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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

REPAIR OF CANVAS AND WEBBING

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DEPARTMENT OF THE ARMY TECHNICAL MANUAL

TM 10-269

This manual supersedes appendix V and paragraphs I and XIV, appendix XI (C5), TB QM 22, 1 August 1944; and paragraph 4, TB QM 23, 4 August 1944.

REPAIR OF CANVAS AND WEBBING



DEPARTMENT OF THE ARMY *JULY 1948*

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TM 10–269, Repair of Canvas and Webbing, is published for the information and guidance of all concerned.

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This manual supersedes appendix V and paragraphs I and XIV, appendix XI (C5), TB QM 22, 1 August 1944; and paragraph 4, TB QM 23, 4 August 1944.

CHAPTER 1

INTRODUCTION

1. Purpose

This manual presents the approved procedures for the repair of all items of canvas and webbing that are repaired by quartermaster field units, quartermaster base depots, and installations other than manufacturing depots in the zone of interior. The manual is designed to provide the operating personnel of both mobile and fixed canvas and webbing textile repair units with detailed information on the mending and reconstructing of all canvas and webbing items issued by the Quartermaster Corps. Numerous drawings and photographs are provided to clarify procedures.

2. Scope

This manual contains both general instructions for the repair of canvas and webbing equipage and special instructions for the proper repair of individual items. Included in repair operations are inspection and marking of the item for repair, repair procedures, and inspection of the finished work. The general organization of the manual is as follows:

a. Basic Repair. Chapter 2 discusses basic repair operations, such as darning, stitching, hand sewing, machine sewing, and cement patching.

b. Repair of Components. Chapter 3 discusses the repair of components used in the construction of quartermaster canvas and webbing items, such as chapes, loops, billets, straps, handles, lines, and suspenders.

c. Special Repair Procedure for Each Item. Chapter 4 discusses in detail the special procedures required for the repair of each canvas and webbing item, section I covering the repair of equipage and section II the repair of heavy canvas and tentage.

CHAPTER 2

BASIC REPAIR

3. Marking

Canvas and webbing items are inspected for weakened areas, holes, tears, opened seams, and missing parts, such as hardware and lines. When fabric damage or missing parts are noted, the inspecting repairman designates by a chalk mark the area for repair or the part to be replaced. Five different markings are used to indicate the types of repair necessary. (See fig. 1.)

a. Circle. A circle ① indicates—

(1) On canvas equipage, that minor repairs are needed, such as darning or tacking.

(2) On tentage, that the hole or tear is under 4¾ inches in diameter or length and is to be repaired by a cement patch.

b. Rectangle. A rectangle ② indicates—

(1) On canvas equipage, that a machine-sewn patch is required.

(2) On tentage, that the damaged area is greater than 4¾ inches in diameter or length and requires a machine- or hand-sewn patch. If the damaged area, regardless of size, supports hardware and is subject to strain, it must be repaired by a sewn patch.

c. Arrow. An arrow ③ indicates—

(1) Hidden damage.

(2) Missing hardware.

d. Parallel Lines. Parallel lines ④ indicate an open seam. A line is chalked along each side of the open seam parallel to the seam and extending the distance to be sewed.

e. Cross. A cross ⑤ indicates that—

(1) The damaged or missing part is on the inside.

(2) An old patch must be replaced.

(3) A section or panel must be replaced.

4. Hand Sewing

In many instances canvas and webbing must be sewed by hand. Hand sewing is necessary when no sewing machine is available and when it is impracticable to use a machine because of the size of the article to be repaired or because the damaged area cannot be conveniently placed under the machine needle.

a. Hand-Sewing Tools and Materials. The items used for the hand sewing of canvas (see fig. 2) are—

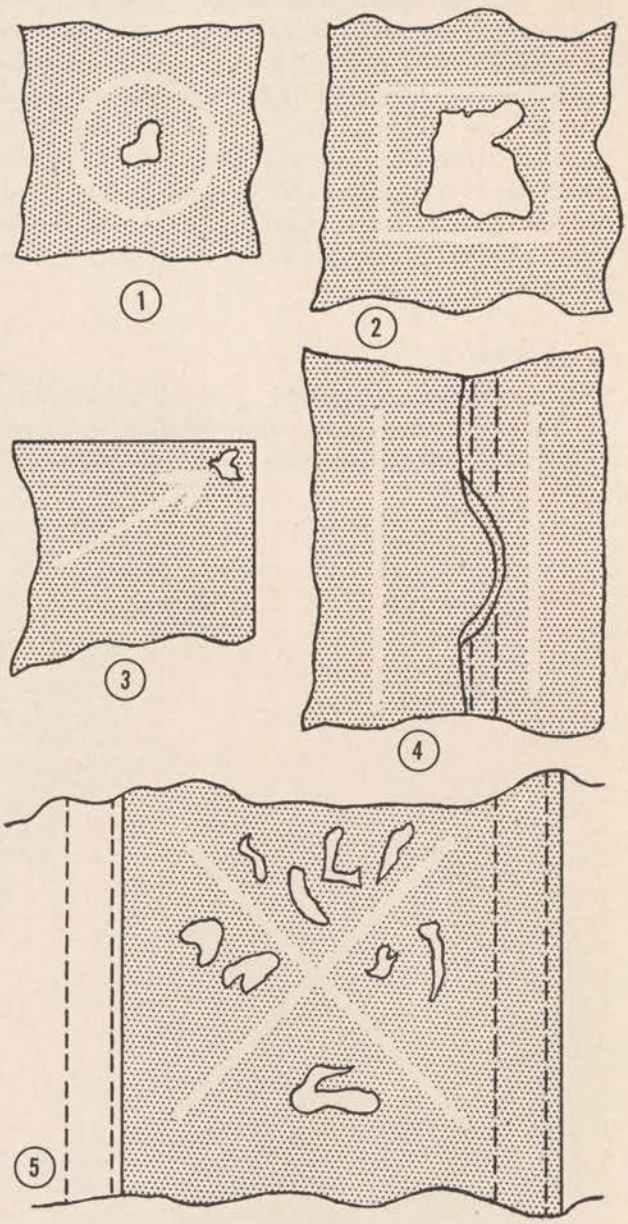


Figure 1. Marks used to indicate types of repair.

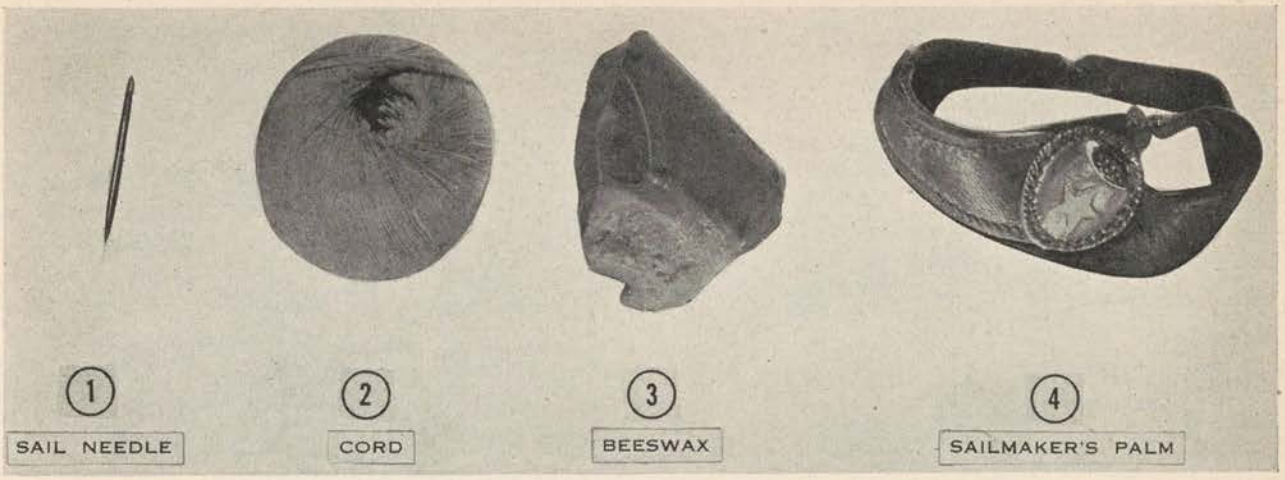


Figure 2. Hand-sewing tools and materials.

(1) *Sail needle.* The sail needle ① is a long steel needle, triangular in cross section, with rounded edges tapering to a sharp point at one end and rounding off to the eye at the other end. Long spur needles are used for sewing canvas. Sizes are designated by whole numbers from 6 to 17, with half numbers from 14½ to 17½. The larger numbers designate the larger needles. Size 15 is generally used for mediumweight canvas.



Figure 3. Sailmaker's palm on hand.

(2) *Cord.* Cord ② is a strong thread, made of either cotton or flax, used for hand-sewing canvas. It is available in several sizes. Size 10–5 is used on lightweight and mediumweight canvas and size 8–6 on heavy canvas.

(3) *Beeswax.* Beeswax ③ is wax matter derived from the honeycomb found in beehives. It is applied to the cord to prevent the small threads from fraying as the cord is pulled through the canvas and to make the cord pass easily through the heavy material.

(4) *Sailmaker's palm.* The palm ④ is a leather or metal shield worn over the palm of the hand while hand-sewing heavy fabrics such as canvas. The palm protects the hand from the sharp needle and, like a thimble, assists in pushing the needle through the material. Leather palms frequently have a small metal inset with small round indentations to hold the end of the needle while it is being forced through the canvas. See figure 3.

b. Hand-Sewing Stitches. The following stitches (see fig. 4) are commonly used by repairmen in the hand sewing of canvas:

(1) *Flat stitch.* To make the flat stitch, pass the needle over and under an equal amount of the material, each successive stitch entering the material from the opposite side ①. This stitch is used as a temporary fastening until machine repairs can be made.

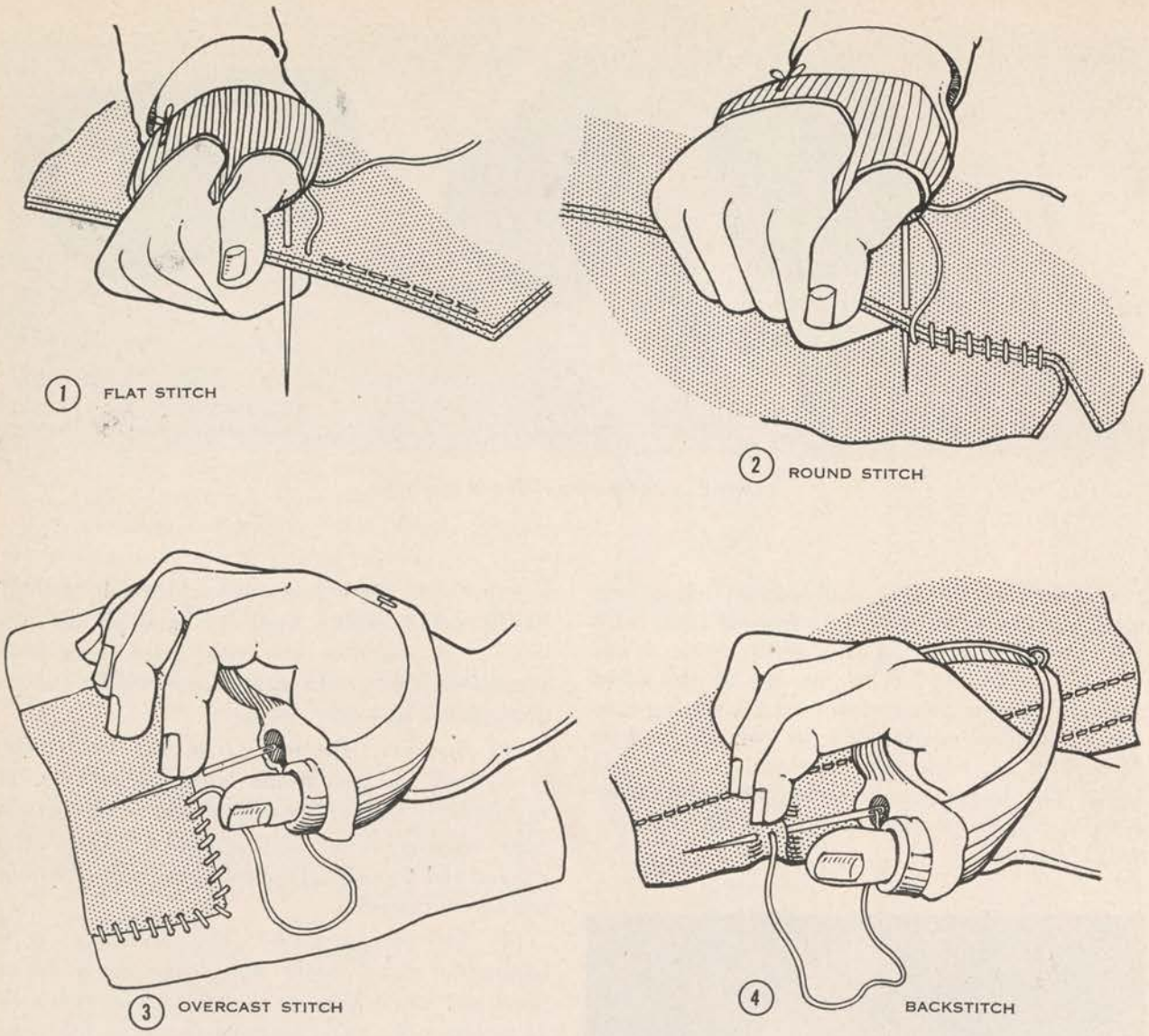


Figure 4. Common stitches used in hand sewing.

(2) *Round stitch.* To make the round stitch, insert the needle at right angles to the edge of the material and bring the cord around the edge before making the next stitch ②. The round stitch is used to hand-work grommets.

(3) *Overcast stitch.* To make the overcast stitch, insert the needle through the material at an angle so that it comes out to one side and ahead of the point of insertion and bring the cord over to the original line of insertion before making the next stitch ③. This stitch is used to apply a hand-sewn patch.

(4) *Backstitch.* The backstitch gets its name from the fact that the needle is always set back half a stitch-length into the last stitch made. To make this stitch, first take two small stitches in the same place in order to secure the end of the cord. Then continue by inserting the needle into the middle of the preceding stitch and bringing it out on the same side of the material a stitch-

length in advance of the last stitch ④. The backstitch is used to secure an open seam.

5. Machine Sewing

a. General. The machine sewing of canvas and webbing in the Army is normally done on a single-needle, lock-stitch machine with compound feed and high-lift alternating pressure. It is designed especially for the repair of canvas equipage and tentage. In some instances chainstitch machines are used.

b. Sewing-Machine Operation. Operation and maintenance instructions for sewing machines are covered in TM 10–263, Clothing and Textile Repair Sewing Machines. Additional information may be found in the manufacturer's manual for the specific model of the machine being operated.

c. Machine Sewing of Canvas. (1) *Type of stitch.* When repairing canvas equipage and tentage by machine, follow as nearly as possible the type of stitch used in the original construction of the item being repaired. The lock stitch, chain stitch, and bar tack are the stitches commonly used in the machine sewing of canvas and webbing.

(2) *Size of needle.* The size of the needle to be used is determined by the size of the thread. The machine will not stitch well if the thread does not pass freely through the eye of the needle. Sewing-machine needles size 26 are commonly used in the repair of heavy canvas and size 22 in the repair of lightweight canvas.

(3) *Type of thread.* Cotton thread, three- or four-ply, is generally used for machine sewing. Left-twist thread is used for the needle and either left- or right-twist thread for the bobbin. Thread size 10–3 is commonly used in the repair of heavy canvas and sizes 16–4 and 24–4 in the repair of lightweight canvas.

(4) *Thread tension.* Adjust the tension (see fig. 5) of the needle and bobbin threads so that the threads lock in the center of the thickness of the material being sewed ①. If the tension of the needle thread is greater than that of the bobbin thread, a faulty stitch will result, with the needle thread lying straight along the upper side of the material ②. If the bobbin thread is tighter than the needle thread, a poorly made stitch will result, with the bobbin thread lying straight along the under side of the material ③.

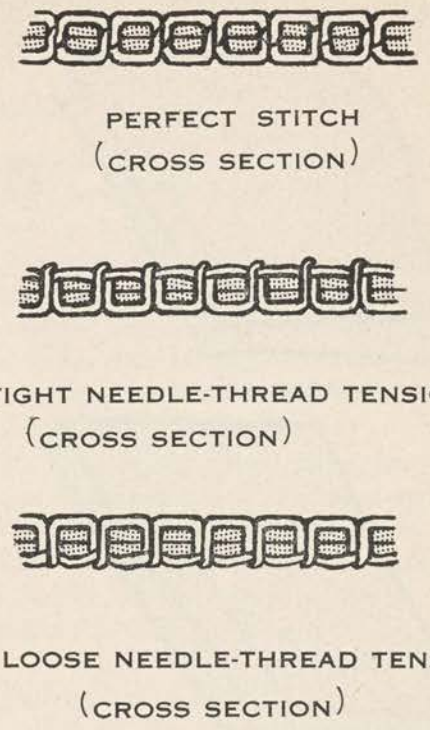


Figure 5. Thread tension.

(5) *Length of stitch.* The length of the stitch is determined by the number of stitches per inch (the longer the stitch, the fewer stitches per inch). Set the machine to sew five stitches per inch on heavy canvas and eight stitches per inch on lightweight canvas.

d. Seams. The seams commonly used in canvas repair (see fig. 6) are—

(1) *The simple seam.* To make a simple seam, place two thicknesses of the material together with edges alined and unite them with one row of stitching ①.

(2) *The flat seam.* To make a flat seam, overlap the edges of two thicknesses of the material and unite them with two rows of stitching ②.

(3) *The single-felled seam.* To make a single-felled seam, place two thicknesses of the material together, unite them with one row of stitching ③A, and then turn one thickness back and stitch it down with two rows of stitching ③B.

(4) *The double-felled seam.* To make a double-felled seam, place two thicknesses of the material together and unite them with a single row of stitching ④A. Then, turning the one thickness back and the edge of the other thickness in, fasten the seam with two rows of stitching ④B.

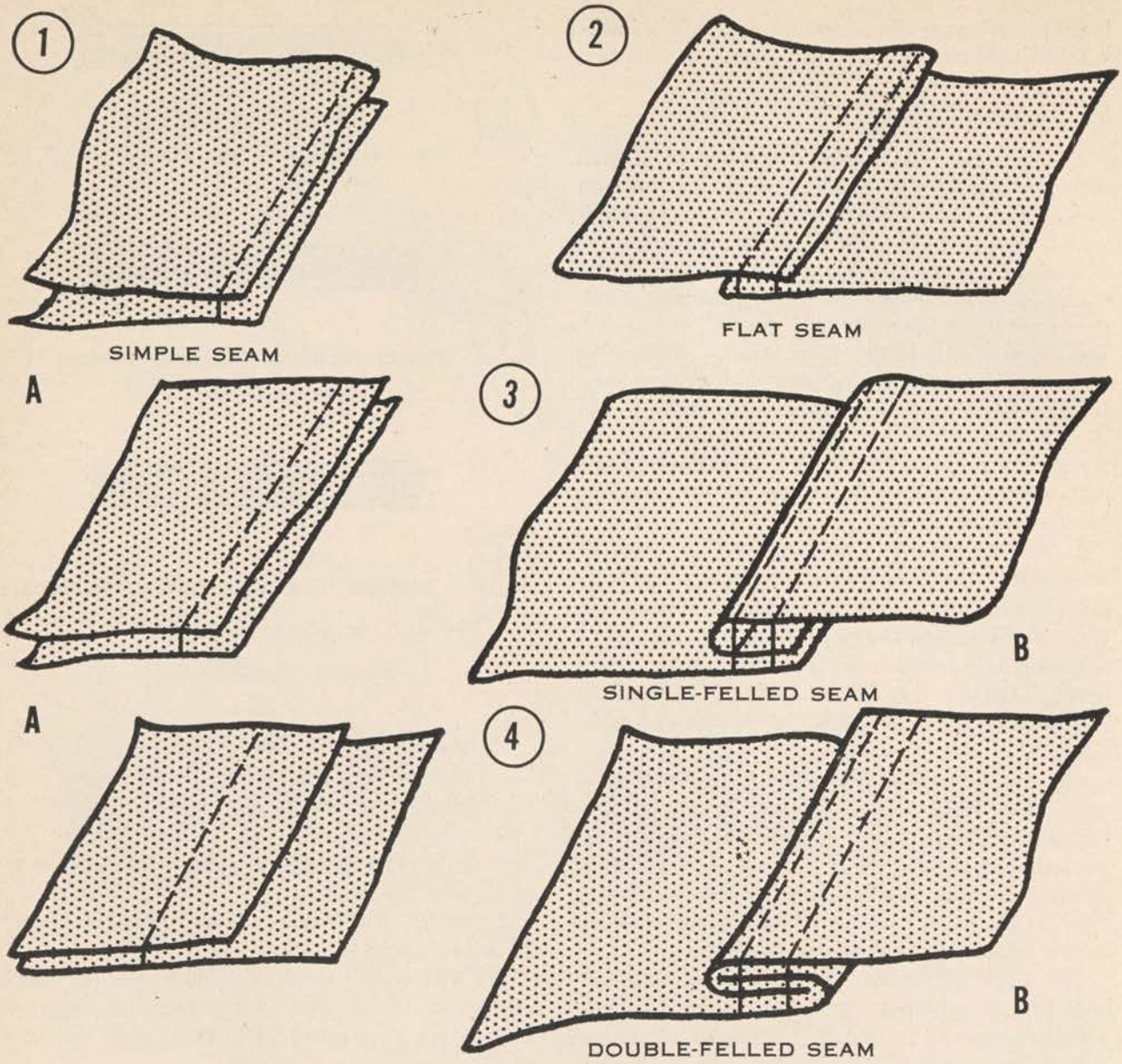


Figure 6. Seams commonly used in canvas repair.

6. Binding

A binding of a narrow strip of material or tape is used to strengthen the edge of the material (see fig. 7). When a binding attachment ① is not available, stitch the binding first to the inside of the piece being worked upon and then fold it over to the outside and stitch into place ②.

7. Darning

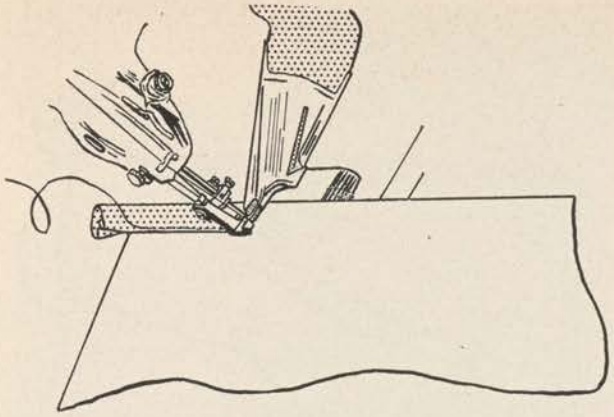
Small holes and worn areas, except in tentage, may be repaired by either hand or machine darning. Common types of darning (see fig. 8) are used in the following instances:

a. A circular darn, starting at the outside and ending at the center ① is used for small holes and worn areas under ½ inch in diameter.

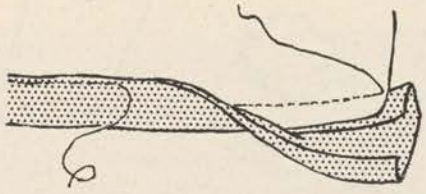
b. An up-and-down or zigzag darn ② is used for slits or straight tears.

c. A circular or overhand fashion of darning ③ is used when wear occurs on corded seams or bindings.

d. A reinforcing piece is laid underneath a hole



① ATTACHING BINDING. USING BINDING ATTACHMENT



② ATTACHING BINDING. WITHOUT AID OF BINDING ATTACHMENT

Figure 7. Methods for attaching binding.

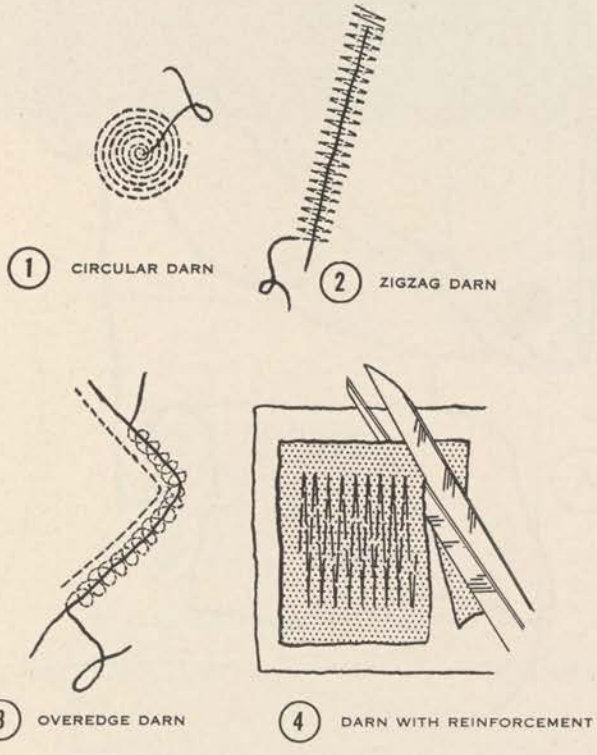


Figure 8. Common types of darns.

from ½ to ¾ inch in diameter before the hole is darned ④.

8. Patching

Holes or tears in canvas equipage over ¾ inch in diameter or length require patching. Damaged tent tops require patching on all holes and tears. Items of waterproof, fire-resistant, and mildew-treated fabric must be patched with similarly treated material. The material used for patching should match the item in color and texture. The following patches are customarily used in the repair of canvas and webbing items:

a. Top Patch. A top patch, as its name implies, is applied to the top side of the material. It may be a simple patch or a felled patch.

(1) *Simple top patch.* To make a simple top patch (see fig. 9) use the following procedure:

(*a*) Zigzag the torn parts together ①. Holes that cannot be zigzagged are finished by cutting away the damaged area after the patch has been stitched in place ②. Zigzagging and cutting away are unnecessary when the damaged area contains several small holes ③.

(*b*) Center the patch over the damaged area allowing a minimum overlap of 2 inches on all sides ①.

(*c*) Turn under the edges of the patch and stitch into place, taking care to keep the edges of the patch parallel with the edge of the item being repaired and the stitching not more than ⅛ inch from the edge of the patch ②. On tentage two rows of stitching ④ are required before the damaged area is cut away. A distance of ⅜ to ½ inch between rows of stitching is adequate.

(2) *Felled top patch.* The felled top patch (see fig. 10) differs from the simple top patch only in the manner of finishing. After first stitching the top patch into place turn the material over, cut away the damaged area, notch the corners, turn the edges in, and stitch the turned edges to the patch ①. Turn the material top side up and the felled patch is completed ②.

b. Inverted Patch. An inverted patch (see fig. 11) is one that is placed on the under side of the material being repaired. An inverted patch, either simple or felled, is stitched and finished in the same manner as a top patch. Care must be taken to center the inverted patch

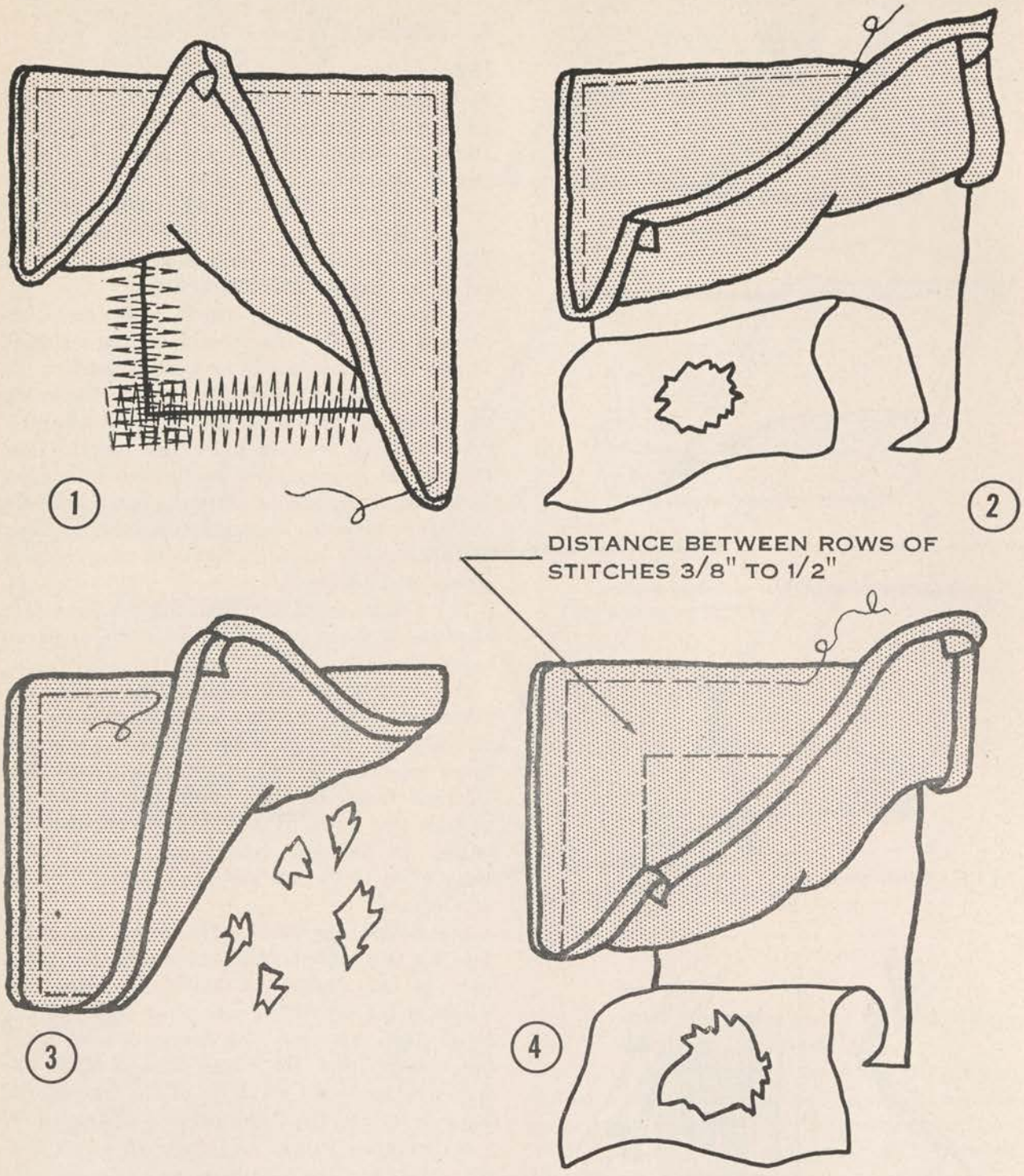
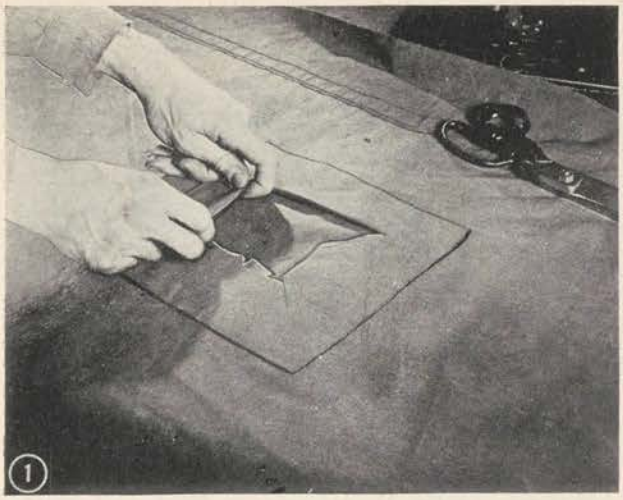


Figure 9. Simple top patches.



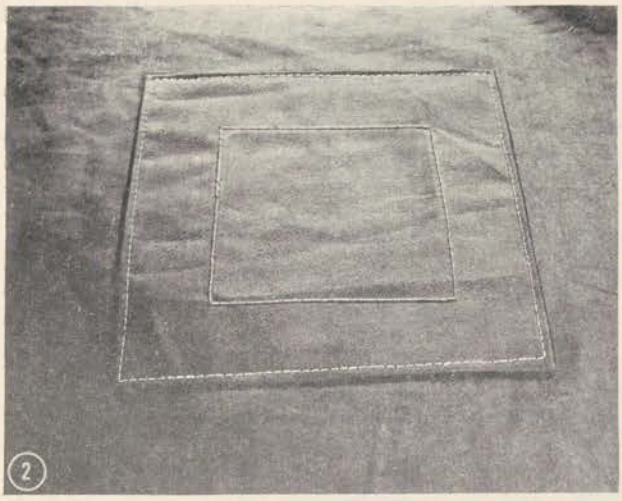


Figure 10. Felled top patch.

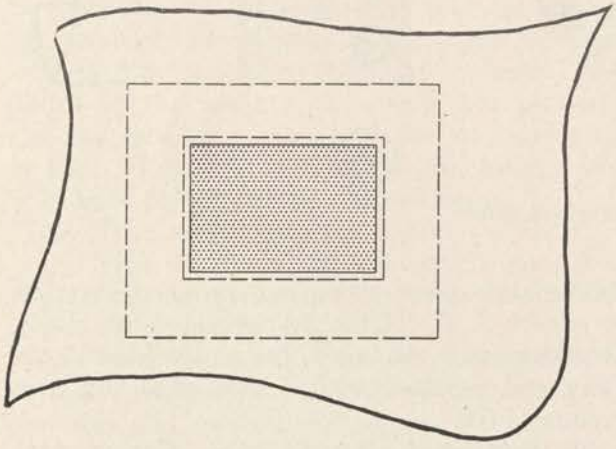


Figure 11. Inverted patch.

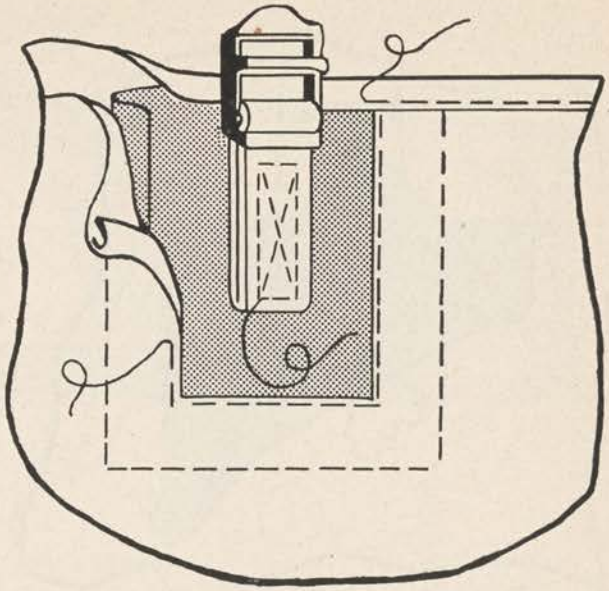


Figure 12. Single-thickness strap-support patch.

under the damage being repaired; otherwise a top patch will result.

c. Strap-Support Patch. A strap-support patch is used to repair the damaged strap-support areas. It may be of single thickness where the strain is slight or of double thickness where increased tensile strength is required.

(1) *Single-thickness patch.* This patch is a top-felled patch and may be made from a salvaged piece of material with the strap attached. (See fig. 12 for inside view of single-thickness strap-support patch.)

(2) *Double-thickness patch.* The double-thickness patch (see fig. 13) is a two-patch combination using both the inverted patch and the top patch. It is made in the following manner:

(*a*) Cut two patches of equal size large enough to cover the damaged area, allowing for a ½-inch turn-under of edges.

(*b*) Turn the item being repaired wrong side up and center patch A over the damaged area ①.

(*c*) Turn under the patch edges and stitch the patch into place ①.

(*d*) Turn the item right side up and cut away the damaged area ②.

(*e*) Center patch B over patch A.

(*f*) Turn under the patch edges so that patch B and patch A are the same size ②.

(g) Finish by stitching patch B into place ②.

d. Grommet Patch. A grommet patch is used to replace a damaged grommet support area where a grommet has torn loose from the fabric. Grom-

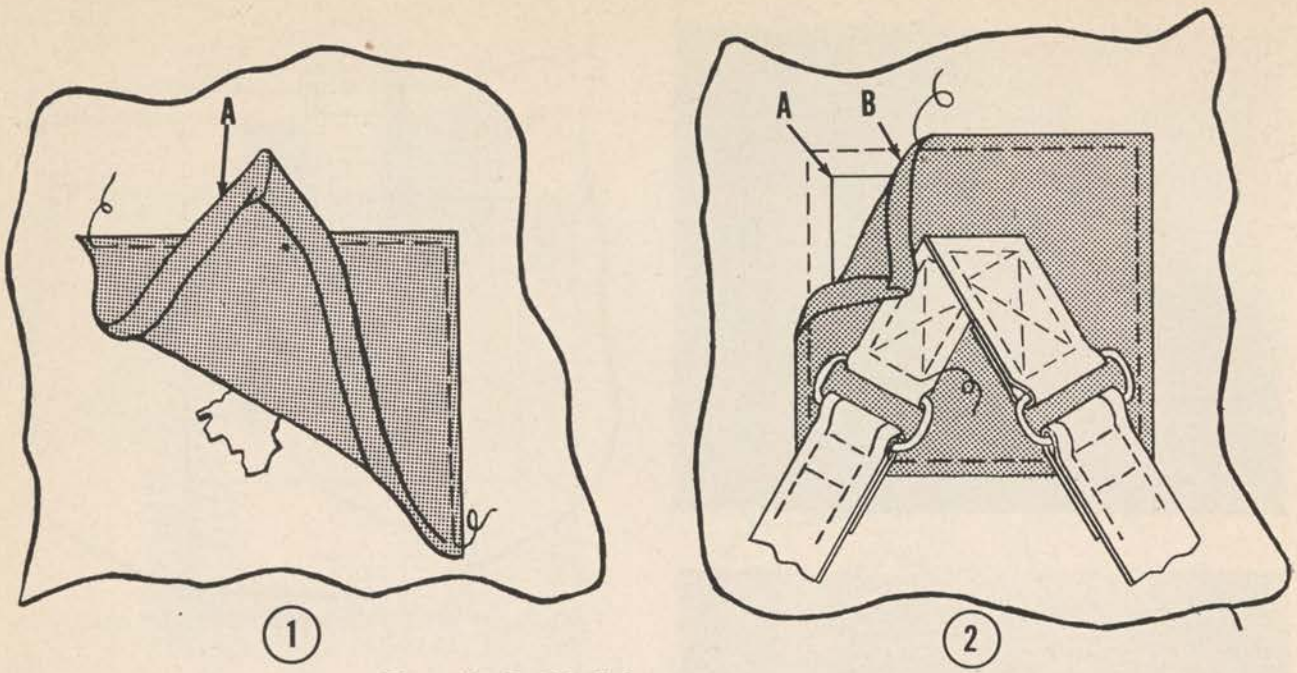


Figure 13. Double-thickness strap-support patch.

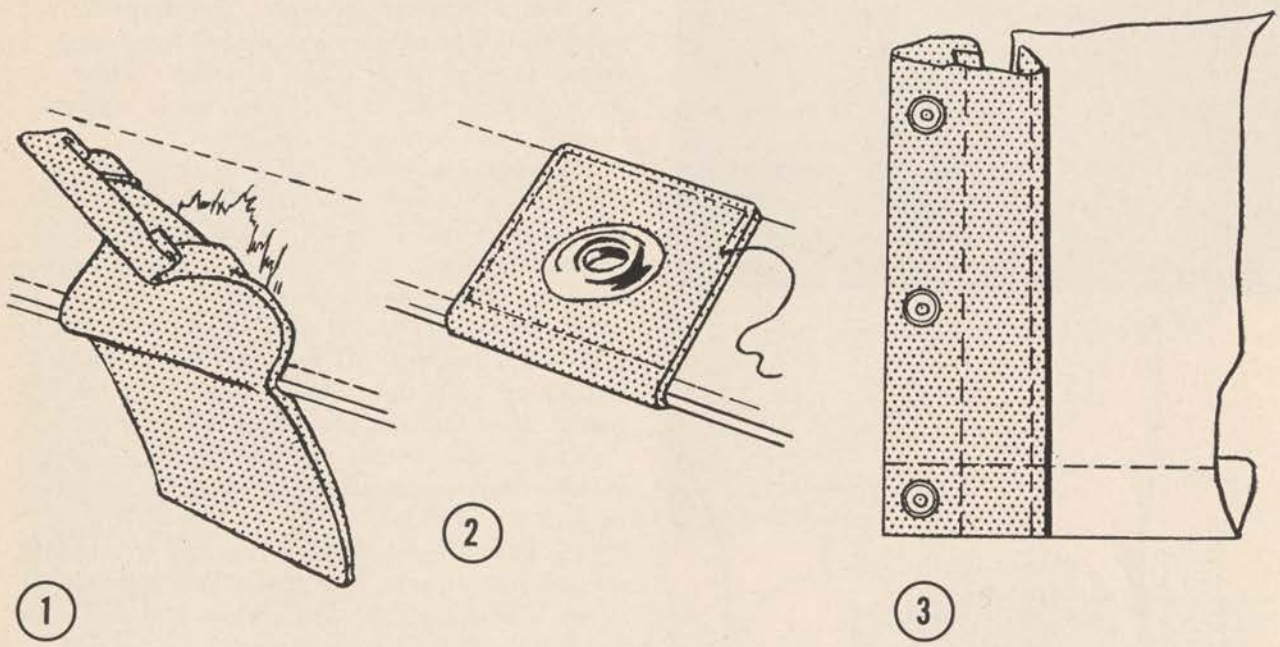


Figure 14. Overedge grommet patch.

met patches most commonly used in the repair of canvas and webbing items are:

(1) *Overedge grommet patch.* The overedge grommet patch (see fig. 14) is made by folding the patch material over the damaged grommet support area ①. The damage is covered on both the top and the bottom. The patch is then stitched into place and a new grommet inserted or reworked ②. If the fabric containing a row of grommets is damaged, the entire edge is cut away and replaced with a new edge and new grommets ③.

(2) *Reinforced grommet patch.* Corners containing grommets are subject to considerable

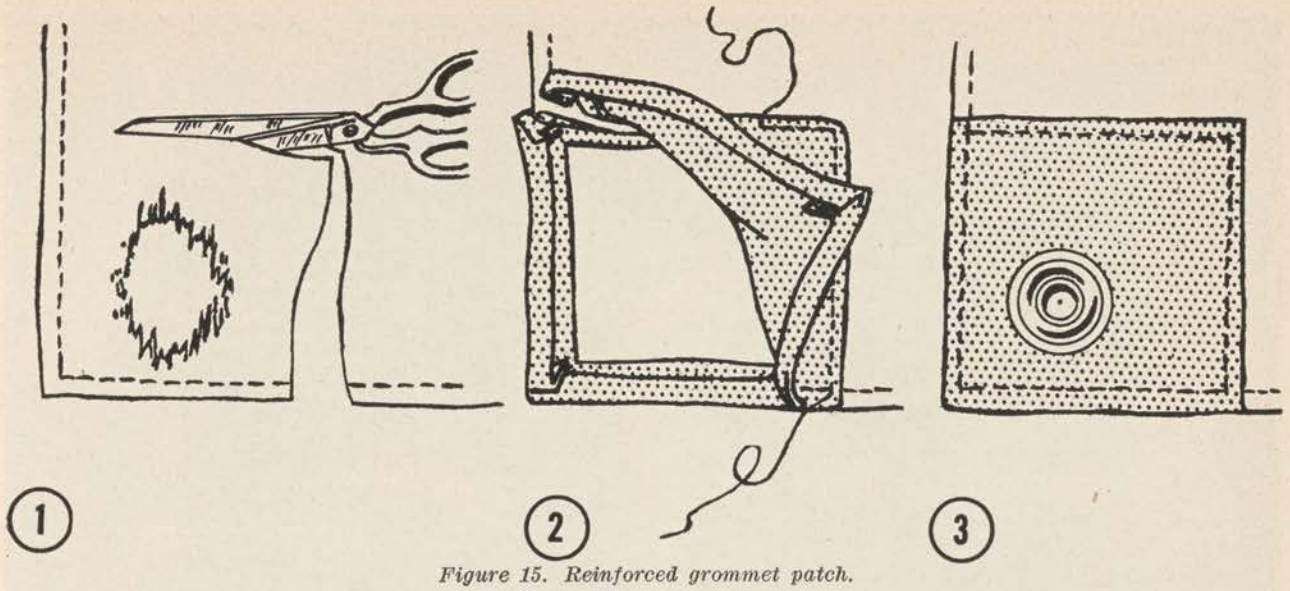


Figure 15. Reinforced grommet patch.

strain. To replace a corner grommet use a reinforced patch of three thicknesses of material (see fig. 15). To make this type of patch—

(*a*) Cut away the damaged corner ①.

(*b*) Apply the patch to the under side and stitch into place.

(c) Apply the top patch, inserting an extra piece between patches to give three thicknesses of material ②.

(*d*) Finish by stitching the top patch into place and inserting a new metal grommet ③.

(3) *Eave grommet patch.* When an eave grommet has torn loose or the fabric supporting an eave grommet is damaged, a four-ply patch (see fig. 16) is necessary to support the grommet against the pull of the eave line. To make the eave grommet patch—

(*a*) Cut a patch large enough, when folded, to cover the damaged area with four thicknesses of material. The length of the patch material will be four times the width of the eave. The width of the patch will be sufficient to cover the damaged area and allow for an overlap of at least 2 inches on each side of the damage and a ½-inch turn-under of the two edges.

(*b*) Turn under the side edges ½ inch ①.

(*c*) Take each end of the patch and fold toward the center so that the ends meet at the center of the patch ②.

(*d*) Fold the patch over the damaged eave so that two plies of material will be on top of the eave and two on the bottom ③.

(*e*) Finish by stitching the patch into place and inserting a new grommet (fig. 14 ②).

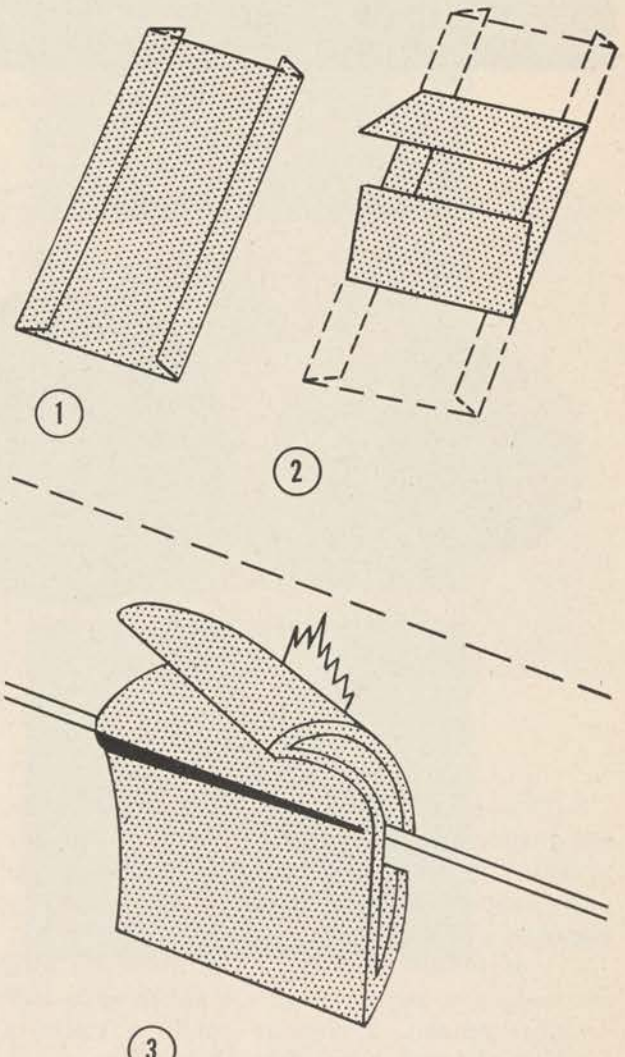


Figure 16. Eave grommet patch.



Figure 17. Cement patching tools.

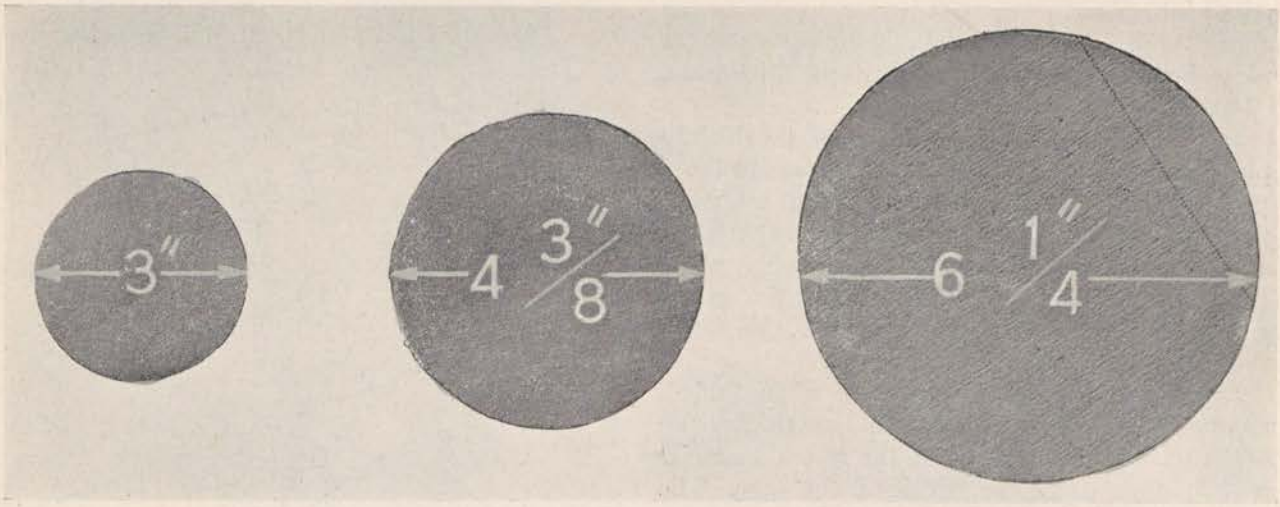


Figure 18. Cement patches.

e. Cement Patch. A hole or a tear in tentage, not greater than 4¾ inches in diameter or length, provided it does not occur on seams, edges, or areas supporting hardware, may be repaired by means of a cement patch.

(1) *Materials necessary.* The materials used for making a cement patch are either olive-drab or clear cement, a circular patch, a roller, a board, and brushes (see figs. 17 and 18).

(2) *Size of patch.* Three sizes of circular patches (see fig. 18) are used to repair tents as follows:

Sizes (inches)	
Diameter of patch	*Diameter of length of hole or rip*
3	1½
4⅜	2⅞
6¼	4¾

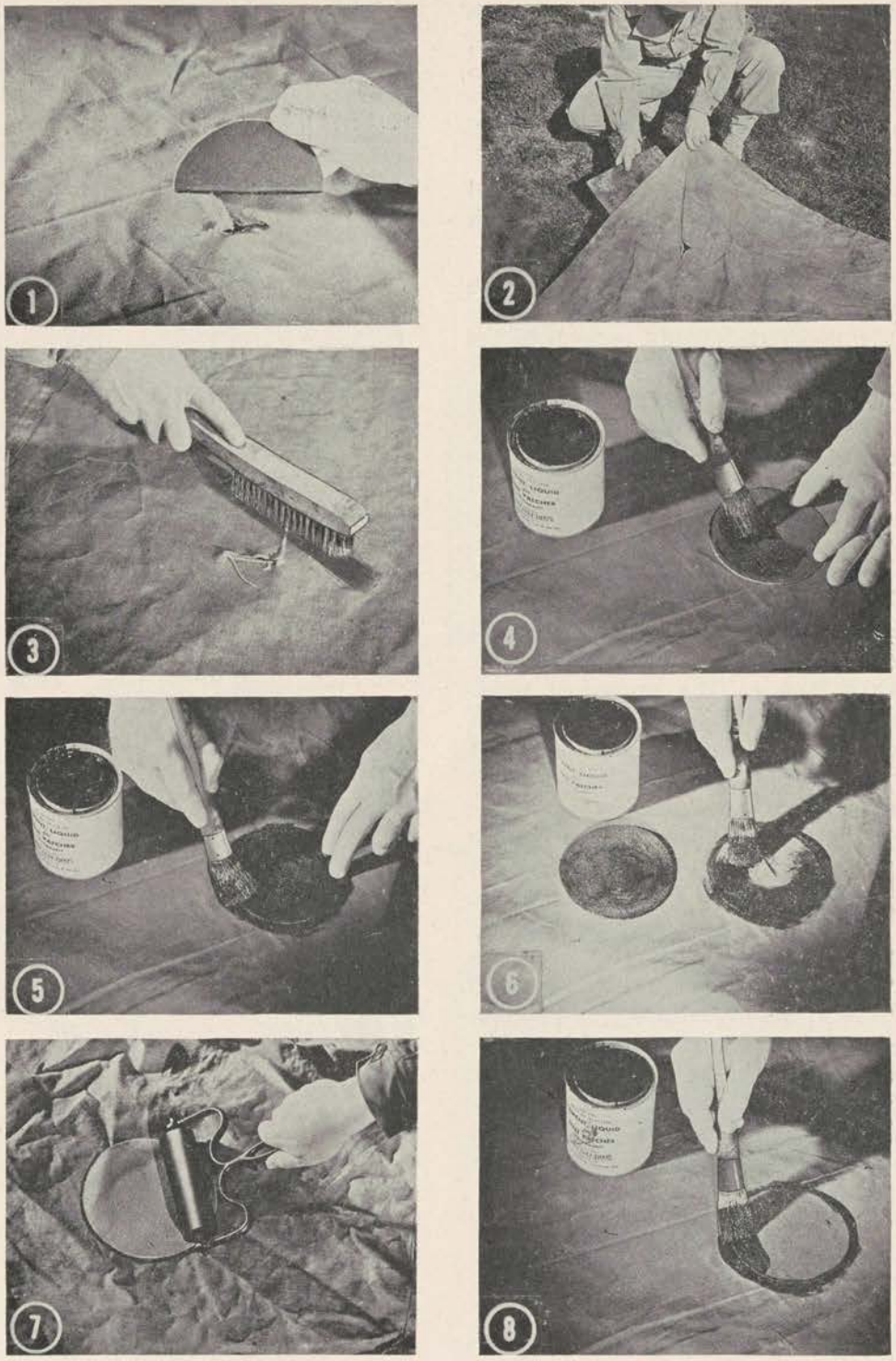


Figure 19. Steps in applying a cement patch.

(3) *Procedure.* To repair the damaged area by means of a cement patch (see fig. 19) proceed as follows:

(*a*) Select a patch that overlaps the damage with a margin of at least ¾ inch on all sides ①.

(*b*) Place a board under the damaged area to provide a flat working surface ②.

(*c*) Clean the damaged area of the tent with a wire or stiff bristle brush ③.

(*d*) Center the patch over the damage and while holding it in place apply cement to it with a brush ④.

(*e*) Apply cement to the edge of the patch, making a cement circle on the tent ⑤.

(*f*) Lift the patch and apply cement to the area of the tent inside the cement circle ⑥.

(*g*) Allow the cement to dry to a viscid or gummy state and apply a second coat. (Some cement issued by the Army does not require a second coat. Directions on the container should be followed.)

(*h*) With the roller provided for that purpose ⑦ press the cemented surfaces together while they are still wet.

(*i*) Seal by wiping the edge of the patch with the tip of the finger or with the cement brush ⑧.

f. Watershed Patch. The watershed patch (see fig. 20) is a top patch used on tentage. It differs from the rectangular top patch in that it has the top edge angled off to give a roof effect. The roof-type top edge more readily sheds water than the straight or flat-top edge. Collecting less moisture in the top-edge seaming, the watershed patch lasts longer than the rectangular patch. However, a rectangular patch may be properly placed directly under the eave of a tent where the top edge is protected or where the patch straddles the ridge of a tent, leaving both top and bottom edges of the patch in a downward position. The watershed patch is made in the following manner:

(1) Select a piece of material of the same weight, color, treatment (i.e., fire- and mildew-resistant), and state of wear as that of the tent being repaired.

(2) Cut a patch large enough to overlap 2 inches on all sides of the area to be repaired, allowing for a ¾-inch turn-under of the edge.

(3) Fold the patch in half lengthwise ①.

(4) On the folded patch, make a roof-type top edge by cutting from the open edges to the folded edge at a 22½° angle ②. (A 22½° angle can be easily made by first marking a 45° angle and then bisecting it.)

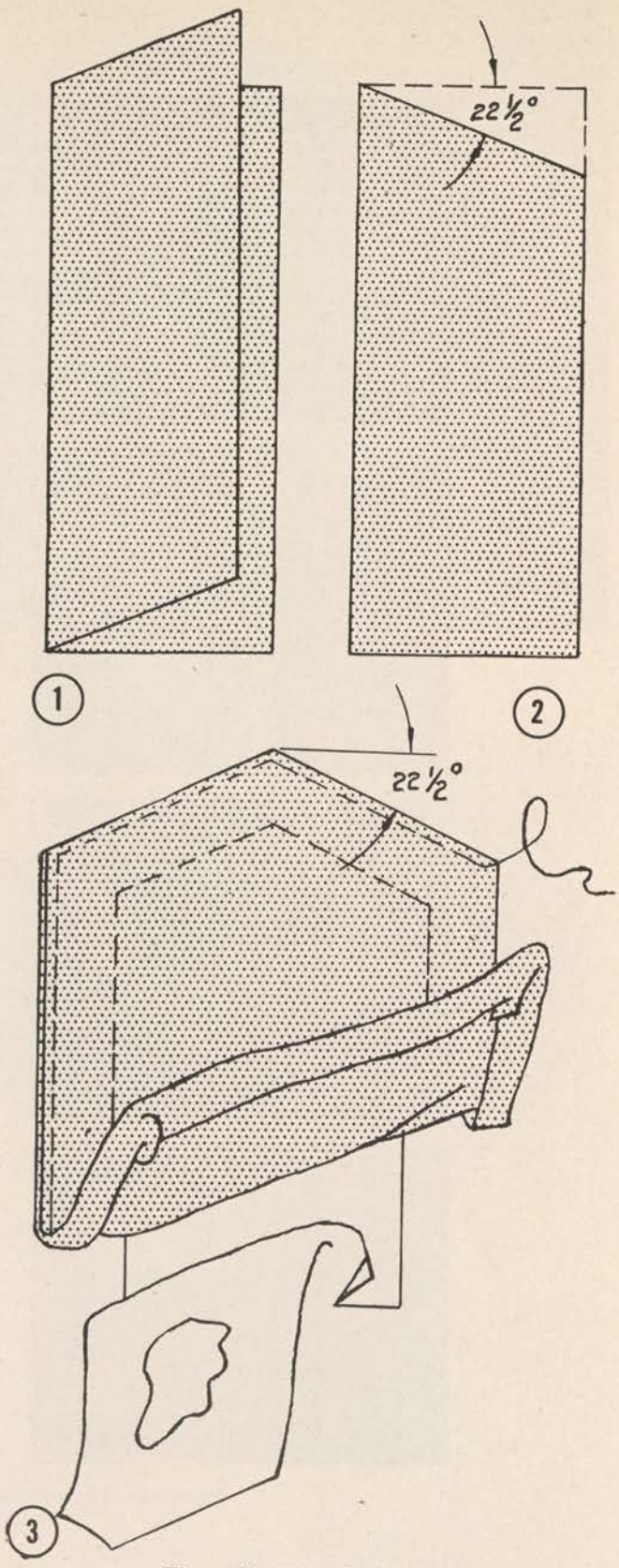


Figure 20. Watershed patch.

(5) Center the patch over the damaged area, turn under the patch edges, and stitch into place with a row of stitching not more than ⅛ inch from the edge. (If the stitching is more than ⅛ inch from the edge, the seam collects water, shortening the life of the canvas.)

(6) Secure the patch to the tent with a second row of stitching, placing the second row ⅜ to ½ inch from the first ③.

(7) Turn the tent over and cut away the damaged material to within ⅛ inch of the inside row of stitching.

Note. On tent side walls and on small tents the watershed patch should be finished by felling (see fig. 10).

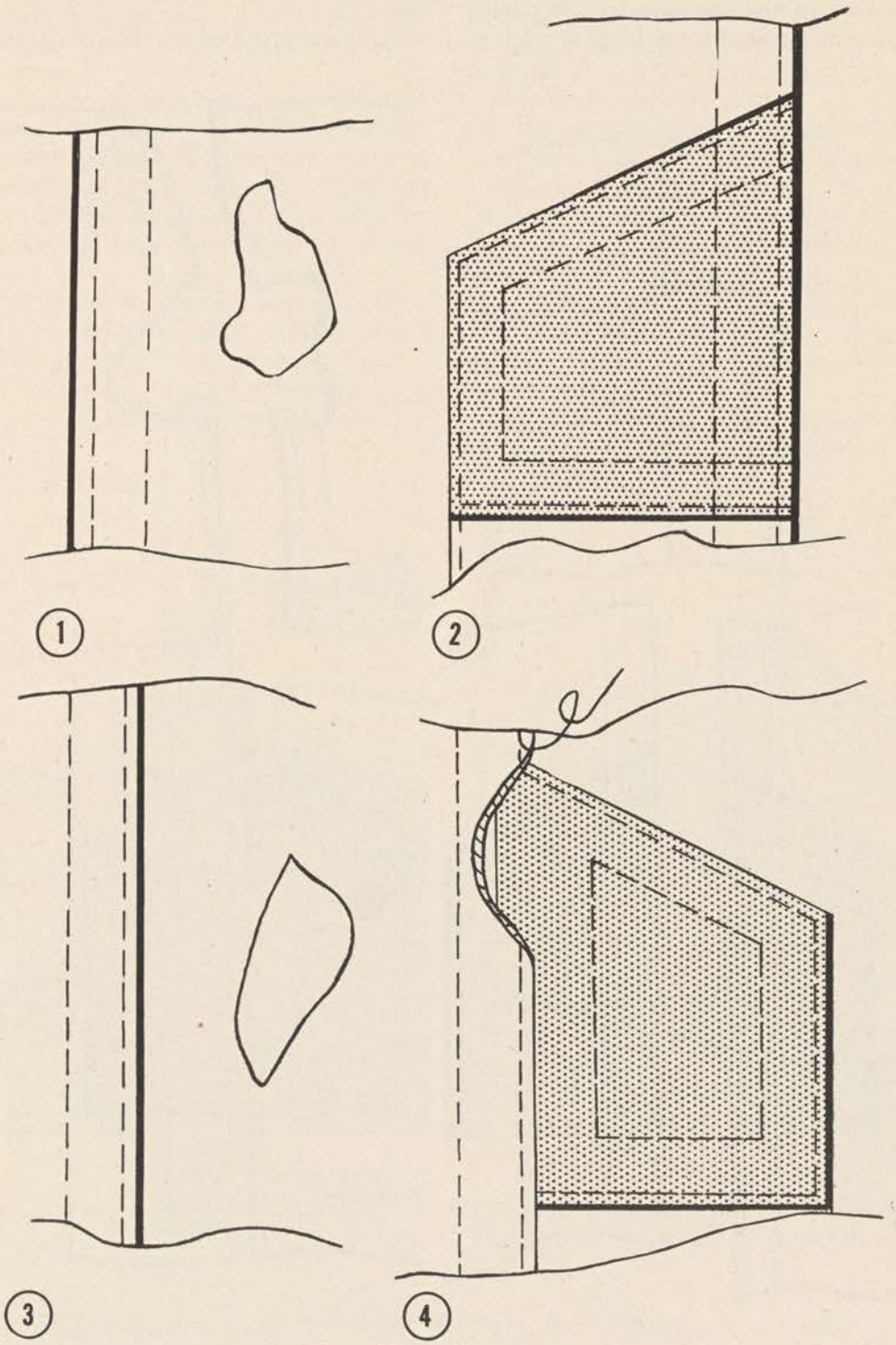


Figure 21. Patch near seam.

g. Patch Near Seam. When damage occurs near a seam (see fig. 21 ① and ③), repair it by either a rectangular-type or a watershed-type top patch, depending upon the item being repaired and the location of the damage being covered. The construction of the patch to be used near a seam is similar to that of the top patch (see *a* above) and that of the watershed patch (see *f* above). The patch must be cut large enough to cover the damaged area and extend to the exposed edge of the seam. The patch, if on the top ply of the seam, is finished by two rows of stitching placed over it to match the original seam ②; if the patch is on the bottom ply of the seam, it is finished like a double-stitched top patch, with the seam edge tucked into the half-opened seam ④.

h. Overseam Patch. The overseam patch (see

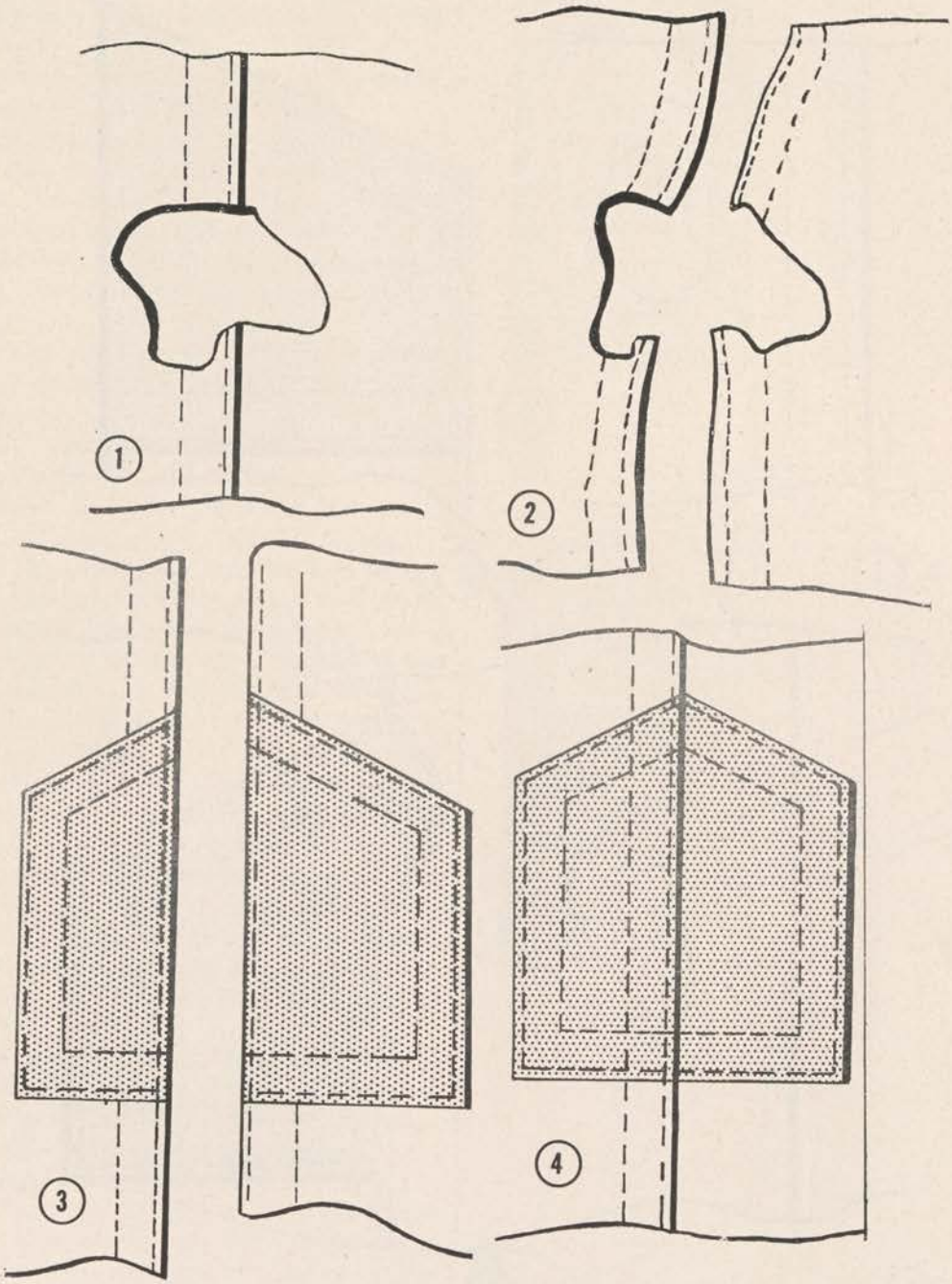


Figure 22. Watershed overseam patch.

fig. 22) is used to repair a hole or a tear occurring on a seam ①. The overseam patch is in reality two half patches, one half being applied to the top ply of the seam and the other half to the bottom ply ③. The patch may be either the rectangular or the watershed type, depending upon its location. The watershed overseam patch is made in the following way:

(1) Open the seam 6 inches above and below the damaged area ②.

(2) Cut a piece of patching material large enough to extend 2 inches on all sides of the damaged area, allowing for a ½-inch turn-under of the edge and an overlap at the seam. Allow one width of the seam for a flat seam, two widths for a single-felled seam, and three widths for a double-felled seam.

(3) Fold at patch lengthwise, left over right, so that the left edge of the patch is short of the right edge the distance of the seam overlap.

(4) Cut off the top edge of the patch at a 22½° angle, cutting from the open edges to the folded edge.

(5) With the patch still folded, cut along the folded edge, making two patches, one a seam lap wider than the other.

(6) Double-stitch the large patch to the bottom ply of the seam and cut away the damaged area ③.

(7) Double-stitch the small patch to the top ply of the seam, making certain to tuck in the roof-type top edge deep enough to form the roof peak when overlapped on the bottom patch.

(8) Finish by overlapping the top panel on the bottom panel and restitching the seam ④.

i. Reinforced-Seam Patch. The most common reinforced seam found in canvas repair is the single-felled seam with a reinforcing strip of material, such as tape, light webbing, or canvas. When a hole or tear occurs on a seam of this type, it is repaired by patching. The basic construction of the reinforced-seam patch (see fig. 23) is the same as that of the overseam patch, with the following exceptions:

(1) The piece of patching material must be large enough to extend 2 inches on all sides of the

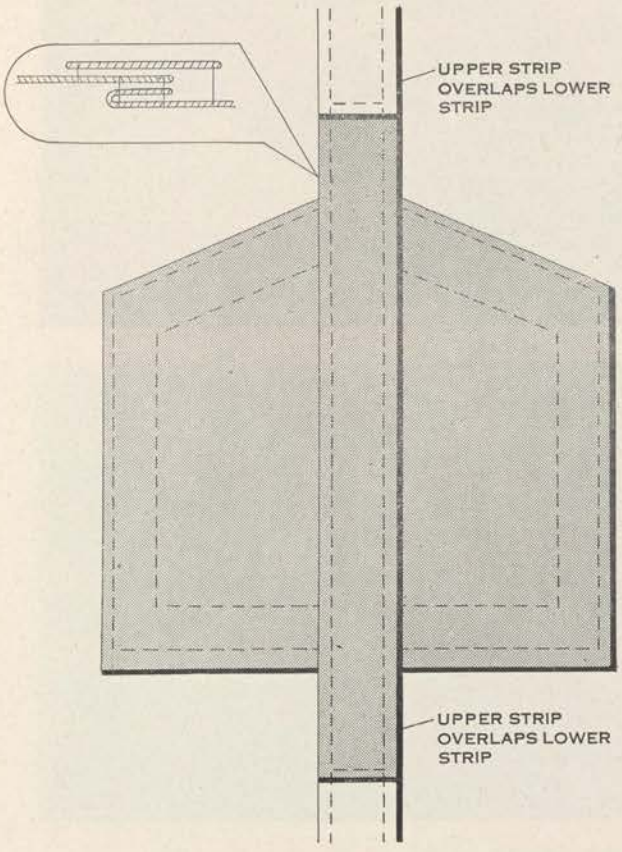


Figure 23. Reinforced-seam patch.

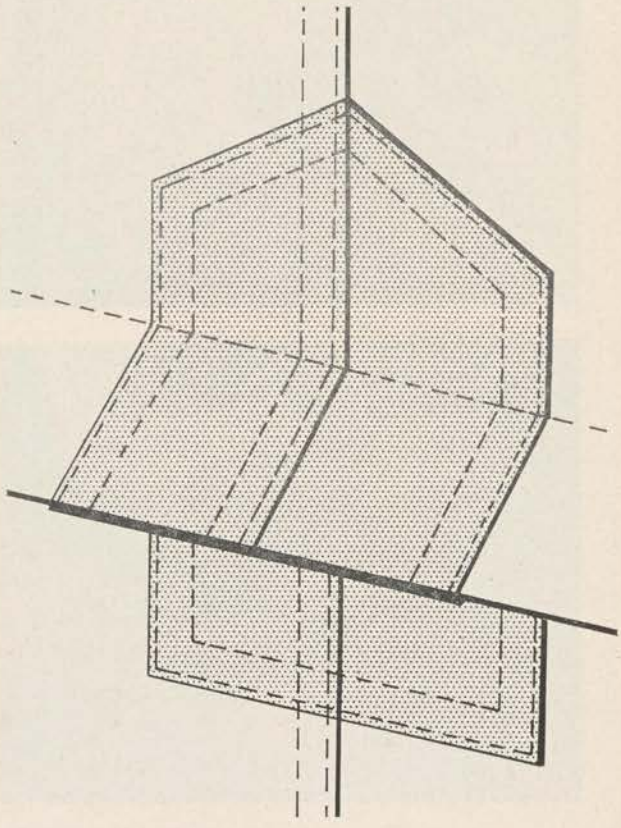


Figure 24. Eave-base patch.

damaged area and allow for a ½-inch turn-under of the edges and for double the width of the seam overlap.

(2) The patch is folded lengthwise, left over right, so that the left edge of the patch is short of the right edge, double the width of the seam overlap.

(3) The top panel is overlapped on the turned-over edge of the bottom panel and the single-felled seam restitched.

(4) The patch is finished by a reinforcement tape stitched over the unfinished edge of the seam, care being taken that all overlapping ends face downward.

j. Eave Patch. A damaged tent eave is repaired by means of a top patch. The type of top patch differs with the location of the eave damage.

(1) *Eave-edge patch.* When damage occurs on or near the edge of an eave, repair it with a four-thickness patch (see fig. 16) extending for at least 2 inches on each side of the damaged area.

(2) *Eave-base patch.* When the damage extends into the eave-base stitching, repair it with a watershed top patch (see fig. 24). To apply this type of patch to a damaged eave, proceed in the following manner:

(*a*) Turn tent inside out and open the seams on all sides of the damaged area a minimum distance of 6 inches.

(*b*) Turn the tent right side up and flatten the damaged area.

(*c*) Apply an overseam patch (see *h* above).

(*d*) Finish the patch by restitching the eave seam as shown in figure 24.

k. Seam-to-Seam Patch. Extensive damage be-

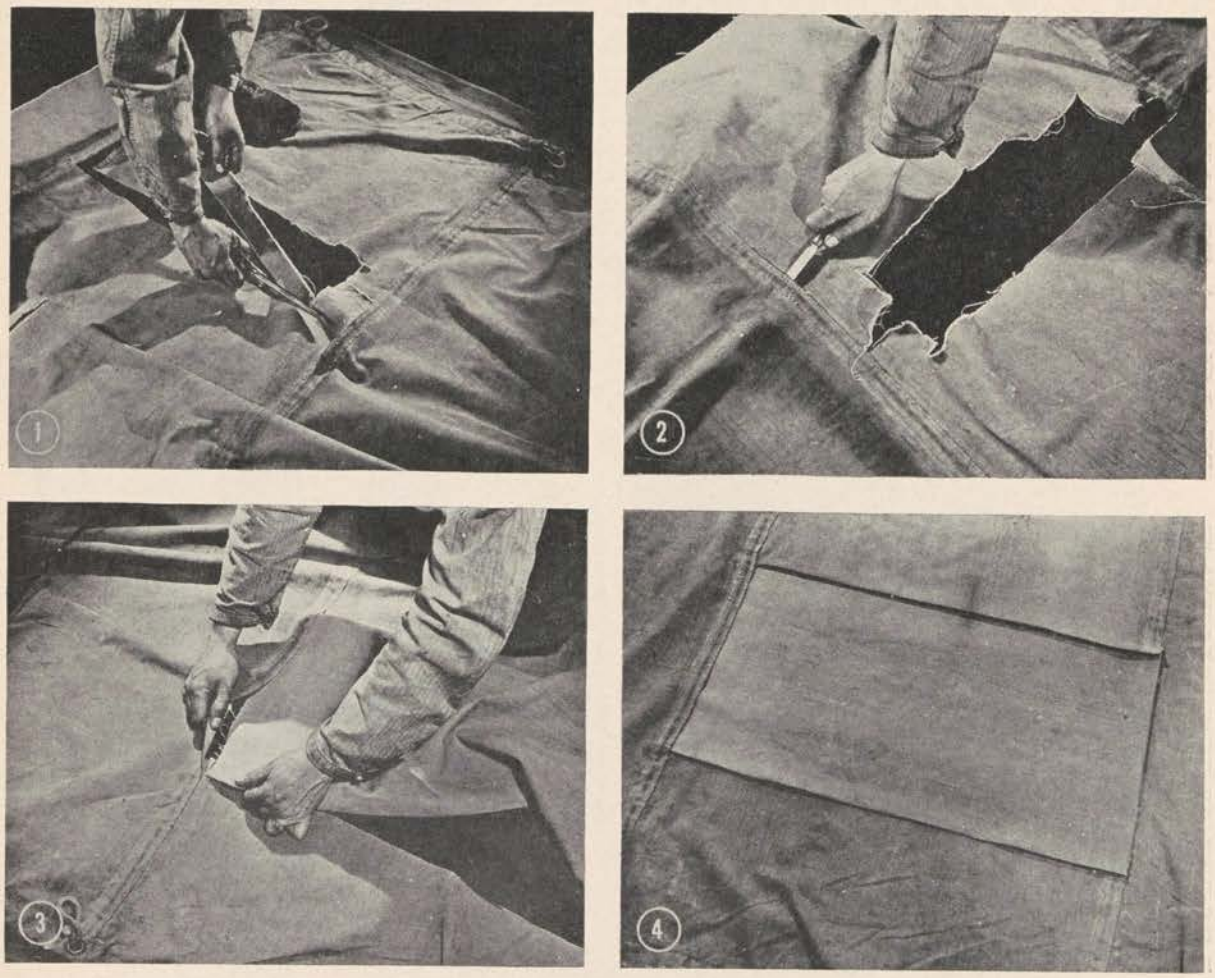


Figure 25. Applying a seam-to-seam patch.

tween seams is repaired with a seam-to-seam patch. This patch is a shingle-type patch, which sheds water away from the top and bottom patch seams. The procedure for the seam-to-seam patch (see fig. 25) is as follows:

(1) Square off the damaged area from seam to seam ①.

(2) Open the seams 2 inches above and below the damaged area ②.

(3) Cut a patch large enough to cover the squared-away section, allowing 1½ inches at the top for tucking beneath the top panel and ½ inch at the bottom for folding under the patch edge.

(4) Center the patch over the cut-away section, inserting the left patch edge under the top ply of the left seam, the upper patch edge under the folded edge of the top panel, the right patch edge overlapping the under ply of the right seam, and the folded lower patch edge overlapping the bottom panel ③ and ④.

(5) Finish by stitching the patch into place (see fig. 26).

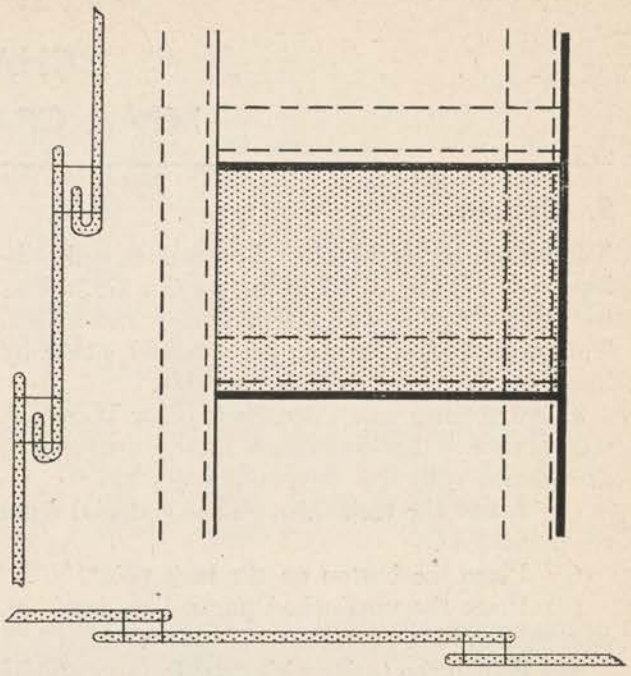


Figure 26. Completed seam-to-seam patch.

CHAPTER 3
REPAIR OF COMPONENTS

9. Buttons

The button commonly found on canvas and webbing items is the tack-button (see fig. 27), a button consisting of two parts, a button and a tack. This type of button may be attached either by hand or by a tack-button machine.

a. Attaching the Tack-Button by Hand. A tack-button is hand-fastened to the material in accordance with the following procedure:

(1) Insert the tack through the material from the under side.

(2) Place the button on the tack point.

(3) Place the unclinched parts, tack head up, on a smooth hard surface.

(4) Clinch the tack and button to the material with a hammer blow forceful enough to secure the parts to the material without damaging the fabric or button.

b. Attaching the Tack-Button by Machine. Machine-fastening a tack-button to material differs from hand-fastening in only one operation. Instead of the tack-button being clinched to the material with the hammer and wood block, the tack, material, and button are placed between the flat dies of a tack-button machine and, by operation of a foot lever, pressed together (see TM 10–264, Overedge, Tack Button and Snap Fastener Machines (when published)).

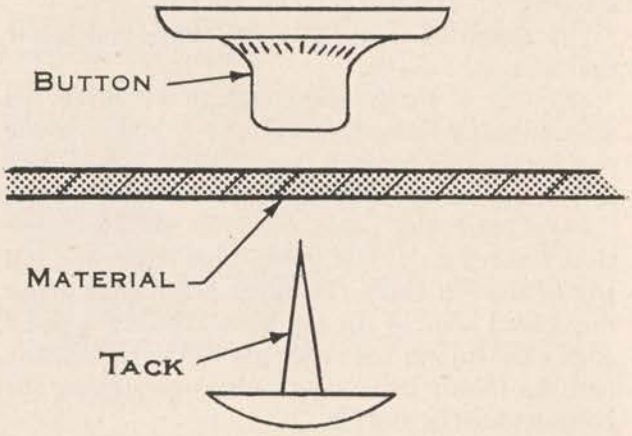


Figure 27. Tack-button.

10. Buttonholes

Damaged buttonholes may be repaired or replaced (see fig. 28) in the following ways:

a. Cut away the damaged material and apply a top patch. The top patch may be a piece of salvaged material containing a buttonhole ① or a piece of plain material in which the buttonhole has to be made.

b. Add a new piece of material to the back of the buttonhole strip ② and rework the old buttonhole to the new material, using the buttonhole stitch (see fig. 29).

c. Cut away the damaged buttonhole strip and attach a new backing and a new facing, taking care to seam the backing to the facing before folding over to top-stitch into place (fig. 28 ③). Remake the buttonhole.

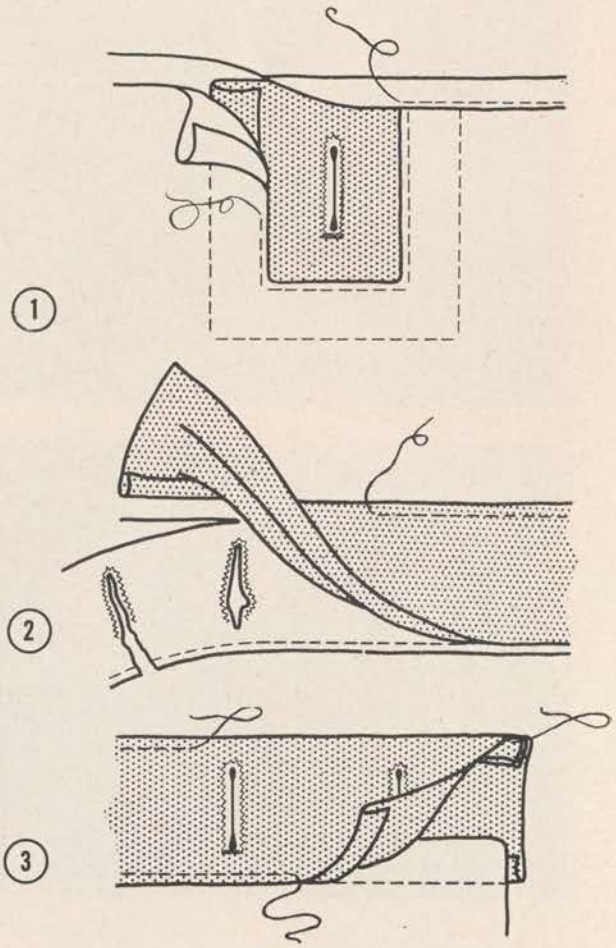


Figure 28. Common ways to replace buttonholes.

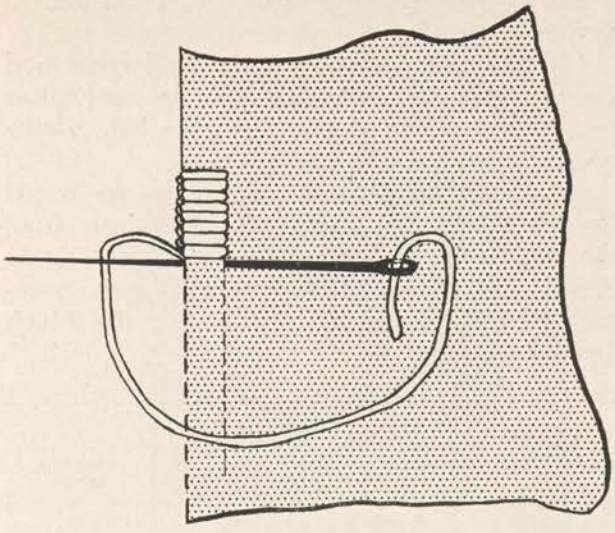


Figure 29. Buttonhole stitch.

11. Grommets

Grommets are metal eyelets. They are used to reinforce and protect the fabric at points where grommet holes have been made to hold ropes, lines, spindles, and sometimes webbing straps. Grommets are either hand-worked or die-inserted.

a. Hand-Worked Grommet. A hand-worked grommet is an iron ring hand-sewn to the material. This type of grommet withstands great strain and is therefore commonly found on heavy tentage.

(1) *Materials needed.* In addition to the hand-sewing tools and materials shown in figure 2, the following are needed: iron rings, lead block, hollow steel cutter, wood fid, and mallet (see fig. 30).

(2) *Size of rings.* There are three sizes of iron grommet rings: ½-, ¾-, and 1-inch (see fig. 31).

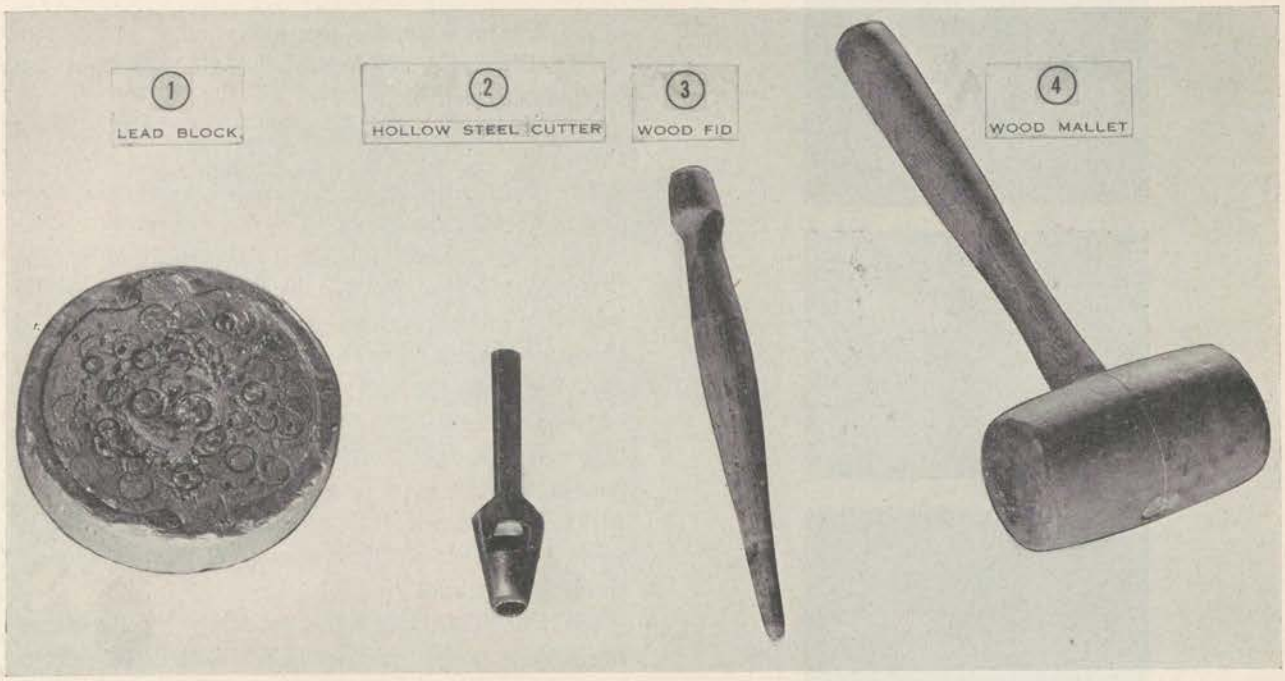


Figure 30. Additional tools for installation of hand-worked grommet.

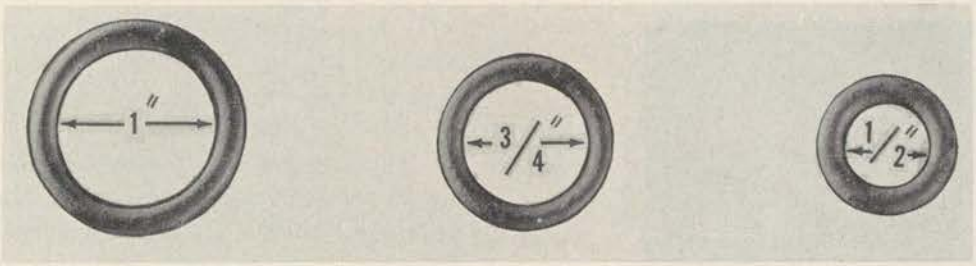


Figure 31. Common-sized rings for hand-worked grommets.

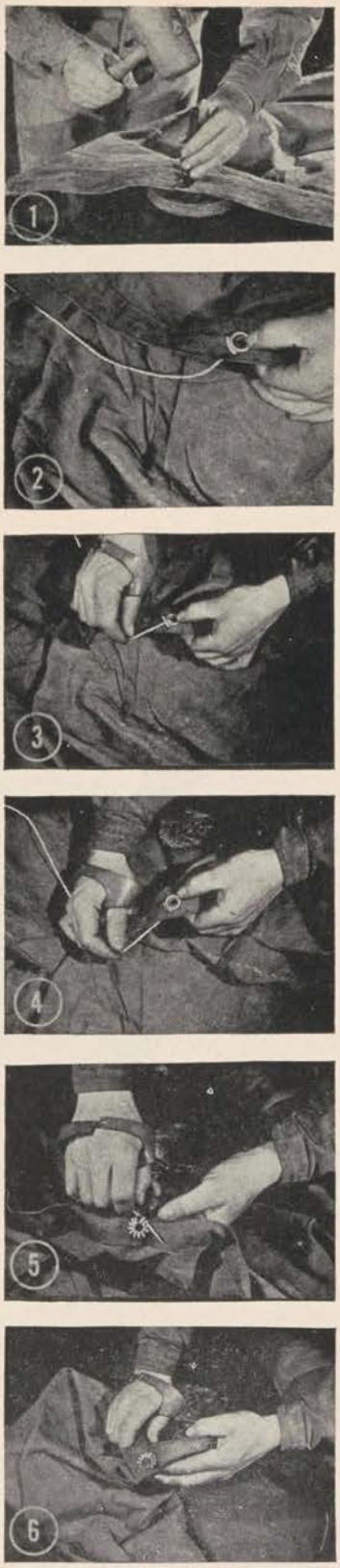


Figure 32. Installation of hand-worked grommet.

(3) *Procedure.* To install a hand-worked grommet (see fig. 32) proceed as follows:

(*a*) Lay the material on the lead block and punch a grommet hole with a hollow steel cutter ①, using a cutter smaller than the hole of the ring.

(*b*) Pierce holes for stitching, not to exceed 1/16-inch diameter, approximately 1/8 inch from the outer edge of the centered ring, making 14 equally spaced piercings for the 1/2-inch grommet, 18 for the 3/4-inch, and 22 for the 1-inch (see fig. 33).

No. of piercings	Diameter (inches)		
	Ring	Punch	Piercing circle
14	1/2	3/8	1 1/16
18	3/4	1/2	1 3/8
22	1	5/8	1 5/8

(*c*) Cut and wax a size 8–6 cord.

(*d*) Thread a sailmaker's needle and knot the cord ends together.

(*e*) Twist the double cord, rewax, and cut off the knot.

(*f*) Center the iron ring over the grommet hole and hold the ring in place.

(*g*) Begin hand-working the grommet at the line of pull (see fig. 33) by inserting the needle into the nearest piercing and drawing the cord through until a 1/2-inch end remains (fig. 32 ②).

(*h*) Secure the end of the cord along the outer edge of the grommet ring by bringing the needle through the grommet hole and inserting the needle for the second stitch ③.

(*i*) Hand-work the grommet to the material with a circular stitch, working clockwise around the iron grommet ring ④.

(*j*) Complete the hand-working by thrusting the needle under the last stitch and drawing the cord tight ⑤.

(*k*) Cut the cord allowing a 1/2-inch free end (see fig. 33).

(*l*) Finish the hand-worked grommet by inserting a wooden fid into the grommet hole, first from the front and then from the back, to flatten the stitching (fig. 32 ⑥).

b. Die-Inserted Grommet. A die-inserted grommet is a two-part brass grommet consisting of a male part called a barrel and a female part called a washer. The two parts, with the fabric between them, are clinched together by means of a die set.

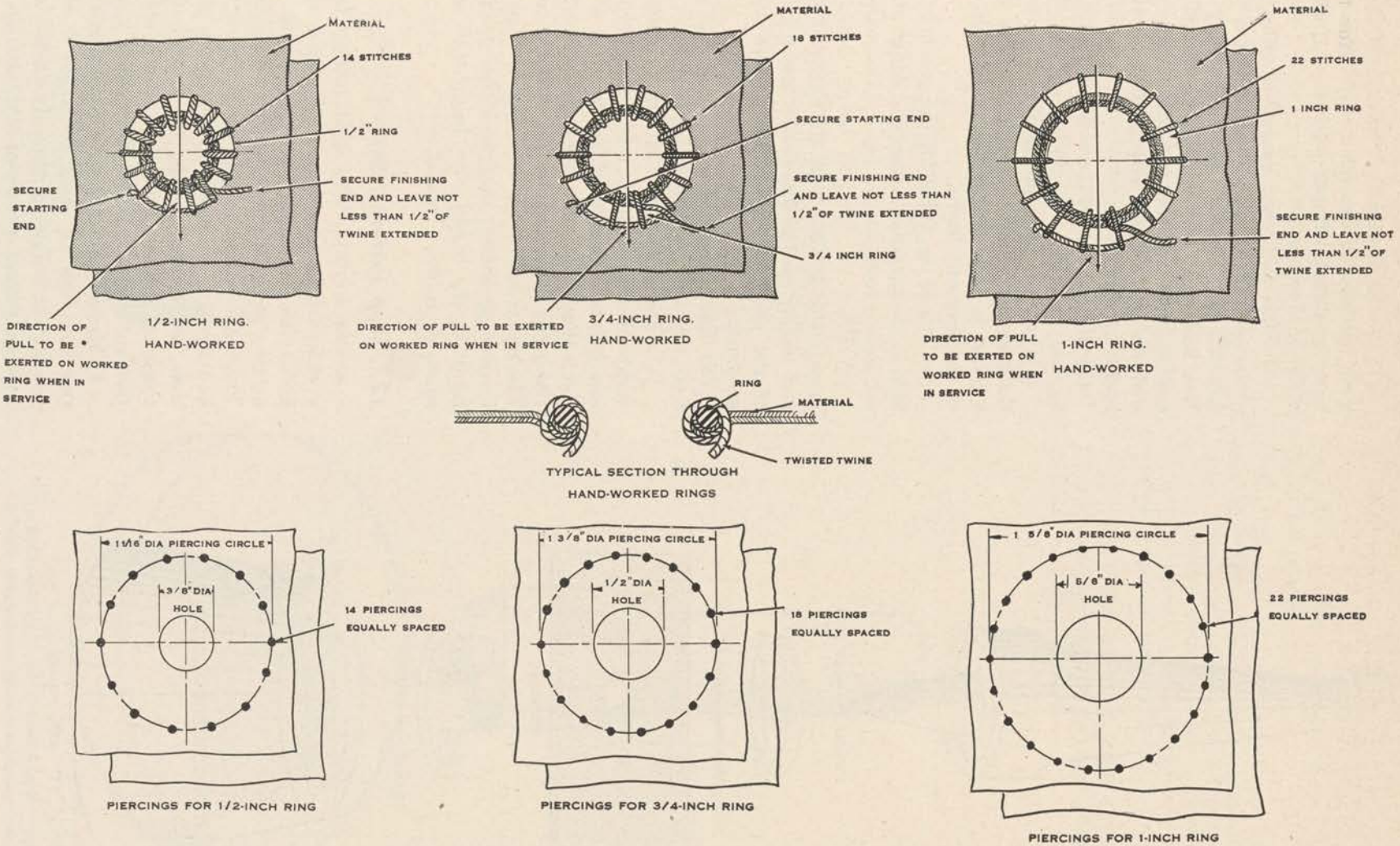


Figure 33. Piercing and stitching patterns for hand-worked grommets.

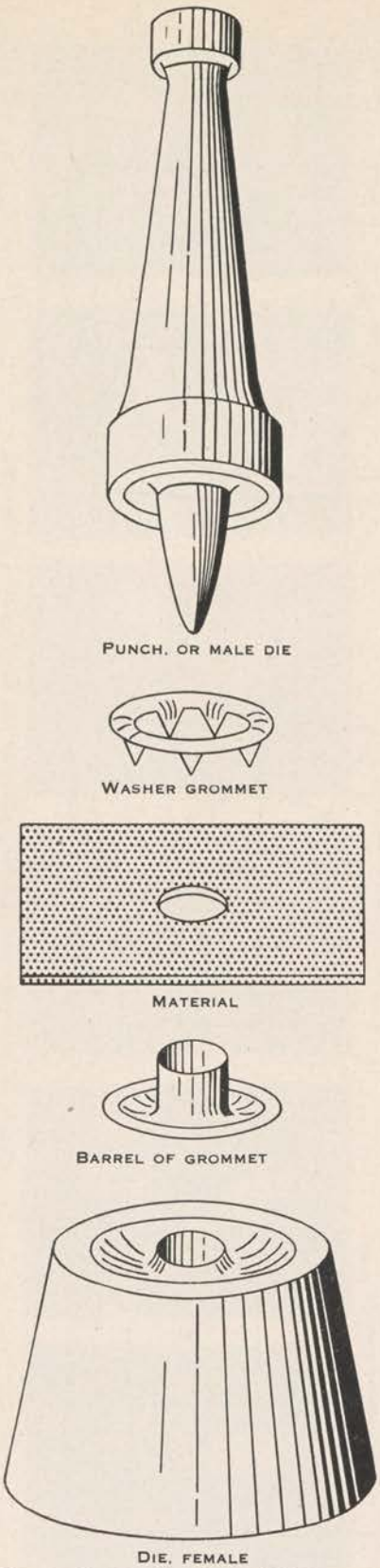


Figure 34. Installation of die-inserted grommet with washer.

(1) *Materials and tools needed.* Materials and tools needed for the die-inserted grommet are: brass grommet, die set, lead block, hollow steel cutter, and mallet.

(2) *Sizes of brass grommets.* Round brass grommets vary in size (small to large) from No. 0 to No. 10. The sizes most commonly used are Nos. 2, 4, and 5, with inside diameters of $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{3}{4}$ inch respectively. An oblong grommet with an inside measurement of $\frac{3}{8}$ by $1\frac{1}{2}$ inches is also in common use.

(3) *Procedure.* To insert a brass grommet (see fig. 34) proceed in the following way:

(*a*) Lay the material on a lead block and cut the grommet hole with a hollow steel cutter, using a cutter $\frac{1}{8}$ inch smaller than the inside diameter of the grommet barrel.

(*b*) Insert the barrel of the grommet into the hole in the material so that the flange of the barrel section rests on the face of the material.

(*c*) Place the inserted barrel section of the grommet on the die, with the flange of the grommet resting on the die, barrel upward. The size of the die must correspond to the size of the grommet.

(*d*) Place the washer section of the grommet, teeth down, over the grommet barrel.

(*e*) Insert the punch into the grommet barrel and, with a mallet blow, clinch together the grommet halves. (Care must be exercised to see that the mallet blow is not too hard so that the material is cut or punched by the washer or grommet.) The punch used must correspond in size with the inserted grommet; otherwise the operation will result in the barrel edge being split instead of smoothly rolled.

12. Snap Fastener, Style 1

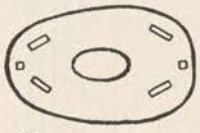
a. Description. The style 1 snap fastener is a two-part fastener consisting of a male section and a female section. The female section comes in two pieces, the socket and the clinch plate. The male section is also in two parts, the stud and the stud washer. The stud is made in two sizes, single and double, the double stud being twice as long as the single stud and able to hold fast an additional ply of material with socket.

b. Materials and Tools Needed for Installing the Female Half of Style 1 Snap Fastener. The following items are needed for installing the female section of style 1 snap fastener:

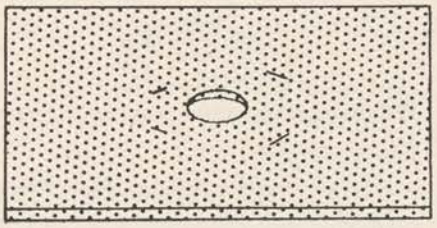
(1) Style 1 snap fastener socket.
(2) Style 1 snap fastener clinch plate.
(3) Style 1 socket snap fastener punch.
(4) Style 1 socket snap fastener anvil.
(5) Riveting hammer.
(6) Wood mallet.

c. Procedure for Installing the Female Half of the Style 1 Snap Fastener. The procedure for installing the female, or socket, section of style 1 snap fastener (see fig. 35) is as follows:

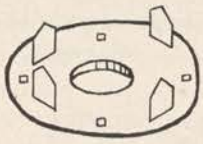
(1) Place the material on a lead block, centering the area in which the socket is to be inserted (see fig. 36).



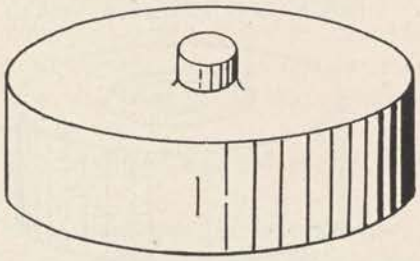
PLATE, CLINCH,
SNAP FASTENER, STYLE-1



MATERIAL



SOCKET,
SNAP FASTENER, STYLE-1



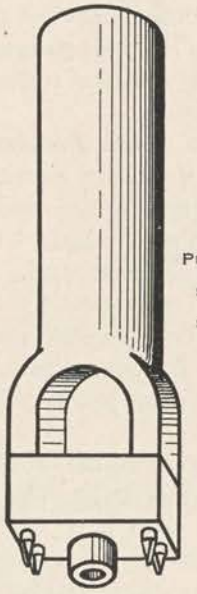
ANVIL, SOCKET,
SNAP FASTENER, STYLE-1

Figure 35. Installation of style 1 snap fastener socket.

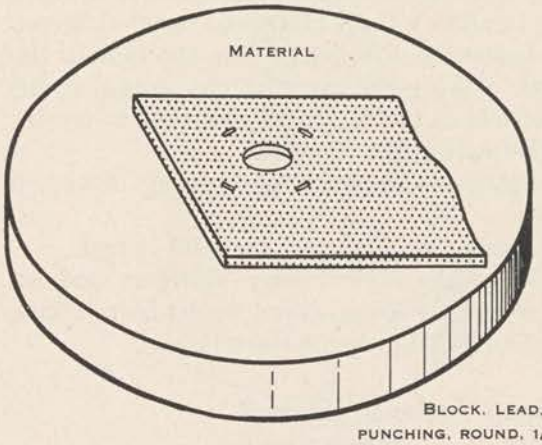
(2) Center the socket punch over the fastener location and, with a mallet blow, make a center hole for the socket opening and perforations for the socket prongs.

Note. The irregular placement of the socket perforations about the center hole make it imperative that the socket punch be set properly before making the cut. A properly inserted socket will have its flattened edge toward the top of the item being repaired and its elongated oval edge toward the bottom (see fig. 37).

(3) Insert the socket into the prepared perforation, the prongs extending through to the under side of the material.



PUNCH, SOCKET,
SNAP FASTENER,
STYLE-1



BLOCK, LEAD,
PUNCHING, ROUND, 1/2" X 4"

Figure 36. Cutting and perforating material for installation of style 1 snap fastener socket.

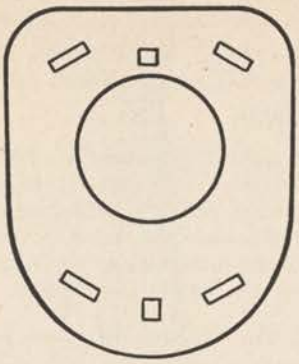


Figure 37. Proper position of style 1 snap fastener socket.

(4) Fit the clinch plate on the socket prongs.

(5) Place the loose fastener halves, prongs up, on style 1 snap fastener socket anvil. With a riveting hammer, bend the socket prongs toward the center, flattening the prongs against the clinch plate until the plate and the socket are securely clinched to the material.

d. Materials and Tools Needed for Installing the Male Half of the Style 1 Snap Fastener. The following items are needed for installing the male section of the style 1 snap fastener:

(1) Style 1 snap fastener stud.
(2) Style 1 snap fastener stud washer.
(3) Style 1 snap fastener stud set.
(4) Style 1 snap fastener stud anvil.
(5) Six-tube revolving belt punch.
(6) Wood mallet.

e. Procedure for Installing Male Half of the Style 1 Snap Fastener. The procedure for installing the stud section of the style 1 snap fastener (see fig. 38) is as follows:

(1) Cut a hole in the material, using a tube on the revolving punch that will cut a hole small enough to allow a tight fit around the stud barrel.

(2) Insert the stud barrel into the hole in the material, making certain that the prong of the stud extends in the direction necessary to receive the socket half of the fastener.

(3) Place the inserted stud, prong down, on the anvil.

(4) Fit the washer over the stud barrel.

(5) Place the style 1 snap fastener stud set on the stud barrel and, with a mallet blow, clinch the stud and washer to the material.

13. Snap Fastener, Style 2

a. Description. The style 2 snap fastener consists of a female section of two parts, a cap and

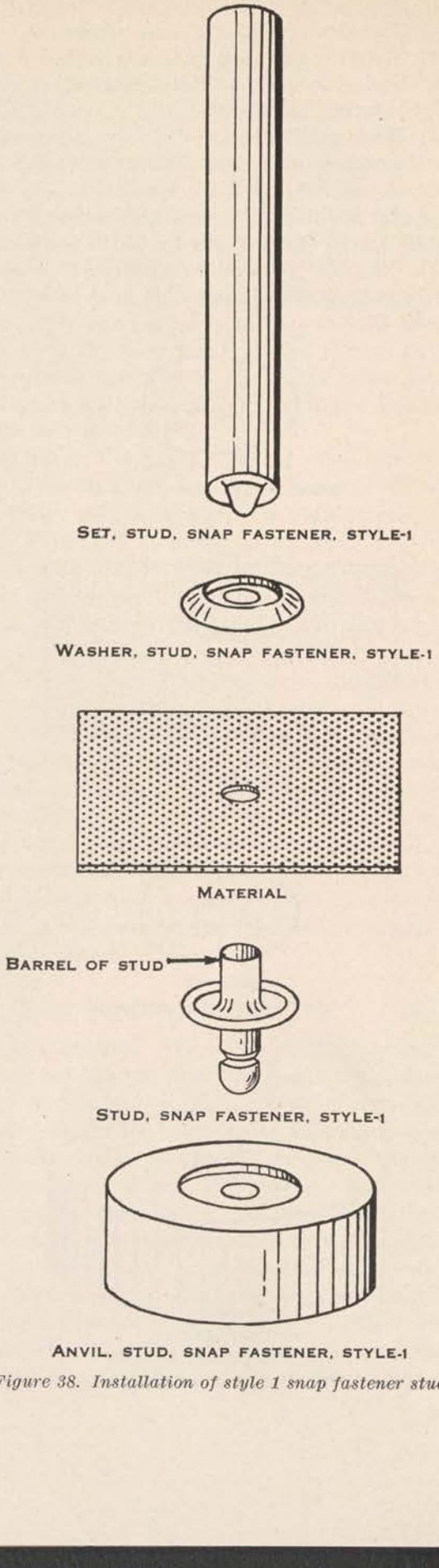


Figure 38. Installation of style 1 snap fastener stud.

a socket, and a male section consisting of a stud and a post.

b. Materials and Tools Needed for Installing the Female Half of Style 2 Snap Fastener. The following items are needed to install the style 2 snap fastener socket:

(1) Style 2 snap fastener cap.
(2) Style 2 snap fastener socket.
(3) Style 2 snap fastener cap-and-post set.
(4) Style 2 snap fastener cap anvil.
(5) Six-tube revolving belt punch.
(6) Wood mallet.

c. Procedure for Installing the Female Section of the Style 2 Snap Fastener. To install the female section of the style 2 snap fastener (see fig. 39) proceed as follows:

(1) Cut a hole in the material, using a tube of the revolving belt punch that will cut a hole small enough to fit tightly on the barrel of the cap.

(2) Insert the barrel of the cap through the hole in the material.

(3) Place the inserted cap, barrel up, on the anvil.

(4) Fit the socket over the barrel of the cap.

(5) Place the snap fastener set on the barrel of the cap and, with a mallet blow, clinch the cap and the socket to the material.

d. Materials and Tools Needed for Installing the Male Section of the Style 2 Snap Fastener. The following items are needed to install the style 2 snap fastener stud:

(1) Style 2 snap fastener stud.
(2) Style 2 snap fastener post.
(3) Style 2 snap fastener cap-and-post set.
(4) Style 2 snap fastener post anvil.
(5) Six-tube revolving belt punch.
(6) Wood mallet.

e. Procedure for Installing the Male Section of the Style 2 Snap Fastener. To install the stud section of the style 2 snap fastener (see fig. 40) proceed as follows:

(1) Cut a hole in the material, using a tube of the revolving belt punch that will cut a hole small enough to fit tightly over the barrel of the post.

(2) Insert the post barrel through the hole in the material.

(3) Place the inserted post barrel upward on the anvil.

(4) Fit the stud over the barrel of the post.

(5) Place the cap-and-post set on the barrel of the post and, with a mallet blow, clinch the post and the stud to the material.

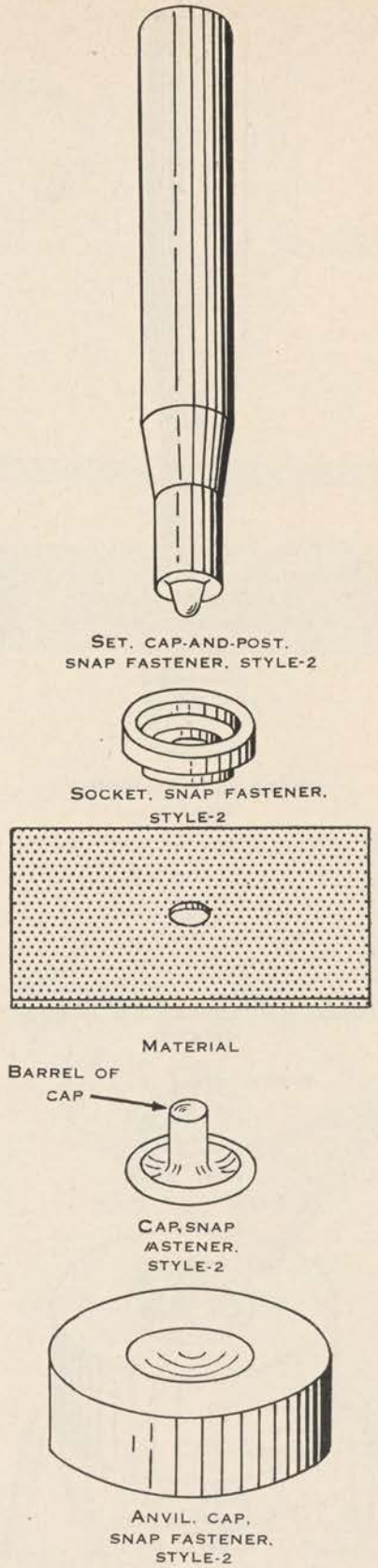


Figure 39. Installation of style 2 snap fastener socket.

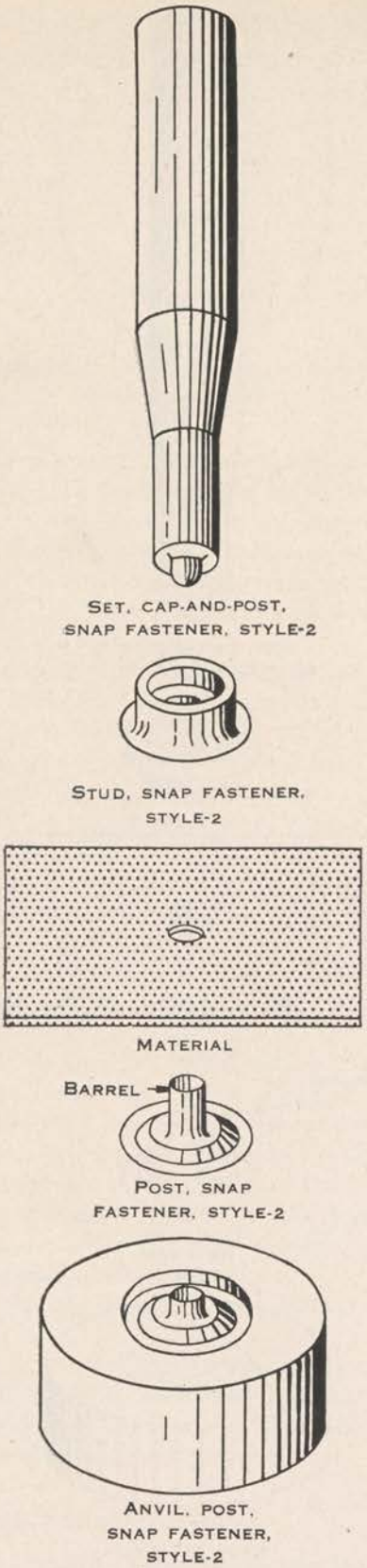


Figure 40. Installation of style 2 snap fastener stud.

14. Eyelets

a. Description. An eyelet is a small, metal, die-inserted grommet. Similar to the large die-inserted grommet, it consists of two parts: a barrel section, called the eyelet, and a washer.

b. Materials and Tools Needed for Installing an Eyelet. The following items are needed for installing an eyelet:

(1) Eyelet.
(2) Eyelet washer.
(3) Eyelet set.
(4) Eyelet awl.
(5) Six-tube revolving belt punch.
(6) Wood mallet.

c. Procedure for Installing an Eyelet. The procedure for installing an eyelet (see fig. 41) is as follows:

(1) Cut a hole in the material, using a tube of the revolving belt punch that will cut a hole small enough to fit tightly over the barrel section of the eyelet.

(2) Insert the barrel section of the eyelet into the hole in the material.

(3) Place the washer on the awl.

(4) Place the inserted eyelet, barrel down, on the awl.

(5) Place the eyelet set on the awl so that it rests on the eyelet and, with a mallet blow, clinch the eyelet washer to the material.

15. End Clips

End clips are metal tips used to protect the free unfinished ends of the web-strap fastenings and to provide a solid tip for easy insertion into the grommets or buckles. There are two types, the ball and the flat.

a. Ball-Type End Clip. The ball-type end clip (see fig. 42) is so named because it has the appearance of a hollow metal ball before it is flattened to form an end clip. Actually it is cup- or thimble-shaped, with one side open to receive the end of the strap ①. Once the strap has been inserted, the ball-type end clip is flattened by hand with a hammer or by a machine using plain dies ②.

b. Flat-Type End Clip. The flat-type end clip is a flat strip of metal folded in the center, giving it a V-shaped appearance (see fig. 43). The jaw ends of the clip are usually toothed to insure a firm grip to the fabric. The flat-type end clip may be clinched to the webbing either by a hammer or by a machine designed for this purpose.

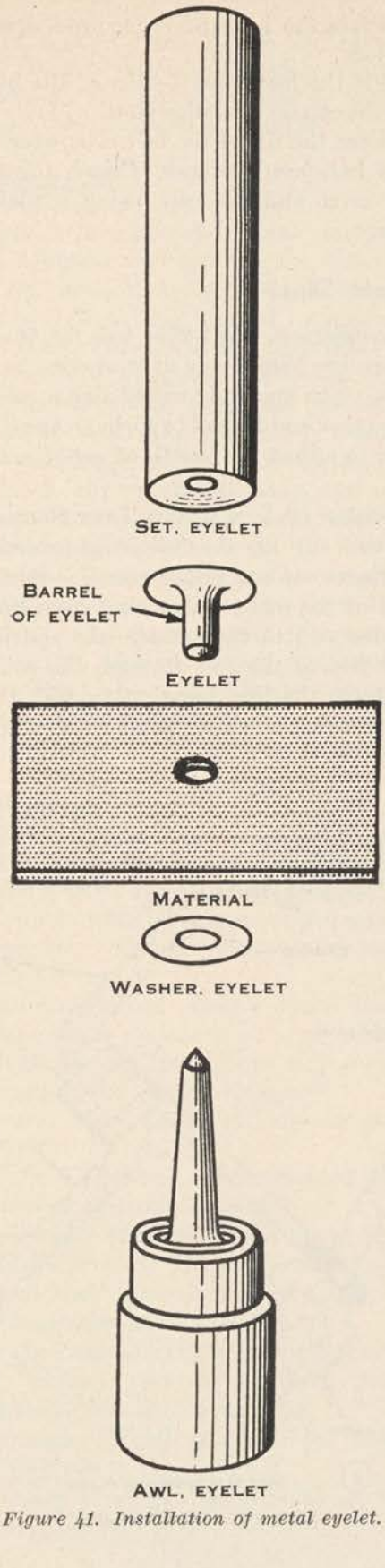


Figure 41. Installation of metal eyelet.

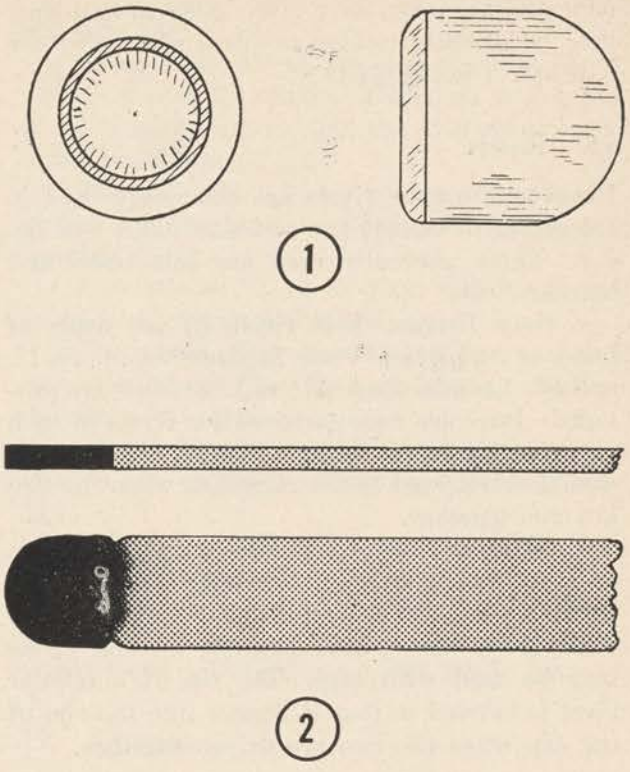


Figure 42. Ball-type end clip.

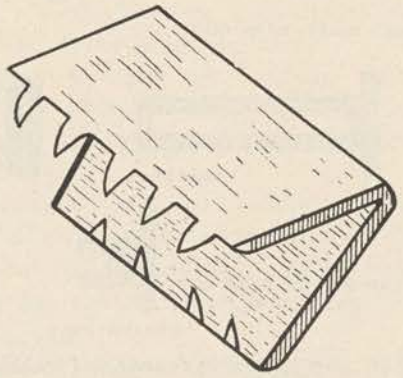


Figure 43. Flat-type end clip.

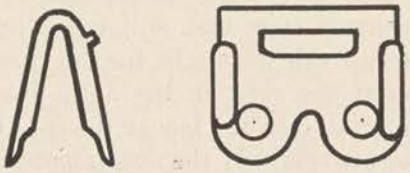


Figure 44. End-buckle clip.

Some flat-type end clips, designed to hold buckles or hooks, are made with rivet holes, so that they may be securely riveted in place after they are clinched. (See fig. 44.)

16. Rivets

Brass and copper rivets are commonly used in the repair of canvas and webbing items (see fig. 45). Types generally used are belt rivets and tubular rivets.

a. Belt Rivets. Belt rivets ① are made of brass or copper and come in sizes Nos. 8, 10, 12, and 14. Lengths from .375 to 1.25 inches are provided. Burs are manufactured for rivets of each size. To insure permanent riveting the bur size should correspond to the rivet size when the two are used together.

b. Tubular Rivets. Tubular rivets ② are made of brass and have hollow shanks. They are approximately .145 inch in diameter and are supplied in 3/16- to 12/16-inch lengths. Tubular rivets may be used with caps. The tip of a tubular rivet is beveled so that it flanges into the rim of the cap when the two are driven together.

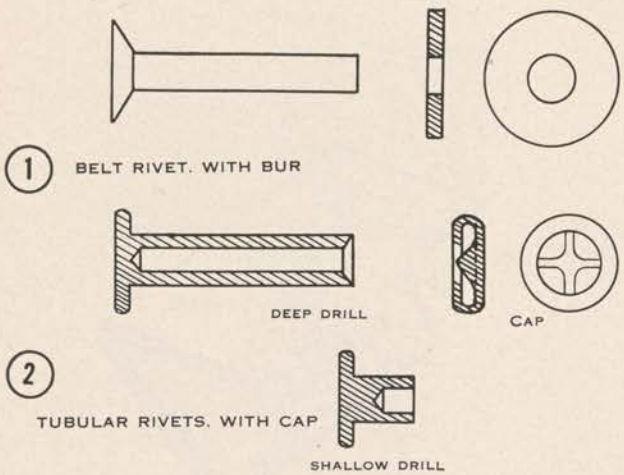


Figure 45. Rivets used in canvas and webbing repair.

c. Procedure for Installing Rivets. To install a rivet proceed as follows:

(1) Cut a hole in the material with a revolving punch, using a tube that will cut a hole small enough to provide a snug fit for the rivet.

(2) Insert the rivet in the hole. Use a rivet long enough to take the bur or the cap, yet short enough to provide only the excess material necessary for peening or capping.

(3) Place the inserted rivet, head down, on a metal block.

(4) Fit the bur over the tip of the belt rivet or over the cap on a tubular rivet.

(5) Peen the tip of the belt rivet over the bur, using a ball-peen hammer. Clinch together the tubular rivet and the cap, using a plain-faced hammer.

17. Tent Slips

a. Description. Tent slips (see fig. 46) are devices 4 inches long, made of steel wire 3/16 inch in diameter, with one end twisted like a coil spring and the other end looped to form an eye ①. They are used to adjust the length of eave lines or guy lines.

b. Method of Installing Tent Slips. To install a tent slip use the following procedure:

(1) Reeve one end of the eave line through the coil end of the tent slip, reeving from the inside end of the coil to the outside end and drawing about 2 feet of the line through the coil.

(2) Reeve the line (continuing with the same end) through the eave grommet, reeving from

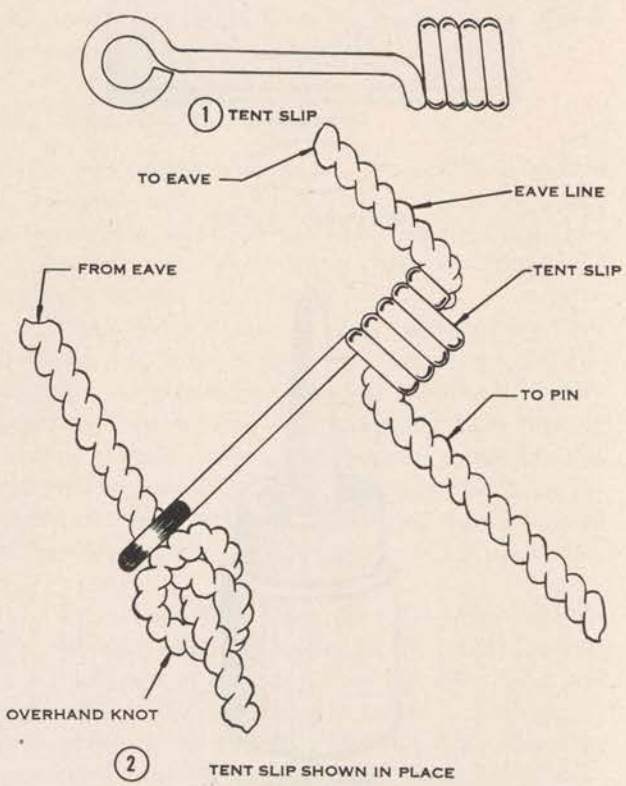


Figure 46. Wire tent slip.

the roof side to the wall side and bringing the end of the line through the eye in the tent slip.

(3) Secure the slip to the line by finishing the line end with an overhand knot ②.

18. Hardware

All metal trimmings and metal attachments on canvas equipage and tentage are referred to as hardware. Some items of hardware have already been discussed in this manual to emphasize the special tools needed and the individual installation procedure necessary. However, there are many other hardware items used (see fig. 47), the majority of them being attached by means of canvas or webbing loops known as chapes.

a. Rings. Circular metal pieces used as tie tape fasteners, catches for snap hooks, and supports for hand-worked grommets ①.

b. Loops. Loop-shaped metal rings used to hold web fastening straps and also to form supports for hand-worked oblong grommets ②.

c. D-Rings. Metal D-shaped rings used on canvas equipage to catch snap hooks and on tentage to loop over pole spindles ③.

d. Triangles. Triangular metal pieces usually used on tentage to carry canvas strain at pole spindles ④.

e. Links. Single metal chain links. A link is sometimes used where the pole spindle passes through the eave, and in a few instances it is used over the pole spindle to support the eave line ⑤.

f. Squares. Square metal pieces used with webbing ⑥.

g. Double Hooks. Double metal hooks used to attach canvas equipage to the pistol belt ⑦.

h. Slide Loops. Metal loops with a center bar used to adjust the length of straps ⑧.

i. Snaps. Metal hooks with spring steel snaps ⑨.

j. Wall D-Rings. Special-shaped metal D-rings used on assembly tents ⑩.

k. S-Hooks. Metal S-shaped hooks ⑪.

l. Triangle with Hook. A combination triangle and hook used to connect a fair-leader to the webbing support of a tent ⑫.

m. Fair-Leaders. Aluminum block castings 5½ by 1¼ inches) used to keep eave lines from chafing the canvas at tent eaves ⑬.

n. Buckles. Metal fasteners for loose strap ends ⑭, ⑮, ⑯.

o. Sliding Keepers. Metal loops used to hold straps in place ⑰.

p. Fasteners. Metal devices to fasten loose belt ends ⑱.

q. Rope Tips. Metal tips for rope ends ⑲.

r. Fastener Supports. U-shaped metal supports usually used to hold the stud section of a style 1 snap fastener ⑳.

s. Plates. Metal plates used with tentage to protect and support the fabric about ridge-pole spindles ㉑.

t. Chains and Plate. A plate with chains used at the peak of a pyramidal tent ㉒.

u. Thimbles. Egg-shaped metal inserts that fit into a splice eye ㉓. They are used to reinforce the ends of tie lines.

v. Bull's Eyes. Circular wood blocks with a hole in the center to carry liner hoisting lines ㉔.

w. Staples. U-shaped metal pieces with ends finished for riveting to material ㉕.

x. Double Washers. Used with staples to provide sufficient area coverage to prevent a riveted staple from pulling through the fabric ㉖.

19. Chapes

Chapes are canvas or webbing loops (see fig. 48) used to hold hardware, such as buckles and rings, to canvas equipage and tentage ①. Chapes are designated as D-ring chapes, buckle chapes, etc., according to the type of hardware they carry.

a. Fit Chape Before Stitching. A chape may be fitted in the following ways:

(1) Insert a strip of webbing double the length of the proposed chape through the hardware so that the unfinished ends meet one above the other ②.

(2) Insert a strip of webbing double the length of the proposed chape through the hardware so that the top ply overlaps the bottom ply ③. Turn the top end under, butting it against the bottom end.

(3) Insert through the hardware a strip of webbing double the length of the proposed chape plus additional length for turning under the end ④. Turn the top end of webbing under so that it grips the bottom end.

(4) Insert a two-ply strip of webbing through the hardware. (A two-ply length of webbing is made by folding in the center a piece four times the length of the proposed chape.) Fold again, setting the ends together, so that the folded end rests on the two unfinished ends ⑤.

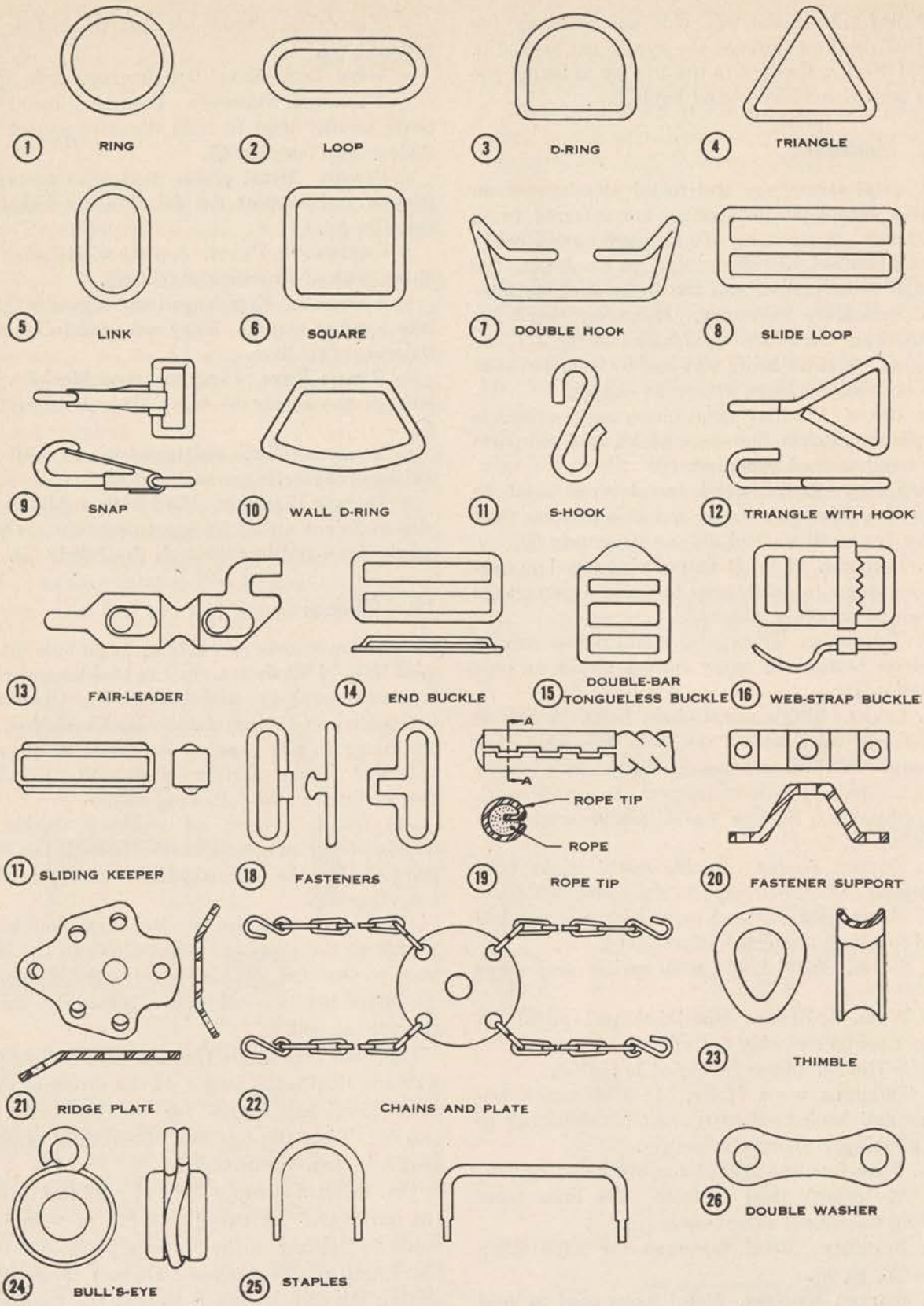


Figure 47. Additional hardware.

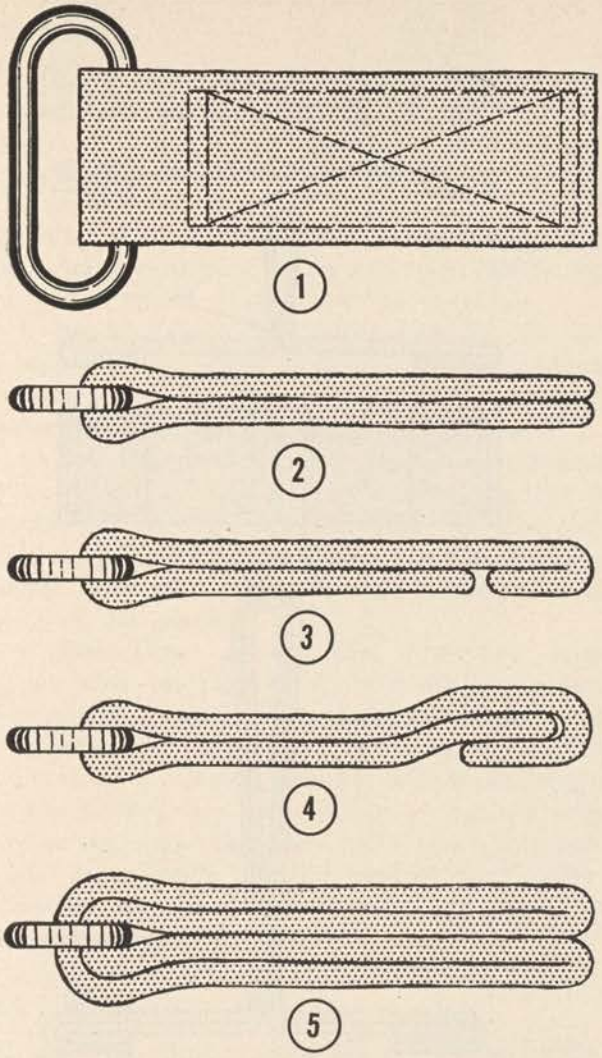


Figure 48. Loop chape, showing ways in which webbing may be folded.

b. Stitch Chape in Place. Use the following procedure to machine-stitch a chape in place (see fig. 49):

(1) Insert work in the machine so that the presser foot rests on the upper right-hand corner of the chape with the hardware to the left.

(2) Stitch in a clockwise direction the four sides of the stitching area (AB, BC, CD, DA, ①).

(3) Stitch diagonally from corner to corner and again across the end (AC, CD, ②).

(4) Stitch a second diagonal from corner to corner crossing the first diagonal at the center of the stitching area (DB, ③).

(5) Finish with a row of stitching across the end (BA, ③).

c. Reinforce Chape Where Necessary. Sometimes a chape is located at a place subject to excessive tugging and pulling. In such a location the simple chape with its small area of stitching would soon tear the chape-supporting fabric. It may be reinforced in the following manner:

(1) *By reinforcement patch.* To widen the stitching area and thereby increase the area of support, apply a reinforcement to the chape.

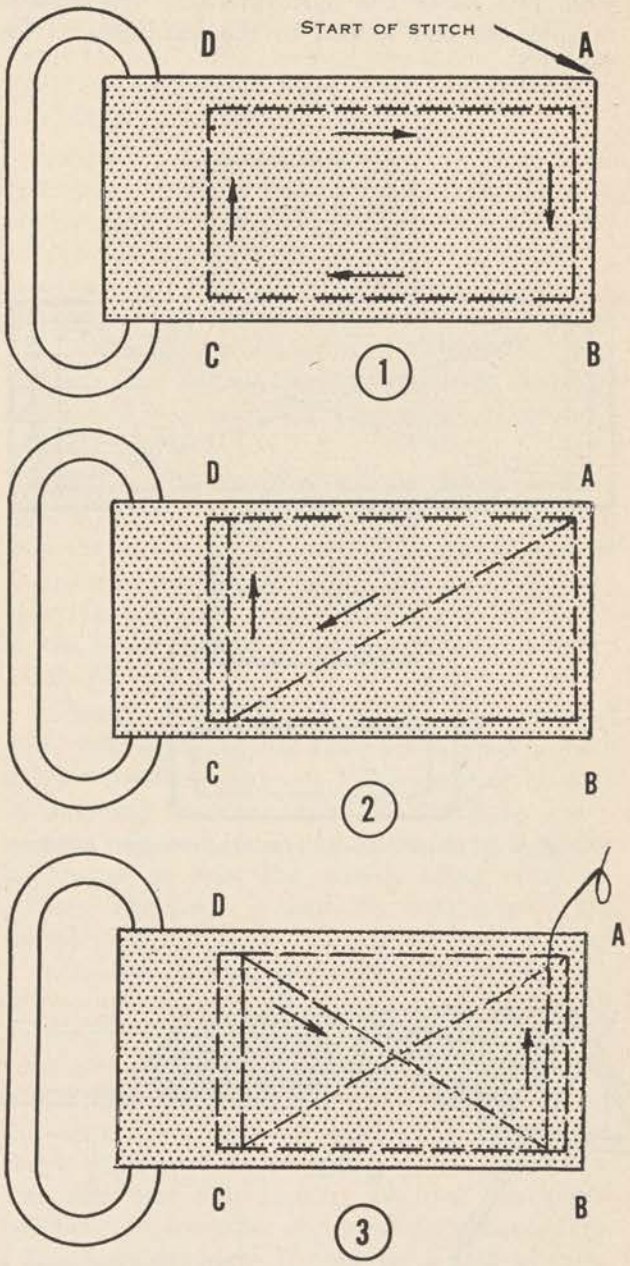


Figure 49. Method of stitching chape.

This reinforcement is an additional piece of webbing set across the chape and stitched into place, the stitching in the center being crossed and the ends double-stitched. (See fig. 50).

(2) *By special stitching.* Reinforce the chape by increasing the amount of machine stitching and by adding extra hand stitches. Run four rows of machine stitching lengthwise and three rows crosswise. Place the stitching across the webbing at the nonhardware end and over each turned-under tip. Hand-sew the hardware-holding end in place, using four stitches around each edge just below the hardware and five stitches around the end looped to the hardware. (See fig. 51.)

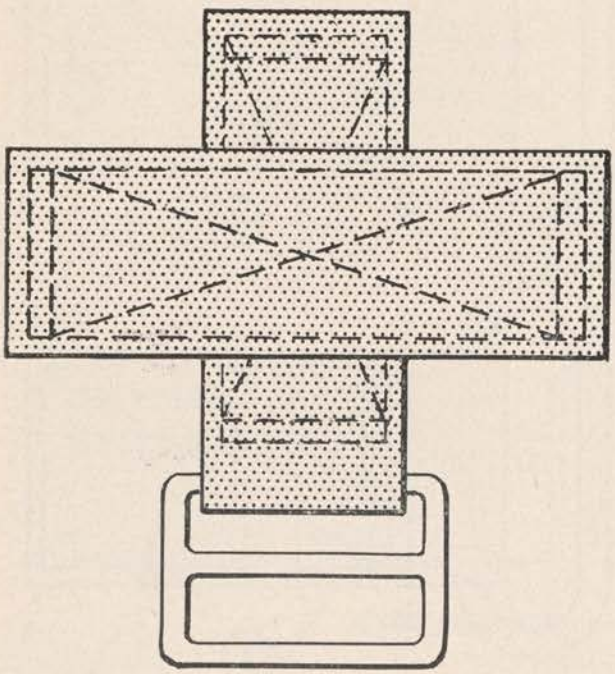


Figure 50. Buckle chape with reinforcement patch.

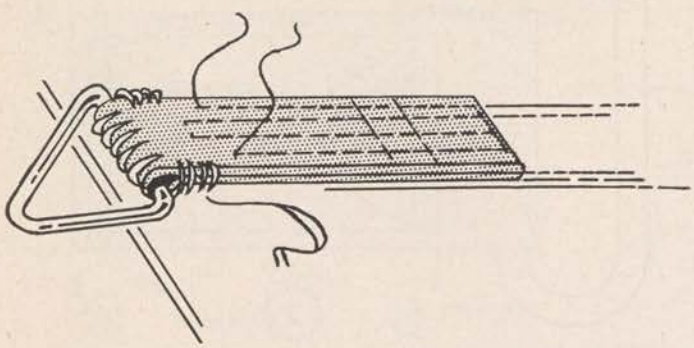


Figure 51. Chape reinforced with special stitching.

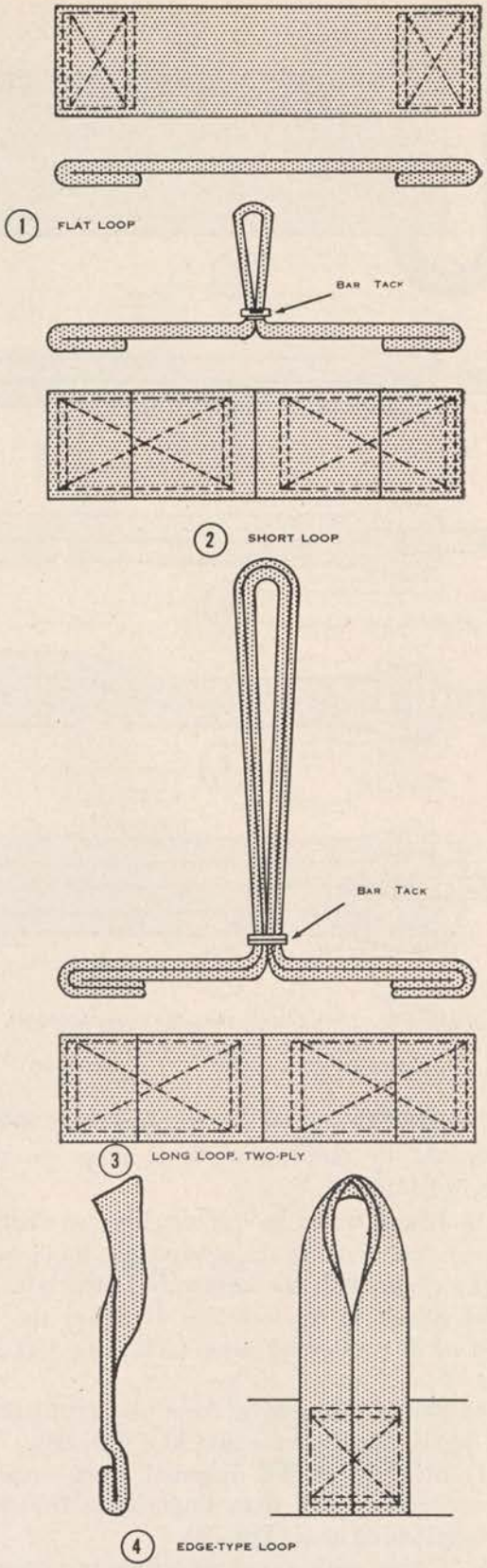


Figure 52. Loop construction.

20. Loops

Loops are often used on canvas equipage and tentage as line fastenings and strap retainers. Their construction is fairly simple. (See fig. 52.)

a. Flat Loop. The flat loop ① lies flat on the surface and is made by cutting a piece of webbing the length of the proposed loop, plus material for turning under the ends. Each end is secured with crossed rows of stitching.

b. Short Loop. The short loop ② is just a short distance away from the surface to which it is attached. The base of the loop is bar-tacked before the end tabs are stitched into place.

c. Two-Ply Long Loop. In some instances where a long, strong loop is required, the loop is made with two plies of webbing ③. The two plies are stitched together with a row of stitching along each edge before being bar-tacked and stitched into place.

d. Edge-Type Loop. The edge-type loop ④ is used on paulins for tie-line fastenings. Sometimes it is used as the female half of a toggle fastener. The edge-type loop is constructed by cutting a piece of webbing double the length of the desired loop and folding so that the ends are on the same plane, with their tips alined and their inner edges butting against each other. The tips are then turned under and the loop is stitched in place.

21. Billets

Straps that enter buckles are known as billets. Billets are simple in construction (see fig. 53). The normal procedure is to cut a piece of webbing the length of the desired billet, plus approximately ¾ inch for turn-under. Attach an end clip (see par. 15) and stitch into place.

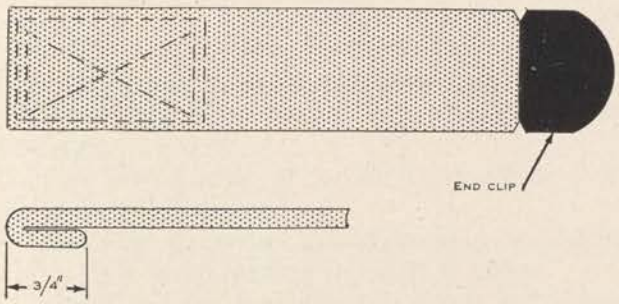


Figure 53. Billet construction.

22. Straps

Straps of various types are found on canvas equipage. Procedure for their construction (see fig. 54) follows:

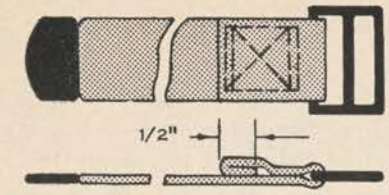
a. Plain Straps. Attach a buckle to one end and an end clip to the other end of a piece of webbing the desired length of the strap ①.

b. Strap with End Rolled and Stitched. In many instances where wide webbing is used in the body of the strap the wide ends are tapered to take 1-inch hardware ②. The strap is tapered by rolling the edges toward the center, butting the edges the length of the desired end, and then angling off the folded-in edges to the outer edge of the belt body. The distance of the taper is approximately 2½ inches on 2-inch webbing. Both inner and outer edges of the folded material are held in place by stitching.

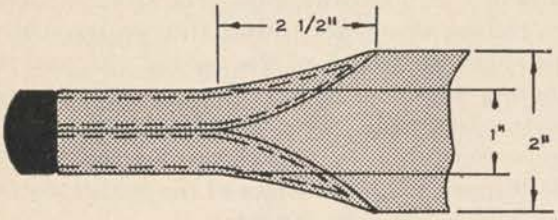
c. Strap with Short End Angled and Stitched. Where a wide webbing strap does not require long narrow ends, the tips are made short to provide only enough material for attaching hardware ③. The ends are narrowed by folding the outside edges to the center far enough to provide a loop for the hardware. The folded material is then angled from the center to the outer edges and stitched with two rows of stitching over each fold.

d. Wide Webbing Strap with Narrow Webbing Ends. This strap is constructed by turning over the corners of the wide webbing body to meet the narrow webbing ends ④. The attached ends, carrying the hardware, are stitched into place in the same manner as a billet, shown in figure 53 above.

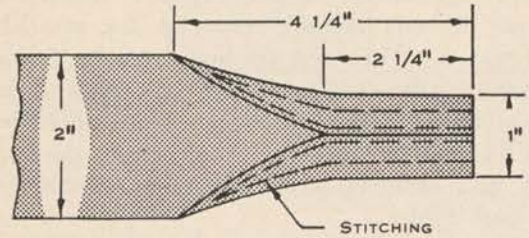
e. Strap with Shaped Ends. This type of wide webbing strap has the ends tapered to take narrow webbing ends ⑤. The shaping is done by notching the strap ends. To facilitate notching, the material at the end of the strap is folded lengthwise so that the outside edges come together. The notch is made by cutting away the folded corner with a cut angled from a point 3 inches down the folded edge to within ½ inch of the open edges. The inside edges of the V-opening are then brought together to take the buckle chape at one end and the billet at the other. The buckle end is finished by inserting the shaped end into the chape, turning under the chape ends, and stitching the chape into place. The billet end is finished by stitching the shaped end between the billet and a reinforcement strip. (An additional piece of webbing is used as backing and reinforcement of the single-ply billet.)

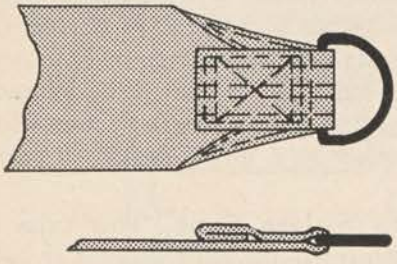


1 PLAIN STRAP

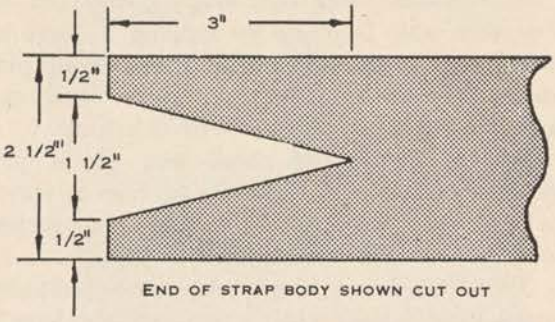


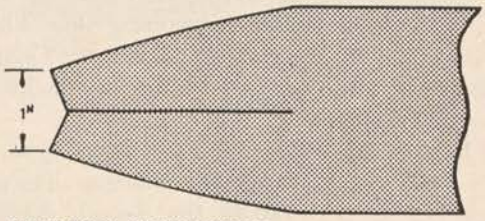
2 STRAP WITH END ROLLED AND STITCHED

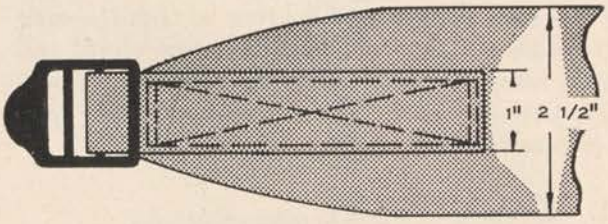


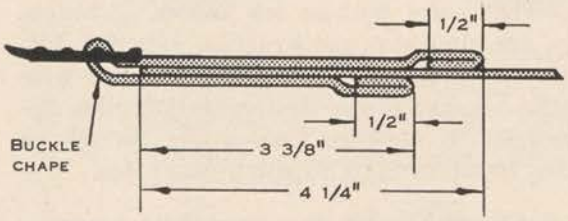


3 STRAP WITH SHORT END ANGLED AND STITCHED

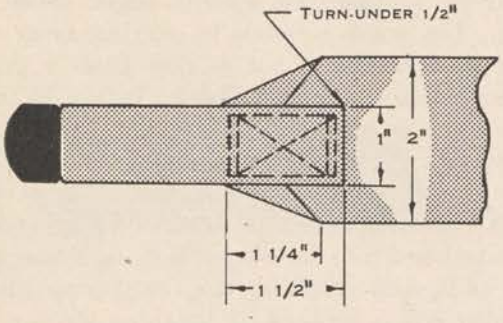








5 STRAP WITH SHAPED ENDS



4 WIDE WEBBING STRAP WITH NARROW WEBBING ENDS

Figure 54. Strap construction.

The billet end and the reinforcement ends are turned under before they are stitched into place.

23. Handles

The following types of handles are used in the repair of canvas and webbing items:

a. Web-Strap Handle, Plain. This handle, found on carrying cases, bags, and hampers, is generally used where the strain is carried along the vertical plane of the item to which it is attached. It is simple in construction, consisting of a single piece of webbing approximately 12 inches long twisted into a U-shape and stitched into place. It is finished with a ½-inch turn-under at the ends, and a stitching area approximately 2 inches long. (See fig. 55.)

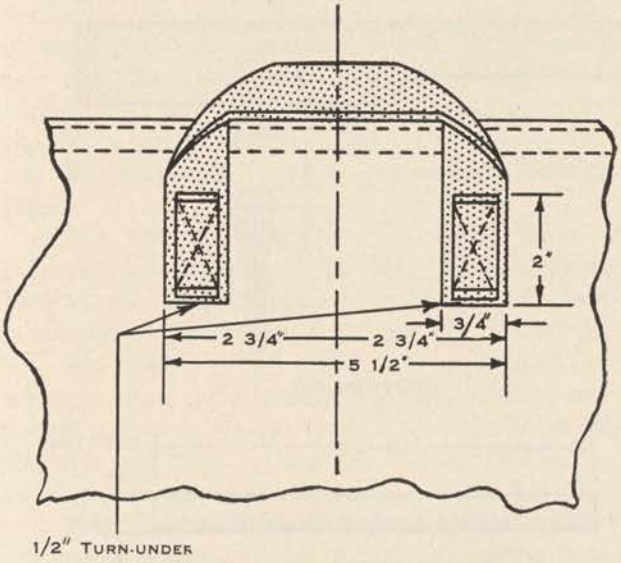


Figure 55. Web-strap handle, plain.

b. Web-Strap Handle, with Stitched Grip. This type of handle (see fig. 56), found on bags and carrying cases, is generally used where the pull is on the horizontal plane of the item to which it is attached. To construct this type of handle (taking a common-sized folded and stitched grip handle as an example), proceed as follows:

(1) Take a strip of 2-inch heavy cotton webbing 15¼ inches long.

(2) Find the center line of the grip by folding it in half and bringing the ends together.

(3) From the center line measure 2⅞ inches toward each end and mark ①. (The markings indicate the ends of the folded and stitched part of the handle.)

(4) Fold the edges of the marked grip section to the center, butting the edges together and stitching them into place.

(5) Double-stitch the grip ends ①.

(6) Cut a reinforcement backing 5½ inches wide and 14 inches long.

(7) Center the backing piece under the proposed location of the handle, give the edges a ½-inch turn-under, and stitch into place ③.

(8) Center the handle on the handle location, with a ⅝-inch turn-under at each end and with the ends 12 inches apart, giving a curve to the grip section ②.

(9) Stitch the handle in place, omitting the crossed rows of stitching.

(10) Cut from 2-inch webbing two reinforcement pieces 4½ inches long.

(11) Stitch the reinforcements (with ½-inch turn-under at ends) over the handle ends, using crossed rows of stitching through the center of the reinforcement and double rows of stitching at the ends and the edge next to the handle grip ③.

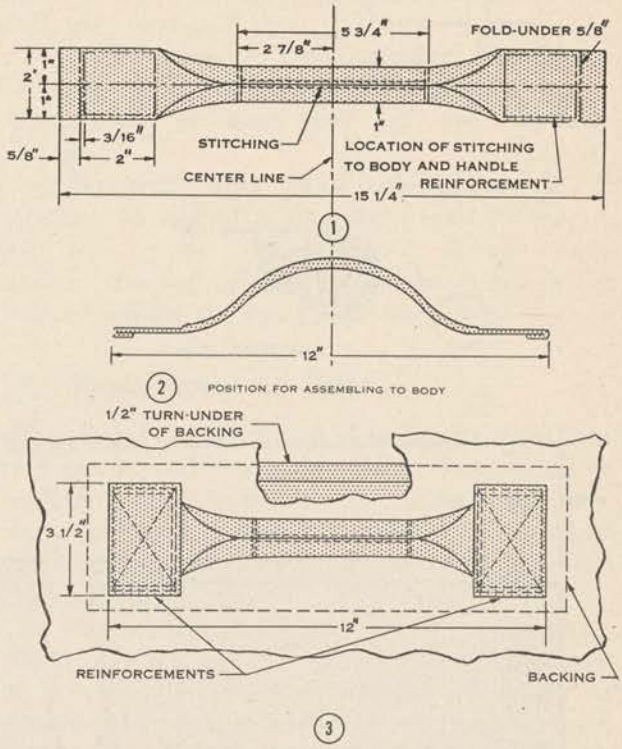


Figure 56. Web-strap handle, with stitched grip.

c. Rope-Reinforced Handle. The rope-reinforced handle (see fig. 57) is generally used on canvas buckets. To construct this type of handle (using the handle or the 18-quart water canvas

bucket as an example), proceed as follows:

(1) Cut a piece of duck 4½ inches wide and 25½ inches long for the body strip ⑦.

(2) Notch the body strip corners, cutting away an area ¾ by ½ inch at each corner, with the ¾-inch dimension along the outside edges ⑦.

(3) Cut a 9½-inch piece of ¾-inch braided cotton rope for a handle reinforcement ⑥.

(4) Place the rope reinforcement in the cen-

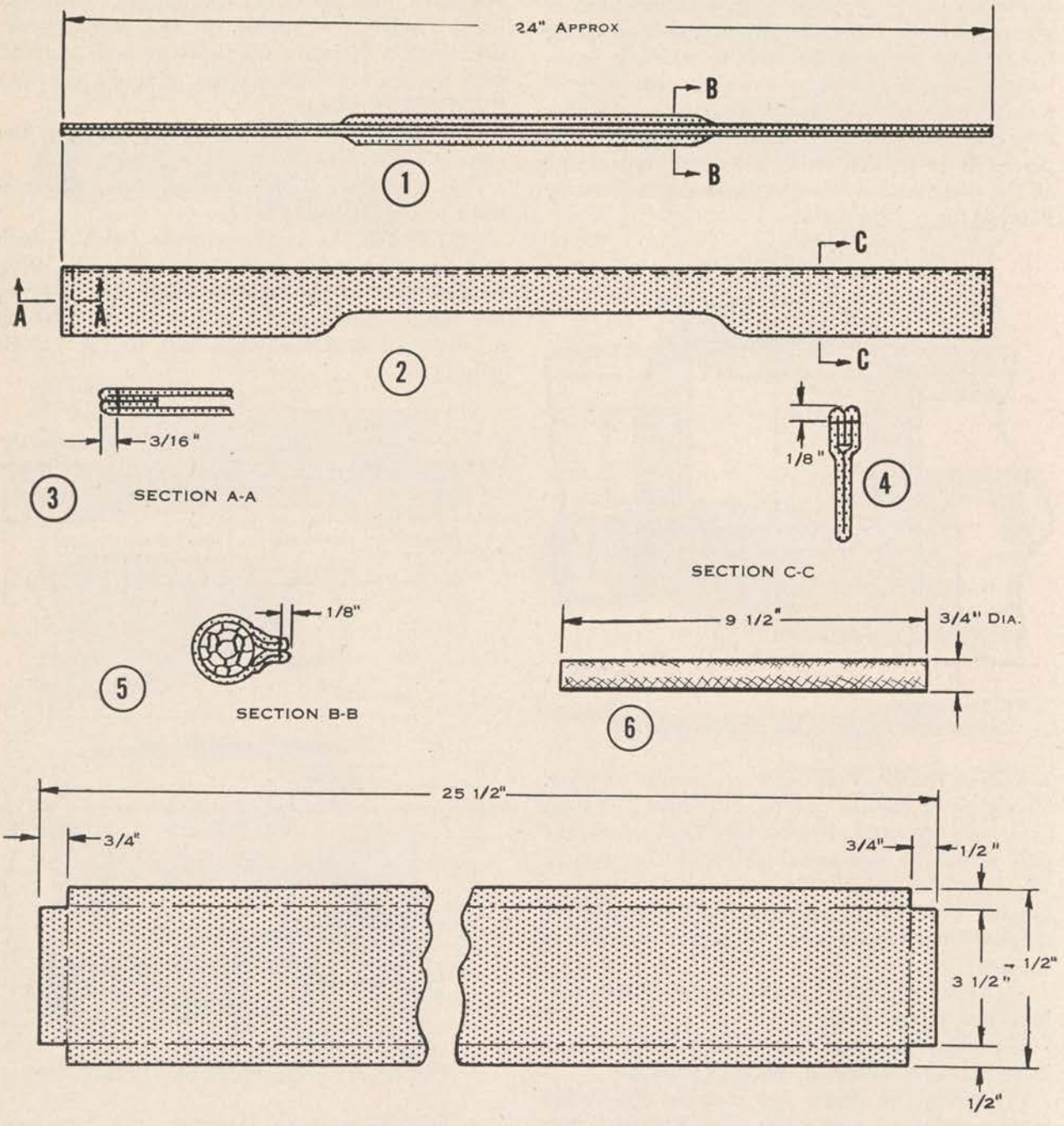


Figure 57. Rope-reinforced handle.

ter of the body strip, turning in the body sides ½ inch and the ends ¾ inch.

(5) Fold the body strip over the rope reinforcement and stitch the body edges ①, ②, ③, ④, and ⑤.

24. Lines

Ropes or lines used on army canvas and webbing may be of manila, sisal, cotton, or jute. When they become badly worn, frayed, or mildewed, they must be replaced. The replacement must be similar to the original construction both in rope material and in method of fastening. To properly replace lines, therefore, a basic knowledge of rope structure, rope knotting, and rope splicing is required. TM 5–225, Rigging and Engineer Hand Tools, contains detailed information and graphic illustrations on rope construction, knot tying, and rope splicing. Special attention should be given to those knots and splices (see fig. 58) commonly found in canvas and webbing repair.

a. Eye Splice, Regular. When the end of a line requires a permanent loop for attaching hardware or for fastening to grommets, the loop is generally made by eye splicing ①. Following the directions in TM 5–225, the repairman insures a neat, close-fitting job by giving each strand at least three tucks to securely splice the eye and then rolling the finished splice between the hands or under foot.

b. Eye Splice, Sailmaker's. The sailmaker's eye splice, a splice following the lay of the rope, is used when the eye is to be sewed to canvas. The splice is started in the same manner as the regular eye splice, but the remaining tucks follow the original lay of the rope ②.

c. Eye, Tied. On some tentage, where cotton braided rope is used, the eye is made by tying ③.

d. Short Splice. The short splice ④ is the strongest and the most secure way to join two ropes. Although it is stronger than the long splice, it increases the diameter of the rope, so that the spliced part of the rope may be unable to pass through a bull's eye or a fair-leader or over the sheave of a block.

e. Long Splice. The long splice ⑤ is also used to join two ropes. It is weaker than the short splice and requires more rope. Its advantage lies in the fact that it does not appreciably increase the diameter of the rope. It will run through a bull's eye or over the sheave of a block without jamming.

f. Cut Splice. The cut splice ⑥ is the splicing together of two ropes so that an eye is formed at the splice. The rope ends pass each other the distance of the desired opening and then each tucks into the body of the other by use of the regular eye splice tucking. A cut splice is usually found in a double guy line, the cut being set over the pole spindle.

g. Cut, Tied. Where cotton braided rope is used, the cut may be made by tying ⑦.

h. Overhand Knot. The overhand knot ⑧ is used to keep an end from slipping through an eye or a grommet.

i. Bowline Knot. The bowline knot ⑨ is used to form a loop that cannot slip.

j. Figure-Eight Knot. The figure-eight knot ⑩ is used to prevent a line from slipping through a grommet.

k. Footstop for a Single-Grommet Fastening. This type of footstop is made by looping a footstop line and securing the open ends with a single overhand knot ⑪.

l. Footstop for a Two-Grommet Fastening. This type of footstop is made by tying an overhand knot at each end of the footstop line ⑫.

m. Whipped Rope End. Whipping ⑬ is binding the end of a rope with cord so that it will not unravel. Whipping is always made against the lay of the rope, the turns being worked toward the end of the rope.

25. Replacement of Parts

When parts are missing or so badly damaged that it is not advisable to repair them, they should be replaced. Replacement should be made with salvaged parts when they are at hand. If salvaged parts are not at hand, new parts can be made from a pattern.

a. Parts from Salvage. When using a salvaged part for replacement, care should be taken to select a part that will match as closely as possible the color and wear of the item to which replacement is being made. Furthermore, since canvas stretches with use, precaution must be taken in sizing.

b. Parts from Patterns. When a part is cut from new or salvaged material, a pattern should be used. If a pattern is not at hand, one may be provided in the following manner:

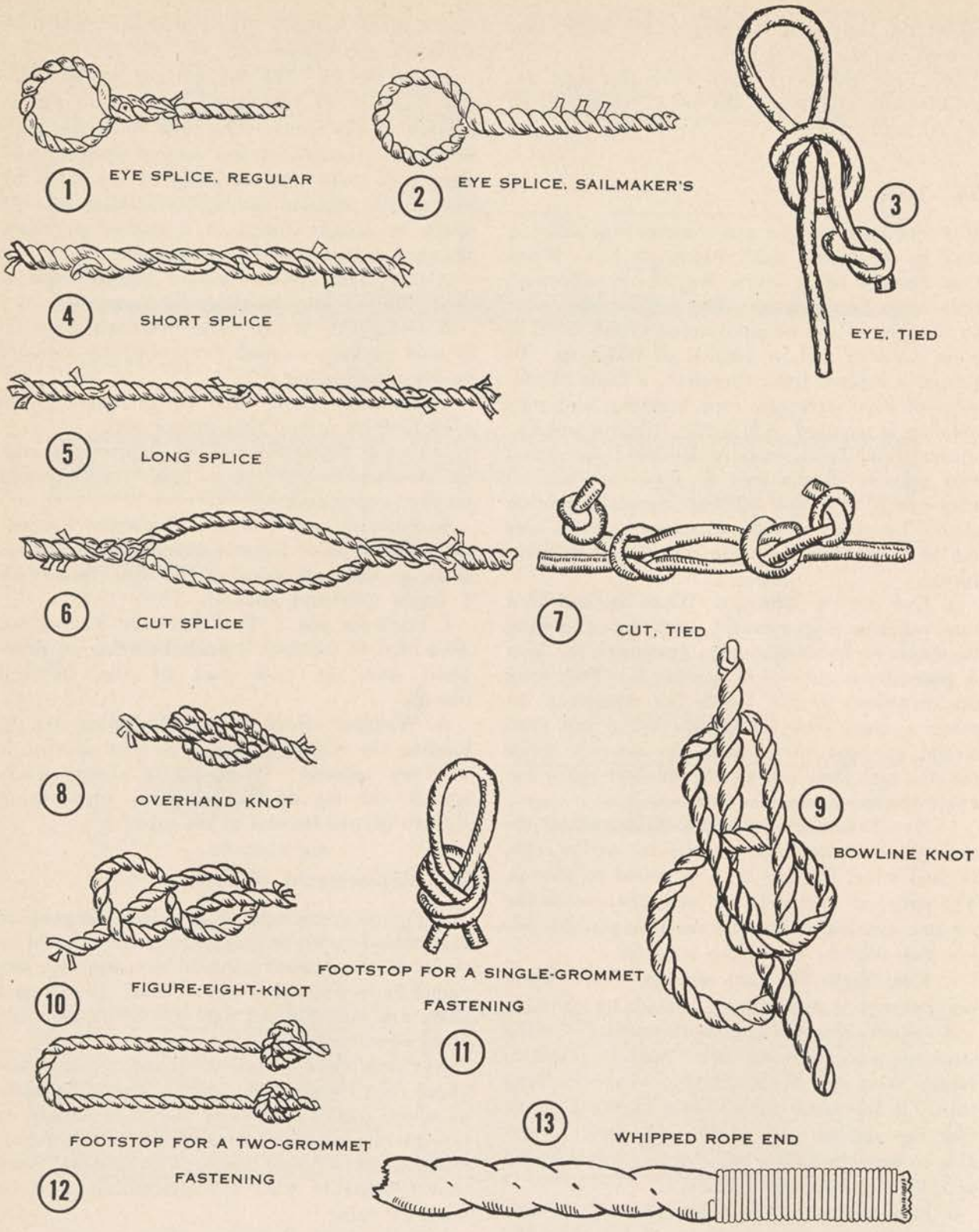


Figure 58. Knots and splices.

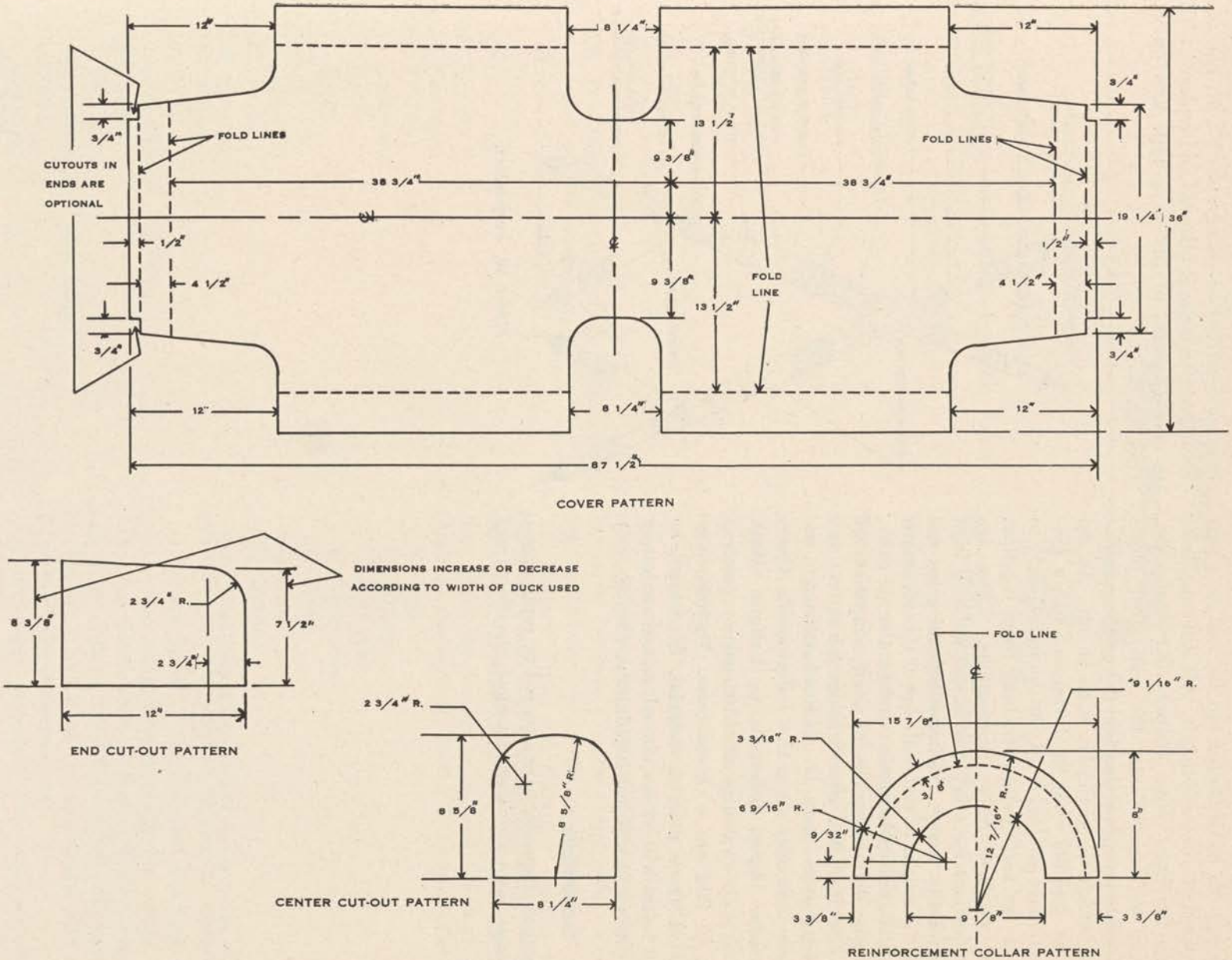


Figure 59. Patterns (folding-cot cover).

(1) *Patterns from Old or Damaged Parts.* The part to be discarded can be used as a pattern by first disassembling it. All stitching, hemming, binding, lugs, chapes, hardware, etc., should be removed and the individual pieces allowed to be opened and laid flat on the material from which the new part is to be cut. As old canvas does not hold its dimensions like a precision-made pattern, it may be found necessary to pin-fit the parts before stitching them together.

(2) *Patterns from specifications.* There are specifications for every canvas and webbing item used in the Army. The specification gives not only the weight of material, size of thread, length of stitch, size of hardware, and number of parts, but also scale drawings of each component of the item it covers. Specifications for canvas and webbing items may be obtained (through the proper channels) from the Jeffersonville Quartermaster Depot, Jeffersonville, Indiana. With specification drawings and dimensions, patterns may be laid out with exactness. Patterns constructed from pattern material, fiberboard, or sheet metal will, if not abused, assure accurately cut parts and will last indefinitely. (See fig. 59.)

26. Suspenders

Damaged suspenders are repaired by replacement of those parts which are damaged, the straps and loops being replaced in accordance with the procedures described in paragraphs 20, 21, and 22. Damaged hardware is removed and replaced with serviceable items of the same type and finish. (See fig. 60.)

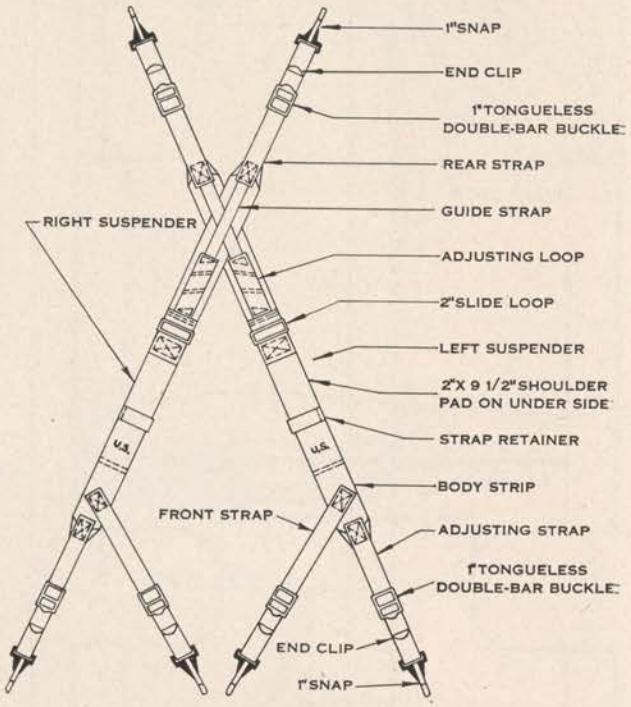


Figure 60. Suspenders.

CHAPTER 4

REPAIR PROCEDURE

Section I. EQUIPAGE

27. Essential Points of Inspection

When inspecting canvas equipage, use the following checklist for guidance:

a. Fabric. (1) Abrasions.
(2) Binding.
(3) Buttonholes.
(4) Hems.
(5) Holes.
(6) Markings.
(7) Mildew.
(8) Patches.
(9) Seams.
(10) Spots and stains.
(11) Stitching.
(12) Tears or rips.
(13) Tensile strength.
(14) Treatment (waterproofing, fireproofing, and mildew resistance).

b. Hardware. (1) Buckles.
(2) Buttons.
(3) End clips.
(4) Eyelets.
(5) Fasteners.
(6) Faucets.
(7) Grommets.
(8) Hooks.
(9) Rings.
(10) D-rings.
(11) Rivets.
(12) Snaps.
(13) Squares.
(14) Staples.
(15) Tips.

c. Lines or Tapes. (1) Draw.
(2) Lacing.
(3) Tie.

d. Reinforcements. (1) Billet.
(2) Chape.
(3) Grommet.
(4) Handle.

e. Unattached Parts. (1) Covers.
(2) Inserts.
(3) Liners.
(4) Straps.
(5) Suspenders.

28. Method of Inspection

Use the following procedure to inspect equipage for repair:

a. Test the Tensile Strength of the Fabric. Before marking a piece of equipage for repair, test it by grasping a small fold of the fabric between the thumb and the forefinger of each hand, gripping it close up so that the tips of the forefingers touch. Tug the fabric several times; if it does not rip, it is repairable so far as its tensile strength is concerned.

Caution. When testing, always grasp the canvas or duck against the warp threads, which are the threads running parallel to the selvage. The woof (or cross threads), being weak, should not be used for testing the tensile strength.

b. Inspect Item for Damage. Handle systematically each piece of equipment being checked for repair. During the initial inspection of the item, mark the repairs to be made (see par. 3), checking the surfaces in the following order:

(1) Top.
(2) Bottom.
(3) Left side.
(4) Right side.
(5) Front.
(6) Back.
(7) Inside.

Note. If an item is composed of several parts, check each part separately, detaching the parts for inspection.

c. Repair Item. After the item has been inspected and marked, it is ready for repair. If no special instructions are given, repair the damage in accordance with the methods illustrated in chapters 2 and 3 and in accordance with the following general instructions:

(1) *Patching material.* Use water-repellent and mildew-resistant material.

(2) *Thread.* Use mildew-resistant thread.

(3) *Length of stitch.* On heavyweight canvas,

stitch five stitches to the inch; on mediumweight and lightweight canvas, stitch eight stitches to the inch.

(4) *Stitching.* When stitching is not a continuous thread, backstitch not less than 1-inch at each break. Except when the ends are turned under in a hem or held down by other stitching, backstitch all stitching at the ends to prevent raveling. Maintain the proper thread tension so that the lock will be embedded in the center of the materials sewed.

d. Give Item a Final Inspection. Upon completion of repairs, again check the item, paying special attention to the quality of the repair work to make sure that—

(1) The proper size of thread and length of stitch have been used and all breaks in the stitching backstitched.

(2) The stitching has not, through carelessness, fastened together parts that should never have been fastened together.

(3) Patches, straps, and replaced flaps correspond, in color, texture, weight of material, and method of fastening to the original material and construction of the item being repaired.

(4) Chapes, billets, loops, and reinforcing strips are of the proper length and that they have been cross-stitched through the center and double-stitched at the ends of the stitching area taking the strain.

(5) Complementary hardware, such as snap fasteners, has been installed to assure perfect engagement without wrinkles or puckers.

(6) Mechanically set or die-inserted hardware, such as buttons, snap fasteners, grommets, end clips, and eyelets, have been securely clinched without damage to the surrounding fabric.

(7) All hardware is of the type and size specified and that it is in working order.

(8) All detached parts have been checked for repair and properly attached to the item with which they belong.

(9) All special instructions for the inspection and repair of the items (listed in the following paragraphs) have been followed.

29. Apron, Outfit, Butchers', Abattoir

a. Stock Number. The stock number of the apron is 37–A–475.

b. Specification. The specification is J. Q. D., No. 573.

c. Inspection. (See fig. 61.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

4 Grommets, brass, No. 1, with toothed washers ①.

(3) *Straps.* See whether or not the following straps are damaged or missing:

1 Strap, neck, 30-inch-long, 1-inch lightweight cotton webbing ②.

1 Strap, waist, 24-inch-long, ¾-inch lightweight cotton webbing ③.

d. Repair. To patch the apron, which is made of two plies of material, use No. 12 cotton duck on the under ply; on the outer ply, use No. 12 cotton duck, with one side rubber-coated. Stitch with No. 10–3 cotton thread, stitching seven stitches to the inch.

30. Bag, Carrying, Ammunition

a. Stock Number. The stock number of the bag is 74–B–54–30.



Figure 61. Apron, outfit, butchers', abattoir.

b. Specification. The specification is J. Q. D., No. 299B.

c. Inspection. (See fig. 62.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, double-bar, tongueless, 1-inch ①.
1 Clip, end, ball-type, 1-inch ②.
2 Grommets, brass, No. 0, with toothed washers ③.
4. D-rings, 1- by .75-inch ④.
2 Snaps, 1-inch ⑤.

d. Repair. To patch the bags, use No. 6 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

31. Bag, Outfit, Cooking, Cavalry Pack, Candle

a. Stock Number. The stock number of the bag is 64–B–100.

b. Specification. The specification is No. 6–290.

c. Inspection. (See fig. 63.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Line.* See whether or not the following line is damaged or missing:

1 Line, tie ①.

d. Repair. To patch the candle bag, use the same weight of material as that used in the original construction of the bag. The weights usually used are either No. 4 or No. 8 cotton duck.

32. Bag, Canvas, Carrying, Demolition Equipment

a. Stock Number. The stock number of the bag is Ordnance Department No. 24–1882.050–500.

b. Specification. The specification is J. Q. D., No. 513.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, double-bar, tongueless, 1-inch.
1 Buckle, web-strap, 2-inch.
2 Clips, end, 1-inch.
1 Clip, end, 2-inch.
2 Eyelets, No. 4132.

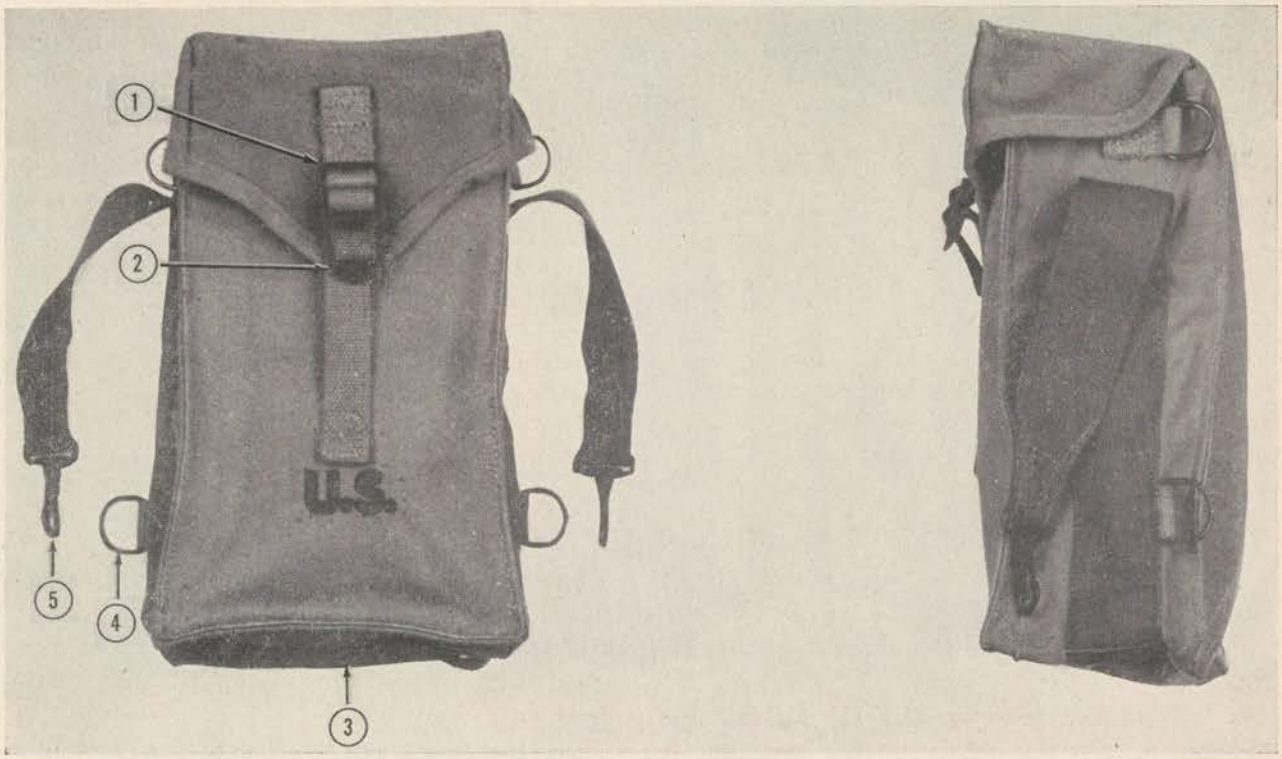


Figure 62. Bag, carrying, ammunition.

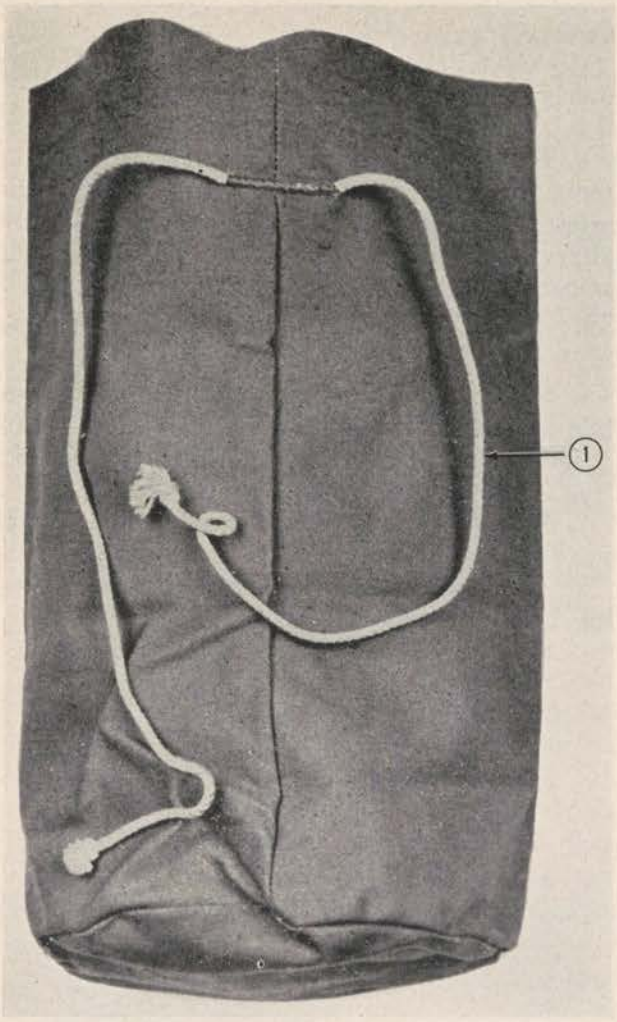


Figure 63. Bag, outfit, cooking, cavalry pack, candle.

2 Fasteners, snap, style 2.
3 Rivets, tubular, deep-drill, 5/16-inch long, with burs.
1 Snap, 2-inch.

d. Repair. To patch the bag, use 9.85-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching seven stitches to the inch.

33. Bag, Carrying, Rocket, M–6

a. Stock Number. The stock number of the bag is 74–B–54–35.

b. Specification. The specification is J. Q. D., No. 300C.

c. Inspection. (See fig. 64.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:
1 Buckle, end, 1-inch ①.
2 Eyelets, No. 4132, with washers ②.
2 Fasteners, snap, style 1 ③.
1 Loop, strap, 1- by ½-inch, style 2 ④.

d. Repair. (1) *Patching.* Use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing shoulder strap.* Use 2-inch mediumweight cotton webbing cut 54 inches long.

34. Bag, Carrying, Rocket, M–6, Parachutist

a. Stock Number. The stock number of the bag is 74–B–54–40.

b. Specification. The specification is J. Q. D., No. 477B.

c. Inspection. (See fig. 65.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:
1 Buckle, end, 1-inch ①.
2 Eyelets, No. 4132, with washers ②.
2 Fasteners, snap, style 1 ③.
1 Loop, strap, 1- by ½-inch ④.
2 D-rings, 1- by .75-inch ⑤.
1 Snap, harness, 1⅛-inch ⑥.

d. Repair. (1) *Patching.* Use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing harness snap.* After attaching the snap and the chape in the regular manner, hand-stitch the back of the snap to the bag, using a circular stitch through the fabric and around the back of the snap. Secure the cord ends on the inside with a square knot.

(3) *Replacing shoulder strap.* Replace the shoulder strap with 2-inch mediumweight cotton webbing cut 54 inches long.

35. Bag, Canvas, Coal, 1-Bushel

a. Stock Number. The stock number of the bag is 24–B–138.

b. Specification. The specification is J. Q. D., No. 548.

c. Inspection. (See fig. 66.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

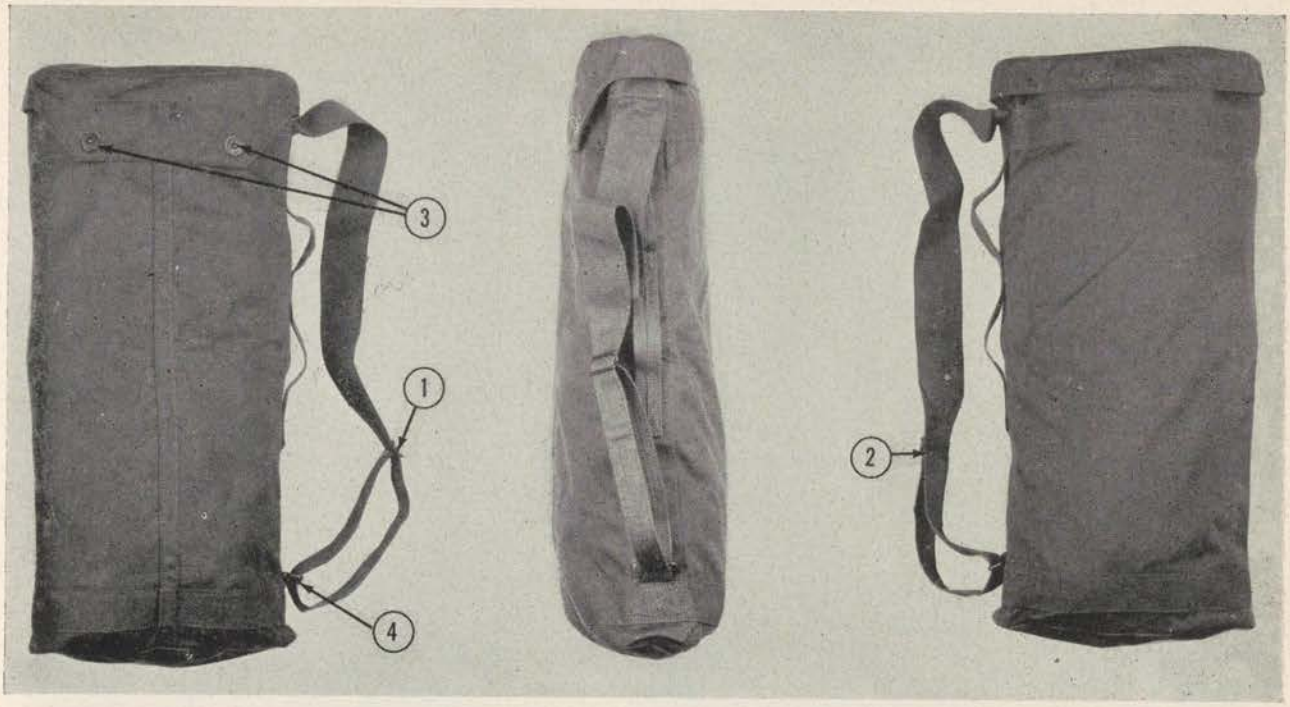


Figure 64. Bag, carrying, rocket, M–6.



Figure 65. Bag, carrying, rocket, M–6, parachutist.



Figure 66. Bag, canvas, coal, 1–bushel.

8 Rivets, tubular, brass, 5/16-inch long, without caps ①.

d. Repair. (1) *Patching.* Use No. 1 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Riveting.* Drive the rivets into the material without previously punching holes.

36. Bag, Canvas, Coal, 2-Bushel

a. Stock Number. The stock number of the bag is 24–B–140.

b. Specification. The specification is J. Q. D., No. 548.

c. Inspection. (See fig. 67.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

10 Grommets, brass, No. 4, with toothed washers ①.

4 Grommets, brass, No. 5, with toothed washers ②.

8 Rivets, tubular, brass, 5/16-inch-long, without caps ③.

(3) *Drawstring.* See whether or not the following drawstring is damaged or missing:

1 Drawstring, 66-inch-long, 1/4-inch-diameter sisal (3-strand).

d. Repair. (1) *Patching.* Use No. 1 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing drawstring.* Tie an overhand knot in the center of the string. Lace each end

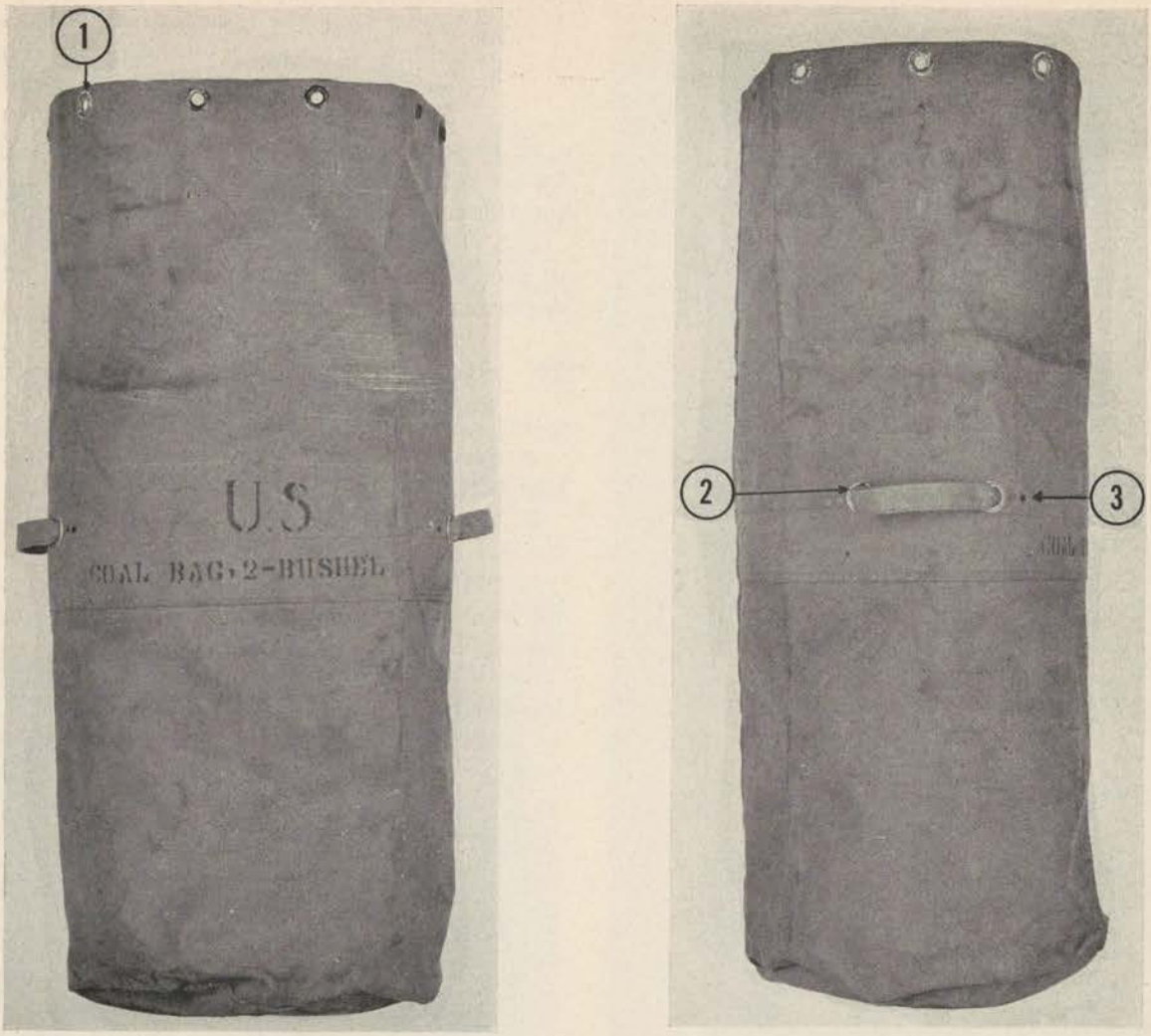


Figure 67. Bag, canvas, coal, 2-bushel.

through the grommets and finish each end with an overhand knot.

(3) *Riveting.* Drive the rivets into the fabric without previously punching holes.

37. Bag, Canvas, Coal, 30-Pound

a. Stock Number. The stock number of the bag is 24–B–135.

b. Specification. The specification is J. Q. D., No. 605.

c. Inspection. (See fig. 68.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Drawstring.* See whether or not the following drawstring is damaged or missing:

1 Drawstring, 48-inch-long, No. 4 (⅛-inch-diameter) solid-braided cotton rope ①.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Securing drawstring.* Knot the drawstring with an overhand knot ½ inch from each end.

38. Bags, Conveyor and Laundry

a. Stock Number. The stock numbers of the bags are—

No. 7050000 (Conveyor, soiled linen, bag—Medical Department).

No. 7151000 (Bag, laundry, large—Medical Department).

No. 7152000 (Bag, laundry, small—Medical Department).

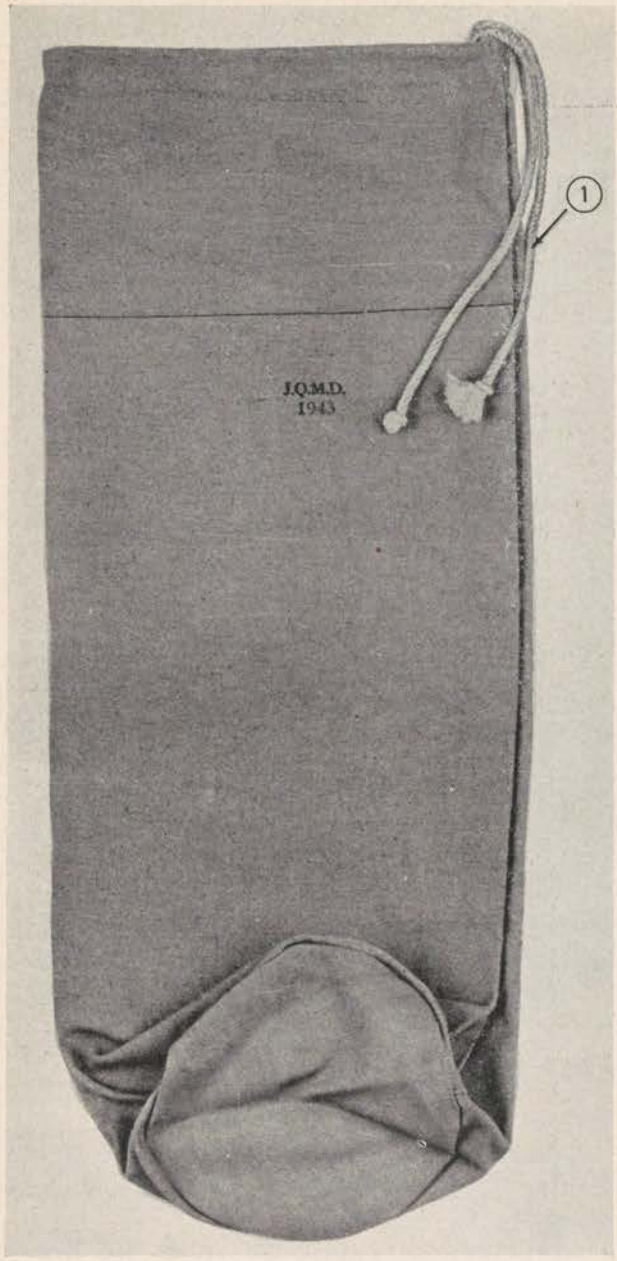


Figure 68. Bag, canvas, coal, 30-pound.

b. Specification. The specification is J. Q. D., No. 609.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Grommets, brass, bright, No. 5, with toothed washers.

(3) *Drawstrings,* See whether or not the following drawstrings are damaged or missing:

2 Drawstrings, No. 8 cotton sash cord (64-inch-long for small laundry bag, 73-inch-long for large laundry bag, 88-inch-long for conveyor bag).

d. Repair. (1) *Patching.* Use 14.53-ounce-per-square-yard cotton duck and four-ply No. 16 cotton thread, stitching eight stitches to the inch.

(2) *Replacing drawstring.* Bar-tack the ends of each drawstring to the top folded edge of the opposite grommet reinforcement.

39. Bag, Canvas, Tools-and-Maintenance-Parts, Stove, Cooking-Outfits

a. Stock Number. The stock number of the bag is 24–B–1105.

b. Specification. The specification is J. Q. D., No. 517.

c. Inspection. (See fig. 69.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Grommets, brass, No. 2, with toothed washers ①.

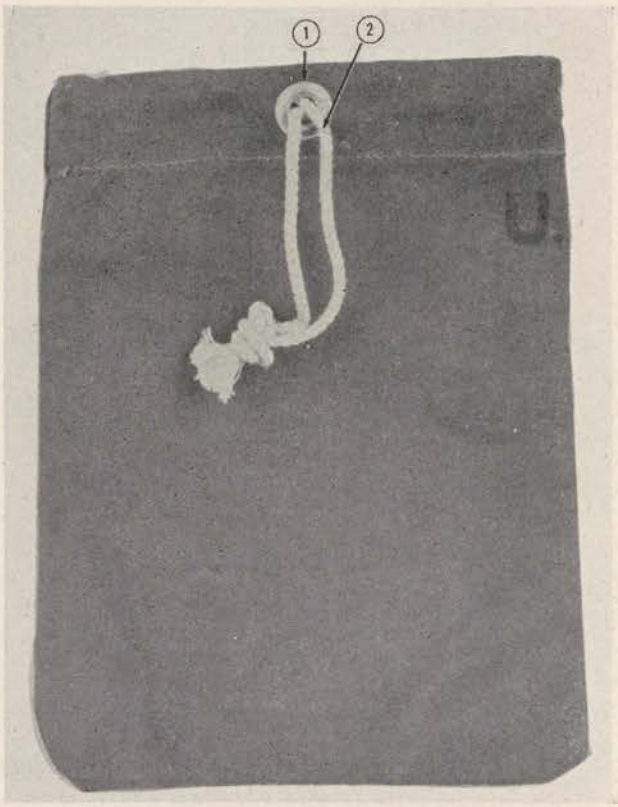


Figure 69. Bag, canvas, tools-and-maintenance-parts, stove, cooking-outfits.

(3) *Drawstrings.* See whether or not the following drawstrings are damaged or missing:

2 Drawstrings, No, 96 seine twine ②.

d. Repair. (1) *Patching.* Use 12.20-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing drawstrings.* Insert the two drawstrings in the top hem of the bag, one on each side. Secure the ends by tying them together with an overhand knot.

40. Bag, Cutlery, Canvas

a. Stock Number. The stock number of the bag is 64–B–35.

b. Specification. The specification is J. Q. D., No. 479.

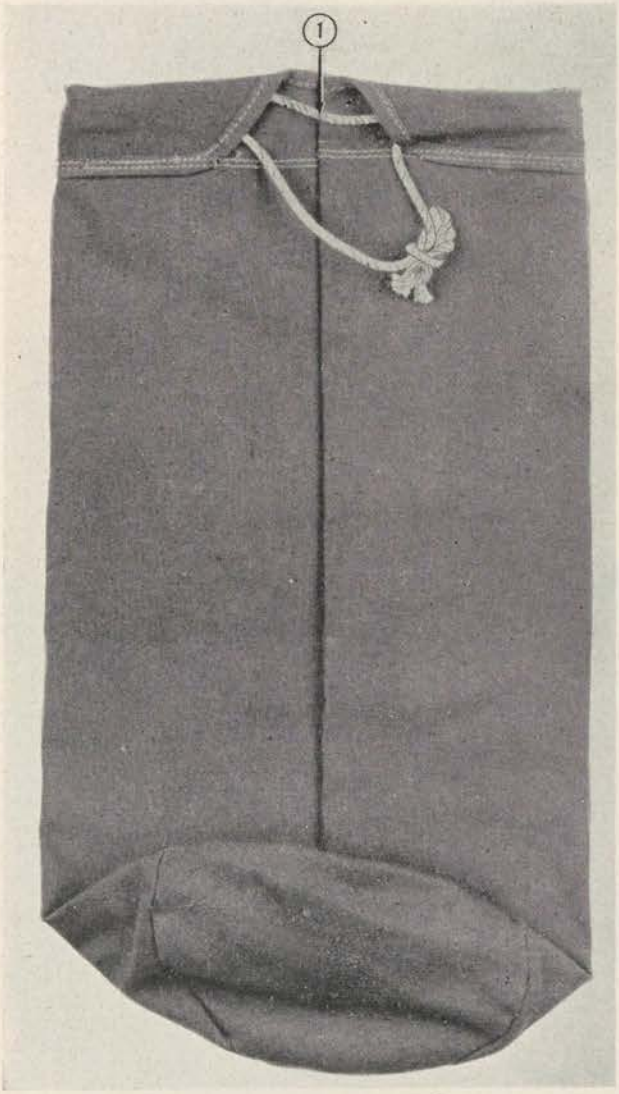


Figure 70. Bag, cutlery, canvas.

c. Inspection. (See fig. 70.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Drawstrings.* See whether or not the following drawstrings are damaged, or missing:

2 Drawstrings, 34-inch-long, No. 96 seine twine ①.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing drawstrings.* Insert drawstrings in the hem at the top edge of the bag, one on each side of the bag. Extend the two ends through the hem openings on each side of the bag and tie with a square knot.

41. Bag, Duffel

a. Stock Number. The stock number of the bag is 74–B–54–55.

b. Specification. The specification is J. Q. D., No. 316E.

c. Inspection. (See fig. 71.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

4 Grommets, brass, rolled-rim, No. 5, with toothed washers ①.

1 Keeper, bag, duffel, steel or brass ②.

1 Snap, 1⅛-inch ③.

d. Repair. (1) *Patching.* Use No. 10 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Restitching carrying strap.* Use four-ply No. 10 cotton thread, stitching six stitches to the inch.

42. Bag, Canvas, Field, OD, M–1936

a. Stock Number. The stock number of the bag is 74–B–53.

b. Specification. The specification is J. Q. D., No. 20B.

c. Inspection. (See fig. 72.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the followind hardware is loose, damaged, or missing:

2 Buckles, double-bar, tongueless, 1-inch ①.

2 Buckles, end, 1-inch ②.

2 Buttons, tack ③.

2 Clips, end, 1-inch ④.



Figure 71. Bag, duffel.



Figure 72. Bag, canvas, field, od, M–1936.

2 Eyelets, No. 4094, with washers, No. 4096 ⑤.
2 D-rings ⑥.
2 Snaps, 1-inch ⑦.

d. Repair. To patch, use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

43. Bag, Money

a. Stock Number. The stock number of the bag is 34–B–50.

b. Specification. The specification is J. Q. D., No. 538.

c. Inspection. (See fig. 73.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Ovals, saddlebag, style 3 ①.
1 Padlock, 1½-inch, with 9-inch chain and clevis ②.
17 Rivets, belt, 1¼-inch-long, No. 10, with burs ③.
1 Rivet, belt, ⅜-inch-long, No. 10, with bur ④.
2 Rivets, belt, 5/16-inch-long, No. 12, with burs ⑤.
8 Rivets, belt, ½-inch-long, No. 10, with burs ⑥.
1 Staple, 1-inch ⑦.
5 Staples, 1½-inch ⑧.
20 Washers, ¾-inch ⑨.
2 Washers, double (secures staple, 1-inch ⑦).

d. Repair. To patch the bag, use No. 4 cotton duck and No. 10–3 cotton thread, stitching five stitches to the inch.

44. Bag, Canvas, Nail, 13 3/4 x 7 3/8 In.

a. Stock Number. The stock number of the bag is 24–B–700.

b. Specification. The specification is J. Q. D., No. 730.

c. Inspection. (See fig. 74.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Line.* See whether or not the following line is damaged or missing:

1 Line, tie, 28-inch-long, No. 4 (⅛-inch-diameter) solid-braided cotton rope ①.

d. Repair. To patch the bag, use No. 4 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

45. Bag, Boxers', Training

a. Stock Number. The stock number of the bag is 37–B–800.

b. Specification. The specification is J. Q. D., No. 627.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Chain, 72-inch.
4 Chains, 8- to 12-inch.
4 D-rings.

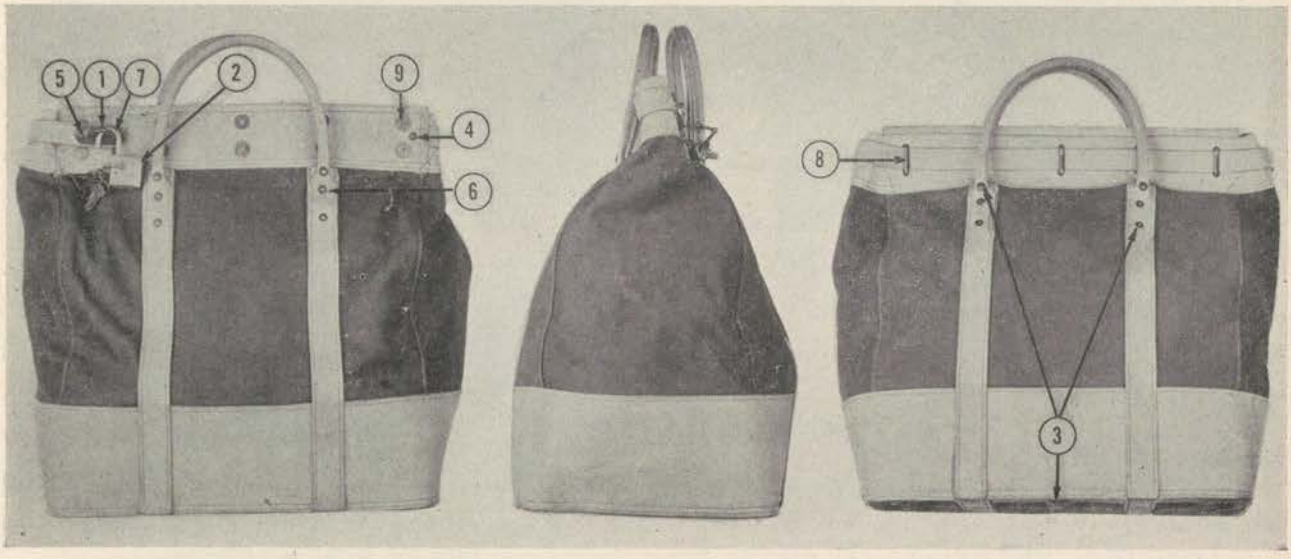


Figure 73. Bag, money.

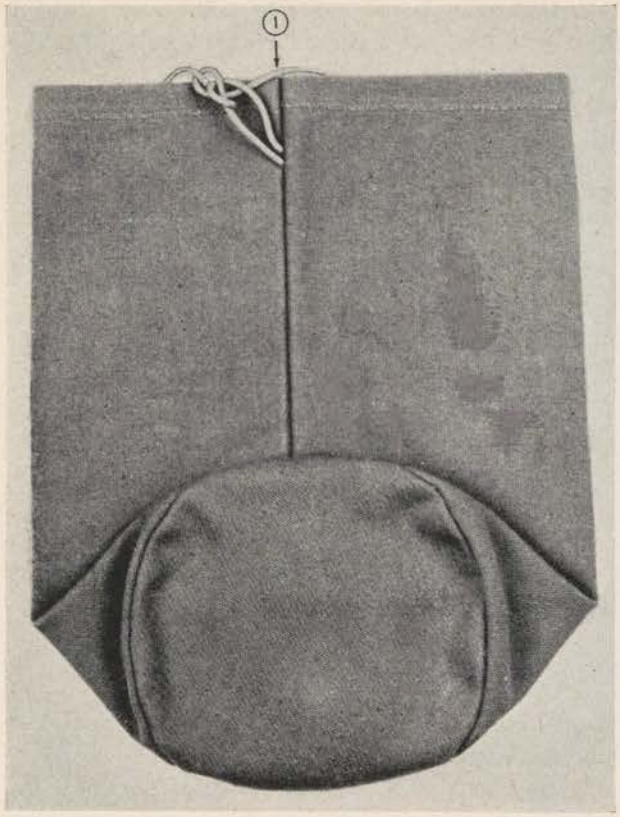


Figure 74. Bag, canvas, nail, 13¾ x 7⅜ in.

5 S-hooks.
1 Swivel.

(3) *Line.* See whether or not the following line is damaged or missing:

1 Line, lacing.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching seven stitches to the inch.

(2) *Replacing webbing loop.* Use 1½-inch heavyweight webbing and No. 10–6 cotton thread, stitching five stitches to the inch. Reinforce the loop with a double thickness of No. 8 duck, large enough to cover the stitching pattern, placed on the inside of the bag.

(3) *Replacing stuffing.* Replace lost stuffing with cotton waste, small leather scraps, and/or cotton fabric scraps.

46. Bag, Canvas, Valuables, Numbered, with Tag, Metal, Identification

a. Stock Number. The stock number of the bag is 24–B–1183.

b. Specification. The specification is J. Q. D., No. 268B.

c. Inspection. (See fig. 75.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Grommets, brass, No. 2, with toothed washers ①.
1 Tag, identification, metal, 1⅜₁₆-inch diameter ②.

(3) *Band and drawstrings.* See whether or not the following band and drawstrings are damaged or missing:

1 Band, neck, 31-inch-long, 7/16-inch-width cotton tape ③.
2 Drawstrings, 31-inch-long, No. 4 (⅛-inch-diameter) solid-braided cotton rope ④.

d. Repair. (1) *Patching.* Use 8.25-ounce-per-square-yard cotton duck and No. 16 cotton thread, stitching 8 stitches to the inch.

(2) *Replacing drawstrings.* Sew the ends of each drawstring to the opposite grommet reinforcement.

(3) *Replacing neck-band tape.* Overlap the ends of the neck-band tape 1½ inches and stitch with 5 parallel rows of stitches, using No. 40 cotton thread and making 14 stitches to the inch.

(4) *Replacing identification tag.* Make certain that the number on the replacement tag and the number on the bag are the same.



Figure 75. Bag, canvas, valuables, numbered, with tag, metal, identification.

47. Bag, Canvas, Water-Carrying, 5-Gallon, Complete

a. Stock Number. The stock number of the bag is 74–B–53–425.

b. Specification. The specification is J. Q. D., No. 643A.

c. Inspection. (See fig. 76.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, bar, tongueless, 5/8-inch (under closure flap).
6 Buckles, double-bar, tongueless, 1-inch ①.
2 Clips, end, 5/8-inch (under closure flap).
6 Clips, end, 1-inch ②.
2 Eyelets, No. 4094, with washers, No. 4096 (at bottom of bag on some models).
4 Fasteners, snap, style 1 ③.
2 D-rings, 1- by .75-inch ④.
4 Snaps, 1-inch ⑤.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing bladder.* Replace the bladder with the 5-gallon canvas water-carrying bag bladder (stock No. 74–B–307).

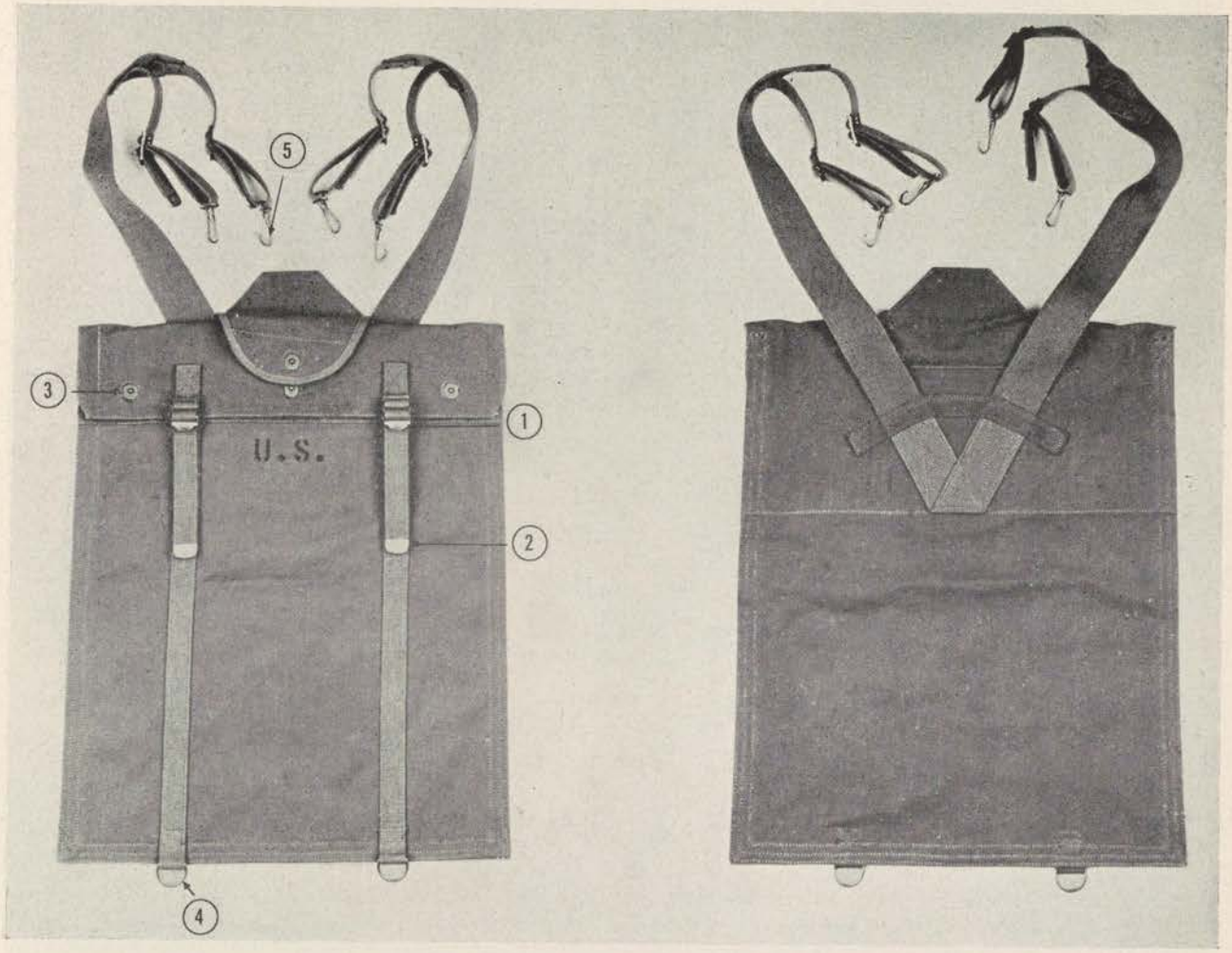


Figure 76. Bag, canvas, water-carrying, 5-gallon, complete.

48. Bag, Canvas, Water-Sterilizing, Complete, with-Cover-and-Hanger, Porous

a. Stock Number. The stock number of the bag is 24–B–1170.

b. Specification. The specification is JAN–B–273.

c. Inspection. (See fig. 77.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

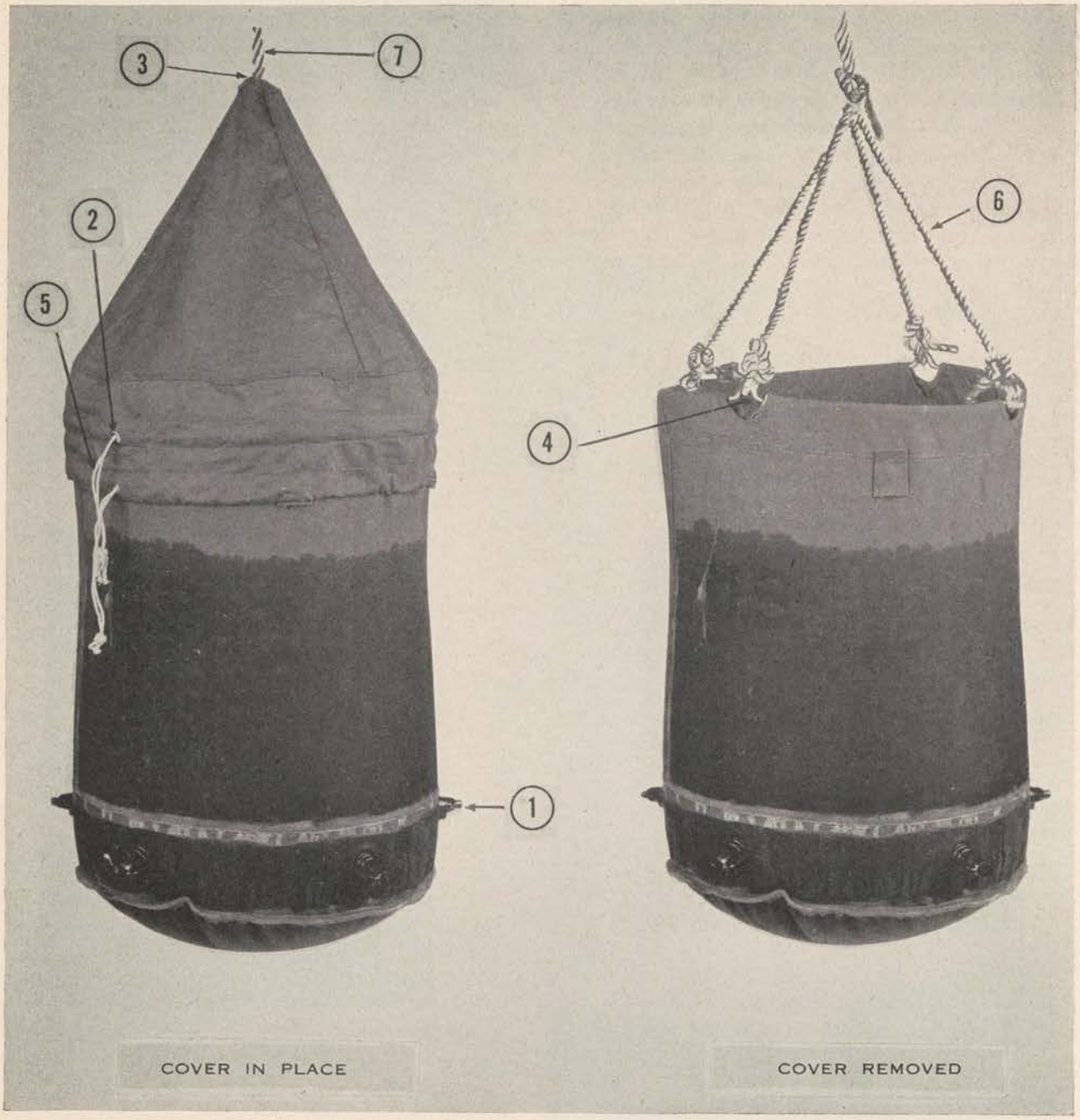


Figure 77. Bag, canvas, water-sterilizing, complete, with-cover-and-hanger, porous.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

4 Faucets, metal or plastic (some bags have 5 faucets) ①.
1 Grommet, brass, plain, No. 0, with washer (under overflow flap).
4 Grommets, brass, No. 1, with toothed washers ②.
1 Grommet, brass, No. 5, with toothed washer ③.
1 Ring, supporting ④.

(3) *Lines.* See whether or not the following lines are damaged or missing:

4 Drawstrings, 7½-foot-long, ⅛-inch-diameter cotton rope ⑤.
2 Ropes, suspension, 5½-ft-long, ⅜-inch-diameter sisal (3-strand) ⑥.
1 Rope, suspension, 6½-foot-long, ½-inch-diameter sisal (3-strand) ⑦.

d. Repair. (1) *Patching.* Use No. 4 resin-coated cotton duck for the body and No. 10 resin-coated duck for the cover.

(2) *Stitching.* Use a round-pointed needle no larger than a No. 24 and cotton thread No. 10–3.

(3) *Cementing.* To cement patches and seal seams, use a liquid cement of the type used for sealing resin-coated fabrics.

Caution. Do not use canvas, thread, rope, or any other material that has been made mildew-resistant or treated with chemicals of a toxic nature.

49. Bands, Liner, Helmet, M–1, for Head and Neck

a. Stock Numbers. The stock numbers of the bands are—

Type I—No. 74–B–59 Band, liner, helmet, M–1, head, new type.
Type II—No. 74–B–60–300 Band, liner, helmet, M–1, neck, adjustable.

b. Specification. The specification is No. 6–344.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged or missing:

Type I

1 Buckle, bar, hand, head.
6 Clips, band, head.

Type II

1 Buckle, bar, band, head.
4 Fasteners, snap, commercial, 16-ligne (studs only).

50. Basin, Canvas, Folding, OD

a. Stock Number. The stock number of the basin is 24–B–1295.

b. Specification. The specification is No. 6–219A.

c. Inspection. (See fig. 78.) See whether or not the fabric or the stitching is damaged.

d. Repair. (1) *Patching.* Use No. 8 waterproofed cotton duck and four-ply No. 16 cotton thread.

(2) *Waterproofing stitching.* Coat the stitching with hot beeswax.

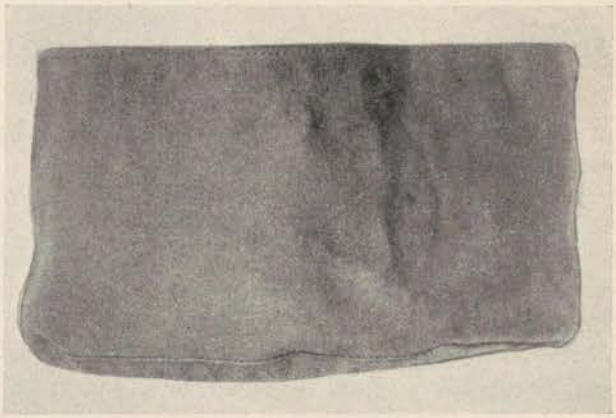


Figure 78. Basin, canvas, folding, od.

51. Belt, Cartridge, Caliber .30, M–1923, Dismounted

a. Stock Number. The stock number of the belt is 74–B–160.

b. Specification. The specification is No. 6–180B, amendment 1.

c. Inspection. (See fig. 79.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Clip, end, 2-inch ①.
23 Eyelets, with washers ②.
1 Fastener, belt, cartridge, male ③.
1 Fastener, belt, cartridge, female ④.
10 Fasteners, snap, style 1 ⑤.
10 Fasteners, snap, style 2 ⑥.
2 Hooks, double ⑦.
2 Loops, bar, 2-inch ⑧.

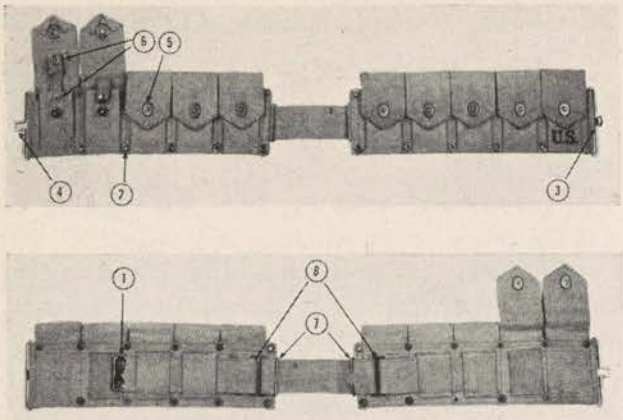


Figure 79. Belt, cartridge, caliber .30, M–1923, dismounted.

52. Belt, Cartridge, Caliber .30, M–1923, Mounted

a. Stock Number. The stock number of the belt is 74–B–180.

b. Specification. The specification is No. 6–180B.

c. Inspection. (See fig. 80.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Clip, end, 2-inch ①.
23 Eyelets, with washers ②.
1 Fastener, belt, cartridge, male ③.
1 Fastener, belt, cartridge, female ④.
10 Fasteners, snap, style 1 ⑤.
9 Fasteners, snap, style 2 ⑥.
2 Loops, bar, 2-inch ⑦.
2 Loops, 2-inch ⑧.

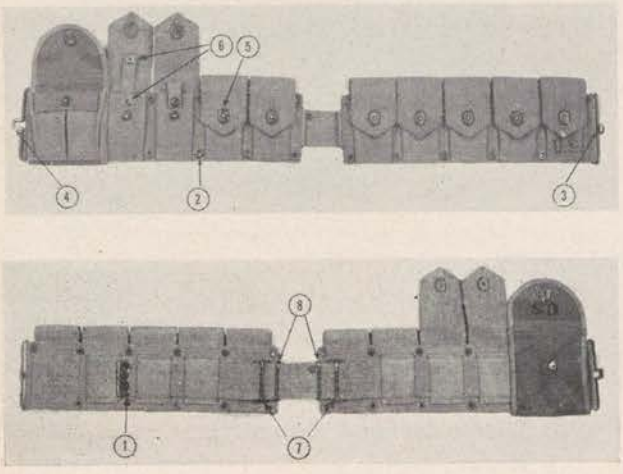


Figure 80. Belt, cartridge, caliber .30, M–1923, mounted.

53. Belt, Magazine, Browning Automatic Rifle, M–1937

a. Stock Number. The stock number of the belt is 74–B–240.

b. Specification. The specification is No. 6–386A.

c. Inspection. (See fig. 81.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

21 Eyelets, with washers ①.
1 Fastener, belt, cartridge, male ②.
1 Fastener, belt, cartridge, female ③.
6 Fasteners, snap, style 1 ④.
2 Loops, bar, 2-inch ⑤.

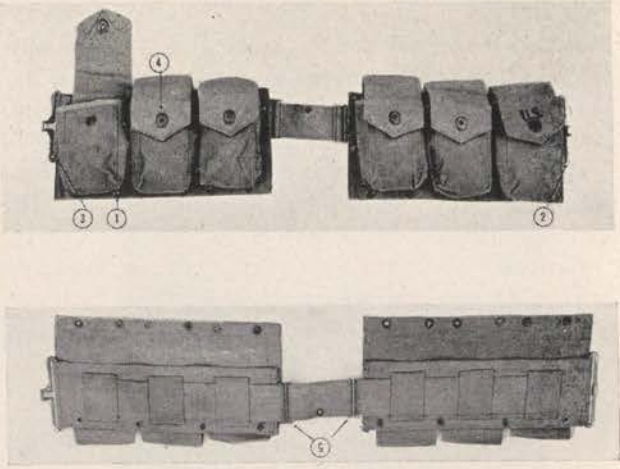


Figure 81. Belt, magazine, Browning automatic rifle, M–1937.

54. Belt, Pistol-or-Revolver, M–1936

a. Stock Number. The stock number of the belt is 74–B–265.

b. Specification. The specification is J. Q. D., No. 12B.

c. Inspection. (See fig. 82.) (1) *Fabric.* See whether or not the fabric or stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

36 Eyelets, No. 4094 ①.
18 Eyelets, No. 1563 ②.
3 Eyelets, No. 4133 ③.
1 Fastener, belt, cartridge-and-pistol, male ④.

1 Fastener, belt, cartridge-and-pistol, female ⑤.
1 Fastener, end, style 2 ⑥.
1 Fastener, snap, style 2 ⑦.
2 Keepers, sliding, 2¼-inch ⑧.
36 Washers, No. 4096 ⑨.

d. Repair. (1) *Restitching.* Use No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing sliding keepers and male belt fastener.* Remove style 2 end fastener, place sliding keepers and male belt fastener in position, and reattach style 2 end fastener.

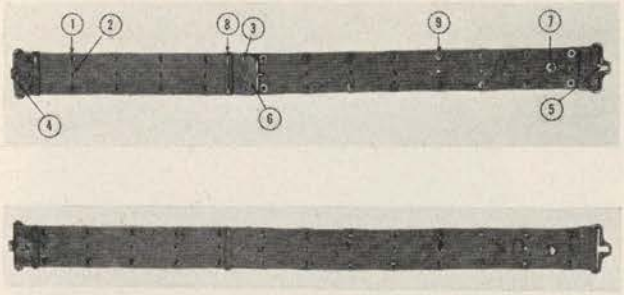


Figure 82. Belt, pistol-or-revolver, M–1936.

55. Belt, Waist, Web, Enlisted Men's, M–1937

a. Stock Numbers. The stock numbers of the belt are—

No. 73–B–5120 Small.
No. 73–B–5124 Medium.
No. 73–B–5132 Large.

b. Specification. The specification is J. Q. D., No. 19A.

c. Inspection. (See fig. 83.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, web-strap, bronze-finish, 1¼-inch ①.
1 Clip, end, flat-type, bronze-finish, 1¼-inch ②.

d. Repair. (1) *Weight and size of webbing.* Use type V 1¼-inch cotton webbing.

(2) *Length of webbing.* For size S, use 39-inch length; for size M, use 41-inch length; and for size L, use 48-inch length.

(3) *Marking.* On replaced webbing, stencil the size—S, M, or L—on the inside of the belt 1 inch from the buckle, using a ⅜-inch letter and black waterproof ink or black stencil paint.



Figure 83. Belt, waist, web, enlisted men's, M–1937.

56. Boot, Dog

a. Stock Number. The stock number of the boot is 34–B–14715–70.

b. Specification. The specification is J. Q. D., No. 482.

c. Inspection. (See fig. 84.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Leather sole.* See whether or not the sole is badly worn.

(3) *Strings.* See whether or not the following strings are damaged or missing:

1 Drawstring, leather, 32-inch-long ①.
1 Tiestring, leather, 28-inch-long ②.

d. Repair. (1) *Patching.* Use 9.85-ounce-per-square-yard water-repellent cotton duck and four-ply No. 16 cotton thread, stitching eight stitches to the inch.

(2) *Replacing sole.* Cut a round leather sole 4-inches in diameter from 5/64-inch stock and stitch to the upper with four-ply No. 16 cotton thread, stitching six stitches to the inch.

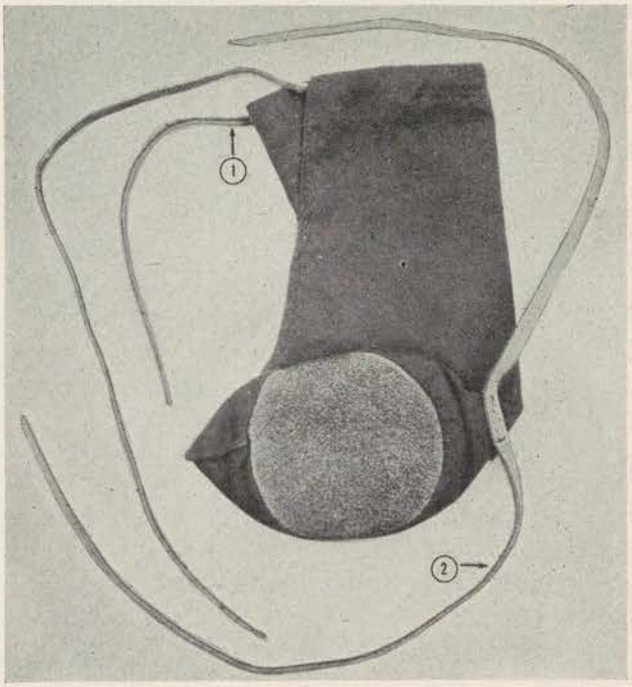


Figure 84. Boot, dog.

57. Bucket, Canvas, Water, 18-Quart

a. Stock Number. The stock number of the bucket is 34–B–15000.

b. Specification. The specification is J. Q. D., No. 272B.

c. Inspection. (See fig. 85.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Rings, 11-inch, 3/16-inch-stock ①.

d. Repair. (1) *Patching.* Use No. 4 water-repellent cotton duck and No. 10–3 cotton thread.

(2) *Treatment of stitching.* Coat with hot beeswax.

(3) *Replacing handle.* See paragraph 23*c*.



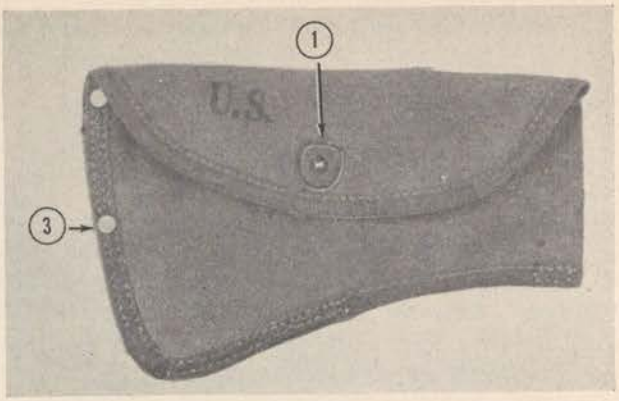
Figure 85. Bucket, canvas, water, 18-quart.

58. Carrier, Axe, Camp

a. Stock Number. The stock number of the carrier is 74–C–117.

b. Specification. The specification is J. Q. D., No. 471A.

c. Inspection. (See fig. 86.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.



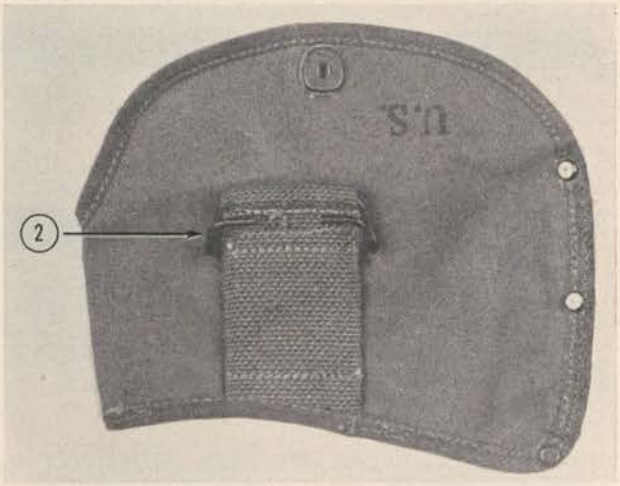


Figure 86. Carrier, axe, camp.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, snap, style 1 ①.

1 Hook, double ②.

3 Rivets, tubular, 5/16-inch-long, with caps ③.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Riveting.* Place the rivet caps on the hook side of the carrier.

59. Carrier, Grenade, Three-Pocket

a. Stock Number. The stock number of the carrier is 74–C–123.

b. Specification. The specification is J. Q. D., No. 528.

c. Inspection. (See fig. 87.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

3 Eyelets, No. 4094, with washers, No. 4096 ①.

6 Fasteners, snap, style 1 ②.

1 Hook, double ③.

d. Repair. To patch the carrier, use No. 10 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

60. Carrier, Pack, M–1928

a. Stock Number. The stock number of the carrier is 74–C–147.

b. Specification. The specification is No. 6–163B.

c. Inspection. (See fig. 88.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

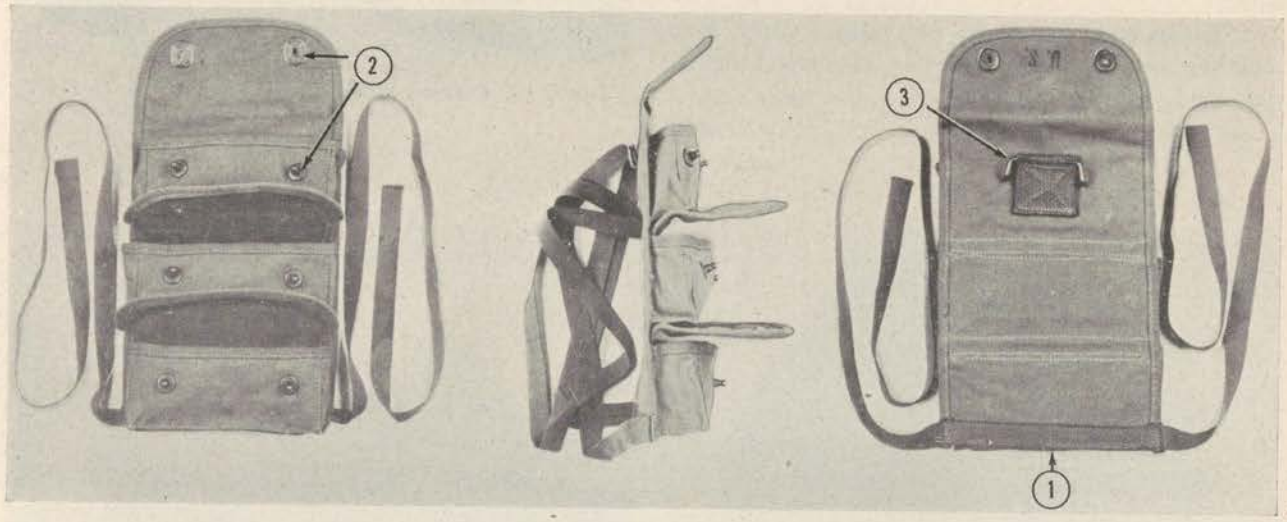


Figure 87. Carrier, grenade, three-pocket.

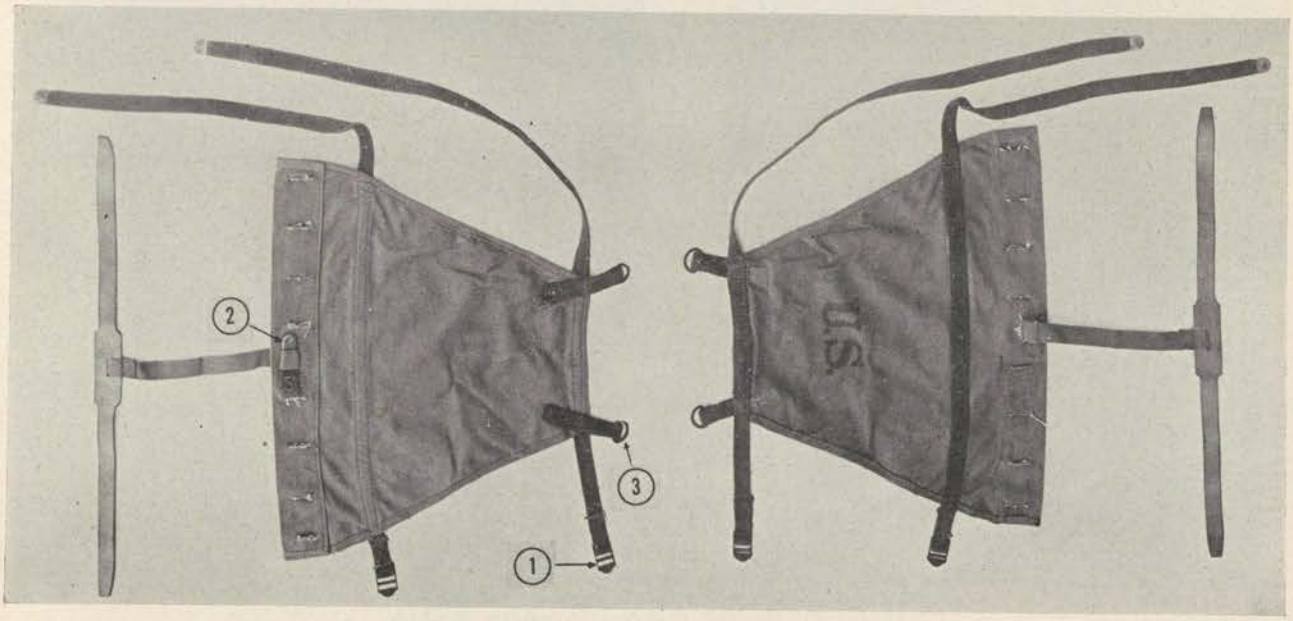


Figure 88. Carrier, pack, M–1928.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, double-bar, tongueless, 5/8-inch ①.
3 Clips, end, ball-type, 5/8-inch ②.
2 D-rings, .7- by .26-inch ③.

61. Carrier, Pick-Mattock, Intrenching, M–1910

a. Stock Number. The stock number of the carrier is 74–C–154.

b. Specification. The specification is No. 612C.

c. Inspection. (See fig. 89.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, bar, tongueless, 5/8-inch ①.
1 Clip, end, ball-type, 5/8-inch ②.
1 Hook, double ③.

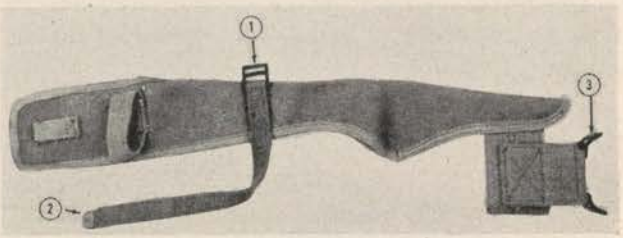


Figure 89. Carrier, pick-mattock, intrenching, M–1910.

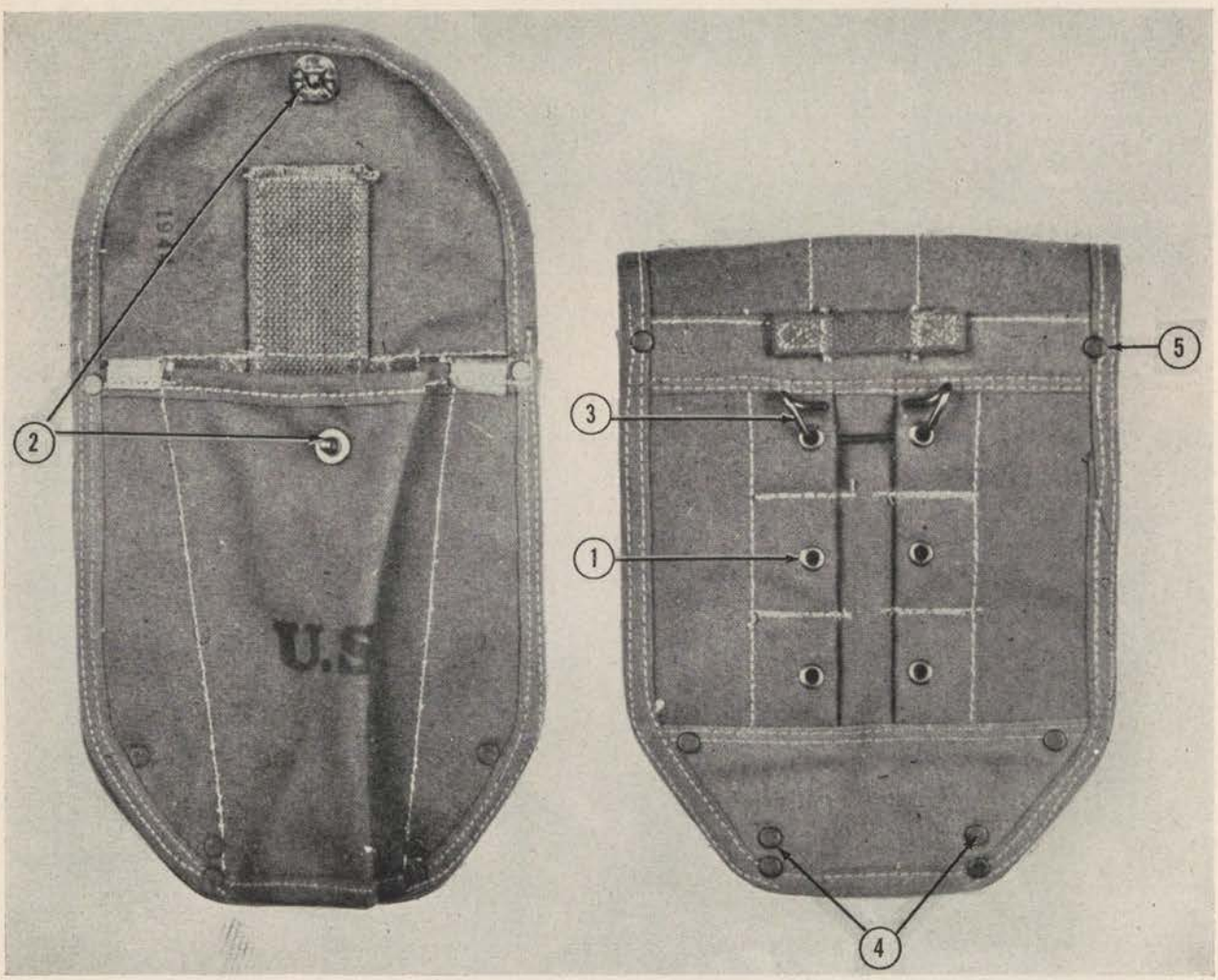


Figure 90. Carrier, shovel, intrenching, M–1943.

62. Carrier, Shovel, Intrenching, M–1943

a. Stock Number. The stock number of the carrier is 74–C–167.

b. Specification. The specification is J. Q. D., No. 454C.

c. Inspection. (See fig. 90.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

6 Eyelets, No. 4094, with washers, No. 4096 ①.
1 Fastener, snap, style 1 ②.
1 Hook, double, style 1 ③.
2 Rivets, tubular, 1/16-inch-long, with caps ④.
6 Rivets, tubular, 5/16-inch-long, with caps ⑤.

d. Repair. (1) *Patching.* Use No. 6 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing the double hook.* Insert the double hook in the following positions: If to be used with the field or haversack pack, insert in the top two eyelets; if to be used with the pistol or revolver belt, insert in the middle two eyelets; if to be used with the rucksack, insert in the bottom two eyelets.

63. Carrier, Wire-Cutter, M–1938

a. Stock Number. The stock number of the carrier is 74–C–187.

b. Specification. The specification is No. 6–284A.

c. Inspection. (See fig. 91.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, snap, style 1 ①.
1 Hook, double ②.

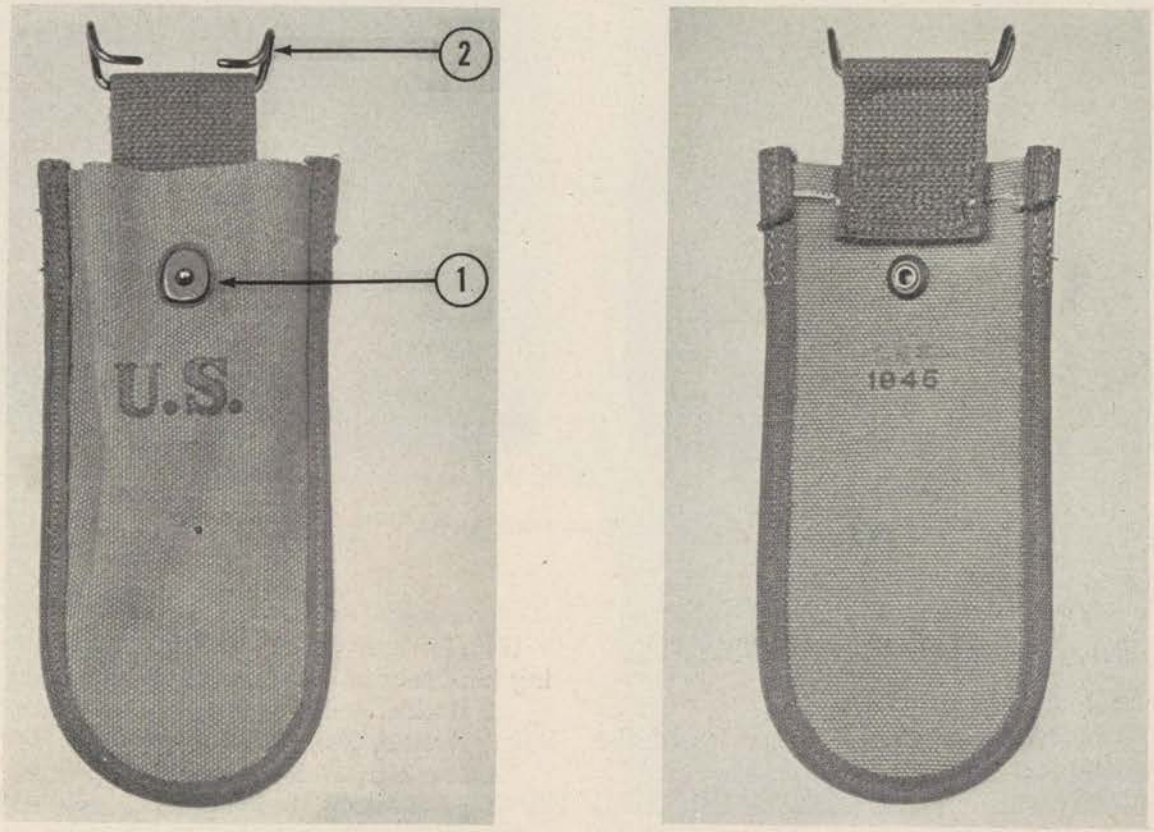


Figure 91. Carrier, wire-cutter, M–1938.

64. Case, Brief, Canvas

a. Stock Number. The stock number of the case is 24-C-300.

b. Specification. The specification is J. Q. D., No. 700.

c. Inspection. (See fig. 92.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, double-bar, tongueless, 1-inch ①.
2 Clips, end, 1-inch ②.
1 Lock, 3-position-extension, 1⅜- by 3⅜-inch with keeper (on some models).
2 Rivets, belt, 3/16-inch-long, with burs.
2 Rivets, belt, ½-inch-long, No. 10 ③.
2 Rivets, tubular, ½-inch-long, No. 10 with caps.
2 Rivets, tubular, deep-drill, 5/16-inch-long ④.
4 Rivets, tubular, deep-drill, 3/16-inch-long.

d. Repair. (1) *Patching.* For the outside cover, use No. 6 cotton duck and No. 10–3 cotton thread, stitching seven stitches to the inch. For the partitions, use 8.25-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching seven stitches to the inch.

(2) *Replacing lock keepers.* Secure the keeper by riveting.

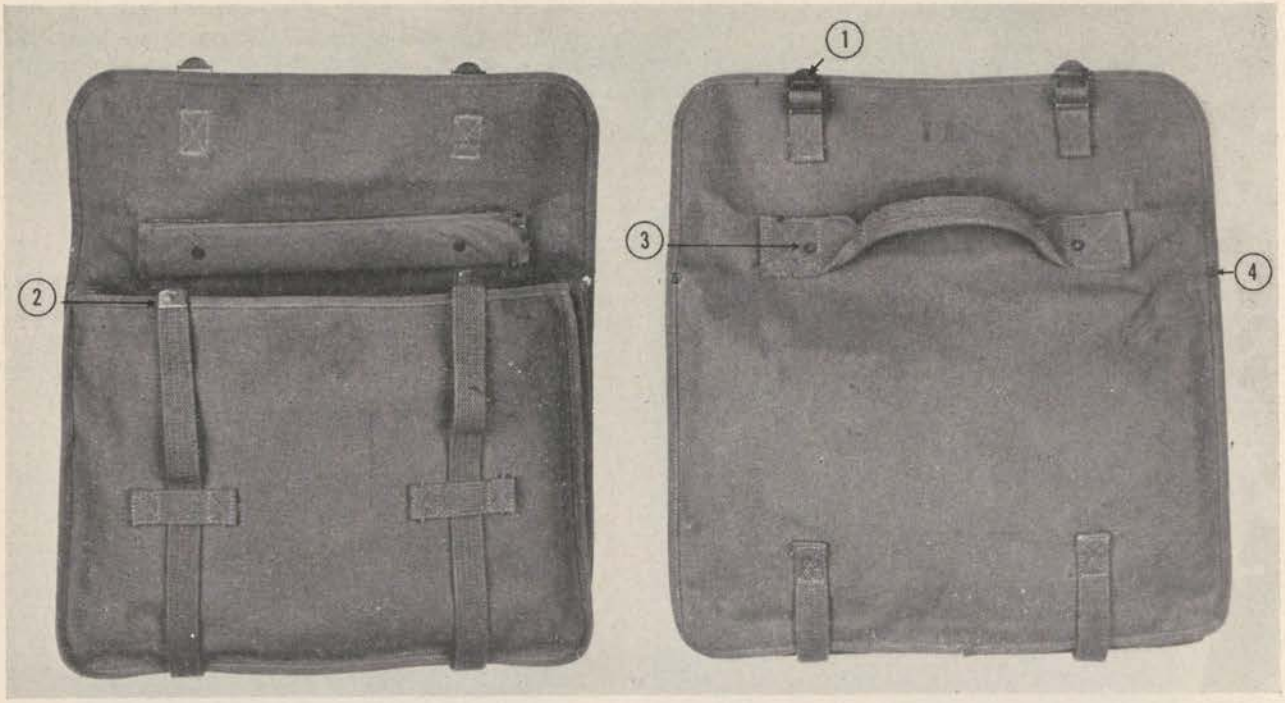


Figure 92. Case, brief, canvas.

65. Case, Canvas, Carbine, Caliber .30, M–1

a. Stock Number. The stock number of the case is 34–C–255.

b. Specification. The specification is J. Q. D., No. 227C.

c. Inspection. (See fig. 93.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, end, 1-inch ①.
2 Eyelets, No. 4133 ②.
1 Fastener, slide ③.
1 Loop, strap, 1- by ½-inch, style 2 ④.

(3) *Thong.* See whether or not the following thong is damaged or missing:

1 Thong, leather, 4-inch-long, for slide fastener slider ⑤.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing leather tabs.* Use No. 10–3 cotton thread, stitching six and one-half stitches to the inch.

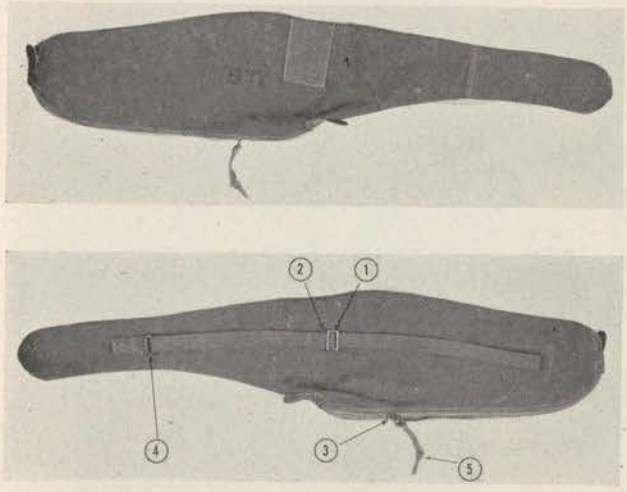


Figure 93. Case, canvas, carbine, caliber .30, M–1.

66. Case, Carrying, Drawing-Board or Plane Table, 24 In. x 31 In., for Field Artillery

a. Stock Number. The stock number of the case is Engineer Corps No. 18–2452.360–500.

b. Specification. The specification is J. Q. D., No. 610.

c. Inspection. (See fig. 94.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

3 Buckles, double-bar, tongueless, 1-inch ①.
3 Clips, end, ball-type, 1-inch ②.
2 Fasteners, slide, 27-inch-long, No. 7 ③.
7 Fasteners, snap, style 2 ④.
14 Washers, steel, ⅛-inch.
14 Wood screws, steel, oval-head, ⅝-inch-long, No. 5.

(3) *Thongs.* See whether or not the following thongs are damaged or missing:

2 Thongs, leather, 15-inch-long, for slide fastener sliders ⑤.

d. Repair. (1) *Patching.* Use the following weights of cotton duck: for the cover, No. 6; for the inside, No. 8 and No. 10.

(2) *Thread and stitching.* Use No. 10–3 cotton thread, stitching eight stitches to the inch.

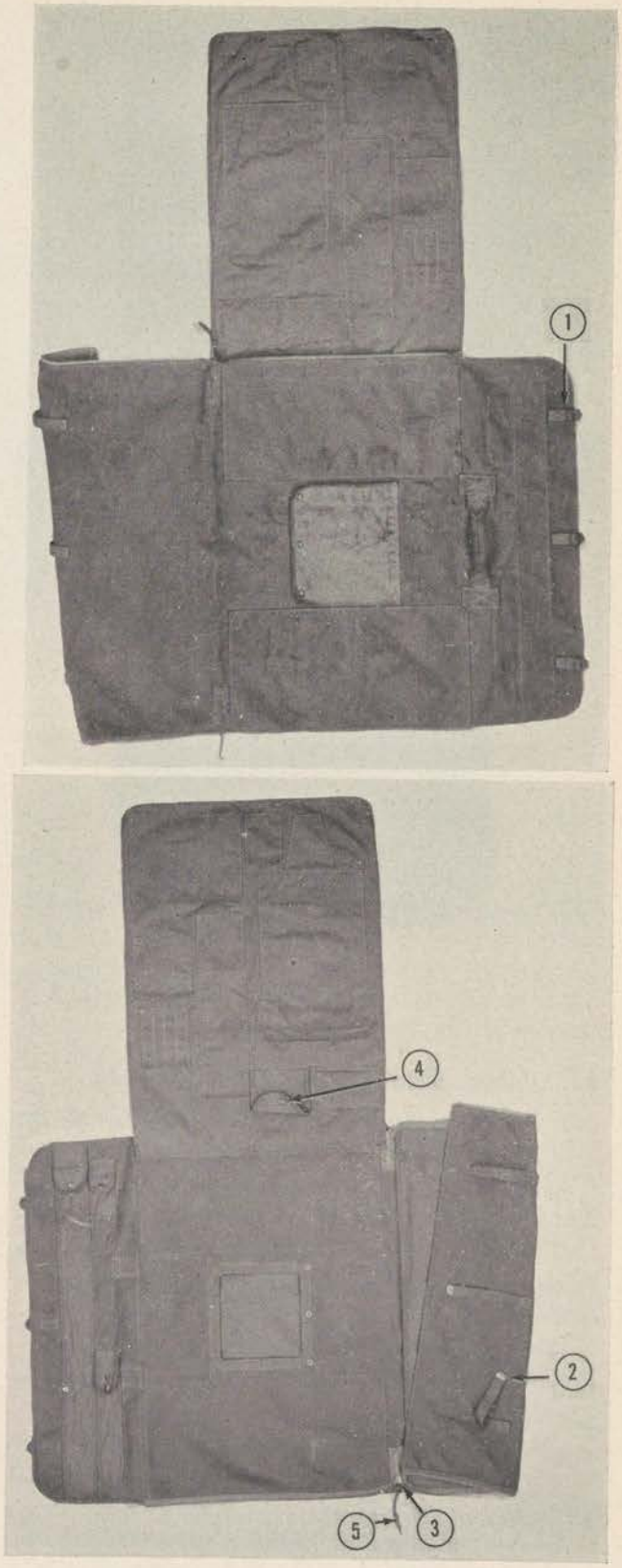


Figure 94. Case, carrying, drawing-board or plane table, 24 in. x 31 in., for field artillery.



Figure 95. Case, canvas, dispatch, M–1938.

67. Case, Canvas, Dispatch, M–1938

a. Stock Number. The stock number of the case is 24–C–535.

b. Specification. The specification is J. Q. D., No. 46A.

c. Inspection. (See fig. 95.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Fasteners, snap, style 1 ①.
2 D-rings, .7- by .38-inch ②.

Carrying strap

1 Loop, sliding, 2-inch, style 2.
1 Loop, strap, 2- by ¼-inch.
2 Snaps, 1-inch.

d. Repair. To patch the body, use No. 8 cotton duck; to patch the map case, use 8.25-ounce-per-square-yard cotton duck. For both weights of canvas, use No. 10–3 cotton thread, stitching eight stitches to the inch.

68. Case, Canvas, Map, Roll-Type

a. Stock Number. The stock number of the case is 24–C–539–20.

b. Specification. The specification is J. Q. D., No. 665.

c. Inspection. (See fig. 96.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, double-bar, tongueless, ⅝-inch ①.
1 Clip, end, ball-type, ⅝-inch.

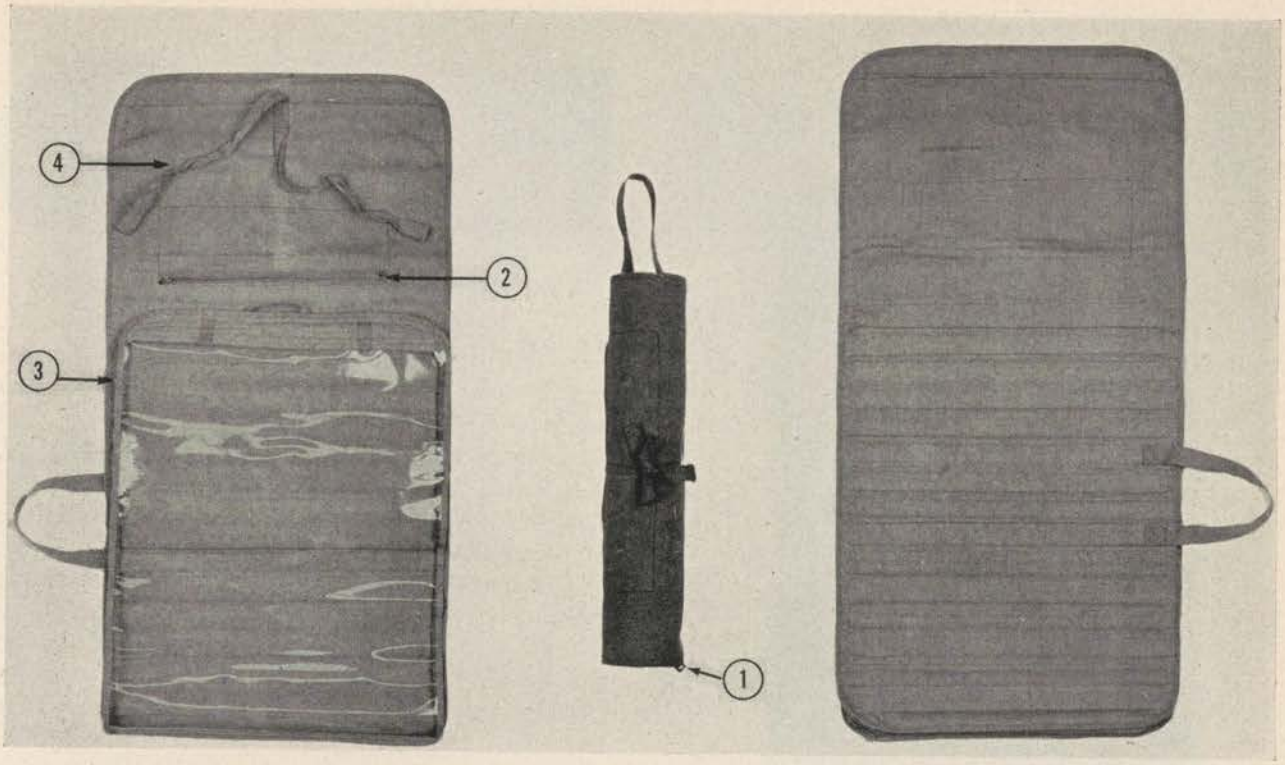


Figure 96. Case, canvas, map, roll-type.

1 Fastener, slide, 15½-foot-long ②.
1 Fastener, slide 7¼-foot-long ③.
1 Fastener, snap, style 2.

(3) *Tape.* See whether or not the following tape is damaged or missing:

1 Tape, tie, 29½-inch-long, ¾-inch lightweight cotton webbing ④.

d. Repair. (1) *Patching.* Use 8.25-ounce-per-square-yard cotton duck and No. 16 cotton thread, stitching eight stitches to the inch.

(2) *Replacing cellulose window.* Place the matte finish on the outside when the case is open; reinforce the edge with a strip of ¾-inch cellulose tape before stitching the window into place.

69. Case, Utility, Canvas, Empty

a. Stock Number. The stock number of the case is Medical Department Stock No. 9751500.

b. Specification. The specification is J. Q. D., No. 592.

c. Inspection. (See fig. 97.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Grommets, brass, No. 5, with toothed washers ①.

(3) *Drawstrings.* See whether or not the following drawstrings are damaged or missing:

2 Drawstrings, 50-inch-long, No. 8 (¼-inch-diameter) solid-braided cotton rope ②.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing drawstrings.* Bar-tack the ends of each drawstring to the top edge of the grommet reinforcement directly opposite it.

70. Case, Individual, Weapons, Parachutist's

a. Stock Number. The stock number of the case is 74–C–190.

b. Specification. The specification is J. Q. D., No. 648.

c. Inspection. (See fig. 98.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, slide, 45-inch-long, size 7 ①.
1 Snap, 1¾-inch ②.

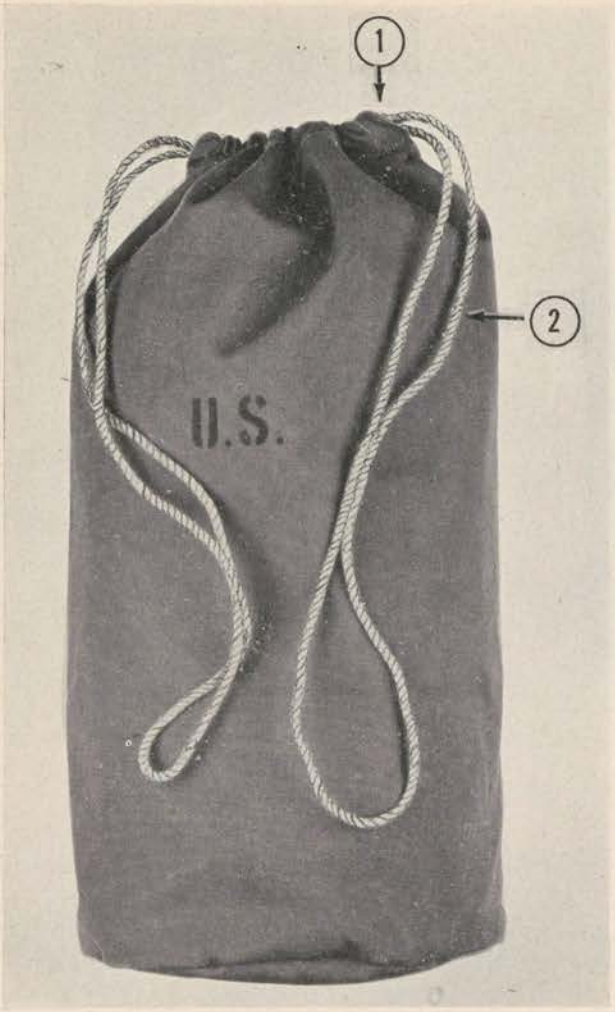


Figure 97. Case, utility, canvas, empty.

(3) *Thong.* See whether or not the following thong is damaged or missing:

1 Thong for slide fastener slider ③.

d. Repair. (1) *Patching.* Use No. 10 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Requilting.* Use No. 10–3 cotton thread, stitching five stitches to the inch.

(3) *Replacing 1¾-inch snap.* Stitch the chape and the snap to the rear body in the regular manner; then secure the back of the snap against the fabric by hand-stitching with five stitches of four strands of No. 10–5 cord, waxed, twisted, and well rewaxed. Pull the stitches taut and securely tie the ends on the inside of the case.

(4) *Replacing slide fastener thong.* Form a ⅜- by 20-inch thong from ¾-inch lightweight cotton webbing by folding along the center line and stitching the edges.

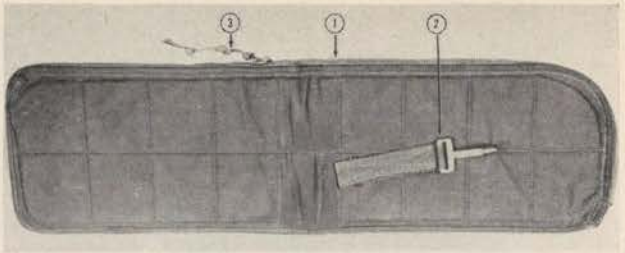


Figure 98. Case, individual, weapons, parachutist's.

71. Cot, Folding, Canvas

a. Stock Number. The stock number of the cot is 26–C–3033.

b. Specification. The specification is C. Q. D., No. 109C.

c. Inspection. See whether or not the fabric or the stitching (canvas cover only) is damaged.

d. Repair. When replacing a tacked-to-frame cover, convert the tacked-to-frame cover to a slip-on cover. Remove the staples and loosen the binding at each end of the worn sections, cutting away the edges of the cot cover that have been damaged by the removal of the staples. Add a wide enough strip of material to each edge to bring the cot cover to the required width, plus 4½ inches on each side for hemming. Top-stitch these strips into place and restitch the binding. If necessary seam a new strip of binding to the old to make it long enough to cover the new extension. Turn a 4½-inch hem on each side. Stitch each hem into place, using two rows of stitching ½ inch apart at the hem edge. (See fig. 59.)

72. Covers, Canteen, Dismounted, M–1910, and Mounted, M–1941

a. Stock Numbers. The stock numbers of the covers are—

No. 74–C–300 (Cover, canteen, dismounted, M–1910).

No. 74–C–304 (Cover, canteen, mounted, M–1941).

b. Specification. The specification is J. Q. D., No. 1F.

c. Inspection. (See figs. 99 and 100.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

Canteen cover (dismounted) (See fig. 99.)

2 Fasteners, snap, style 1 (fig. 99 ①).

1 Hook, double (fig. 99 ②).

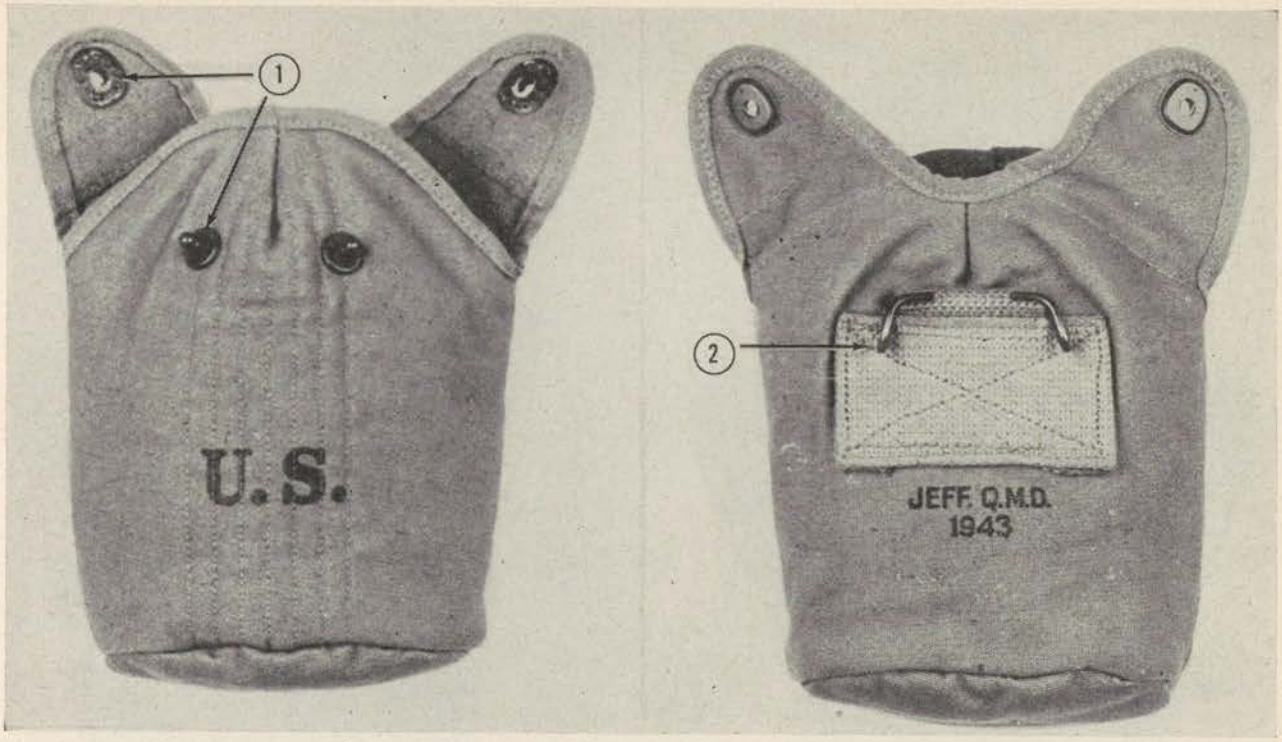


Figure 99. Cover, canteen, dismounted, M–1910.

Canteen cover (mounted) (See fig. 100.)
1 Buckle, double-bar, tongueless, 1-inch (fig. 100 ①).
1 Clip, end, ball-type, 1-inch (fig. 100 ②).
2 Eyelets, No. 4211, with washers, No. 4096 (fig. 100 ③).
2 Fasteners, snap, style 1 (fig. 100 ④).
1 Hook, double (fig. 100 ⑤).
2 Keepers, sliding, 1-inch (fig. 100 ⑥).
2 Rivets, tubular, 7/16-inch-long, with caps (fig. 100 ⑦).
1 Snap, German, 1-inch, with roller (fig. 100 ⑧).

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching seven stitches to the inch.

(2) *Replacing body lining.* Use 3/16-inch-thick felt and requilt, stitching with No. 24 cotton thread.

73. Cover, Pack, Field, White

a. Stock Number. The stock number of the cover is 74–C–310–10.

b. Specification. The specification is J. Q. D., No. 495.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:
2 Grommets, brass, No. 2, with toothed washers.

(3) *Strings.* See whether or not the following strings are damaged or missing:
2 Drawstrings, 12-foot-long, No. 2 seine twine.
1 Tiestring, 30-inch-long, No. 96 seine twine.

d. Repair. (1) *Patching.* Use 2.15-ounce-per-square-yard bleached cotton balloon cloth, waterproofed with a durable-type water-repellent, and No. 24 bleached cotton thread, stitching eight stitches to the inch.

(2) *Replacing tiestring.* Open the seam at the edge and insert the middle portion of a 30-inch tiestring, stitching under the seam approximately 2 inches of the center portion of the line to make two 14-inch tie ends.

(3) *Replacing drawstring.* Draw the 12-foot drawstring through the hem with a wire tape. Finish with an overhand knot at each end.

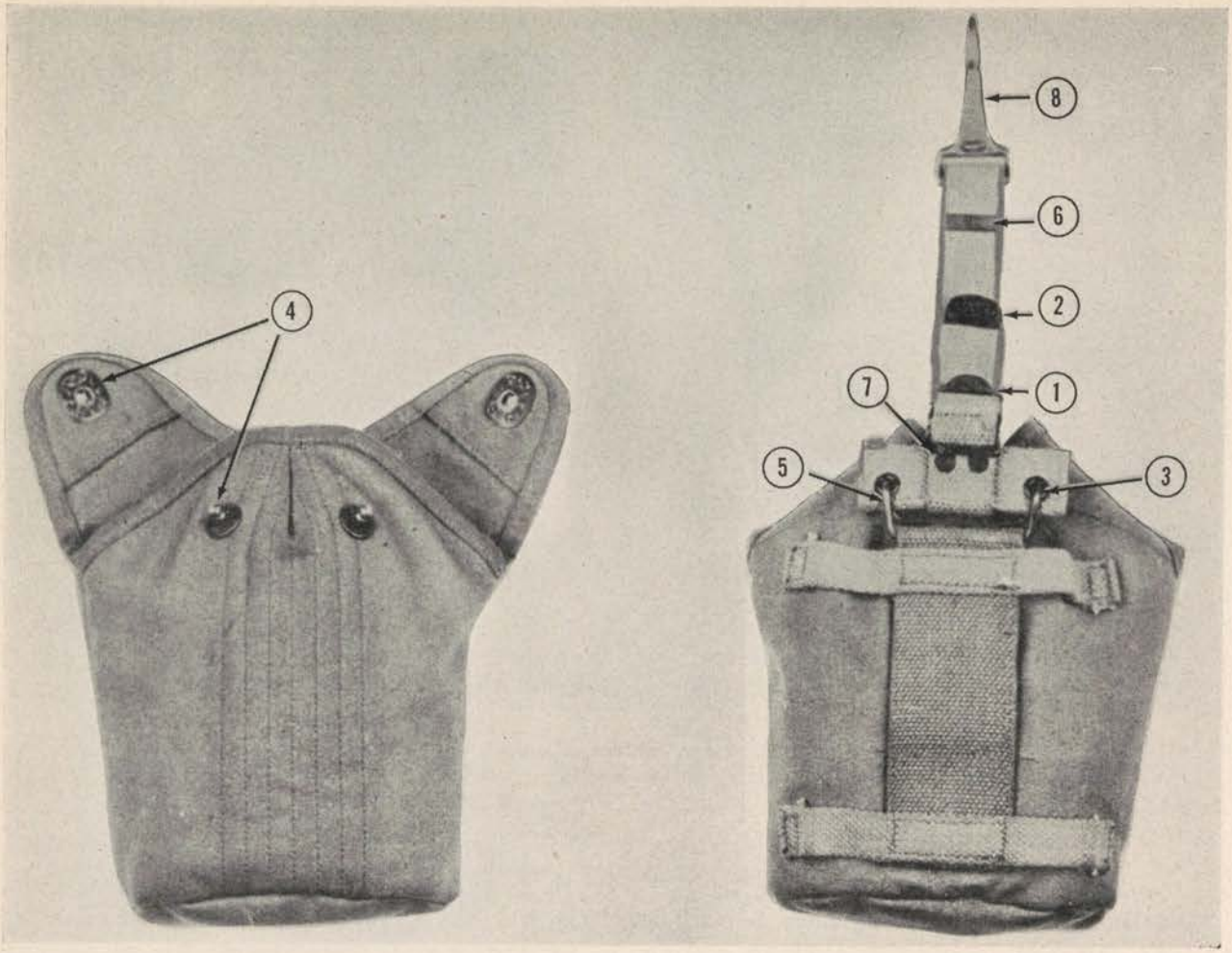


Figure 100. Cover, canteen, mounted, M–1941.

74. Gaiters, Ski

a. Stock Numbers. The stock numbers of the gaiters are—

No. 72–G–1004 (small).
No. 72–G–1002 (medium).
No. 72–G–1000 (large).

b. Specification. The specification is J. Q. D., No. 630.

c. Inspection. (See fig. 101.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, center-bar, satchel or skate, 5/8-inch, without roller ①.
5 Eyelets, hook-washer ②.
8 Eyelets, lacing ③.
5 Hooks ④.
4 Rivets, tubular, 5/16-inch-long, with caps ⑤.

(3) *Laces.* See whether or not the following laces are damaged or missing:

2 Laces, 28-inch-long.

d. Repair. (1) Replacing material. Use No. 6 cotton duck and four-ply No. 16 cotton thread, stitching eight stitches to the inch.

(2) *Replacing buckle chape and billet.* For the buckle chape, use a piece of 9/24-inch leather strapping, 5/8-inch wide and 9 inches long. For the billet, use a 16-inch piece of leather the same thickness and width as the buckle chape.

(3) *Replacing ankle guard.* Cut a piece of 9/64-inch leather, 2 3/8 inches wide and 4 inches long, for the ankle guard. Round one end of the piece and stitch to the side of the gaiter.

75. Hammock, Jungle, Complete

a. Stock Number. The stock number of the hammock is 74–H–60 for both the nylon and the

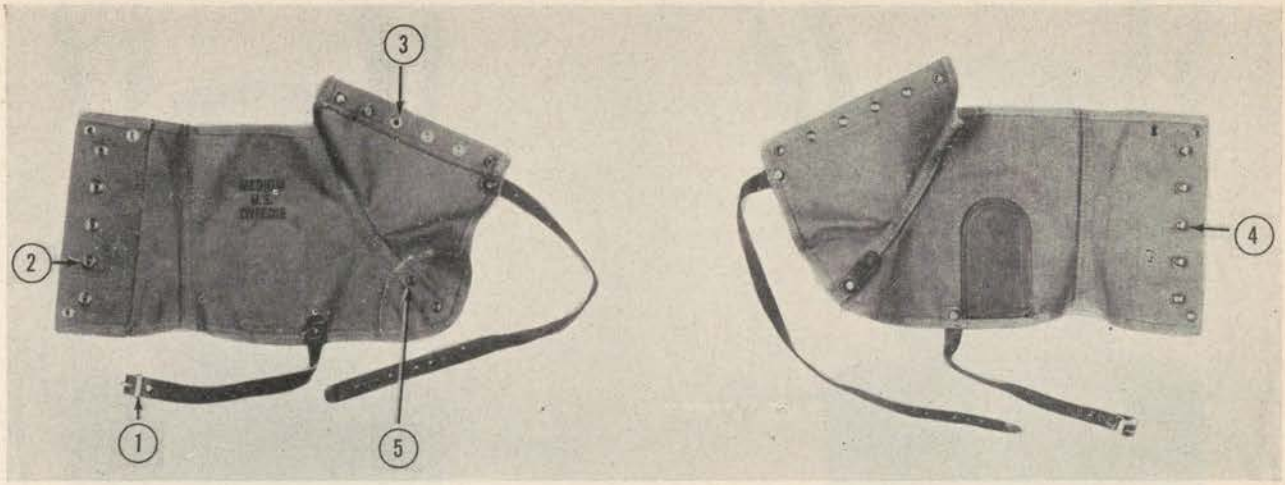


Figure 101. Gaiters, ski.

cotton hammock. (For illustration of the hammock, see FM 20–15.)

b. Specification. The specification is P. Q. D., No. 256E.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, slide, separating, heavy-locking, 50-inch-long.
2 Fasteners, snap, style 2.
20 Grommets, brass, No. 4, with toothed washers.
2 Rings, hammock, steel.

(3) *Lines.* See whether or not the following lines are damaged or missing:

Nylon hammock

10 Lines, bridle, twine, nylon, 72-inch-long, 1/16-inch-diameter.
2 Lines, canopy, elastic, nylon, braided, tubular, corded, 24-inch-long, 3/16-inch-diameter.
8 Lines, canopy, tie, twine, nylon, 24-inch-long, 1/16-inch-diameter.
2 Lines, tie, nylon, 14-foot-long, 7/32-inch-diameter.

Cotton hammock

10 Lines, bridle, 72-inch-long, No. 84 cotton seine twine.
2 Lines, canopy, elastic, cotton, braided, tubular, corded, 24-inch-long, 3/16-inch-diameter.
8 Lines, canopy, tie, 24-inch-long, No. 84 cotton seine twine.
2 Lines, tie, sisal, 14-foot-long, 3/8-inch-diameter.

d. Repair. (1) *Nylon hammock.* (*a*) *Patching.* For the canopy, use 4.1-ounce resin-coated cotton cloth. For the hammock bed under the canopy, use 3-ounce nylon oxford cloth.

(*b*) *Stitching.* Use nylon thread, with the smallest-diameter needle consistent with efficient operation, stitching 10 stitches to the inch.

(2) *Cotton hammock.* (*a*) *Patching.* To patch the bed of the hammock, use 9.85-ounce cotton duck. To reinforce the grommet hem, use No. 4 cotton duck.

(*b*) *Stitching.* For stitching the cotton duck bed, use No. 20–4 cotton thread. For all other operations, use No. 30–3 cotton thread.

76. Haversack, M–1928

a. Stock Number. The stock number of the haversack is 74–H–93.

b. Specification. The specification is No. 6–176B.

c. Inspection. (See fig. 102.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

5 Buckles, double-bar, tongueless, 5/8-inch ①.
6 Buckles, double-bar, tongueless, 1-inch ②.
5 Clips, end, 5/8-inch ③.
6 Clips, end, 1-inch ④.
2 Eyelets, No. 4211, and washers, No. 4096 ⑤.
4 Loops, strap, .7- by .26-inch ⑥.

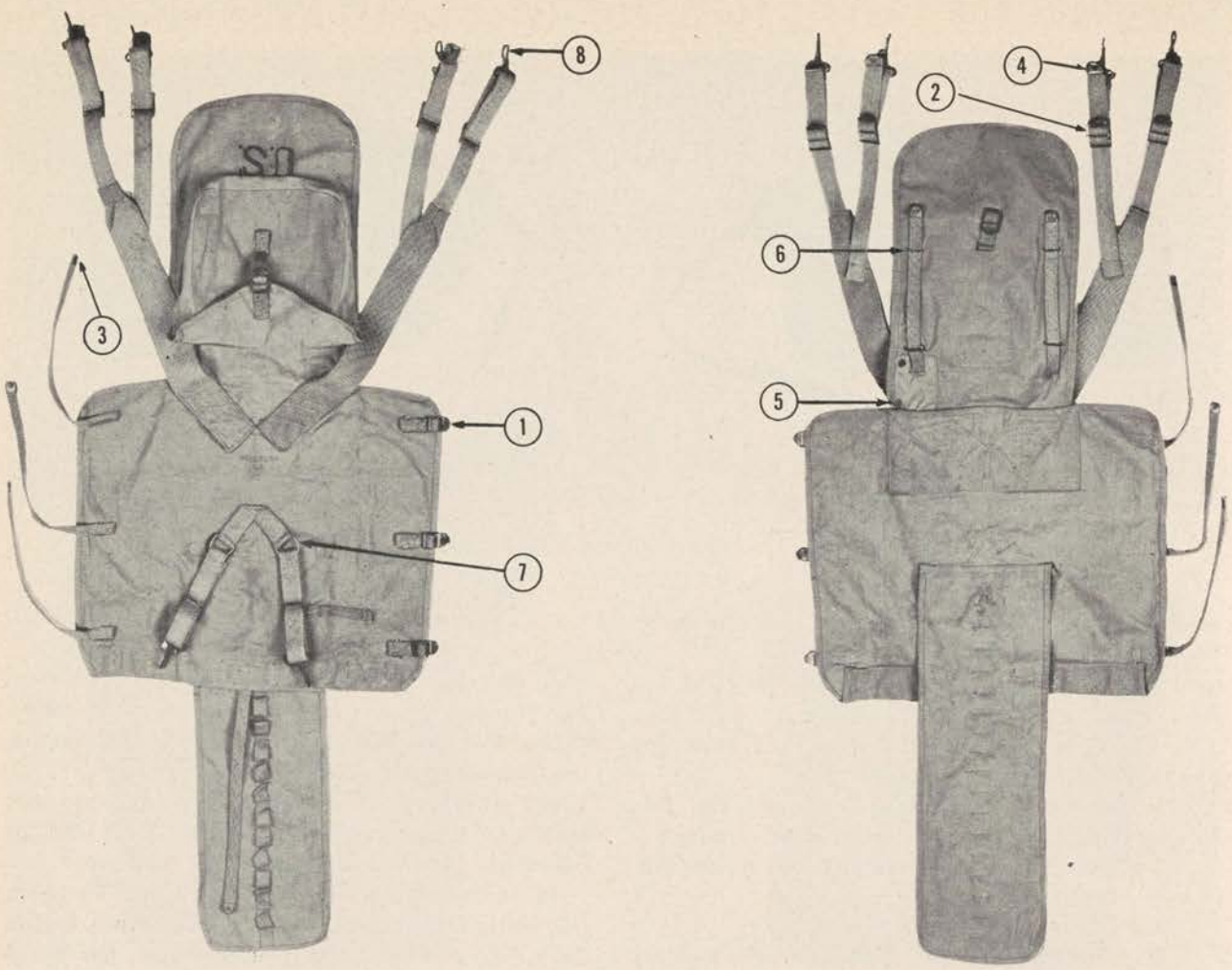


Figure 102. Haversack, M–1928.

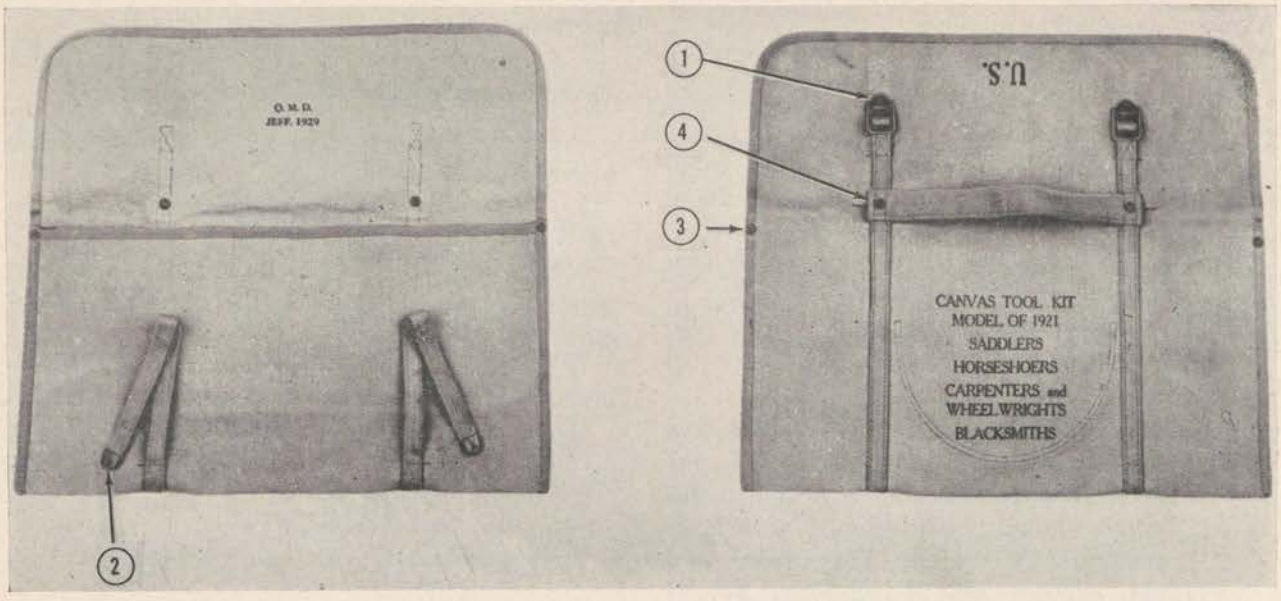


Figure 103. Kit, tool, canvas, M–1921 (empty).

2 D-rings, 1- by .75-inch ⑦.
1 Rivet, tubular, 5/16-inch-long.
6 Snaps, 1-inch ⑧.

77. Kit, Tool, Canvas, M–1921 (Empty)

a. Stock Number. The stock number of the kit is 41–K–140.

b. Specification. The specification is J. Q. D., No. 761.

c. Inspection. (See fig. 103.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, double-bar, tongueless, 5/8-inch ①.
2 Clips, end, ball-type, 5/8-inch ②.
2 Rivets, tubular, 3/16-inch-long, with caps ③.
2 Rivets, tubular, 5/16-inch-long, with caps ④.

78. Kit, Canvas, Utensils

a. Stock Number. The stock number of the kit is 64–K–441.

b. Specification. The specification is J. Q. D., No. 76C.

c. Inspection. (See fig. 104.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Tapes.* See whether or not the following tapes are damaged or missing:

2 Tapes, tie, 12-inch-long, 3/4-inch lightweight cotton webbing ①.

d. Repair. (1) *Patching.* Use No. 4 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Stitching leather scabbards.* When restitching leather scabbards, for cleaver, butcher knife, and paring knife, stitch seven stitches to the inch.

79. Leggings, Canvas

a. Stock Numbers. The stock numbers of the leggings are—

Type I

72–L–61920 (Leggings, canvas, M–1938, dismounted, od–7, No. 1).
72–L–61923 (Leggings, canvas, M–1938, dismounted, od–7, No. 2).
72–L–61926 (Leggings, canvas, M–1938, dismounted, od–7, No. 3).

Type II

72–L–62305 (Leggings, canvas, women's, No. 1).
72–L–62310 (Leggings, canvas, women's, No. 2).
72–L–62315 (Leggings, canvas, women's, No. 3).

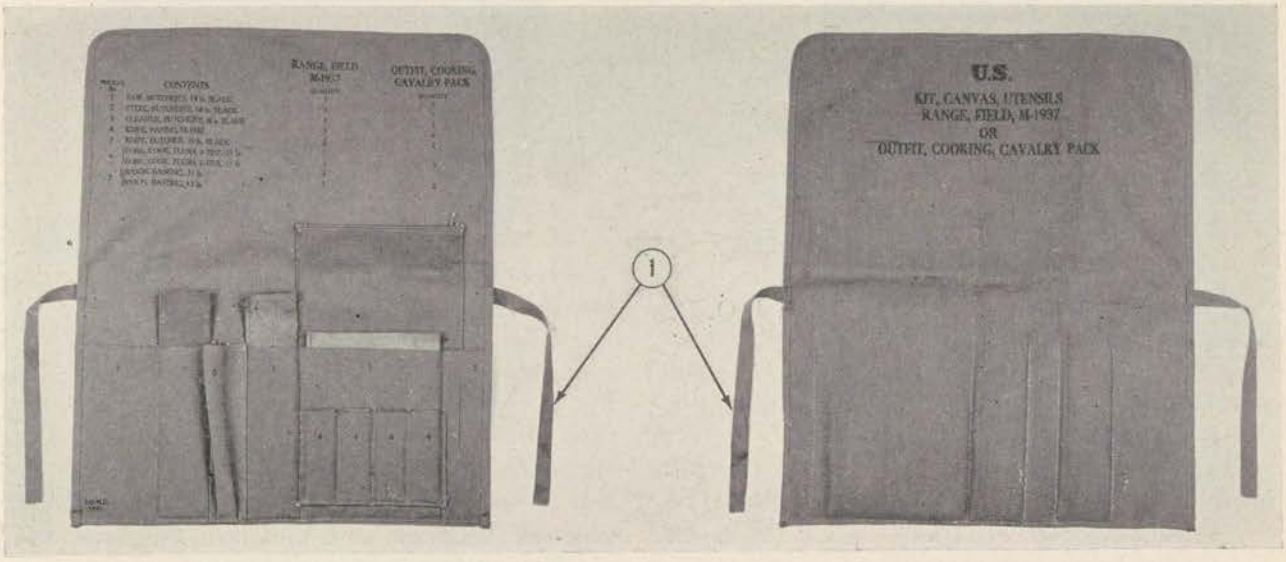


Figure 104. Kit, canvas, utensils.

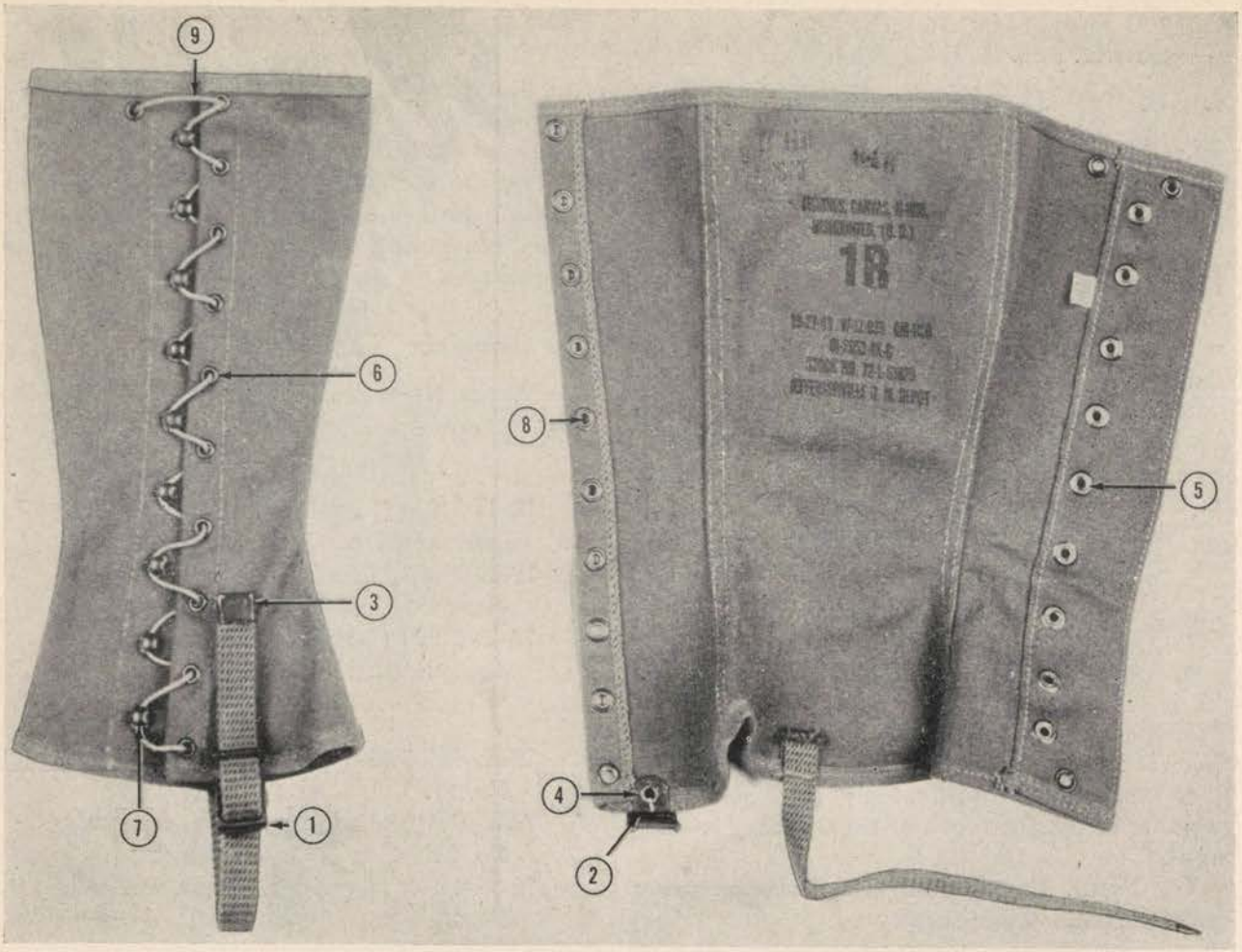


Figure 105. Leggings, canvas.

Type III

72–L–62130 (Leggings, canvas, M–1938, dismounted, white, No. 1).
72–L–62133 (Leggings, canvas, M–1938, dismounted, white, No. 2).
72–L–62136 (Leggings, canvas, M–1938, dismounted, white, No. 3).

b. Specification. The specification is J. Q. D., No. 212G.

c. Inspection. (See fig. 105.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, strap, web ①.
1 Clip, buckle, attaching ②.
1 Clip, end, ball-type, 5/8-inch ③.
1 Eyelet, clip ④.
9 Eyelets, hook-washer ⑤.
13 Eyelets, lacing ⑥.
9 Hooks ⑦.
13 Washers, eyelet, lacing ⑧.

(3) *Lace.* See whether or not the following lace is damaged or missing:

1 Lace, legging, 30-inch-long ⑨.

d. Repair. (1) *Patching near top only.* Use No. 6 cotton duck, olive-drab for type I and type II leggings and bleached for type III. Do all stitching except bar tacking with four-ply No. 16 cotton thread, olive-drab for type I and type II leggings and bleached for type III, stitching eight stitches to the inch.

(2) *Replacing laces.* Insert two 30-inch laces through the two buckles of the pair of leggings and securely tie. Use olive-drab lacings for type I and type II leggings and bleached lacings for type III.

(3) *Replacing foot straps.* Use .9-ounce-per-linear-yard 5/8-inch cotton webbing, 10½ inches long for men's leggings and 9 inches long for women's leggings. Use olive-drab webbing for type I and type II leggings and bleached webbing for type III.

(4) *Replacing binding.* Use ¾-inch lightweight cotton webbing, olive-drab for type I and type II leggings and bleached for type III.

80. Pack, Field

a. Stock Number. The stock number of the field pack is 74–P–12.

b. Specification. The specification is J. Q. D., No. 319A.

c. Inspection. (See fig. 106.) (1) *Fabric.* See



Figure 106. Pack, field.

whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

6 Buckles, double-bar, tongueless, ⅝-inch ①.
2 Buckles, double-bar, tongueless, 1-inch ②.
4 Buckles, end, 1-inch ③.
4 Clips, end, ball-type, ⅝-inch ④.
2 Clips, end, ball-type, 1-inch ⑤.
4 Eyelets, No. 4094, and washers, No. 4096 ⑥.
8 Eyelets, No. 4133, and washers, No. 4096 ⑦.
1 Fastener, slide, interlocking, 11-inch-long ⑧.
10 Grommets, brass, No. 2, with toothed washers (under cover).
4 D-rings, .7- by .38-inch ⑨.
4 Rivets, tubular, 4/16-inch-long, with caps ⑩.
6 Snaps, 1-inch ⑪.

(3) *Drawstring.* See whether or not the following drawstring is damaged or missing:

1 Drawstring, 60-inch-long, No. 4 solid-braided cotton rope.

d. Repair. (1) *Patching.* For the bottom of the pack, use 12.29-ounce-per-square-yard cotton

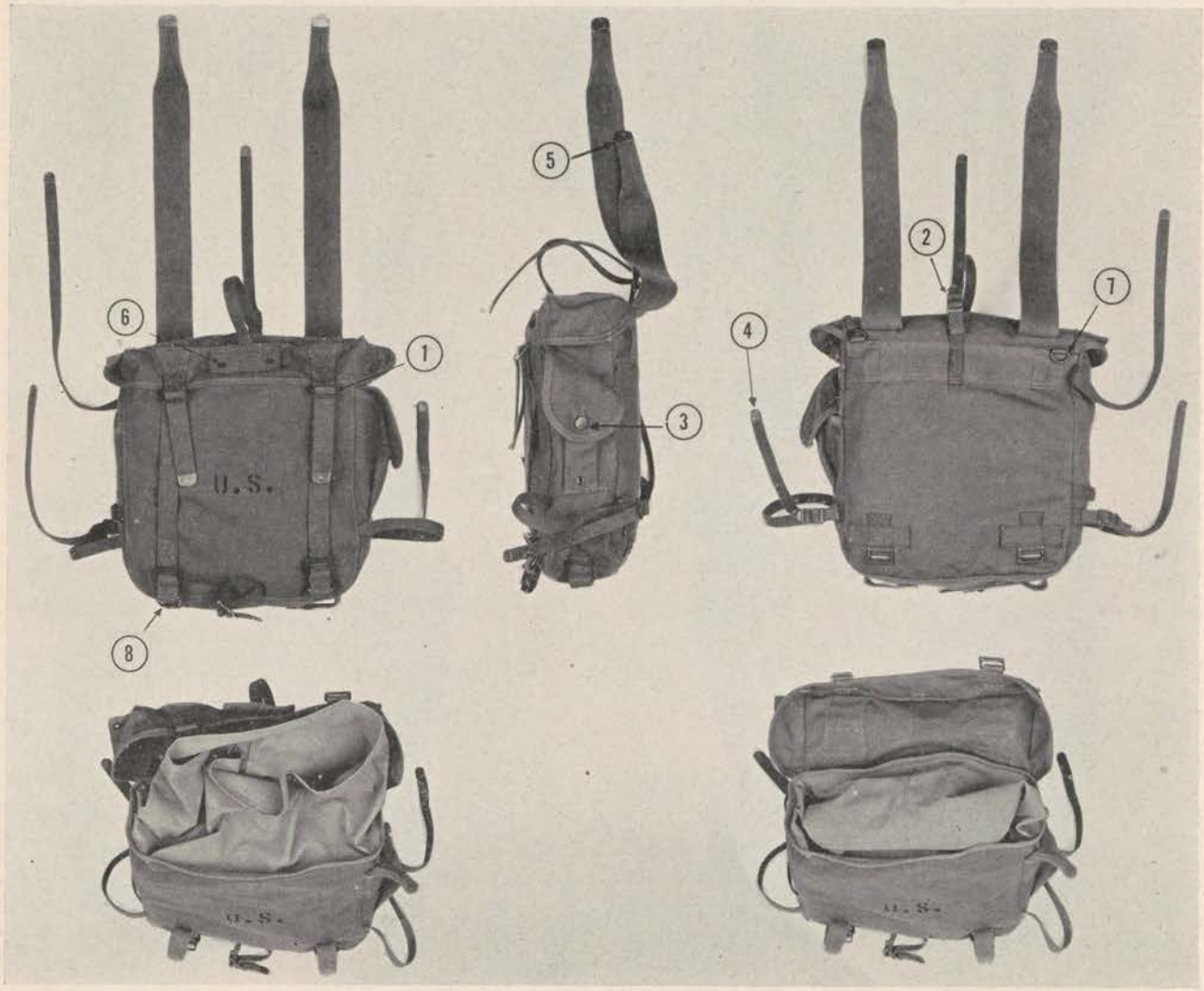


Figure 107. Pack, field, combat, M–1945.

duck and four-ply No. 12 cotton thread, stitching eight stitches to the inch. For the rest of the pack, use 9.85-ounce-per-square-yard cotton duck.

(2) *Riveting.* Insert rivets by driving them through the material without previously punching holes.

(3) *Replacing end buckles.* Use eyelets No. 4133 and washers No. 4096 to rivet the end-buckle clips to the webbing.

81. Pack, Field, Cargo-and-Combat, M–1945

a. Stock Numbers. The stock numbers of the pack are—

No. 74–P–12–287 (Pack, field, combat, M–1945).

No. 74–P–12–252 (Pack, field, cargo, M–1945).

No. 74–S–392–300 (Suspenders, pack, field, cargo-and-combat).

b. Specification. The specification is J. Q. D., No. 650A.

c. Inspection. (See figs. 107, 108, and 109.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

Combat pack (See fig. 107.)

6 Buckles, bar, tongueless, 1-inch ①.
5 Buckles, double-bar, tongueless, 5/8-inch ②.
1 Button, tack ③.

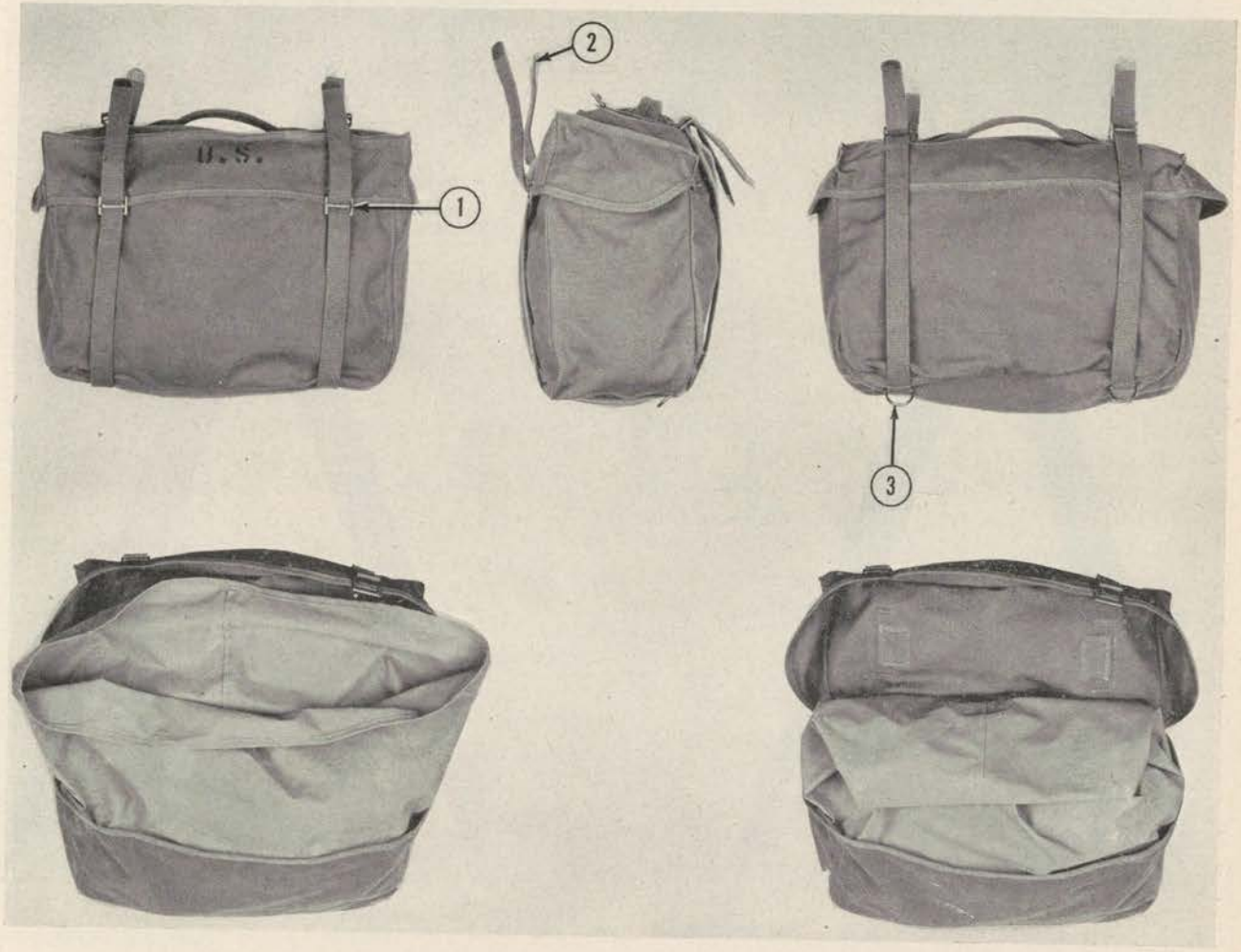


Figure 108. Pack, field, cargo, M–1945.

5 Clips, end, ball-type, 5/8-inch ④.
4 Clips, end, ball-type, 1-inch ⑤.
5 Eyelets, No. 4094, and washers, No. 4096 ⑥.
2 D-rings, .7- by .38-inch ⑦.
2 D-rings, 1- by .75-inch ⑧.

Cargo pack (See fig. 108.)
6 Buckles, bar, tongueless, 1-inch ①.
4 Clips, end, ball-type, 1-inch ②.
2 D-rings, 1- by .75-inch ③.

Cargo-and-combat suspenders (See fig. 109.)
6 Buckles, double-bar, tongueless, 1-inch ①.
6 Clips, end, ball-type, 1-inch ②.
2 Loops, slide, 2-inch ③.
6 Snaps, 1-inch ④.

d. Repairs. (1) *Patching.* Use 8.25-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Repairing suspenders.* See paragraph 26.

82. Packboard, Plywood

a. Stock Number. The stock number of the packboard is 74–P–27–20.

b. Specification. The specification is J. Q. D., No. 1004A.

c. Inspection (Canvas Cover Only). (See

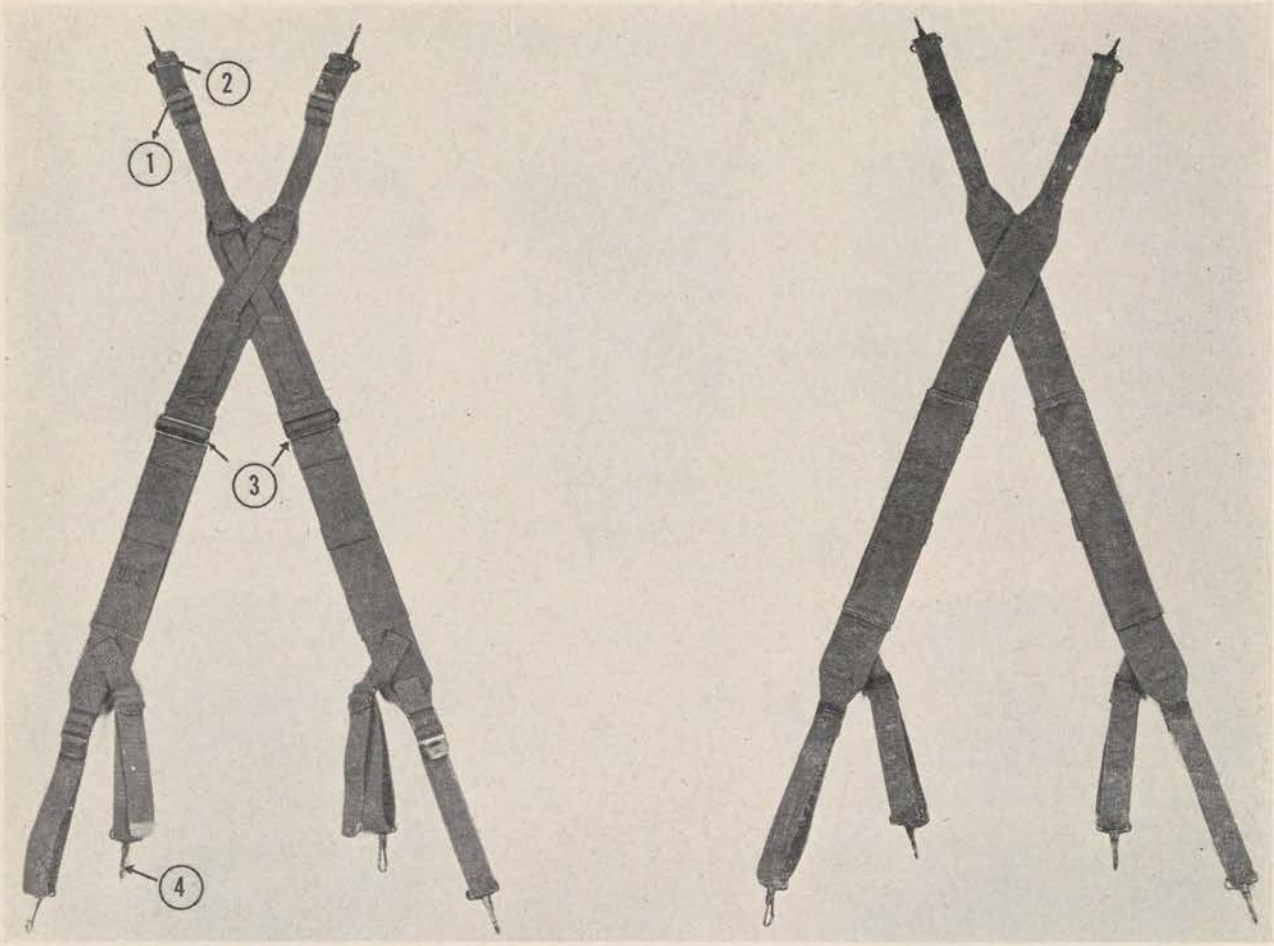


Figure 109. Suspenders, pack, field, cargo-and-combat.

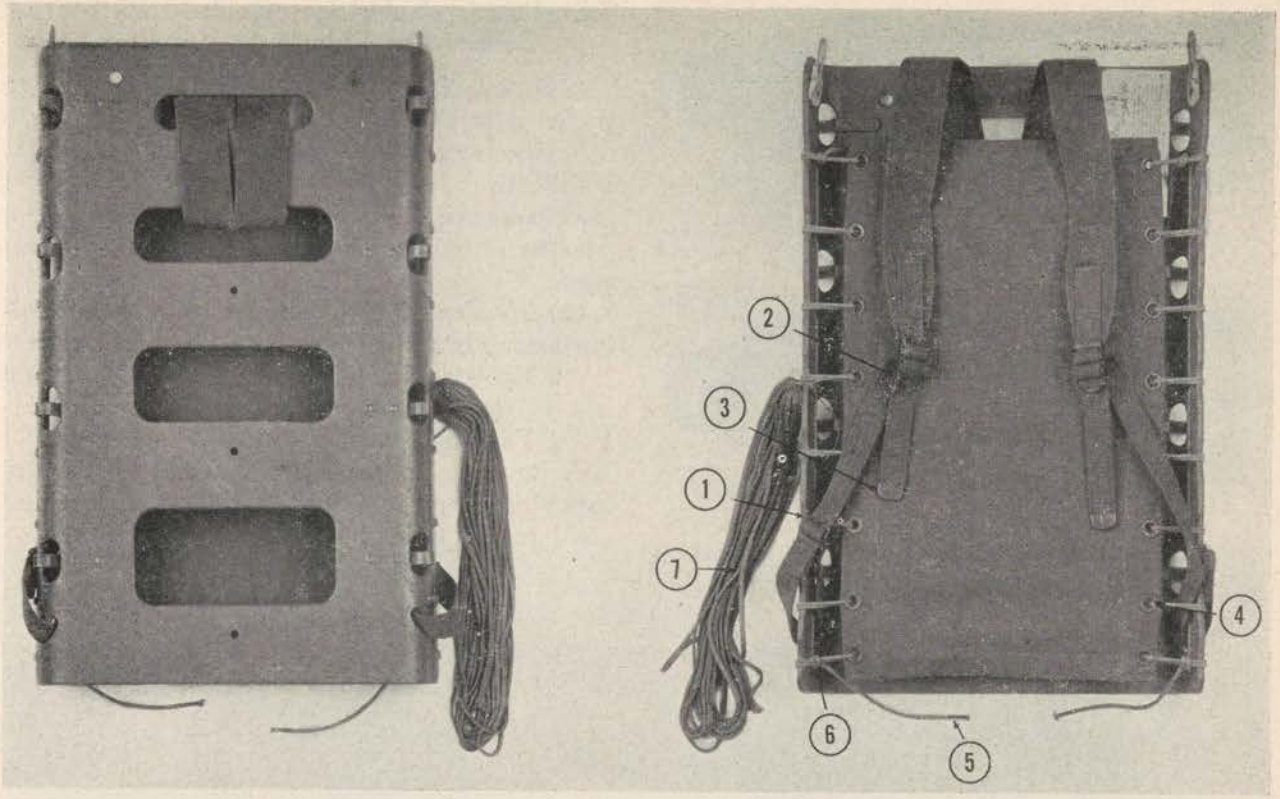


Figure 110. Packboard, plywood.

fig. 110.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, bar, tongueless, 1-inch ①.
2 Buckles, double-bar, tongueless, 1-inch ②.
2 Clips, end, ball-type, 1-inch ③.
16 Grommets, rolled-rim-spur-type, No. 0, with washers ④.
4 Tips, rope ⑤.

(3) *Lines.* See whether or not the following lines are damaged or missing:

2 Lines, lacing, 76-inch-long, No. 4 (⅛-inch-diameter) solid-braided cotton rope ⑥.
1 Line, lashing, 30-inch-long, No. 6 (3/16-inch-diameter) solid-braided cotton rope ⑦.

d. Repair. (1) *Patching.* Use No. 6 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Refinishing line ends.* Use metal rope tips on the 2 lacing line ends and whipping on each end of the lashing line.

(3) *Replacing shoulder strap.* Take a single piece of 2-inch heavyweight cotton webbing, cut 48 inches long, and shape the ends to take 1-inch buckle chapes (see par. 22*e*). Using 1-inch heavyweight cotton webbing as chape material, attach the buckles, one at each end. To make a strap for each shoulder, fold the single strap at the midpoint to form a V, with a 32° angle between the sides. Using the overlapped portion at the bottom of the V as the sewing area, stitch the strap into place.

83. Pad, Shoulder

a. Stock Number. The stock number of the pad is 74–P–58.

b. Specification. The specification is J. Q. D., No. 612.

c. Inspection. (See fig. 111.) See whether or not the fabric or the stitching is damaged.

d. Repair. (1) *Replacing fabric.* Use 8.25-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing felt pad.* Use a piece of 3/16-inch felt 3 inches wide and 11¾ inches long.

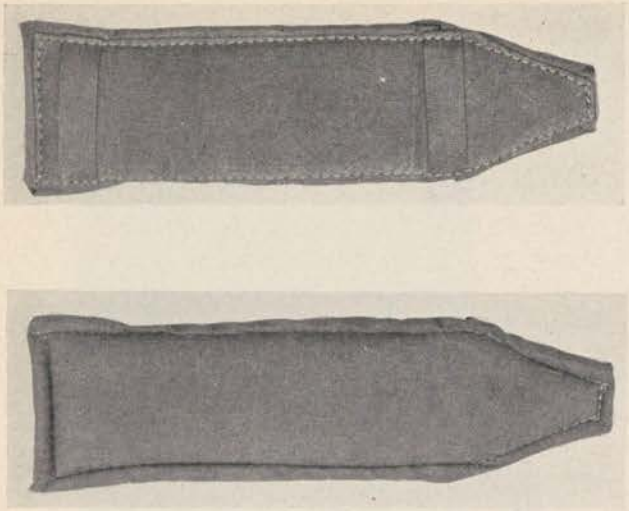


Figure 111. Pad, shoulder.

84. Pocket, Cartridge, Caliber .30 M–1, Carbine or Rifle

a. Stock Number. The stock number of the pocket is 74–P–142–35.

b. Specification. The specification is J. Q. D., No. 314B.

c. Inspection. (See fig. 112.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Eyelets, No. 4094, with washers, No. 4096 (on some models).

1 Fastener, snap, style 1 ①.

d. Repair. To patch the pocket, use No. 10 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

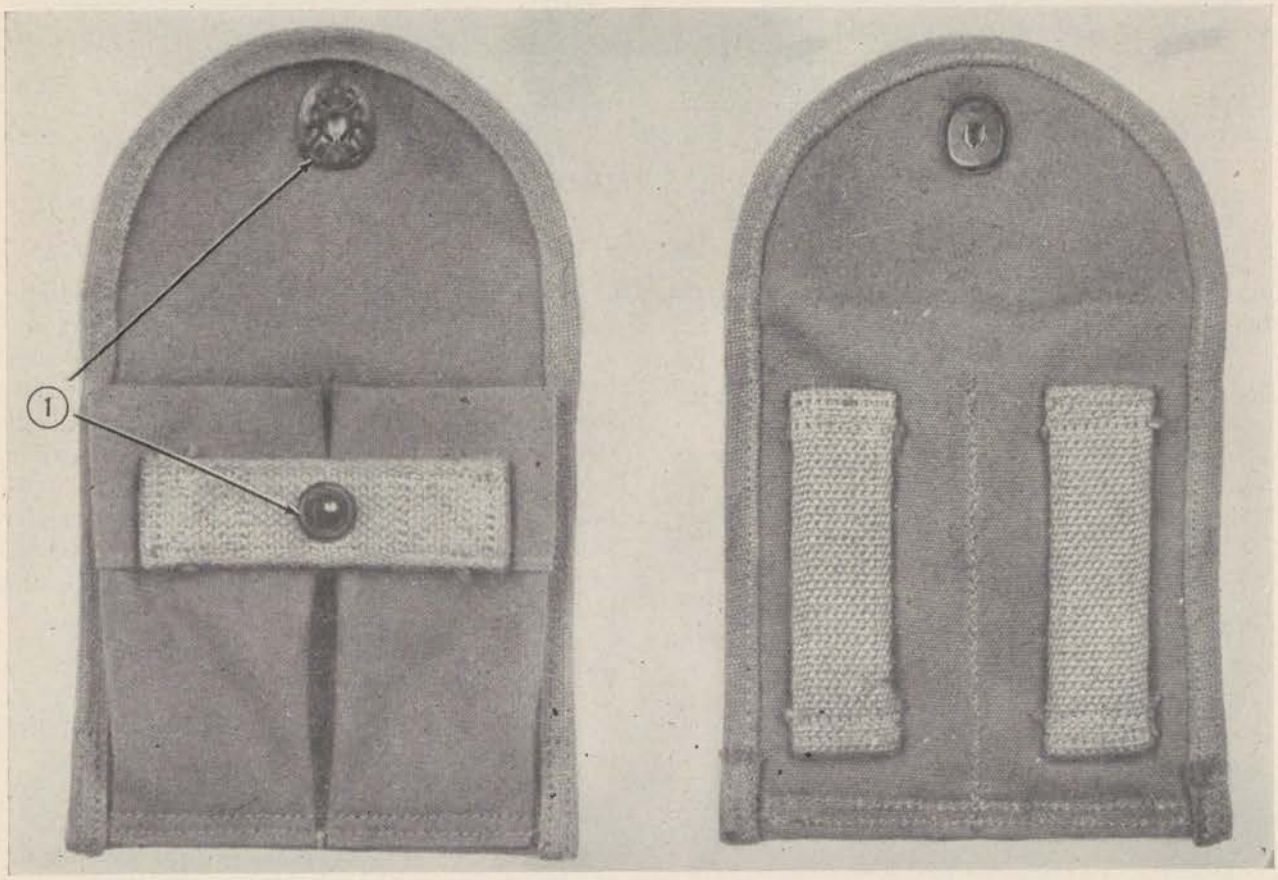


Figure 112. Pocket, cartridge, caliber .30 M–1, carbine or rifle.

85. Pocket, Magazine, Double Web, Enlisted Men, M–1923

a. Stock Number. The stock number of the pocket is 74–P–168.

b. Specification. The specification is No. 6–182B.

c. Inspection. (See fig. 113.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, snap, style 1 ①.
1 Fastener, snap, style 2 (socket only) ②.
1 Support, fastener ③.

86. Pocket, Magazine, Double Web, Carbine, Caliber .30 M–1

a. Stock Number. The stock number of the pocket is 74–P–143–60.

b. Specification. The specification is J. Q. D., No. 98A.

c. Inspection. (See fig. 114.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, snap, style 1 ①.
1 Fastener, snap, style 2 (socket only) ②.
1 Support, fastener ③.

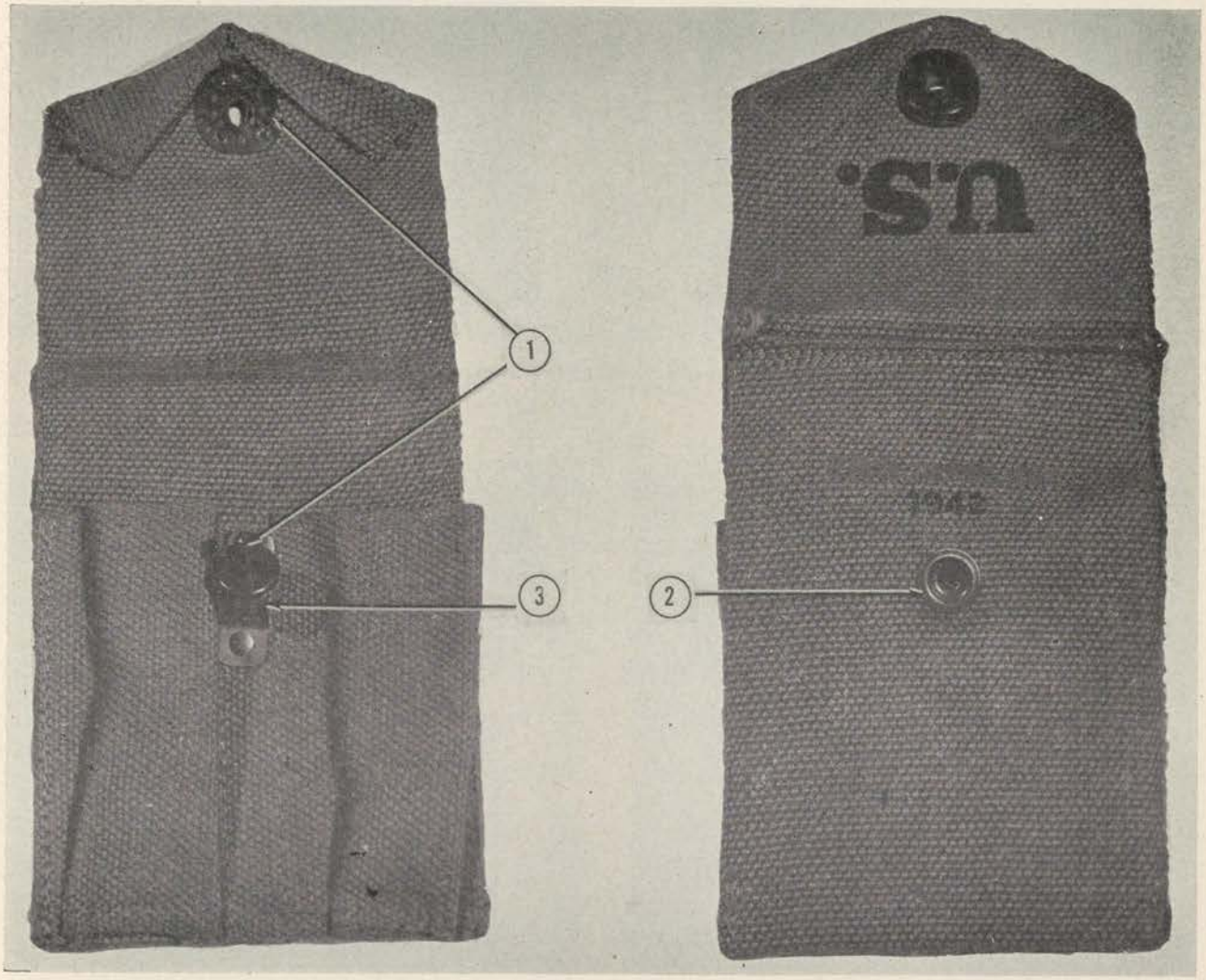


Figure 113. Pocket, magazine, double web, enlisted men, M–1923.



Figure 114. Pocket, magazine, double web, carbine, caliber .30 M–1.

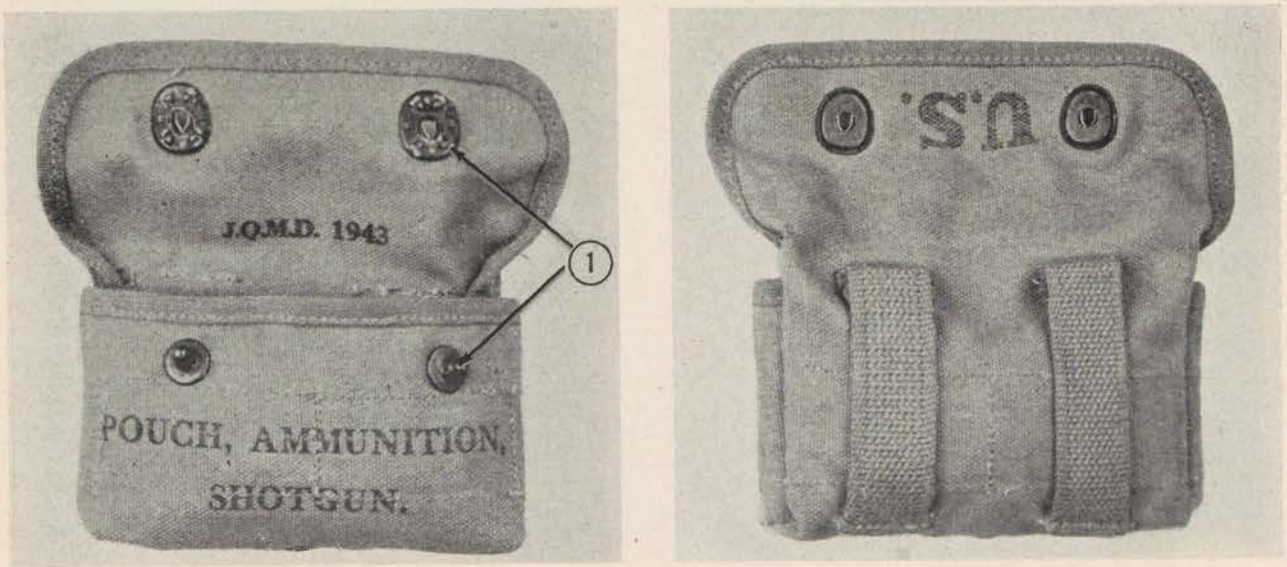


Figure 115. Pouch, ammunition, shotgun.

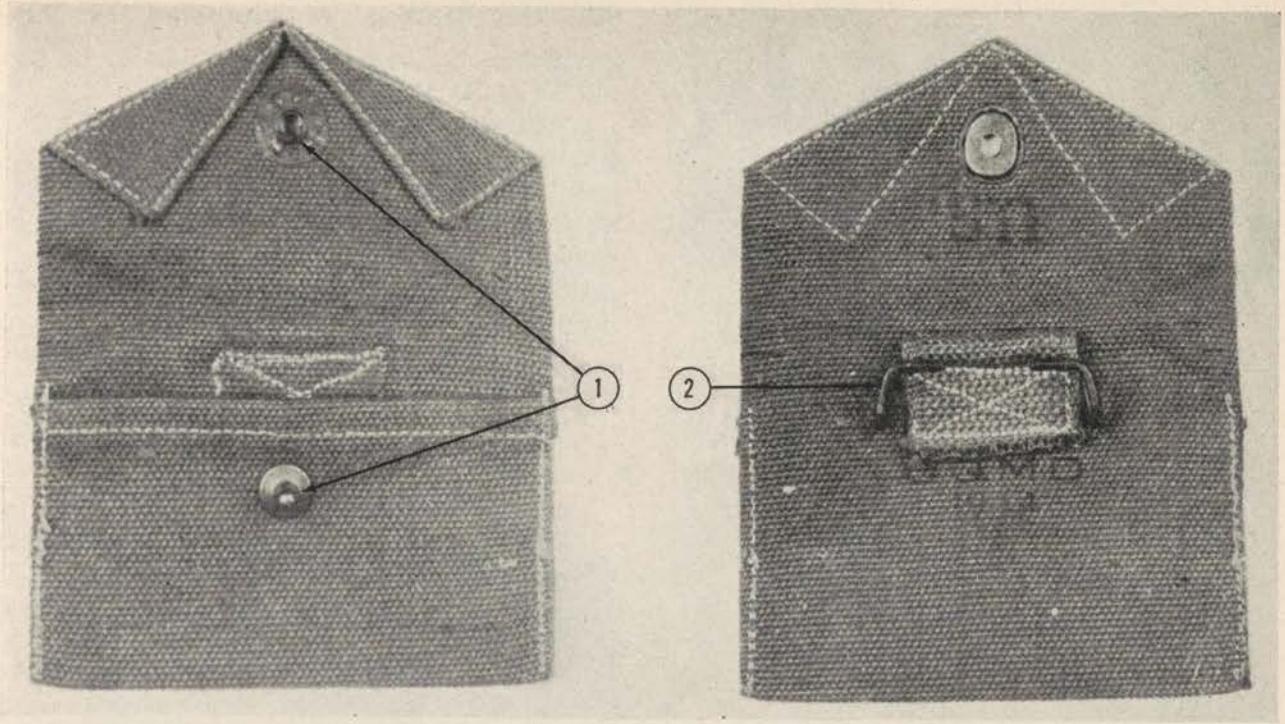


Figure 116. Pouch, first-aid-packet, M–1942.

87. Pouch, Ammunition, Shotgun

a. Stock Number. The stock number of the pouch is 74–P–240.

b. Specification. The specification is No. 6–183A.

c. Inspection. (See fig. 115.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Fasteners, snap, style 1 ①.

88. Pouch, First-Aid-Packet, M–1942

a. Stock Number. The stock number of the pouch is 74–P–260.

b. Specification. The specification is J. Q. D., No. 274.

c. Inspection. (See fig. 116.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, snap, style 1 ①.

1 Hook, double ②.

d. Repair. (1) *Patching material.* For the body, use 5⅝-inch mediumweight cotton webbing; for the hanger, use 2-inch mediumweight cotton webbing.

(2) *Thread and stitching.* Use No. 10–3 cotton thread, stitching eight stitches to the inch.

89. Pouch, Medical, Parachutist

a. Stock Number. The stock number of the pouch is 74–P–284.

b. Specification. The specification is J. Q. D., No. 537.

c. Inspection. (See fig. 117.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

4 Buckles, double-bar, tongueless, 1-inch ①.

4 Clips, end, ball-type, 1-inch ②.

2 Clips, end, ball-type, 1½-inch ③.

2 Loops, slide, 1¾-inch ④.

2 D-rings, 1- by .75-inch ⑤.

2 Snaps, 1⅛-inch ⑥.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing shoulder straps.* Use 2 pieces of extra heavy 1¾-inch cotton webbing, each cut 64 inches long.



Figure 117. Pouch, medical, parachutist.

90. Roll, Bedding, Waterproofed, M–1935

a. Stock Number. The stock number of the roll is 24–R–110.

b. Specification. The specification is J. Q. D., No. 669.

c. Inspection. (See fig. 118.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

8 Buckles, double-bar, tongueless, 1-inch ①.
3 Buckles, double-bar, tongueless, 1½-inch ②.
8 Clips, end, ball-type, 1-inch ③.
3 Clips, end, ball-type, 1½-inch ④.
12 Rivets, tubular, 7/16-inch-long, with caps ⑤.

(3) *Straps.* See whether or not the following straps are damaged or missing:

3 Straps, outside, 8⅛-foot-long, 1½-inch heavyweight cotton webbing ⑥.

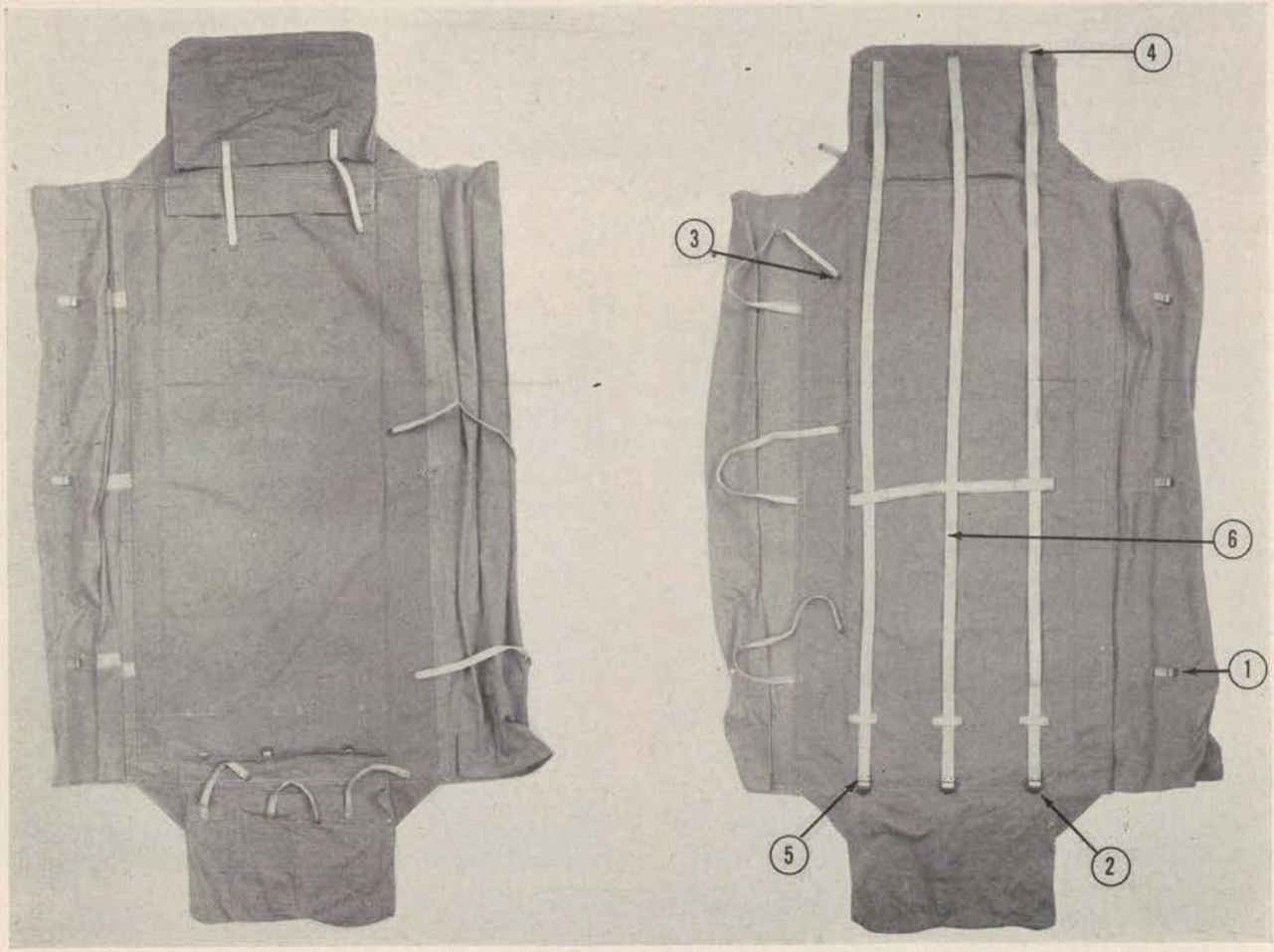


Figure 118. Roll, bedding, waterproofed, M–1935.

d. Repair. (1) *Patching.* Use No. 6 cotton duck for the body and 11.6-ounce cotton twill for the flaps. Attach patches with No. 10–3 cotton thread, stitching eight stitches to the inch.

(2) *Replacing an outer strap buckle.* Reeve 4 inches of webbing through the buckle and turn the inserted piece back on the main part of the strap, with the end turned under approximately 2 inches. Secure the buckle to the webbing with four 7/16-inch tubular rivets, placed one at each corner of the chape area, 3/8 inch from the edge. Drive the rivets through the webbing without previously punching holes and finish by clinching the rivets to the caps.

91. Roll, Canvas, Commissary (Empty)

a. Stock Number. The stock number of the roll is 64–R–554.

b. Specification. The specification is J. Q. D., No. 67C.

c. Inspection. (See fig. 119.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, web-strap, 1½-inch, style 1 ①.
1 Clip, end, ball-type, 1-inch ②.
2 Clips, end, ball-type, 1½-inch ③.
6 Fasteners, snap, style 1 ④.

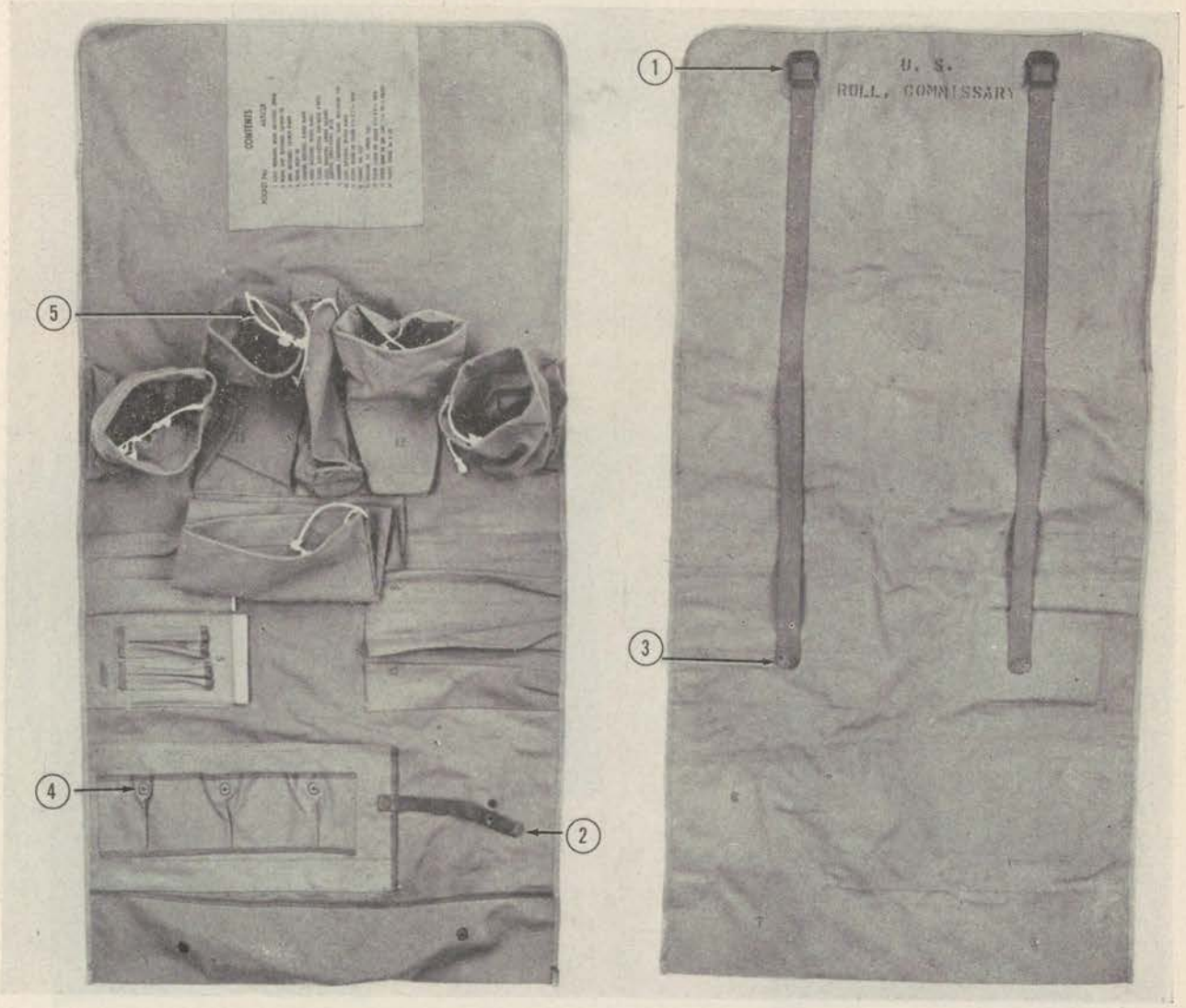


Figure 119. Roll, canvas, commissary (empty).

(3) *Drawstrings.* See whether or not the following drawstrings are damaged or missing:

6 Drawstrings, No. 96 natural-color seine twine ⑤.

d. Repair. To patch the roll, use No. 4 cotton duck for the cover and No. 8 cotton duck for the pockets and the pouches. Use No. 10–3 cotton thread, stitching eight stitches to the inch.

92. Roll, Cutlery, Canvas

a. Stock Number. The stock number of the roll is 64–R–800.

b. Specification. The specification is J. Q. D., No. 400A.

c. Inspection. (See fig. 120.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Tape.* See whether or not the following tape is damaged or missing:

1 Tape, tie, 36-inch-long, ¾-inch lightweight cotton webbing ①.

d. Repair. To patch the roll, use No. 8 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

93. Rolls, Outfit, Butchers', Abattoir

a. Stock numbers. The stock numbers of the rolls are—

Type I—64–R–1615 (Roll, outfit, butchers', abattoir, knives, steak, scimitar and steels, 10″ blade).

Type II—64–R–1605 (Roll, outfit, butchers', abattoir, knives, butchers', 8″ blade).

Type III—64–R–1600 (Roll, outfit, butchers', abattoir, knives, boning, 5″ blade).

Type IV—64–R–1610 (Roll, outfit, butchers', abattoir, knives, skinning, 5″ blade).

b. Specification. The specification is J. Q. D., No. 257A.

c. Inspection. (See fig. 121.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Grommets, brass, No. 2, with toothed washers (fig. 121 ①).

(3) *Tape.* See whether or not the following tape is damaged or missing:

1 Tape, tie, ¾-inch lightweight cotton webbing, cut the following lengths:

For type I roll—50 inches.

For type II roll—36 inches (fig. 121 ②).

For type III roll—44 inches.

For type IV roll—40 inches.

d. Repair. To patch the rolls, use No. 4 cotton duck and No. 10–3 cotton thread, stitching eight stitches to the inch.

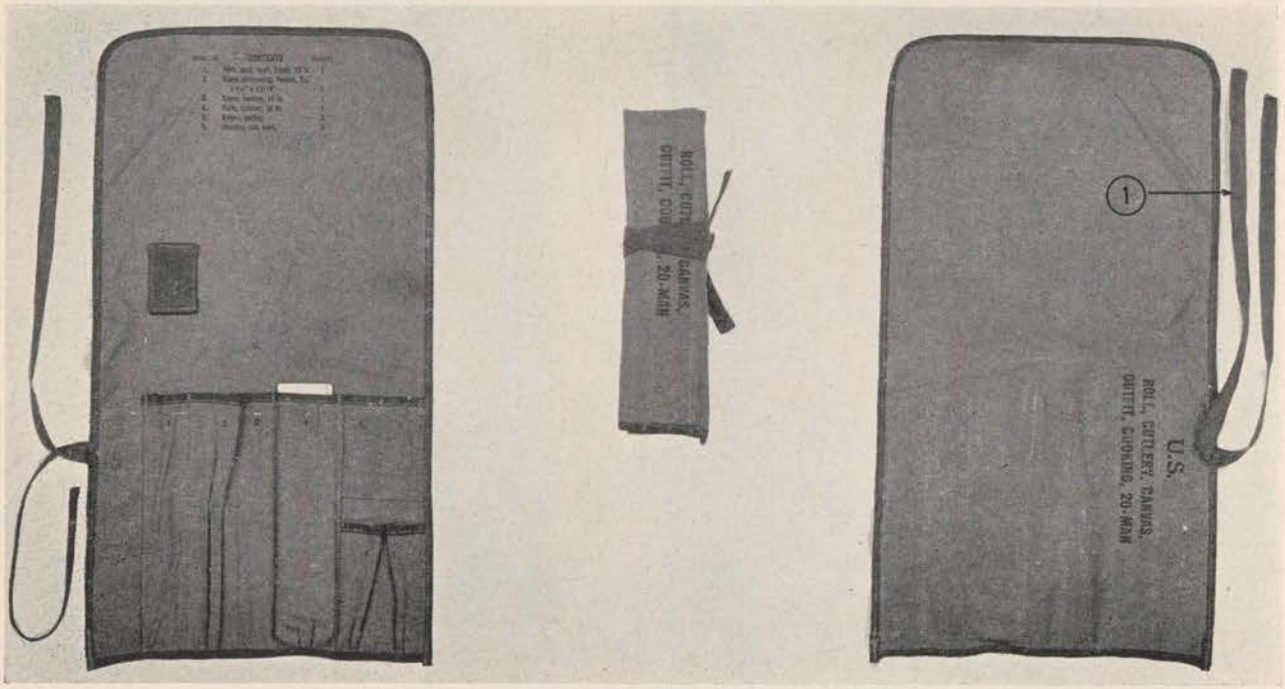


Figure 120. Roll, cutlery, canvas.

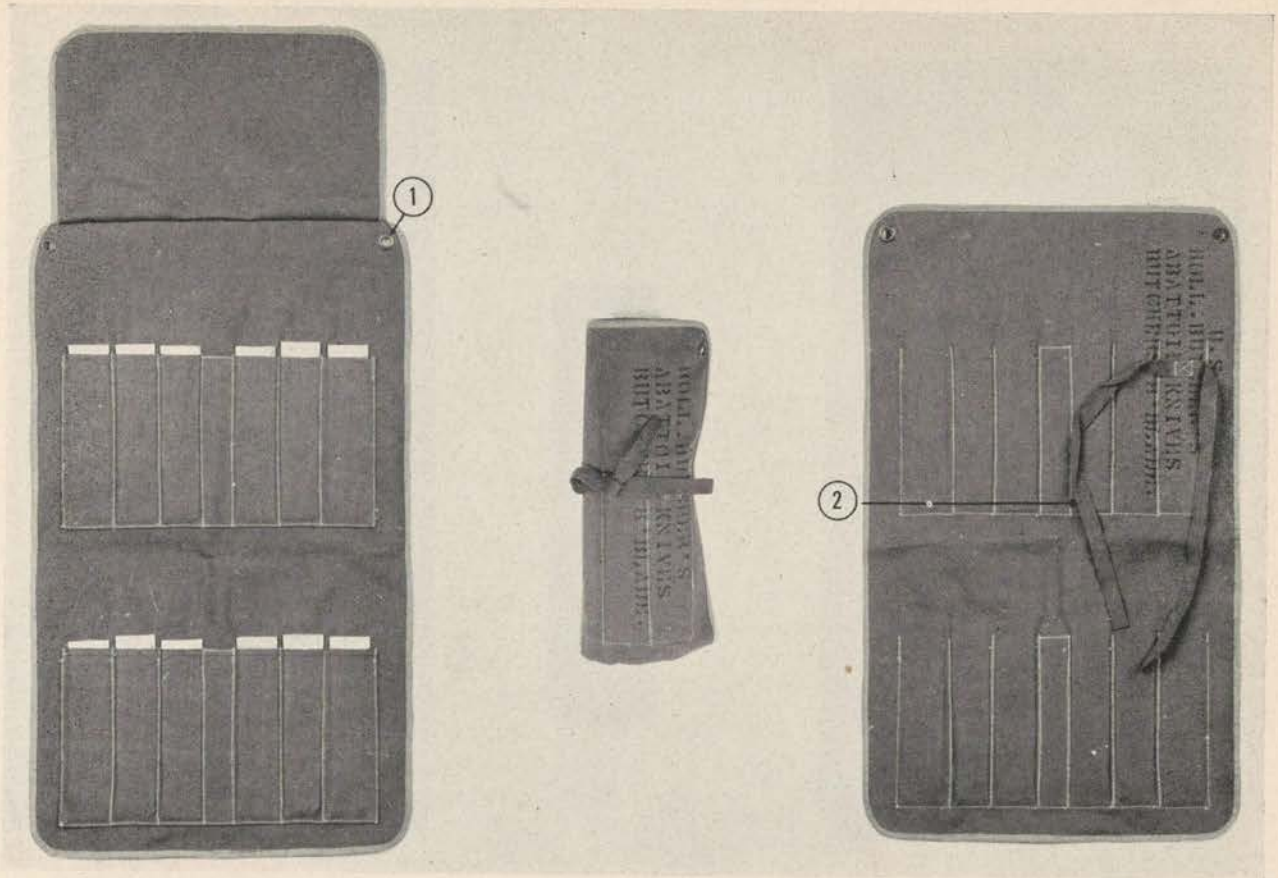


Figure 121. Roll, outfit, butchers', abattoir (type II).

94. Rolls, Tool, Canvas, for Carpenter's No. 1 and Electrician's No. 1 Tool Sets

a. Stock Numbers. The stock numbers of the rolls are—

Type I—41–R–2696 (Roll, tool, canvas, bits and files, M–1944, empty).

Type II—41–R–2700 (Roll, tool, canvas, chisels, empty).

b. Specification. The specification is J. Q. D., No. 257A.

c. Inspection. (See fig. 122.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Fastener, snap, style 2 (fig. 122 ①).

(3) *Tape.* See whether or not the following tape is damaged or missing:

1 Tape, tie, 44-inch-long, ¾-inch lightweight cotton webbing (fig. 122 ②).

d. Repair. To patch the roll, use No. 4 cotton duck and No. 10–3 cotton thread, stitching seven stitches to the inch.

95. Roll, Tool, Canvas, M–1929

a. Stock Number. The stock number of the roll is 41–R–2710.

b. Specification. The specification is J. Q. D., No. 182B.

c. Inspection. (See fig. 123.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing.

3 Buckles, double-bar, tongueless, ⅝-inch ①.

2 Buckles, double-bar, tongueless, 1-inch ②.

3 Clips, end, ball-type, ⅝-inch ③.

2 Clips, end, ball-type, 1-inch ④.

2 Fasteners, snap, style 2 ⑤.

d. Repair. To patch the roll, use No. 4 cotton duck for the cover and No. 8 cotton duck for the pouches and pockets. Use No. 10–3 cotton thread, stitching eight stitches to the inch.

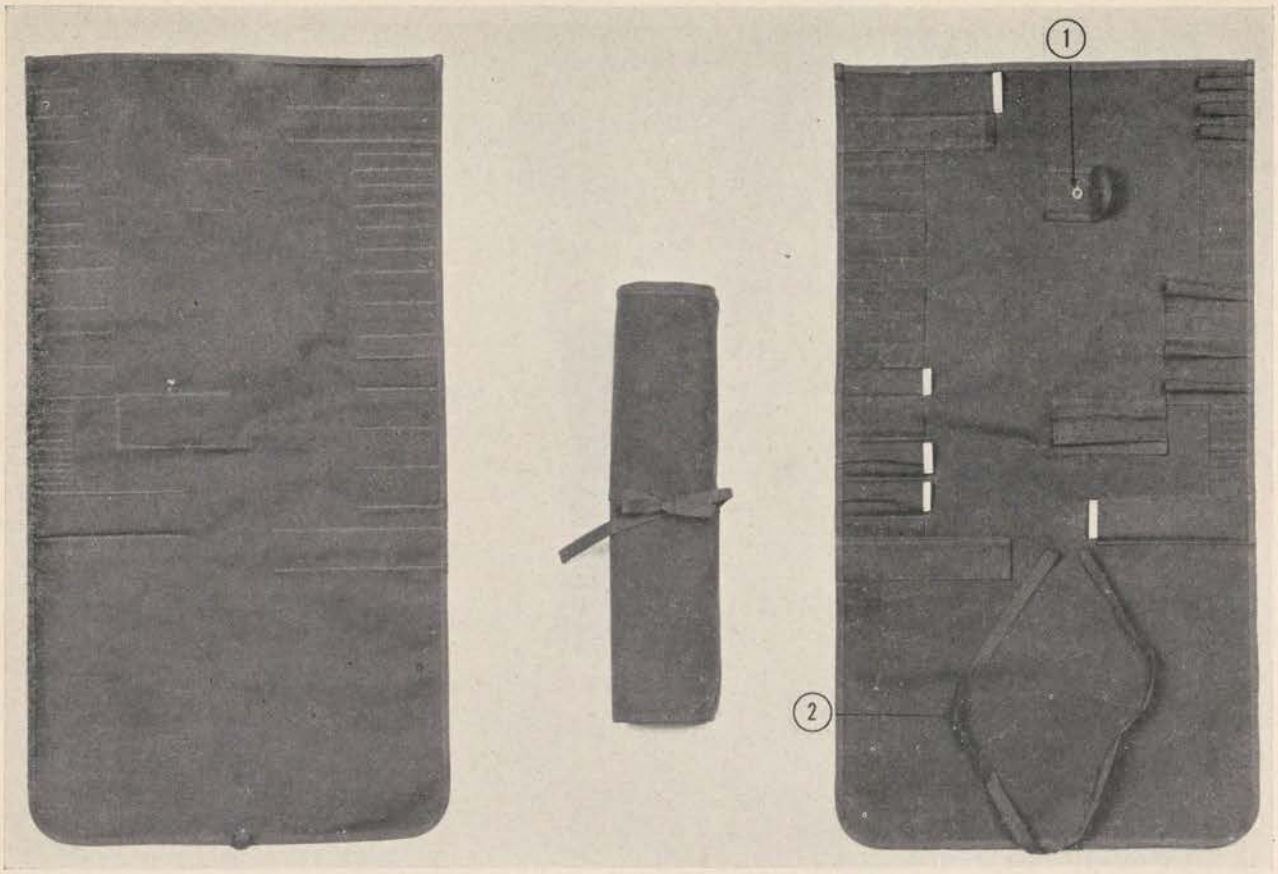


Figure 122. Rolls, tool, canvas, for carpenter's No. 1 and electrician's No. 1 tool sets.

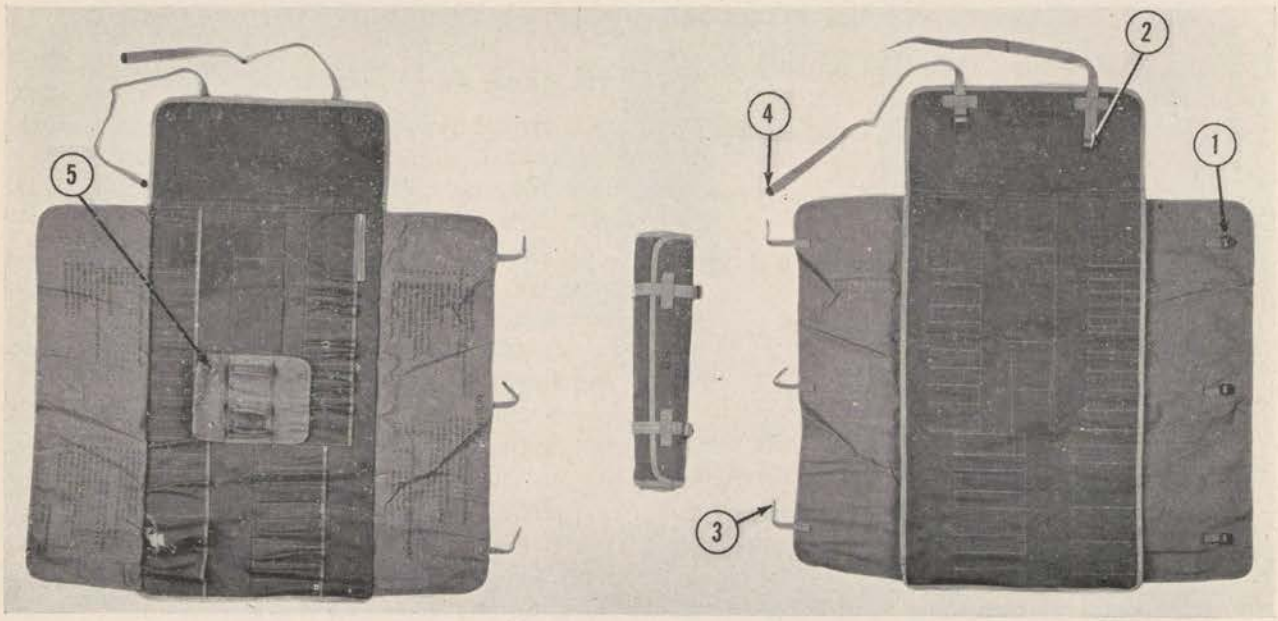


Figure 123. Roll, tool, canvas, M–1929.

96. Rope, Drag, with Shoulder Strap, M–1918

a. Stock Number. The stock number of the rope is 21–R–900.

b. Specification. The specification is J. Q. D., No. 7A.

c. Inspection. (See fig. 124.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 D-ring, 1- by .85-inch ①.
1 D-ring, 2.06- by 1-inch ②.
1 S-hook ③.

(3) *Ropes.* See whether or not the following rope is damaged or missing:

1 Rope, drag, 48½-inch-long, ½-inch-diameter sisal (3-strand) ④.

d. Repair. To splice the draw rope to the D-ring and the S-hook, give each splice four tucks: the first two tucks with all three strands of rope, the third tuck with two strands, and the fourth tuck with one strand, tapering the splice. After the two splices are made, the length of the rope will be approximately 40½ inches from D-ring to S-hook.

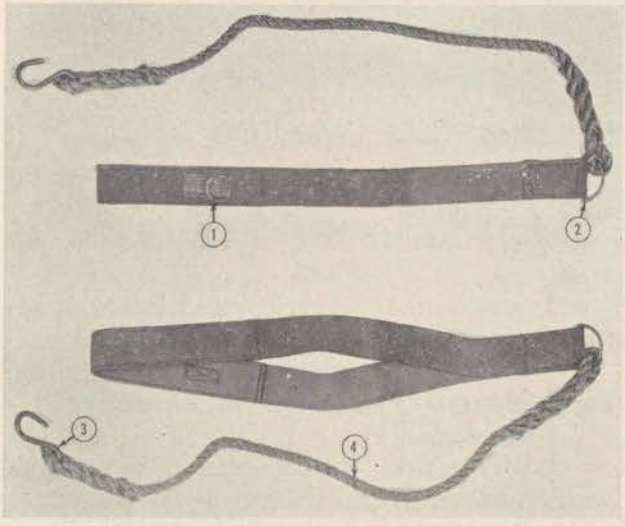


Figure 124. Rope, drag, with shoulder strap, M–1918.

97. Rucksack

a. Stock Number. The stock number of the rucksack is 74–R–350.

b. Specification. The specification is J. Q. D., No. 88H.

c. Inspection. (See fig. 125.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

3 Buckles, center-bar, satchel or skate, ⅝-inch, with roller ①.
5 Buckles, double-bar, tongueless, ⅝-inch ②.
4 Buckles, double-bar, tongueless, 1-inch ③.
1 Buckle, end, 1-inch ④.
8 Clips, end, ball-type, ⅝-inch ⑤.
4 Clips, end, ball-type, 1-inch ⑥.
2 Eyelets, No. 4132 ⑦.
1 Fastener, slide, 10-inch-long ⑧.
1 Fastener, snap, style 2.
12 Grommets, brass, No. 0, with toothed washers ⑨.
1 Grommet, brass, No. 5, with toothed washer ⑩.
1 Hook, sliding, ⅝-inch.
2 Loops, strap, 1- by ½-inch, style 2 ⑪.
1 Ring, tent, ¾-inch ⑫.
1 D-ring, 1- by .875-inch ⑬.
6 Rivets, belt, ⅜-inch-long, No. 12, with burs ⑭.
1 Snap, 1-inch ⑮.
1 Snap, lock ⑯.

(3) *Drawstring and thongs.* See whether or not the following drawstring and thongs are damaged or missing:

1 Drawstring, 60-inch-long, No. 4 solid-braided cotton rope ⑰.
1 Thong, fastener, slide, leather, 7-inch-long ⑱.
1 Thong, snap, lock, leather, 9-inch-long.

d. Repair. (1) *Patching.* To patch the bottom of the rucksack, use 12.29-ounce-per-square-yard cotton duck; for all other parts of the rucksack, use 9.85-ounce cotton duck.

(2) *Stitching.* With the 9.85-ounce cotton duck, use four-ply No. 16 cotton thread, stitching 12 stitches to the inch. For chapes and billets of 12.29-ounce-per-square-yard cotton duck, use No. 10–3 cotton thread, stitching 8 stitches to the inch. For the shoulder strap, the center reinforcement, and the frame support, use six-ply No. 8–6 cotton thread, stitching 6 stitches to the inch.

98. Sling, Carrying, Machine-Gun-and-Ammunition

a. Stock Number. The stock number of the sling is 74–S–270.

b. Specification. The specification is No. 6–177B.

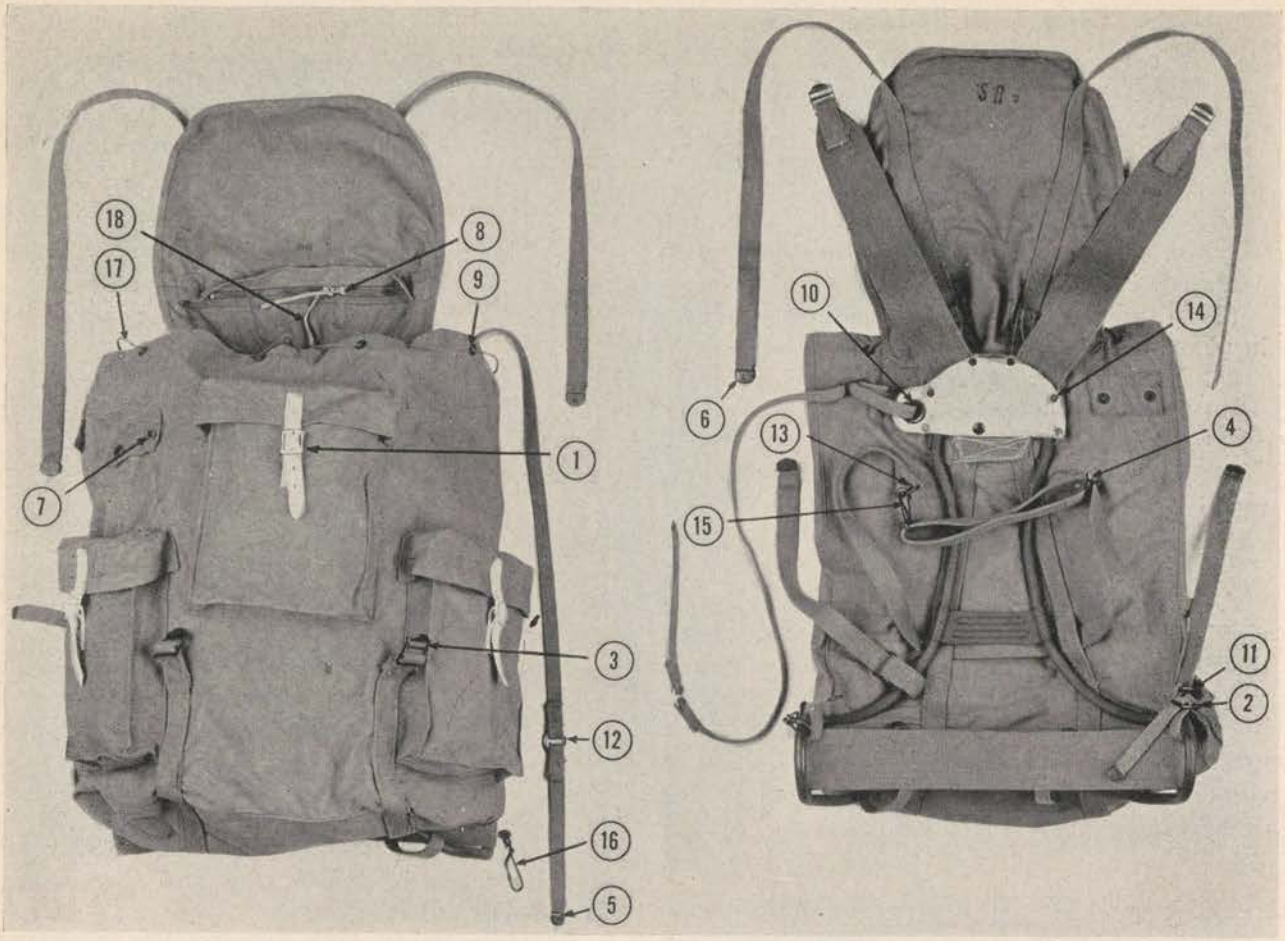


Figure 125. Rucksack.

c. Inspection. (See fig. 126.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Buckles, bar-A, tongueless, 2-inch ①.
2 Clips, end, 2-inch ②.
4 Eyelets, No. 4132 ③.
2 Hooks, end ④.

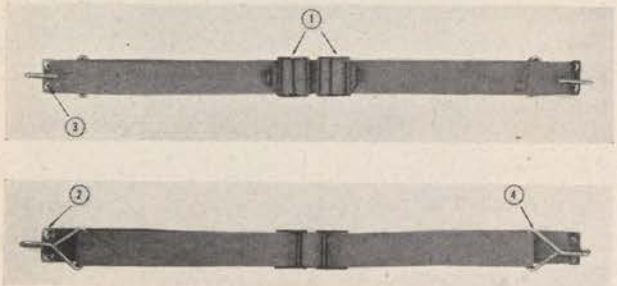


Figure 126. Sling, carrying, machine-gun-and-ammunition.

99. Sling, Color, Web, OD

a. Stock Number. The stock number of the sling is 5–S–640.

b. Specification. The specification is No. 6–294.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Plate, steel.
4 Rivets, steel, 5/16-inch-long, 3/16-inch-diameter.
5 Rivets, steel, 5/16-inch-long, 1/8-inch-diameter.
2 Slides, buckle.
1 Socket, steel.

d. Repair. (1) *Replacing webbing.* Use 2¼-inch type V (special-use) cotton webbing for the shoulder straps, binding the exposed ends with 1¼-inch tape.

(2) *Stitching.* For sewing the pad to the web-

bing, use No. 10–3 cotton thread. For sewing the binding to the webbing, use No. 40–3 cotton thread. For sewing the leather tips to the webbing, use No. 16–4 cotton thread.

100. Strap, Carrying, General Purpose

a. Stock Number. The stock number of the strap is 74–S–333–50.

b. Specification. The specification is J. Q. D., No. 15E.

c. Inspection. (See fig. 127.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Loop, slide, 2-inch ①.
2 Snaps, 1-inch ②.

d. Repair. (1) *Replacing the webbing.* Use 2-inch mediumweight, soft-texture cotton webbing, cutting the body strip 48 inches long and the link strap 7 inches long.

(2) *Stitching.* Use four-ply No. 16 cotton thread, stitching eight stitches to the inch.

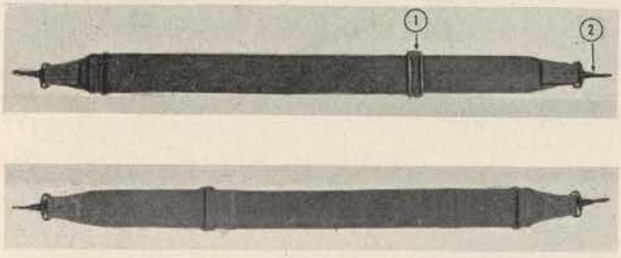


Figure 127. Strap, carrying, general purpose.

101. Strap, Quick-Release, Packboard

a. Stock Number. The stock number of the strap is 74–S–349–80.

b. Specification. The specification is J. Q. D., No. 437A.

c. Inspection. (See fig. 128.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

1 Buckle, bar, tongueless, 1-inch, with extension hook ①.
1 Buckle, 1-inch, quick-release-device ②.
1 Clip, end, ball-type, 1-inch ③.

d. Repair. To replace the webbing, use 1-inch heavyweight cotton webbing and No. 10–3 cotton thread, stitching eight stitches to the inch.

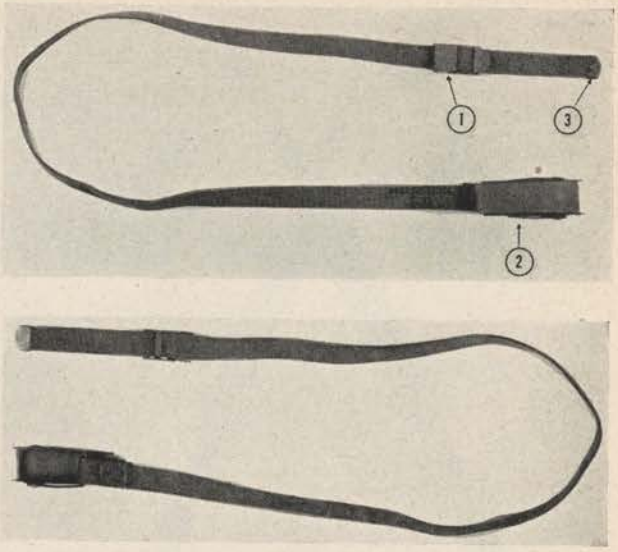


Figure 128. Strap, quick-release, packboard.

102. Suspenders, Belt, M–1936

a. Stock Number. The stock number of the suspenders is 74–S–389.

b. Specification. The specification is J. Q. D., No. 28.

c. Inspection. (See fig. 129.) (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

4 Buckles, double-bar, tongueless, 1-inch ①.
2 Buckles, end, 1-inch ②.
4 Clips, end, ball-type, 1-inch ③.
2 Clips, 1-inch, with loop and D-ring ④.
8 Eyelets, with washers ⑤.
2 Rivets, tubular, 1/16-inch-long, with caps ⑥.
6 Snaps, 1-inch ⑦.

d. Repair. (1) *Replacing the webbing.* For the body, use 2-inch mediumweight cotton webbing; for the ends, use 1-inch heavyweight cotton webbing.

(2) *Stitching.* Use No. 30–3 linen cord or four-ply No. 16 cotton thread.

103. Tent, Shelter Half, New Type

a. Stock Number. The stock number of the tent is 74–T–102. (For illustration of this tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 593A.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

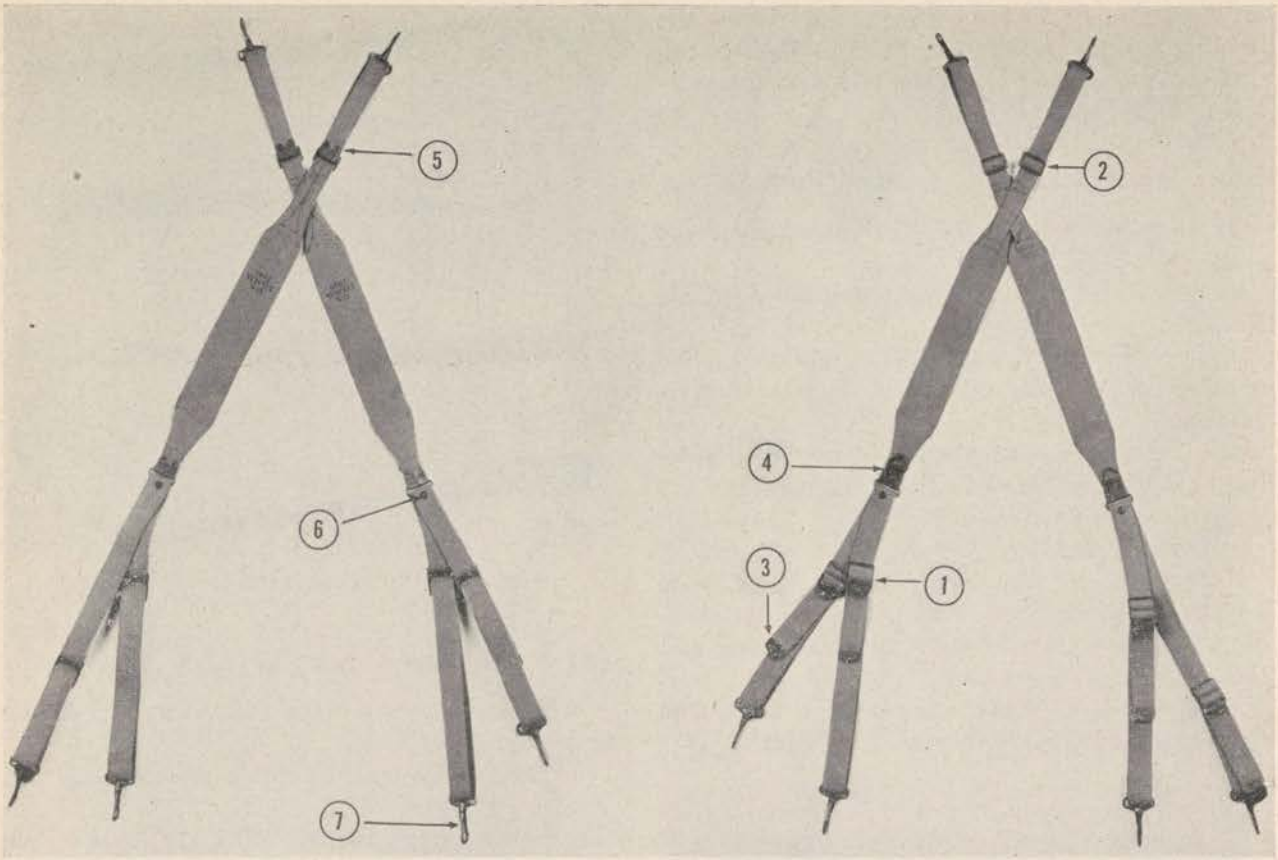


Figure 129. Suspenders, belt, M–1936.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

19 Buttons, tack.
7 Grommets, brass, plain, No. 1, with washers.

(3) *Lines.* See whether or not the following lines are damaged or missing:

5 Lines, footstop, rope, cotton, 10-inch-long, 3/16-inch-diameter.
1 Line, guy, rope, cotton, 7½-foot-long, 3/16-inch-diameter.

d. Repair. To patch the tent, use 9.00-ounce-per-square-yard cotton duck and four-ply No. 16 cotton thread, stitching eight stitches to the inch. Use the water-shed type patch (see par. 8*f*) unless the damage to be repaired is at the ridge edge, when a rectangular patch may be used.

104. Tent, Shelter Half, Old Type

a. Stock Number. The stock number of the tent is 74–T–100. (For illustration of this tent, see FM 20–15.)

b. Specification. The specification is No. 6–308.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

21 Buttons, tack.
6 Grommets, brass, plain, No. 1, with washers.

(3) *Lines.* See whether or not the following lines are damaged or missing:

4 Lines, footstop, rope, cotton, 10-inch-long, 3/16-inch-diameter.
1 Line, guy, rope, cotton, 7½-foot-long, 3/16-inch-diameter.

d. Repair. To patch the tent, use 7.9-ounce-per-square-yard cotton duck and four-ply No. 16 cotton thread, stitching eight stitches to the inch. Use the watershed-type patch (see par 8*f*) unless the damage is at the ridge edge, when a rectangular patch may be used.

Section II. HEAVY CANVAS AND TENTAGE

105. Preparation for Repair

Repairs on heavy canvas or tentage can be properly made only on dry fabric. Wet fabric must be dried and inspected for mildew immediately upon receipt. Before the fabric is completely dry, all mildewed areas must be outlined with white or yellow crayon and the word "mildew" written inside the area outlined to designate any spot requiring special testing when dry. Heavy canvas or tentage may be dried either outdoors or indoors. If it is dried outdoors, it should be hung off the ground in the sunlight and brought in before sundown. If it is dried indoors, it should be dried at a normal temperature, in a well-ventilated place high enough to permit its being suspended off the floor. To conserve space in the drying of tentage, one tent may be hung over another, pagoda-fashion, with a foot or so of space between layers of canvas. When dried, heavy canvas and tentage should be brushed clean.

106. Method of Inspection

When inspecting heavy canvas or tentage for repair, use the following procedure:

a. Test the Tensile Strength of the Fabric. Before suspending heavy canvas or tentage for marking, test it by grasping a small fold of the fabric between the thumb and the forefinger of each hand, gripping it close up so that the tips of the forefingers touch. Tug the fabric several times; if it does not rip, it is repairable so far as its tensile strength is concerned. If it tears on the first try, test several additional areas to ascertain the extent of the deterioration.

Caution. When testing, always grasp the fabric against the warp threads, which are the threads running parallel to the selvage. The woof (or cross threads), being weak, should not be used for testing the tensile strength.

b. Inspect Tentage for Damage. To inspect tentage for damage, draw up each tent by block and tackle and systematically check for defects. Have one man on the outside do the marking (see par. 3) while another man on the inside points out or calls the repairs to be made. Raise the tent a few feet at a time and check the various parts in the following order:

(1) Peak, or part attached to block and tackle.
(2) Roof.
(3) Eaves.
(4) Side walls.
(5) Sod cloth.
(6) Lines.

Note. Check separately such parts as covers, curtains, sashes, liners, ground cloths, and vestibules.

107. Essential Points for Inspection

When inspecting heavy canvas or tentage, use the following checklist for guidance:

a. Fabric. (1) Abrasions.
(2) Holes.
(3) Mildew.
(4) Patches.
(5) Previous repair work.
(6) Seams.
(7) Spots or stains.
(8) Stitching.
(9) Tears or rips.
(10) Tensile strength.

b. Webbing Parts. (1) Chapes.
(2) Lines.
(3) Reinforcements.
(4) Straps.
(5) Tapes.

c. Hardware. (1) Blocks and tackle.
(2) Bull's-eyes.
(3) Chains, with plates.
(4) Chains, with supporting rings.
(5) End clips.
(6) End hooks.
(7) Eyelets, with washers.
(8) Fair-leaders.
(9) Fasteners.
(10) Grommets, with washers.
(11) Loops.
(12) Plates.
(13) Rings.
(14) D-rings.
(15) Rivets.
(16) S-hooks.
(17) Snaps.
(18) Thimbles.
(19) Triangles.
(20) Triangles, with hooks.
(21) Wall D-rings.

d. Lines. (1) Cover.
(2) Door.
(3) Draw.
(4) Eave.

(5) Footstop.
(6) Guy.
(7) Hoisting.
(8) Hood.
(9) Jumper.
(10) Lacing.
(11) Liner-hoisting.
(12) Tie.
(13) Ventilator-flap.
(14) Water-flap.

c. Unattached Parts. (1) Blackout curtains.
(2) Covers.
(3) Ground cloths.
(4) Hoods.
(5) Liners.
(6) Sashes.
(7) Shield retainers.
(8) Side walls (canvas and netting).
(9) Tent sections.
(10) Vestibules.

108. Standards of Repair

The following standards will govern the repair of heavy canvas or tentage:

a. General Appearance. (1) Faded tent duck is acceptable provided the fading is the only defect.

(2) Nondeteriorating spots and stains caused by mildew, sap, and dirt are acceptable provided the fabric has been brushed clean. Where the fabric has been weakened by the staining agent, it must be repaired,

b. Material. (1) Khaki duck or duck not resistant-treated for fire, water, weather, and mildew is not acceptable and should not be repaired.

(2) Fabric (other than khaki duck) containing holes, tears, badly worn areas, weak spots, and frayed sections must be repaired.

(3) Spotted and stained fabric showing deterioration when thumb-tested must be repaired.

(4) A badly damaged section or one containing a large number of patches must be replaced with a new section similar to that used in the original construction.

(5) Previous repair work of substandard quality is a defect and must be properly repaired.

c. Stitching and Seams. (1) Breaks and run-offs of stitching must be repaired.

(2) Seams in which the thread has rotted must be restitched.

d. Hardware. (1) All hardware that is rusty, corroded, bent, broken, or otherwise defective must be replaced.

(2) Hardware having an electro-zinc-plate finish must be replaced with hardware having a heavy hot-galvanize finish.

Note. Zinc-plated hardware has a dull, flaky finish whereas hot-galvanize-finished hardware has a bright, smooth, irregular finish.

e. Webbing. All defective tie tapes, wall lines, ring and snap chapes, corner straps, and web reinforcements must be replaced, being stitched in the same manner as in the original construction.

f. Lines. (1) Frayed or raveled ends must be hand-whipped or machine-stitched.

(2) Lines with frayed or broken strands must be replaced, serviceable lines taken from unserviceable items being acceptable for this purpose.

g. Other Repairs. (1) When a ventilator opening has more than two patches or defects, the entire ventilator section must be replaced.

(2) A ventilator cover containing more than two defects or patches must be replaced with a serviceable cover.

(3) A blackout flap not forming a good closure must be detached and replaced, care being taken that the old needle holes are covered by the replacement.

(4) Fabric to replace a sash pocket may be cut larger than the original pocket piece in order to cover the exposed needle holes.

(5) An extension cloth causing the tent to wrinkle must be replaced.

(6) A ventilator duct with a hole, tear, or rip may be patched with either a sewed patch or a cemented patch.

(7) A window flap of improper dimensions must be replaced with a serviceable flap of proper dimensions.

(8) A window framework assembly may be patched provided the patching does not distort the window opening.

(9) A window sash made of cellulose acetate and cotton netting must be replaced with a flexible waterproof-film sash.

(10) An outlet sash may be patched or repaired provided the proper size is maintained and the number of patches does not exceed three.

(11) An excessively stretched rope reinforcement may be repaired by being shortened and then restitched in the manner of the original construction, or it may be replaced with new rope.

109. Repair of Heavy Canvas or Tentage

After heavy canvas or tentage has been inspected and marked, it is ready for repair. If no special instructions are given, repair the damage in accordance with the methods illustrated in chapters 2 and 3 and in accordance with the following general rules:

a. Patching Material. Use fire-, water-, weather-, and mildew-resistant cotton duck.

b. Webbing. Use water-repellent and mildew-resistant webbing of the same width, weight, and finish as that used in the original construction of the item being repaired.

c. Thread. Use mildew-resistant cotton thread.

d. Stitching. When the stitching is not a continuous thread, backstitch not less than 1 inch at each break. Backstitch all stitching at the ends to prevent raveling except when the ends are turned under in a hem or held down by other stitching. Maintain proper thread tension so that the lock will be embedded in the center of the material sewed. Take care when restitching that the original needle holes are well covered and that the replacement stitching does not fall directly on the original stitch line.

e. Re-treatment of Canvas. To increase its durability, tentage should be re-treated as required. Tentage may be re-colored, waterproofed, and fungus-proofed with Compound, textile, preservative, solvent type, pigmented—Stock No. 51–C–1629. Procedure for re-treatment is as follows:

(1) Make sure tent is dry. Remove dirt and oil and grease stains.

(2) Raise tent by overhead block hoist.

(3) Stir compound before use; do not dilute it; do not heat it. (From 2½ to 3 gallons of compound are needed for one coat on a pyramidal tent.)

(4) Apply the compound by brush or spray gun. If spray gun is used, operator should wear a respirator, fatigue clothing and a helmet liner.

(5) Apply compound to tent top first. Then pull tent up off the ground and finish operation. Apply compound generously to patches and newly-repaired spots.

(6) Let the tent dry in sun and wind. Drying may require as much as 24 hours.

(7) Take fire precautions during application because liquid compound is inflammable.

f. Patches. Use the patches illustrated in figure 130. These patches (see par. 8) are specially designed to divert water away from openings and seams and prevent it from gathering in pockets and rotting the stitching. (For the replacement of the entire corner of a tent, see par. 25.)

110. Final Inspection

Upon completion of repairs, again check the tentage, paying special attention to the quality of the repair work to make sure that—

a. The proper size of thread and length of stitch have been used and all breaks in the stitching backstitched.

b. The stitching has not, through carelessness, fastened together parts that should never have been fastened together.

c. Patches and replaced parts correspond, in color, texture, weight of material, and method of fastening, to the original material and construction of the tent being repaired.

d. Chapes, loops, and reinforcing strips are of the proper width and length and that they have been properly stitched.

e. Complementary hardware, such as snap fasteners, has been installed to assure perfect engagement without wrinkling or puckering the fabric.

f. Die-inserted hardware, such as snap fasteners and grommets, has been securely clinched without damage to the surrounding fabric.

g. All hardware is of the type and size specified and that it is in working order.

h. All detached parts, such as curtains, liners, and sashes, have been checked for repair and properly attached to the tent with which they belong.

i. All special instructions for the inspection and repair of heavy canvas and tentage items (listed in the following paragraphs) have been followed.

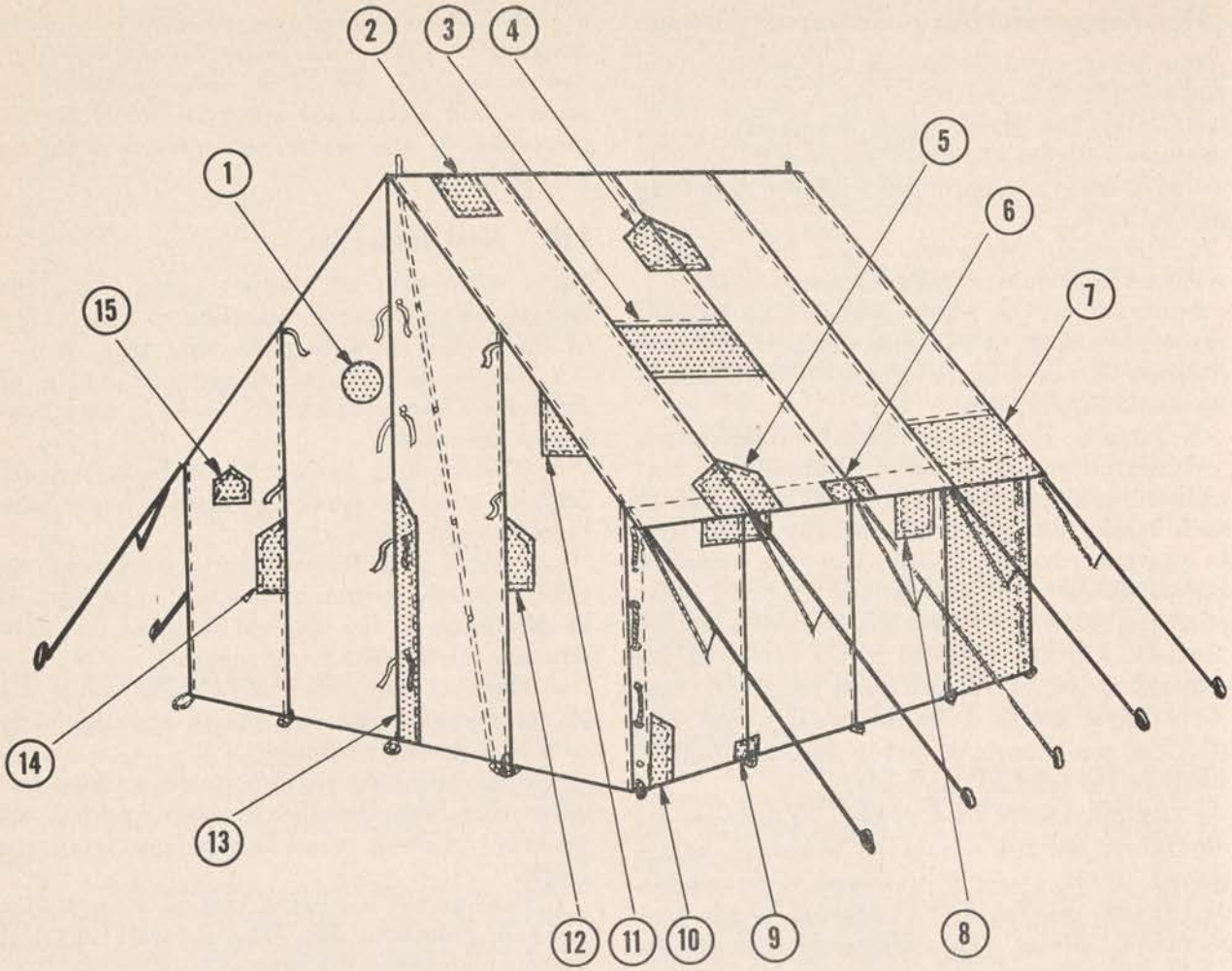
111. Flies, Fire-and-Mildew-Resistant, Tent

a. Stock Numbers. The stock numbers of the flies are—

Type I—No. 24–F–150 (Fly, fire-resistant, tent, wall, small, od)

Type II—No. 24–F–175 (Fly, fire-and-mildew-resistant, tent, wall, large, od)

b. Specification. The specification is J. Q. D., No. 63B.



① Cement patch.
② Rectangular-overridge patch.
③ Seam-to-seam patch.
④ Watershed overseam patch.
⑤ Eave-base patch.
⑥ Eave-edge patch.
⑦ Corner replacement.
⑧ Rectangular patch under eave.
⑨ Edge grommet patch.
⑩ Watershed patch near hem.
⑪ Triangular patch under roof edge.
⑫ Patch near seam, bottom ply.
⑬ Patch for replacing a row of grommets.
⑭ Patch near seam, top ply.
⑮ Watershed patch.

Figure 130. Types of patches applied to tent.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

Small fly

10 Rings, ½-inch.
2 Rings, ¾-inch.
10 Slips, tent, wire.

Large fly

14 Rings, ½-inch.
2 Rings, 1-inch.
14 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or missing:

Small fly—10 Lines, eave, 8-foot-long, ¼-inch-diameter, with eye.

Large fly—14 Lines, eave, 10-foot-long, ¼-inch-diameter, with eye.

d. Repair. (1) *Patching.* Use 9.85-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

(2) *Replacing grommets.* Stitch grommets to canvas (see par 11*a*) with four strands of five-ply cotton wrapping twine which has been waxed, twisted, and well rewaxed.

112. Fly, Fire-and-Mildew-Resistant, Tent, Squad, M–1942 (6-Foot 2-Inch Door)

a. Stock Number. The stock number of the fly is 24–F–163.

b. Specification. The specification is J. Q. D., No. 526A.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

24 Grommets, rolled-rim, spur-type, No. 3, with washers.
4 Grommets, rolled-rim, spur-type, No. 5, with washers.
2 Grommets, rolled-rim, spur-type, No. 6, with washers.
8 Rings, tent, ½-inch.
12 Rings, tent, ¾-inch.
6 D-rings, 1⅝- by 2¼-inch.
38 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or missing:

12 Lines, corner, 14-foot-long, 5/16-inch-diameter, with eye.
26 Lines, eave, 10-foot-long, 5/16-inch-diameter, with eye.
2 Lines, flap, ventilator, 13½-foot-long, ¼-inch-diameter, with one end sewed.

d. Repair. (1) *Patching.* Use 12.10-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching five stitches to the inch.

(2) *Replacing eave reinforcement rope.* Splice breaks in the reinforcement rope with a long (12-inch) splice, using ⅜-inch sisal rope.

(3) *Replacing D-ring.* When replacing a D-ring, be sure to keep the replacement ring flat against the canvas, securing it with eight hand stitches—four on each side of the ring.

(4) *Replacing connected hand-worked grommets.* Join the two grommets with four connecting stitches and finish with two securing stitches (see fig. 131).

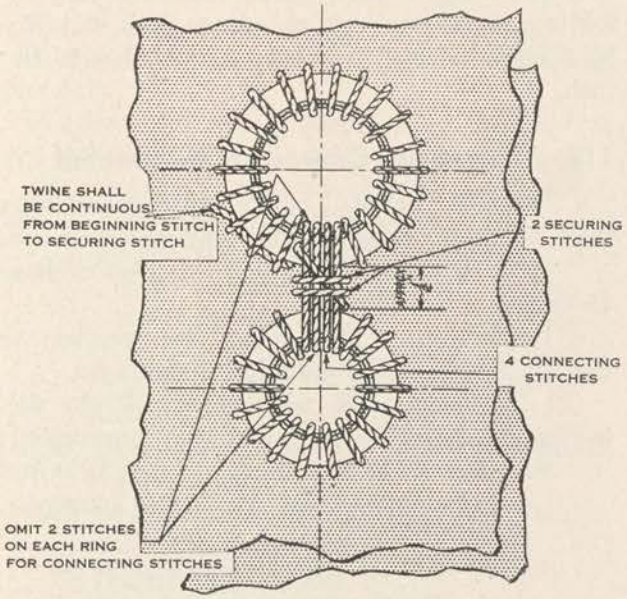


Figure 131. Method of hand-working and securing two rings.

113. Marker, Red-Cross, Canvas, 9 Ft. 6 In. x 21 Ft. 6 In.

a. Stock Number. The stock number of the marker is 5–M–3000.

b. Specification. The specification is J. Q. D., No. 486A.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

10 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.
10 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or mising:

8 Lines, corner, 14-foot-long, 5/16-inch-diameter, with eye.
2 Lines, guy, 50-foot-long, 5/16-inch-diameter, with two ends sewed and a cut splice in center.

d. Repair. To patch the marker, use 8.25-ounce-per-square-yard cotton duck (olive drab, red, or white, depending upon the color of the damaged area) and four-ply No. 16 cotton thread, stitching five stitches to the inch. Stitch lap seams six stitches to the inch.

114. Paulins, Canvas, Fire-and-Mildew-Resistant, OD

a. Stock Numbers. The stock numbers of the paulins are—

No. 24–P–41–400 (small).
No. 24–P–41–425 (large).

b. Specification. The specification is J. Q. D., No. 11C.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

Small paulin—10 Grommets, rolled-rim, spur-type, No. 4, with washers.

Large paulin—14 Grommets, rolled-rim, spur-type, No. 4, with washers.

(3) *Lines.* See whether or not the following lines are damaged or missing:

Small paulin—10 Lines, tie, 3-strand manila rope, 66-inch-long, 3/8-inch-diameter.

Large paulin—14 Lines, tie, 3-strand manila rope, 66-inch-long, 3/8-inch-diameter.

d. Repair. (1) *Patching.* Use No. 6 cotton duck and No. 10–4 cotton thread, stitching six stitches to the inch.

(2) *Replacing tie line.* Reeve 6 inches of tie line through the grommet, double back on the main part of the line, and secure the end by making a three-tuck eye splice, starting the tucking 2¾ inches from the end of the loop. Hand-whip the free end with five-ply wrapping twine which has been waxed, twisted, and well rewaxed.

115. Paulins, Canvas, White

a. Stock Numbers. The stock numbers of the paulins are—

No. 24–P–46–60 Small (8 x 11½-foot).

No. 24–P–46–50 Large (14⅓ x 16-foot).

b. Specification. The specification is J. Q. D., No. 265C.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Loops.* See whether or not the following loops are damaged or missing:

8 Loops, tie, 13-inch-long, 1-inch heavyweight webbing.

d. Repair. (1) *Patching.* Use No. 8 cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

(2) *Replacing loop.* Take a piece of 13-inch-long 1-inch webbing and stitch to the edge of the paulin (see par. 20*d*), turning under the ends ½ inch and allowing a 2-inch overlap for stitching.

116. Paulin, Waterproof, Special-Purpose, 10 Ft. Long x 8 Ft. Wide

a. Stock Number. The stock number of the paulin is 24–P–47–200.

b. Specification. The specification is P. Q. D., No. 461.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

12 Grommets, brass, No. 2, with toothed washers.

(3) *Lines.* See whether or not the following line is damaged or missing:

1 Line, tie, 20-foot-long, No. 8 (¼-inch-diameter) solid-braided cotton rope.

d. Repair. (1) *Patching.* Use rubber-coated fabric and rubber cement.

(2) *Restitching open seam.* Brush, spray, or squeegee rubber cement into the seam and then stitch, using the smallest needle possible, with No. 20–4, No. 30–4, or No. 12–3 cotton thread, stitching eight stitches to the inch.

117. Screen, Latrine, Fire-Resistant, OD

a. Stock Number. The stock number of the screen is 24–S–760. (For illustration of the screen, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 62A.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

16 Grommets, brass, No. 4, with toothed washers.

8 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or missing:

7 Lines, guy, manila, 14-foot-long, 5/16-inch-diameter, with eye.

15 Lines, tie, manila, 3⅓-foot-long, ¼-inch-diameter, with two ends sewed.

1 Line, tie, manila, 8-foot-long, 5/16-inch-diameter, with one end sewed.

d. Repair. To patch the screen, use 9.26- or 9.68-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

118. Tarpaulins, Canvas, Waterproofed

a. Stock Numbers. The Transportation Corps stock numbers of the tarpaulins are shown below.

b. Specification. The specification is Purchase Description, No. 47.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

No. 24–8033–00–260—Tarpaulin, 6- by 9-foot—6 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–070—Tarpaulin, 12- by 12-foot—12 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–050—Tarpaulin, 20- by 20-foot—16 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–140—Tarpaulin, 17- by 30-foot—18 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–110—Tarpaulin, 20- by 40-foot—24 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–180—Tarpaulin, 30- by 30-foot—24 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–030—Tarpaulin, 15- by 40-foot—30 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–210—Tarpaulin, 30- by 60-foot—36 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

No. 24–8033–00–226—Tarpaulin, 40- by 60-foot—40 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

d. Repair. To patch the tarpaulins, use No. 10 cotton duck and No. 10–4 cotton thread, stitching five stitches to the inch.

119. Tent, Fire-and-Mildew-Resistant, Assembly, M–1942, OD

a. Stock Numbers. The stock numbers of the components are—

No. 24–T–323–80 Section, End.
No. 24–T–323–85 Section, Middle.
No. 24–T–323–90 Section, Wall.

(For illustration of the tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 64B.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

3 Blocks and tackle (each consisting of 1 block, tackle, single, with becket; 1 block, tackle, double, without becket; 1 line, tent, hoisting, 85-foot-long, ½-inch-diameter, with one end sewed).
3 Chains, with supporting rings.
40 Grommets, rolled-rim, spur-type, No. 4, with washers.
210 Grommets, rolled-rim, spur-type, No. 5, with washers.
72 Hooks, wall-section.
146 Rings, ¾-inch.
6 Rings, 1-inch.
60 D-rings, wall, ¾- by 13/16-inch.
52 Thimbles, 1¾-inch.
24 Thimbles, 2¼-inch.
4 Thimbles, 3-inch.

(3) *Lines.* See whether or not the following lines are damaged or missing:

30 Lines, eave, 18½-foot-long, ¼-inch-diameter, with one end sewed.
9 Lines, guy, 52-foot-long, ½-inch-diameter, with thimble and hook.
30 Lines, jumper, 6½-foot-long, ¼-inch-diameter, with one end sewed.
4 Lines, lacing, extension-cloth, 6-foot-long, ½-inch-diameter, with one end sewed.

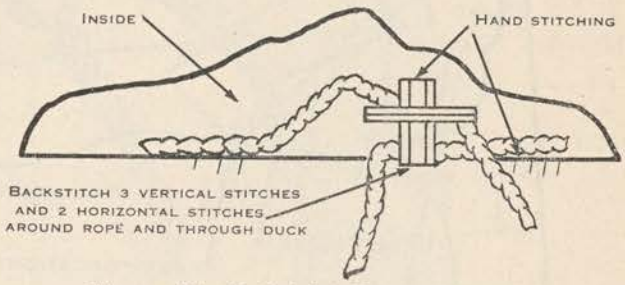


Figure 132. Becket detail, assembly tent.

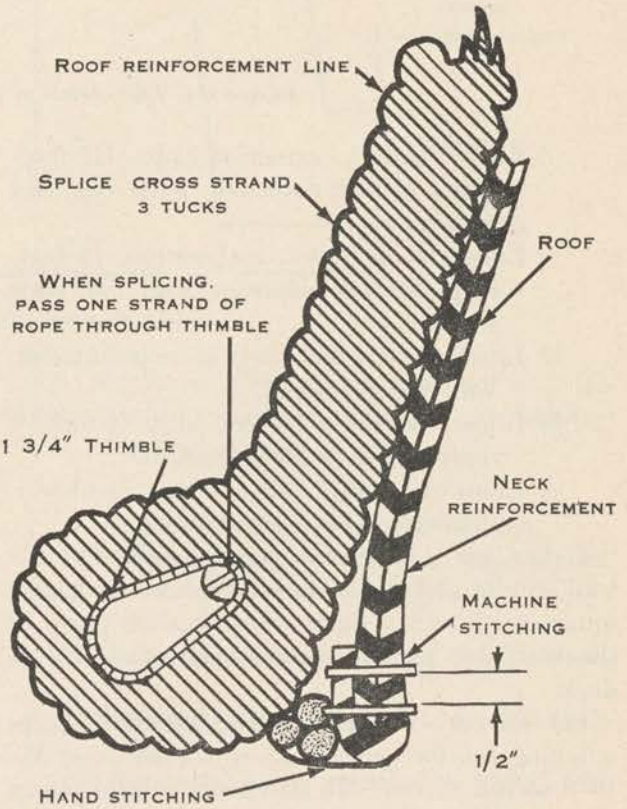


Figure 133. Eave detail, assembly tent.

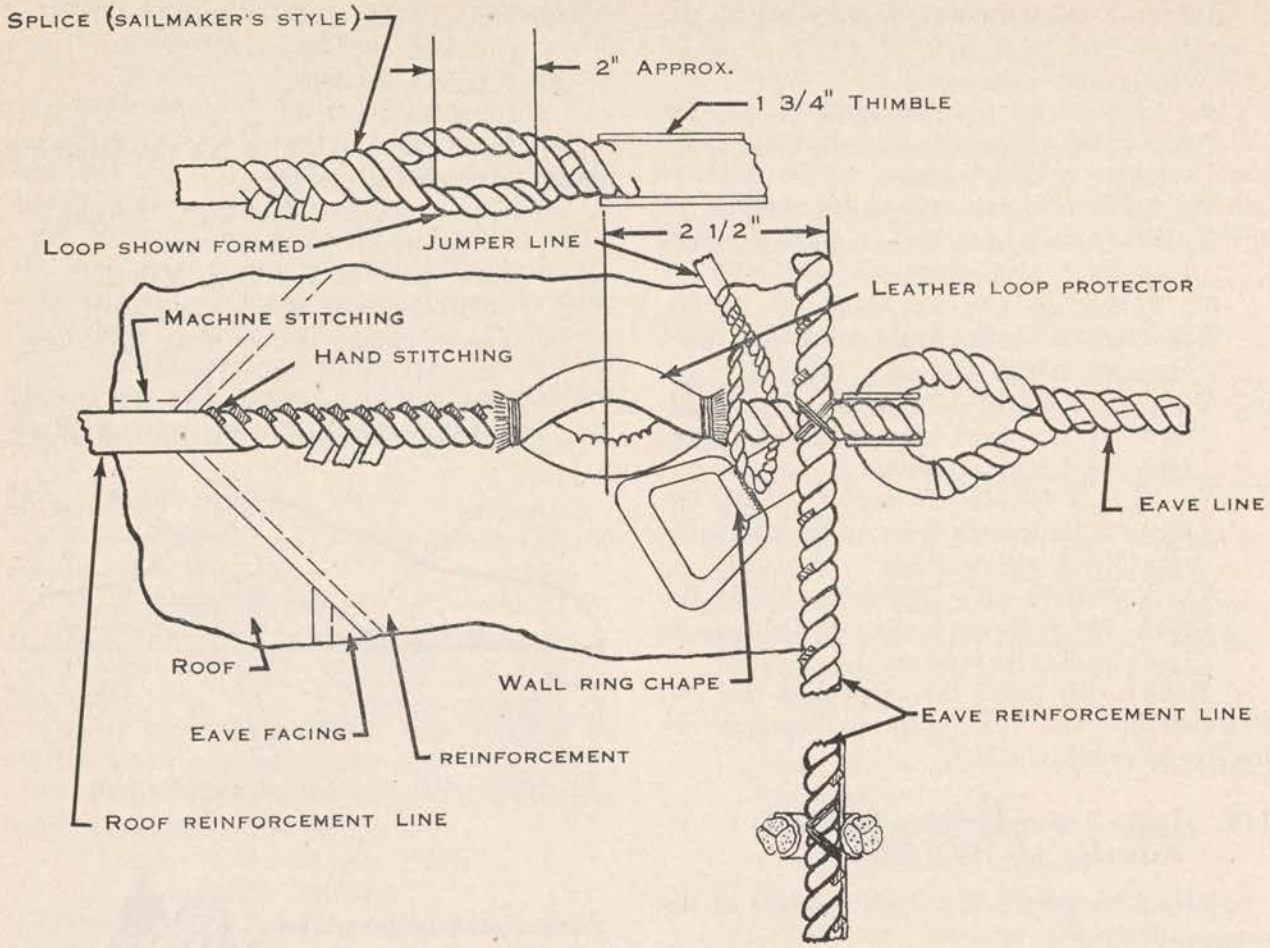


Figure 134. Eave detail at pole-spindle loop, assembly tent.

6 Lines, lacing, extension-cloth, 27-foot-long, ¼-inch-diameter, with one end sewed.

2 Lines, lacing, neck, end-section, 12-foot-long, ½-inch-diameter, with two ends sewed.

12 Lines, tie, 4½-foot-long, ⅜-inch-diameter, with one end sewed.

36 Lines, tie, wall, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.

4 Lines, tie, wall, 6-foot-long, ¼-inch-diameter, with one end sewed.

d. REPAIR. (1) *Patching material.* On the wall section and the curtains, use 9.85-ounce-per-square-yard cotton duck; on all other parts of the tent, use 12.29-ounce-per-square-yard cotton duck.

(2) *Thread.* For all machine stitching except stitching reinforcement lines to the tent, use No. 10–3 cotton thread. To stitch the reinforcement lines to the tent, use six-ply No. 8–6 cotton thread.

(3) *Stitching.* Make six stitches to the inch for all stitching except that used on rope reinforcements, in which case make three stitches to the inch.

(4) *Replacing rope in hem.* If the hem rope is broken, repair it by splicing in another piece of rope, using a long (12-inch) splice.

(5) *Stitching becket.* To secure a becket to the canvas, backstitch three vertical stitches and two horizontal stitches around the rope and through the canvas (see fig. 132).

(6) *Splicing eave reinforcement rope around thimble.* When splicing an eye in an eave reinforcement rope (see fig. 133), pass one strand of rope through the thimble.

(7) *Forming loop for pole spindle in roof reinforcement line.* When making the eye splice for the pole-spindle loop, use the sailmaker's splice, giving the splice five tucks, the first three tucks with all three strands of rope, the fourth tuck with two strands, and the fifth tuck with one strand (see fig. 134).

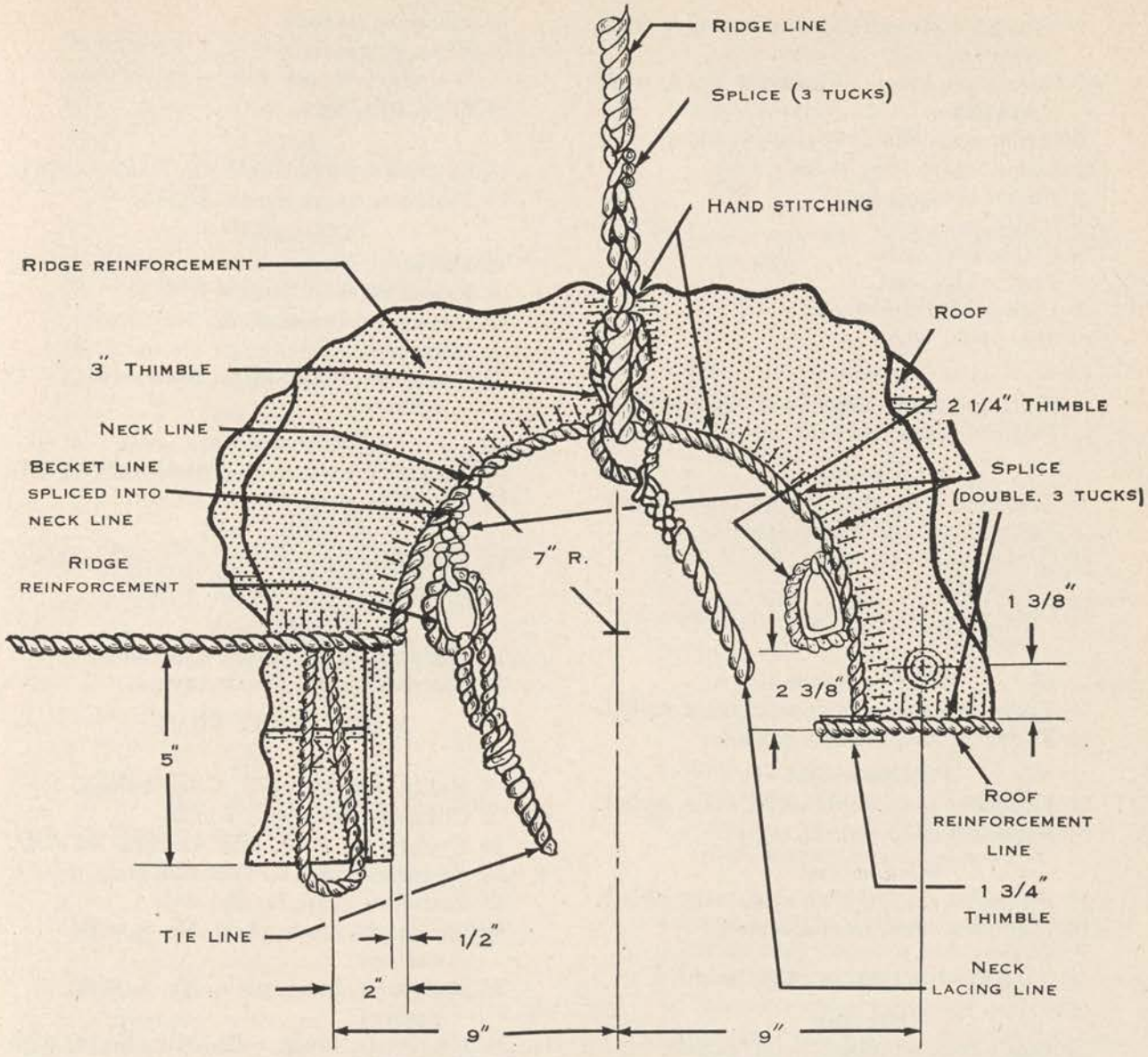


Figure 135. Neck detail, assembly tent.

(8) *Repairing rope work around neck of tent.* Do all rope work around the neck of the tent with the regular rope splice, giving each splice three tucks (see fig. 135).

120. Tent, Fire-and-Mildew-Resistant, Sectional, Hospital

a. Stock Number. The stock number of the tent is 24–T–323–560.

b. Specification. The specification is J. Q. D., No. 578C.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

END SECTION NO. 1

Tent only

7 Bull's eyes, strapped, 1- by 5/16-inch.
64 Fasteners, snap, double-stud, male, style 1.
64 Fasteners, snap, female, style 1.
1 Frame, ventilator.
101 Grommets, brass, plain, No. 2, with washers.
58 Grommets, brass, plain, No. 4, with washers.
12 Grommets, brass, rolled-rim, No. 4, with washers.

6 Grommets, brass, rolled-rim, No. 5, with washers.
2 Grommets, brass, rolled-rim, No. 6, with washers.
10 Grommets, oblong, 3/8- by 1½-inch.
24 Loops, strap, 1- by 5/8-inch.
2 Plates, eave, corner.
2 Plates, eave, end.
2 Plates, eave, side.
1 Plate, ridge, end.
5 D-rings, 1- by .85-inch.
10 Slips, tent, wire.

Liner

13 Fasteners, snap, single-stud, male, style 1.
13 Fasteners, snap, female, style 1.

Screening

8 Fasteners, snap, double-stud, male, style 1.
8 Fasteners, snap, female, style 1.
48 Grommets, brass, plain, No. 2, with washers.
17 Grommets, brass, plain, No. 4, with washers.

Shield retainer

14 Fasteners, snap, double-stud, male, style 1.
14 Fasteners, snap, female, style 1.

Ventilator sash

14 Fasteners, snap, double-stud, male, style 1.
14 Fasteners, snap, female, style 1.

Window sash

16 Fasteners, snap, double-stud, male, style 1.
16 Fasteners, snap, female, style 1.

END SECTION NO. 2

Tent only

4 Bull's eyes, strapped, 1- by 5/16-inch.
2 Clips, end, ball-type, 1-inch.
64 Fasteners, snap, double-stud, male, style 1.
64 Fasteners, snap, female, style 1.
1 Frame, ventilator.
101 Grommets, brass, plain, No. 2, with washers.
54 Grommets, brass, plain, No. 4, with washers.
10 Grommets, brass, rolled-rim, No. 4, with washers.
6 Grommets, brass, rolled-rim, No. 5, with washers.
2 Grommets, brass, rolled-rim, No. 6, with washers.
30 Grommets, oblong, 3/8- by 1½-inch.
2 Plates, eave, corner.
2 Plates, eave, end.
1 Plate, ridge, end.
5 D-rings, 1- by .85-inch.
10 Slips, tent, wire.

Liner

13 Fasteners, snap, single-stud, male, style 1.
13 Fasteners, snap, female, style 1.

Screening

8 Fasteners, snap, double-stud, male, style 1.
8 Fasteners, snap, female, style 1.
48 Grommets, brass, plain, No. 2, with washers.
17 Grommets, brass, plain, No. 4, with washers.

Shield retainer

14 Fasteners, snap, double-stud, male, style 1.
14 Fasteners, snap, female, style 1.

Ventilator sash

14 Fasteners, snap, double-stud, male, style 1.
14 Fasteners, snap, female, style 1.

Window sash

16 Fasteners, snap, double-stud, male, style 1.
16 Fasteners, snap, female, style 1.

MIDDLE SECTION

Tent only

5 Bull's eyes, strapped, 1- by 5/16-inch.
2 Clips, end, ball-type, 1-inch.
10 Eyelets, No. 4094, with washers, No. 4096.
35 Fasteners, snap, double-stud, male, style 1.
35 Fasteners, snap, female, style 1.
88 Grommets, brass, plain, No. 2, with washers.
22 Grommets, brass, plain, No. 4, with washers.
8 Grommets, brass, rolled-rim, No. 4, with washers.
6 Grommets, brass, rolled-rim, No. 5, with washers.
4 Grommets, brass, rolled-rim, No. 6, with washers.
34 Grommets, oblong, 3/8- by 1½-inch.
24 Loops, strap, 1- by 1 5/8-inch.
4 Plates, eave, side.
1 Plate, ridge, middle-section, male.
1 Plate, ridge, middle-section, female.
12 D-rings, .7- by .38-inch.
6 Slips, tent, wire.
1 Stiffener, metal.

Liner

23 Fasteners, snap, single-stud, male, style 1.
23 Fasteners, snap, female, style 1.

Screening

16 Fasteners, snap, double-stud, male, style 1.
16 Fasteners, snap, female, style 1.
36 Grommets, brass, plain, No. 2, with washers.
14 Grommets, brass, plain, No. 4, with washers.

Shield retainer

10 Fasteners, snap, double-stud, male, style 1.
10 Fasteners, snap, female, style 1.

Ventilator sash

10 Fasteners, snap, double-stud, male, style 1.
10 Fasteners, snap, female, style 1.

Window sash

16 Fasteners, snap, double-stud, male, style 1.
16 Fasteners, snap, female, style 1.

VESTIBULE

27 Fasteners, snap, double-stud, male, style 1.
30 Fasteners, snap, female, style 1.
14 Grommets, brass, plain, No. 4, with washers.
2 Grommets, brass, rolled-rim, No. 5, with washers.
2 D-rings, 1⅝- by 2¼-inch.
4 Slips, tent, wire.
5 Snaps, wire, steel, 1¼-inch.

(3) *Lines.* See whether or not the following lines are damaged or missing:

END SECTION NO. 1

Tent only

6 Lines, eave, 11½-foot-long, 5/16-inch-diameter, with eye.
4 Lines, eave, 19-foot-long, 5/16-inch-diameter, with eye.
8 Lines, fastener, door, 3⅓-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, flap, door, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, flap, ventilator, 13½-foot-long, ¼-inch-diameter, with one end sewed.
15 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
6 Lines, jumper, 6-foot-long, ¼-inch-diameter, with one end sewed.
1 Line jumper, 10½-foot-long, ¼-inch-diameter, with one end sewed.
8 Lines, tie, wall, 2-foot-long, ¼-inch-diameter, with one end sewed.

Liner

4 Lines, hoisting, liner, 4-foot-long, ⅛-inch-diameter, with two ends unfinished.
2 Lines, hoisting, liner, 6-foot-long, ⅛-inch-diameter, with two ends unfinished.
1 Line, hoisting, liner, 14-foot-long, ⅛-inch-diameter, with two ends unfinished.

Screening

14 Lines, footstop, 1½-foot-long, ¼-inch-diameter.

END SECTION NO. 2

Tent only

4 Lines, eave, 11½-foot-long, 5/16-inch diameter, with eye.
2 Lines, eave, 13-foot-long, 5/16-inch-diameter, with eye.
4 Lines, eave, 19-foot-long, 5/16-inch-diameter, with eye.
8 Lines, fastener, door, 3⅓-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, flap, door, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, flap, ventilator, 13½-foot-long, ¼-inch-diameter, with one end sewed.
15 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
4 Lines, jumper, 6-foot-long, ¼-inch-diameter with one end sewed.
8 Lines, tie, wall, 2-foot-long, ¼-inch-diameter, with one end sewed.

Liner

4 Lines, hoisting, liner, 4-foot-long, ⅛-inch-diameter, with two ends unfinished.
2 Lines, hoisting, liner, 6-foot-long, ⅛-inch-diameter, with two ends unfinished.
1 Line, hoisting, liner, 14-foot-long, ⅛-inch-diameter, with two ends unfinished.

Screening

14 Lines, footstop, 1½-foot-long, ¼-inch-diameter.

MIDDLE SECTION

Tent only

2 Lines, draw, ventilator, 30-foot-long, ⅛-inch-diameter, with two ends unfinished.
4 Lines, eave, 11½-foot-long, 5/16-inch-diameter, with eye.
2 Lines, eave, 13-foot-long, 5/16-inch diameter, with eye.
10 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
4 Lines, jumper, 6-foot-long, ¼-inch-diameter, with one end sewed.

1 Line, jumper, 10½-foot-long, ¼-inch-diameter, with one end sewed.
4 Lines, tie, wall, 2-foot-long, ¼-inch-diameter, with one end sewed.

Liner

6 Lines, hoisting, liner, 4-foot-long, ⅛-inch-diameter, with two ends unfinished.
2 Lines, hoisting, liner, 14-foot-long, ⅛-inch-diameter, with two ends unfinished.

Screening

10 Lines, footstop, 1½-foot-long, ¼-inch-diameter.

VESTIBULE

4 Lines, eave, 11½-foot-long, 5/16-inch-diameter, with eye.
2 Lines, flap, door, 3⅛-foot-long, ¼-inch-diameter, with one end sewed.
6 Lines, footstop, 1½-foot-long, ¼-inch-diameter.

(4) *Parts.* See that none of the following parts are missing:

2 Retainers, shield, tent, end-section.
3 Retainers, shield, tent, middle-section.
2 Sashes, ventilator, end-section.
3 Sashes, ventilator, middle-section.
16 Sashes, window.
2 Sections, end, liner.
3 Sections, middle, liner.
2 Sections, end, tent.
3 Sections, middle, tent.
2 Sections, screen, wall, end (1 per end).
6 Sections, screen, wall, side (2 per middle section).
2 Vestibules, tent.

d. Repair. (1) *Patching material.* On the tent, use 12.29-ounce-per-square-yard cotton duck. On the liner, use 4-ounce-per-square-yard unbleached cotton sheeting.

(2) *Thread and stitching.* On the tent, use No. 10–3 cotton thread, stitching five stitches to the inch. On the liner, use four-ply No. 16 cotton thread, stitching six stitches to the inch.

121. Tent, Mountain, Two-Man, Complete, With Pins and Poles

a. Stock Number. The stock number of the tent is 74–T–90. (For illustration of the tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 207F.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

14 Grommets, brass, No. 1, with toothed washers.

(3) *Lines.* See whether or not the following lines are damaged or missing:

4 Lines, eave, 6-foot-long, No. 96 natural-cotton medium-laid seine twine.
2 Lines, guy, 15-foot-long, No. 96 natural-cotton medium-laid seine twine.

d. Repair. (1) *Patching material.* For the tent, use reversible-white, olive-drab, resin-coated nylon balloon cloth. For the floor shield, use 7.90-ounce-per-square-yard olive-drab cotton duck.

(2) *Thread and stitching.* Use No. 24–4 cotton thread, natural on the white side and olive drab on the olive-drab side, stitching eight stitches to the inch.

122. Tent, Fire-and-Mildew-Resistant, Command Post, M–1945, OD, Complete, with Liner and Curtain

a. Stock Number. The stock number of the tent is 24–T–323–250.

b. Specification. The specification is J. Q. D., No. 695.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

Tent only

8 Bull's eyes, strapped, 1-inch-outside-diameter by 5/16-inch-inside-diameter.
8 Fair-leaders, style 3.
60 Fasteners, snap, double-stud, male, style 1.
60 Fasteners, snap, female, style 1.
92 Grommets, brass, No. 2, with toothed washers.
36 Grommets, brass, No. 4, with toothed washers.
10 Grommets, brass, rolled-rim, spur-type, No. 5, with washers.
1 Plate, ridge, tent, post, command, M–1945 (front).
1 Plate, ridge, tent, post, command, M–1945 (rear).
2 Rings, ¾-inch.
2 D-rings, 1- by .85-inch.
12 Slips, tent, wire.
16 Triangles, with hooks.

Two side-wall screens and one end-wall screen

34 Fasteners, snap, female, style 1.
60 Grommets, brass, No. 2, with toothed washers.
16 Grommets, brass, No. 4, with toothed washers.

Blackout curtain

4 Buckles, double-bar, tongueless, 1-inch.
4 Clips, end, 1-inch.
34 Fasteners, snap, female, style 1.
6 Grommets, brass, No. 4, with toothed washers.

Three sashes

48 Fasteners, snap, double-stud, male, style 1.
48 Fasteners, snap, female, style 1.

One liner

12 Fasteners, snap, single-stud, male, style 1.
12 Fasteners, snap, female, style 1.

(3) *Lines.* See whether or not the following lines are damaged or missing:

10 Lines, corner, 11½-foot-long, 5/16-inch-diameter, with eye.
2 Lines, eave, door, 13-foot-long, 5/16-inch-diameter, with eye.
6 Lines, flap, door (and lines, tie, wall), 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
30 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
6 Lines, hoisting, liner, 4-foot-long, ⅛-inch diameter, with two ends unfinished.
2 Lines, hoisting, liner, 9-foot-long, ⅛-inch-diameter, with two ends unfinished.
10 Lines, jumper, 6⅙-foot-long, ¼-inch-diameter, with one end sewed.
4 Lines, jumper (end lines, tie, ventilator), 9-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, tie, door, 6-foot-long, ¼-inch-diameter, with one end sewed.

(4) *Parts.* See whether or not the following parts are damaged or missing:

1 Curtain, blackout.
1 Liner.
3 Sashes, window.
1 Screen, wall, end.
2 Screens, wall, side.

d. Repair. (1) *Patching material.* On the tent, use 9.75-ounce-per-square-yard cotton duck. On the liner, use 4-ounce-per-square-yard unbleached cotton sheeting.

(2) *Thread.* On the tent, use No. 10–3 cotton thread. On the liner, use four-ply No. 24 cotton thread.

(3) *Stitching.* On the tent, stitch five stitches to the inch. On the liner, stitch six stitches to the inch.

123. Tent, Fire-and-Mildew-Resistant, Pyramidal, Complete, with-Liner-and-Bag

a. Stock Number. The stock number of the tent is 24–T–323–480.

b. Specification. The specification is J. Q. D., No. 715B.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

On tent

10 Eyelets, No. 4094, with washers, No. 4096.
1 Fastener, slide.
1 Grommet, brass, rolled-rim, spur-type, No. 6, with washer.
9 Rings, tent, ¾-inch.
6 Toggles, wood.

On liner

6 Buttons, tack.
10 Eyelets, No. 4094, with washers, No. 4096.
5 Fasteners, snap, single-stud, male, style 1.
5 Fasteners, snap, female, style 1.
1 Grommet, brass, rolled-rim, spur-type, No. 6, with washer.
7 Rings, tent, ¾-inch.
2 Toggles, wood.

On bag

2 Grommets, brass, rolled-rim, spur-type, No. 2, with washer.

(3) *Lines.* See whether or not the following lines are damaged or missing:

9 Lines, eave, 11-foot-long, 5/16-inch-diameter, with one end sewed.
10 Lines, footstop, 1⅙-foot-long, ⅛-inch-diameter, with two ends unfinished.
1 Line, guy, 21½-foot-long, 5/16-inch-diameter, with one end sewed.

(4) *Parts.* See that none of the following parts are missing:

1 Bag, tent.
1 Liner.
1 Tent.

d. Repair. To patch the tent, use 6.5-ounce wind-resistant oxford cotton cloth. To patch the liner, use 4-ounce-per-square-yard unbleached cotton sheeting. To patch the tent bag, use 9.85-ounce-per-square-yard cotton duck.

124. Tent, Fire-Resistant, Maintenance, Shelter

a. Stock Number. The stock number of the tent is 24–T–319–15. (For illustration of the tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 245A.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

2 Fasteners, slide.
148 Grommets, brass, No. 4, with toothed washers.
18 Rings, ½-inch.
12 Rings, ¾-inch.
3 Rings, 1-inch.
18 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or missing:

2 Lines, draw, lower, 14-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, draw, upper, 27-foot-long, ¼-inch-diameter, with two ends unfinished.
14 Lines, eave, 11½-foot-long, 5/16-inch-diameter, with eye.
20 Lines, fastener, door, 2½-foot-long, ¼-inch-diameter, with two ends sewed.
4 Lines, flap, door, 3⅓-foot-long, ¼-inch-diameter.
2 Lines, flap, water, 4-foot-long, ¼-inch-diameter, with one end sewed.
38 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
2 Lines, guy, 64-foot-long, 5/16-inch-diameter, with two ends sewed and a cut splice in center.
4 Lines, lacing, 7½-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, lacing, 17½-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, lacing, 19-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, lacing, door, 4½-foot-long, ¼-inch-diameter.
1 Line, lacing, flap, opening, 15-foot-long, ¼-inch-diameter, with one end sewed.

d. Repair. To patch the tent, use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

125. Tent, Fire-and-Mildew-Resistant, Squad, M–1942, OD, 6 Ft. 2 In. Door

a. Stock Number. The stock number of the tent is 24–T–323–600. (For illustration of the tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 95H.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

On tent

130 Grommets, brass, No. 4, with toothed washers.
46 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.
2 Grommets, brass, rolled-rim, spur-type, No. 6, with washers.
8 Rings, tent, ¾-inch.
6 D-rings, 1⅝- by 2¼-inch.
42 Slips, tent, wire.

On cover

4 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

(3) *Lines.* See whether or not the following lines are damaged or missing:

On tent

12 Lines, corner, 14-foot-long, 5/16-inch-diameter, with eye.
26 Lines, eave, 10-foot-long, 5/16-inch-diameter, with eye.
8 Lines, fastener, door, 2½-foot-long, ¼-inch-diameter, with lugs and with two ends sewed.
12 Lines, fastener, door, 2½-foot-long, ¼-inch-diameter, without lugs and with two ends sewed.
4 Lines, flap, door, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
4 Lines, flap, ventilator, 13½-foot-long, ¼-inch-diameter, with one end sewed.
42 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
2 Lines, guy, 50-foot-long, 5/16-inch-diameter, with two ends sewed and a cut splice in center.
4 Lines, lacing, 6-foot-long, ¼-inch-diameter, with two ends sewed.

On cover

2 Lines, tie, cover, 13-foot-long, 5/16-inch-diameter, with one end sewed.

(4) *Parts.* See that none of the following parts are missing:

1 Cover, tent.
1 Tent.

d. Repair. To patch the tent, use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

126. Tent, Fire-and-Mildew-Resistant, Squad, M–1942, Web-Frame

a. Stock Number. The stock number of the tent is 24–T–323–605.

b. Specification. The specification is J. Q. D., No. 694.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

For tent

14 Fair-leaders, style 1.
128 Grommets, brass, No. 4, with toothed washers.
14 Grommets, brass, rolled-rim, spur-type, No. 3, with washers.
14 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.
14 Grommets, brass, rolled-rim, spur-type, No. 5, with washers.
2 Grommets, brass, rolled-rim, spur-type, No. 6, with washers.
2 Plates, ridge, M–1945, for squad tent.
8 Rings, 3/4-inch.
28 Slips, tent, wire.
26 Triangles, with hooks.

For tent cover

4 Grommets, brass, rolled-rim, spur-type, No. 4, with washers.

(3) *Lines.* See whether or not the following lines are damaged or missing:

On tent

4 Lines, corner (or lines, eave, door), 11 1/2-foot-long, 5/16-inch-diameter, with eye.
20 Lines, eave, 10-foot-long, 5/16-inch-diameter, with eye.
20 Lines, fastener, door, 2 1/2-foot-long, 1/4-inch-diameter, with two ends sewed.
4 Lines, flap, door, 3 1/3-foot-long, 1/4-inch-diameter, with one end sewed.
2 Lines, guy, 50-foot-long, 5/16-inch-diameter, with two ends sewed and a cut splice in center.
4 Lines, lacing, 6-foot-long, 1/4-inch-diameter, with one end sewed.

On tent cover

2 Lines, tie, cover, 13-foot-long, 5/16-inch-diameter, with one end sewed.

(4) *Parts.* See that none of the following parts are missing:

1 Cover, tent.
1 Tent.

d. Repair. To patch the tent, use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

127. Tent, Fire-Resistant, Storage, OD

a. Stock Number. The stock number of the tent is 24–T–321. (For illustration of the tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 60.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

182 Grommets, brass, with washers.
24 Rings, 1/2-inch.
12 Rings, 3/4-inch.
3 Rings, 1-inch.
42 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or missing:

2 Lines, cloth, extension, 3 1/3-foot-long, 1/4-inch-diameter, with one end sewed.
20 Lines, eave, 10-foot-long, 5/16-inch-diameter, with eye.
18 Lines, fastener, door (or lines, wall, door), 2 1/2-foot-long, 1/4-inch-diameter, with two ends sewed.
2 Lines, flap, door, 3 1/3-foot-long, 1/4-inch-diameter, with one end sewed.
36 Lines, footstop, 1 1/2-foot-long, 1/4-inch-diameter.
2 Lines, guy, 48-foot-long, 5/16-inch-diameter, with two ends sewed and a cut splice in center.
6 Lines, lacing, 6-foot-long, 1/4-inch-diameter, with two ends sewed.

d. Repair. To patch the tent, use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

128. Tent, Fire-and-Mildew-Resistant, Surgical-Operating-Truck, M–1945, Complete, with Liner-and-Ground Cloth

a. Stock Number. The stock number of the tent is 24–T–323–675.

b. Specification. The specification is J. Q. D., No. 631.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

Tent only

12 Bull's eyes, strapped, 1- by 5/16-inch.
2 Fasteners, slide, 10½-foot-long.
128 Fasteners, snap, double-stud, male, style 1.
128 Fasteners, snap, female, style 1.
68 Grommets, brass, No. 2, with washers.
146 Grommets, brass, No. 4, with washers.
14 Grommets, brass, rolled-rim, No. 5, with washers.
2 Grommets, brass, rolled-rim, No. 6, with washers.
12 Grommets, oblong, 3/8- by 1½-inch, with washers.
12 Loops, 5/8- by 1⅝-inch.
10 Plates, eave.
2 Plates, ridge.
7 D-rings, 1- by .875-inch.
2 D-rings, 1⅝- by 2¼-inch.
20 Slips, tent, wire.

Liner only

2 Fasteners, slide, 10½-foot-long.
96 Fasteners, snap, double-stud, male, style 1.
106 Fasteners, snap, female, style 1.
10 Fasteners, snap, male, style 1.
104 Grommets, brass, No. 2, with washers.
92 Grommets, brass, No. 4, with washers.
7 D-rings, 1- by .875-inch.

Ground cloth only

2 Fasteners, slide, 15½-foot-long, separating-type.
6 Grommets, brass, No. 4, with washers.

(3) *Lines.* See whether or not the following lines are damaged or missing:

Tent only

18 Lines, eave, 15-foot-long, 3/8-inch-diameter, with eye.
52 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
2 Lines, guy, 32-foot-long, 3/8-inch-diameter.
1 Line, hoisting, curtain, 66-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, hood, ventilator, 15-foot-long, ¼-inch-diameter, with one end sewed.
10 Lines, jumper, 6-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, jumper, 10½-foot-long, ¼-inch-diameter, with one end sewed.
4 Lines, lacing, 8-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, pull, fastener, slide, 24-foot-long, 1/8-inch-diameter, with unfinished ends.
1 Line, tie, canopy, 36-foot-long, 5/16-inch-diameter, with two ends sewed.

Liner only

26 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
1 Line, hoisting, curtain, 66-foot-long, ¼-inch-diameter, with two ends sewed.
10 Lines, hoisting, liner, 6-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, hoisting, liner, 16-foot-long, ¼-inch-diameter, with two ends sewed.
4 Lines, lacing, 8-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, pull, fastener, slide, 24-foot-long, 1/8-inch-diameter, unfinished.

Ground cloth only

4 Lines, tie, cloth, ground, 4-foot-long, ¼-inch-diameter, with one end sewed.
2 Lines, tie, cloth, ground, 6⅛-foot-long, ¼-inch-diameter, with one end sewed.

(4) *Parts.* See that none of the following parts are missing:

1 Cloth, ground (3 sections).
1 Liner, tent.
6 Sashes, screen, liner.
6 Sashes, window, liner.
4 Sashes, screen, tent.
4 Sashes, window, tent.
1 Tent.

d. Repair. (1) *Patching material.* For the tent, use 12.29-ounce-per-square-yard cotton duck. For the liner, use 4-ounce-per-square-yard unbleached cotton sheeting. For the ground cloth, use No. 8 cotton duck.

(2) *Thread and stitching.* Use No. 10–3 cotton thread, stitching six stitches to the inch.

129. Tent, Fire-and-Mildew-Resistant, Wall, Large, OD

a. Stock Number. The stock number of the tent is 24–T–323–750. (For illustration of the tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 57B.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

144 Grommets, brass, No. 4, with toothed washers.
18 Rings, tent, galvanized, ½-inch.
12 Rings, tent, galvanized, ¾-inch.
3 Rings, tent, galvanized, 1-inch.
18 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or missing:

2 Lines, cloth, extension, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
14 Lines, eave, 9-foot-long, 5/16-inch-diameter, with eye.
22 Lines, fastener, door, 2½-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, flap, door, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
26 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
4 Lines, lacing, 6-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, wall-door, 2½-foot-long, ¼-inch-diameter, with two ends sewed.

d. Repair. To patch the tent, use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

130. Tent, Fire-and-Mildew-Resistant, Wall, Small, OD

a. Stock Number. The stock number of the tent is 24–T–323–755. (For illustration of the tent, see FM 20–15.)

b. Specification. The specification is J. Q. D., No. 56A.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

118 Grommets, brass, No. 4, with toothed washers.
10 Grommets, brass, rolled-rim, spur-type, No. 5, with washers.
2 Grommets, brass, rolled-rim, spur-type, No. 3, with washers.
4 Rings, ¾-inch.
10 Slips, tent, wire.

(3) *Lines.* See whether or not the following lines are damaged or missing:

10 Lines, eave, 8-foot-long, ¼-inch-diameter, with eye.
18 Lines, fastener, door, 2½-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, flap, door, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
18 Lines, footstop, 1½-foot-long, ¼-inch-diameter.
4 Lines, lacing, 4½-foot-long, ¼-inch-diameter, with two ends sewed.
2 Lines, wall, door, 2½-foot-long, ¼-inch-diameter, with two ends sewed.

d. Repair. To patch the tent, use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

131. Tent, Fire-and-Mildew-Resistant, Hospital Ward, OD, 6 Ft. 2 In. Door

a. Stock Number. The stock number of the tent is 24–T–323–360.

b. Specification. The specification is J. Q. D., No. 61A.

c. Inspection. (1) *Fabric.* See whether or not the fabric or the stitching is damaged.

(2) *Hardware.* See whether or not the following hardware is loose, damaged, or missing:

16 Hooks, end tent, ¼-inch, hospital-ward and pyramidal.
16 S-hooks, tent, hospital-ward and pyramidal, style 1.
4 Plates, tent, hospital-ward and pyramidal, with chains.
4 Rings, tent, galvanized, 10-inch, hospital-ward.

(3) *Lines.* See whether or not the following lines are damaged or missing:

12 Lines, corner, 14-foot-long, 5/16-inch-diameter, with eye.
40 Lines, eave, 10-foot-long, 5/16-inch-diameter, with eye.
22 Lines, fastener, door, 2½-foot-long, ¼-inch-diameter, with two ends sewed.
20 Lines, fastener, door, 3⅓-foot-long, ¼-inch-diameter, with two ends sewed.
4 Lines, flap, door, 3⅓-foot-long, ¼-inch-diameter, with one end sewed.
56 Lines, footstop, ¼-inch-diameter.

8 Lines, guy, 50-foot-long, 5/16-inch-diameter, with two ends sewed and a cut splice in center.

12 Lines, hood, 15-foot-long, 1/4-inch-diameter, with two ends sewed.

4 Lines, lacing, 6-foot-long, 1/4-inch-diameter, with two ends sewed.

d. Repair. To patch the tent, use 12.29-ounce-per-square-yard cotton duck and No. 10–3 cotton thread, stitching six stitches to the inch.

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