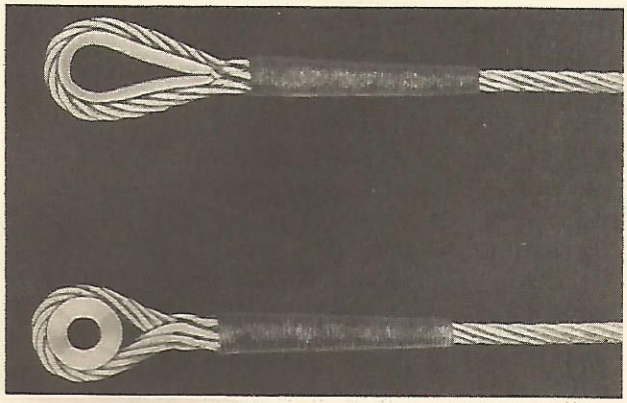

Fig. 29.

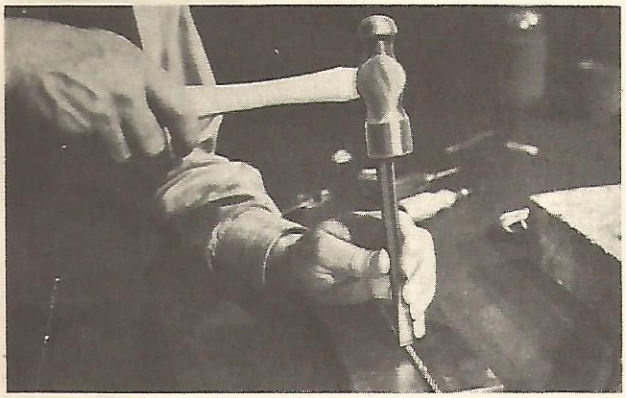

Fig. 30.

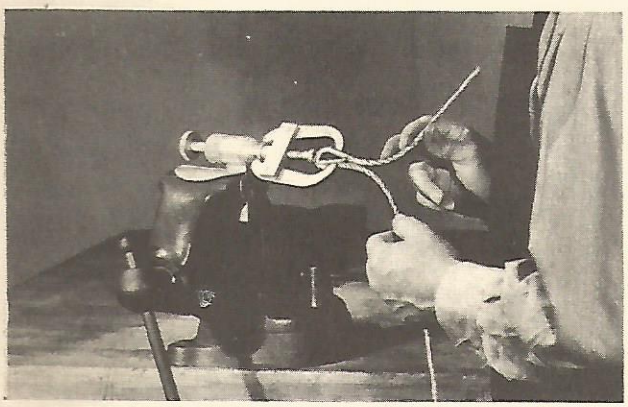

Fig. 31.

are (1) dip the cable end in solvent and then into flux; (2) dip part of cable to be cut into solder; (3) cut the cable in two at center of soldered section; (4) bend points of the thimble back about 45 degrees, and loop the cable snugly around the terminal fixture.

Figure 30 shows that after dipping part of the cable to be cut in solder, the mechanic cuts it in two at the center of the soldered section. Figure 31 shows the bending of the points of the thimble back 45 degrees and the looping of the cable around the terminal fixture.

Using the Splicing Clamp

The mechanic centers the thimble and loop in the clamp, faces the clamp, and selects the first strand (free end) below the point of the thimble, as shown in Fig. 32, where the free end is to the worker's right.

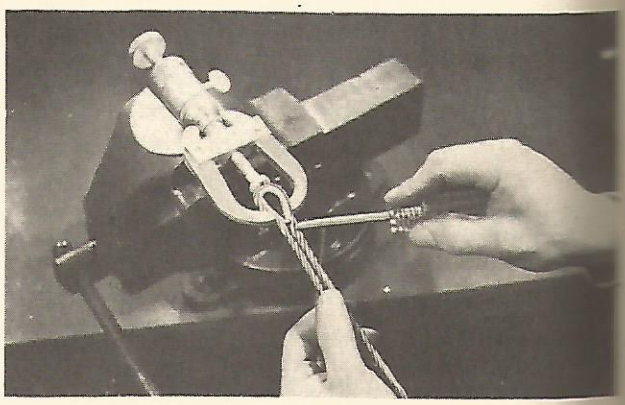

Fig. 32.

Making First Tuck with First Strand

Having selected the first strand below the point of the thimble, the worker inserts the marlin spike under that strand and unlays it, as shown in Fig. 33. He then inserts the spike under all three of the first strands (standing cable) below the point of the thimble (as shown in Fig. 34), inserts from right to left the free strand under those three (as shown in Fig. 35), and pulls the strand tight with smooth jaw pliers.

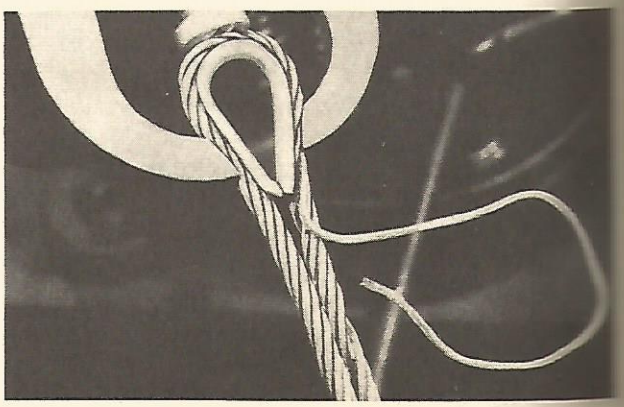

Fig. 33.

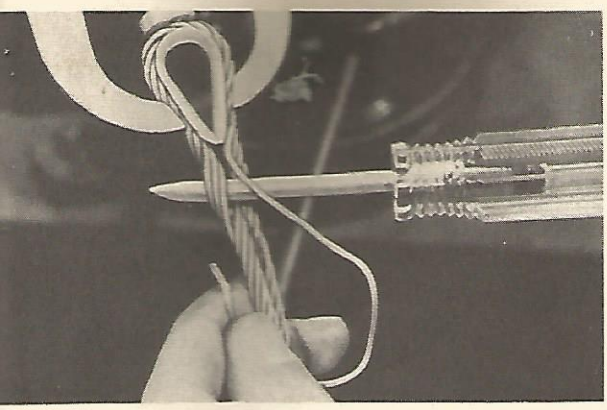

Fig. 34.

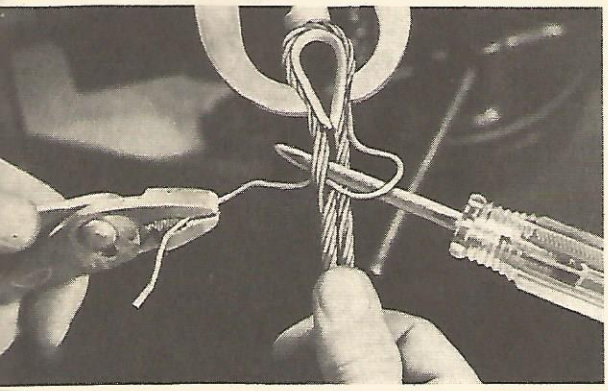

Fig. 35.

Making First Tuck with Second Strand

The mechanic then unlays the next free strand elow the first one tucked, inserts the marlin spike t the same place as before, but only under the rst two of the three strands previously used, as hown in Fig. 36. He then tucks the free strand hrough the hole held open by the spike from right to left and he pulls the strand taut, as shown in Fig. 37.

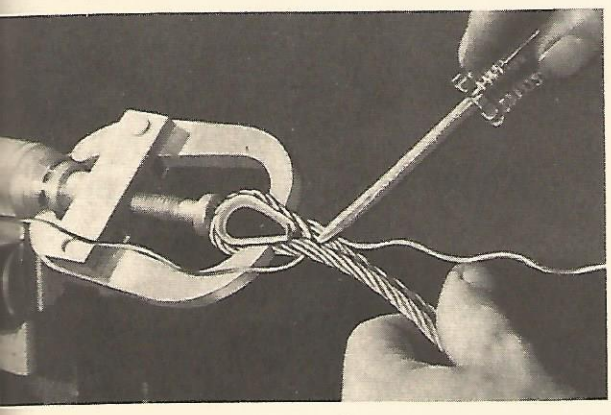

Fig. 36.

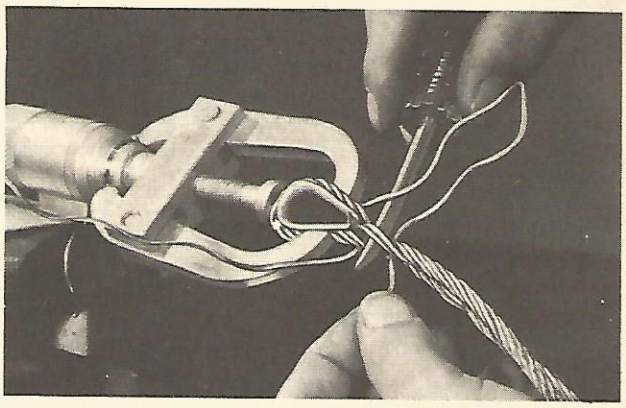

Fig. 37.

Making First Tuck with Third Strand

The mechanic unlays the third (free end) strand, counting from the point of the thimble, lifts only the first strand of the standing cable with the spike, and tucks the third strand through the spike opening from right to left, as shown in Fig. 38. He pulls all three tucked ends taut, turns them back to the right in a tight bend to hold in place, and unlays the core strand (free end) carefully, as shown in Fig. 39.

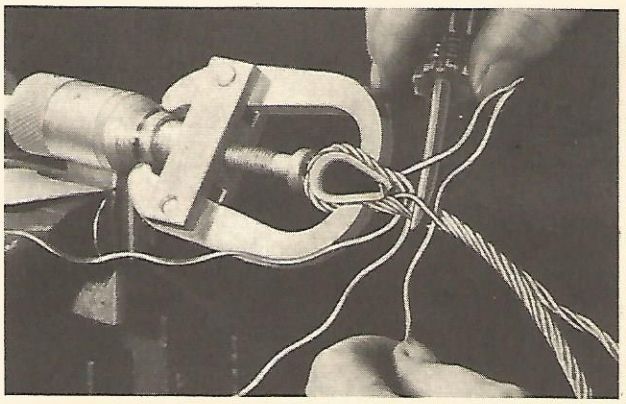

Fig. 38.

Making the First and Only Tuck with the Core Strand

Having unlaid the core strand carefully, he tucks it under the same strands as No. 2 free-end strand was tucked (as shown in Fig. 40), pulls the core strand tight (as shown in Fig. 41), and ties a knot in this strand to establish its identification (as shown in Fig. 42).

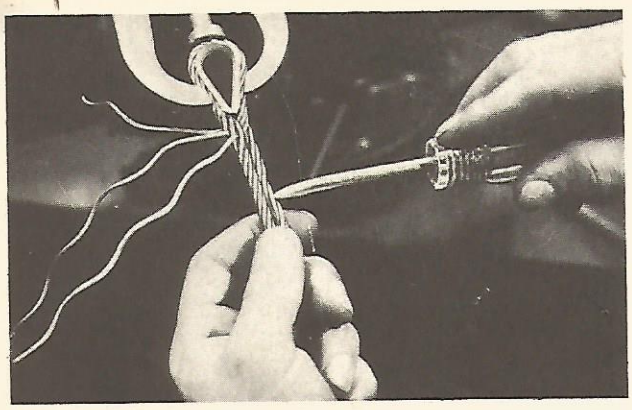

Fig. 39.

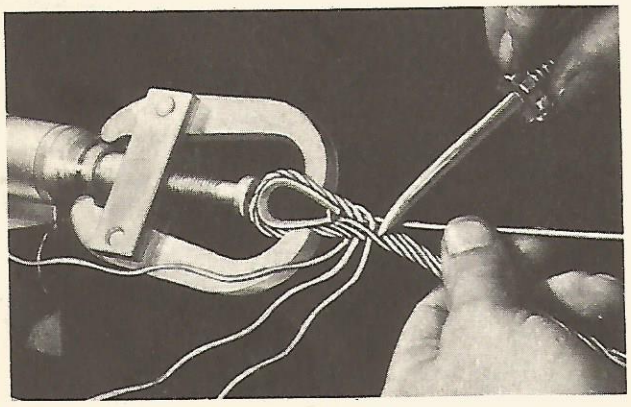

Fig. 40.

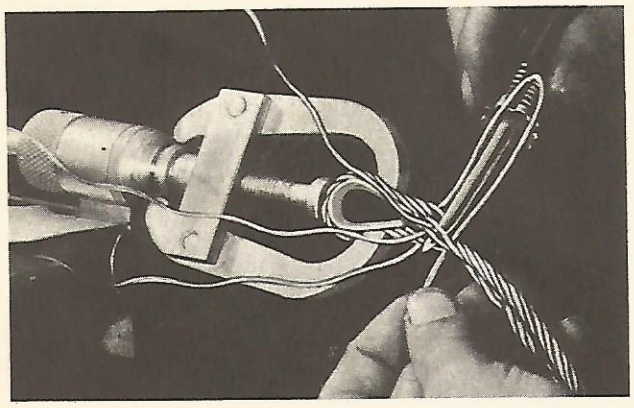

Fig. 41.

Making First Tuck with Sixth Strand

The mechanic skips the fourth and fifth strands of free end and unlays the sixth; he locates the fifth and sixth strands (standing cable); and lifts those two with the spike, as shown in Fig. 43. He tucks from left to right the sixth free-end strand, which is the only strand which is tucked from left to right in the first tuck, as shown in Fig. 44.

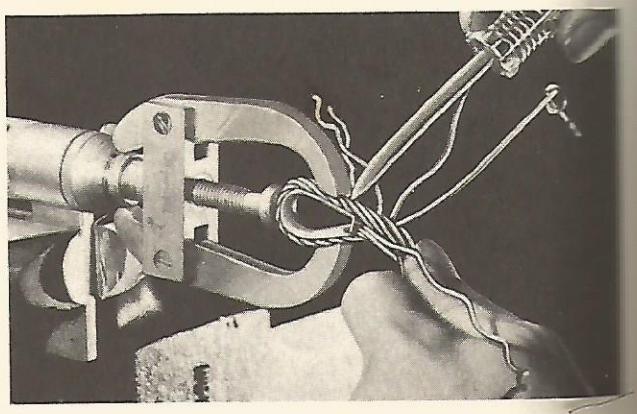

Fig. 42.

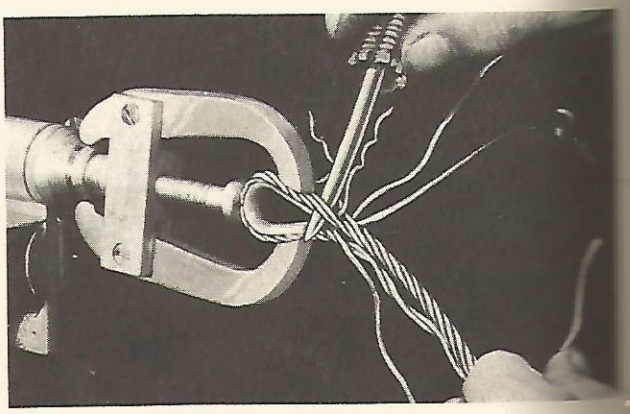

Fig. 43.

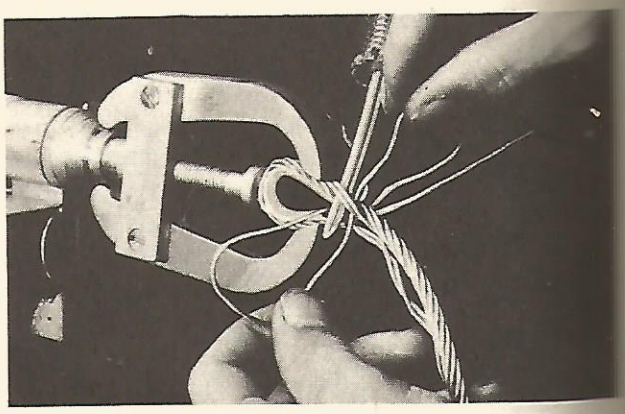

Fig. 44.

Making First Tuck with Fourth Strand

He unlays strands four and five (free end), holds the fourth strand in the left hand, with the spike in the right hand, he lifts the sixth strand of the standing cable (as shown in Fig. 45), inserts the fourth free-end strand from the right (from point of spike toward handle), and pulls taut

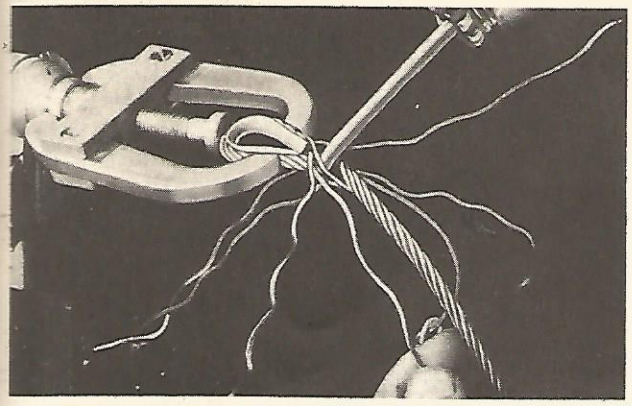

Fig. 45.

Making First Tuck with Fifth and Last Free-end Strand

He tucks from right to left, the fifth free-end strand under the fifth standing cable strand, and pulls taut, as shown in Fig. 46.

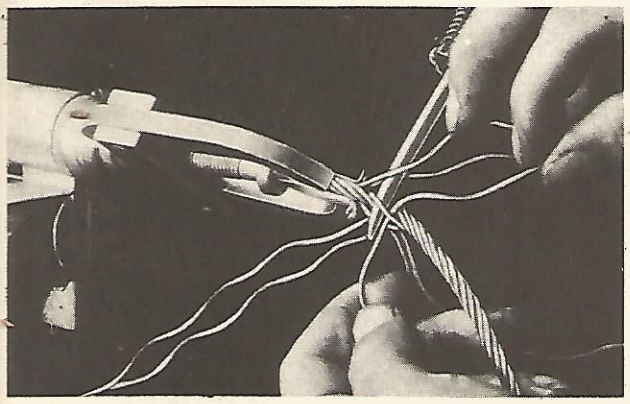

Fig. 46.

Setting the First-tuck Strands

The mechanic starts with the free-end strand that emerges with the core strand, pulls it sharply away from the thimble, taut, then up, then over, and down firmly. He then pulls and sets each strand uniformly and as tight as possible. This is done after making the first tuck with the fifth and last free-end strand and before weaving the second tuck.

Weaving Second Tuck

After pulling and setting each strand as tight as possible, he buries the core strand by tucking the free strand (to left of free core) under the standing strand to right of the free core. It therefore goes from left to right over the standing strand to the left of the core, as shown in Fig. 47.

The mechanic pulls the strand taut, lifts the next standing strand to the right, and tucks the next free strand from left to right over one and under the one lifted (as shown in Fig. 48), and continues similarly with the remaining four free strands (as shown in Fig. 49).

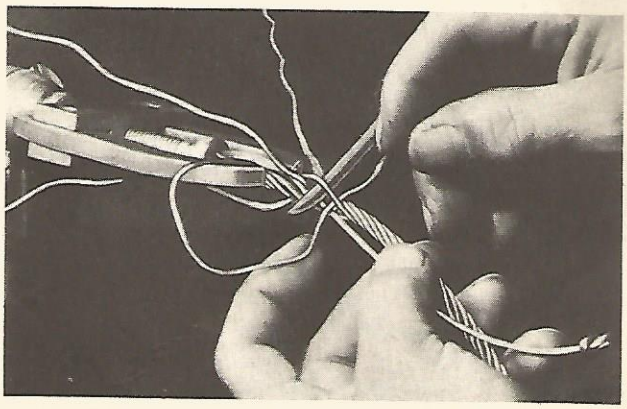

Fig. 47.

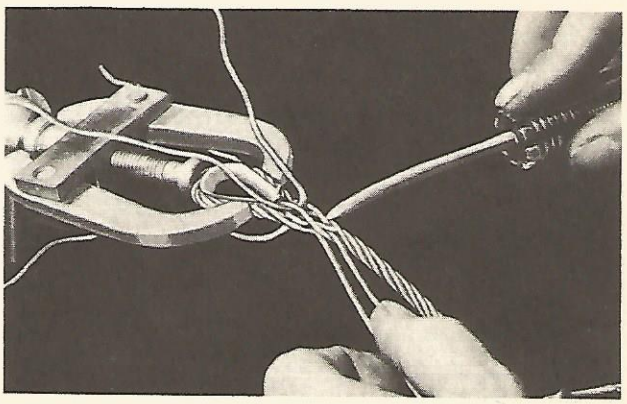

Fig. 48.

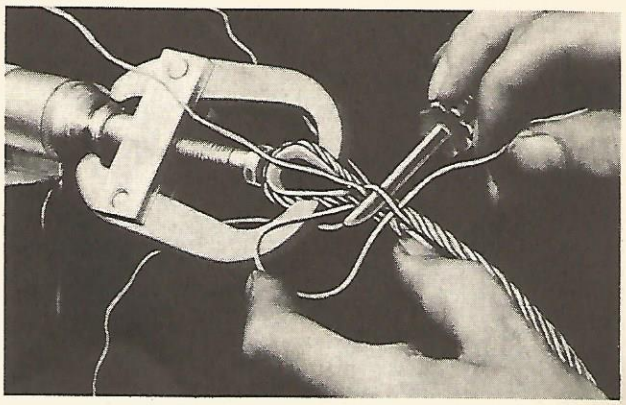

Fig. 49.

Making Third Tuck

The third tuck is made in the same manner as the second tuck, working from left to right, as shown in Fig. 50.

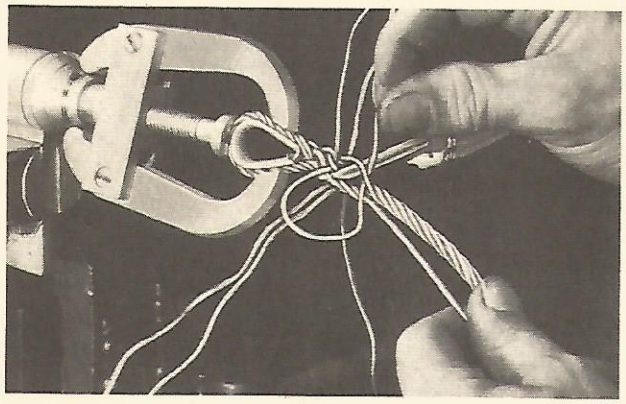

Fig. 50.

Taper Splice

The taper is started before the fourth tuck, and each strand is divided in half, as shown in Fig. 51.

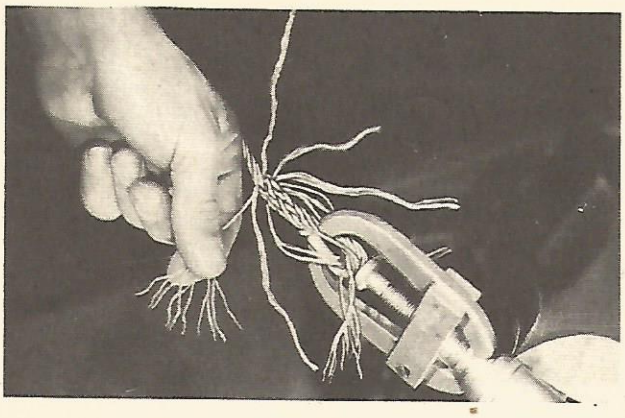

Fig. 51.

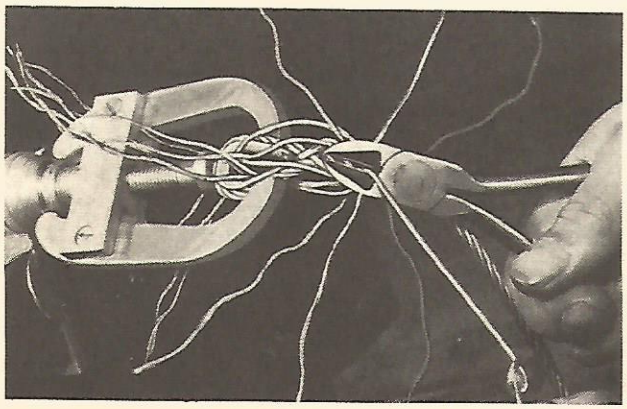

Fig. 52.

The mechanic bends one half out of the way and leaves the other half in position for the fourth tuck. He cuts off the free-end core strand as close to the cable as possible, as shown in Fig. 52.

Tapering can also be effected before the fourth tuck by cutting off one-third of the fine strands close to the cable and toward the soldered end. The mechanic cuts another third of each remainder ahead of the fifth and sixth tucks. Other variations include cutting the small cores out ahead of the fourth tuck.

Fourth Tuck

The fourth tuck is made in the same manner as the second and third tucks, over one and under one from left to right, as shown in Fig. 53.

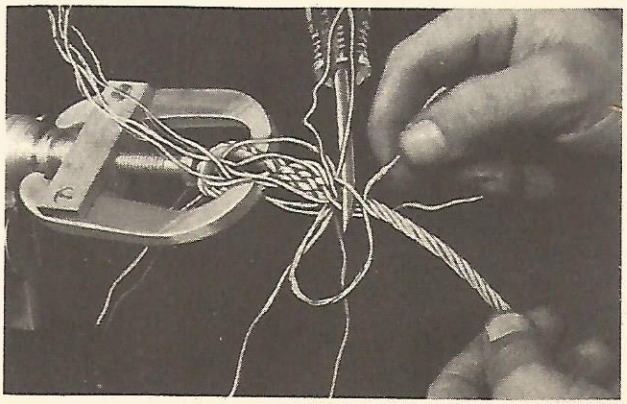

Fig. 53.

Fifth Tuck

The mechanic divides and bends back one-half of the remaining wires. He weaves over one and under one with the remaining wires of each strand, as shown in Fig. 54.

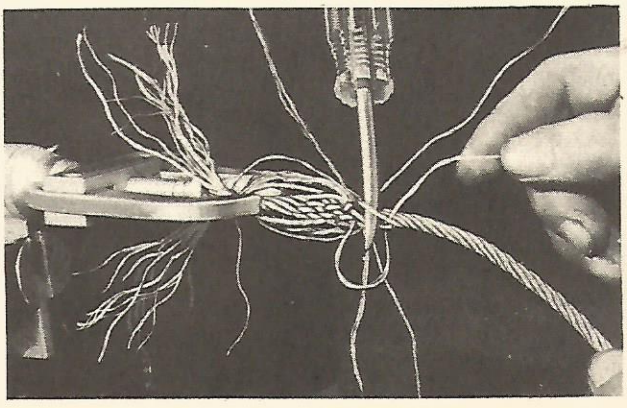

Fig. 54.

Setting the Splice

He sets the splice by pulling all wire ends taut, then up, and hammering the splice vigorously with a mallet, as shown in Fig. 55. He cuts off the loose ends of wires, as shown in Fig. 56.

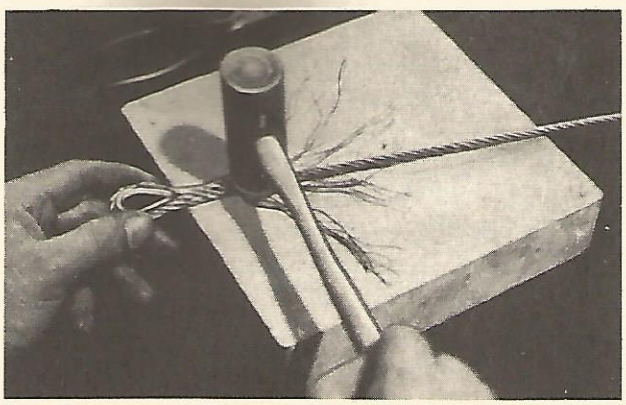

Fig. 55.

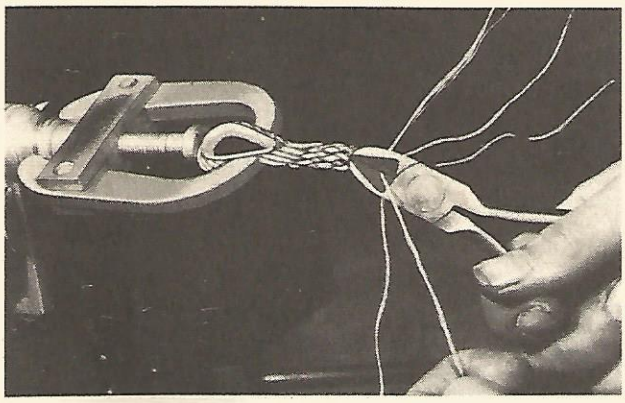

Fig. 56.

Serving the Splice

To serve the splice, the mechanic starts below the end of the splice and winds cotton or linen cord evenly up the taper until all sheared ends are covered. He makes a loop tie with another cord to complete the serving, and covers the serve with two coats of shellac to complete the five-tuck splice shown in Fig. 57.

Army Wrapped and Soldered Splice

In making the wrapped and soldered splice according to the Army method, wrapping wire of soft-annealed steel, thoroughly and smoothly tinned by means of the hot process, is used. The soldering flux is stearic acid or some suitable mix-

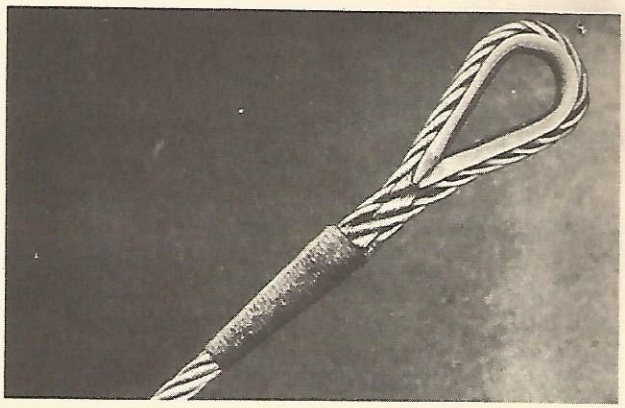

Fig. 57.

ture of stearic acid and resin. Resin dissolved in alcohol or another Army-approved solvent may be used.

The cable is cut to length by mechanical means only. The use of an oxyacetylene torch is forbidden. The wrapping wire is applied either by machine or hand, under constant tension. All terminals are thoroughly cleaned before soldering by immersing in the flux. The terminals are smoothly soldered. The space between the wrapping wire and the cable must be completely filled with solder. Abrasive wheels or files are not used for removing solder.

Navy Wrapped and Soldered Splice

In making the Navy wrapped and soldered splice, the serving or wrapping wire must be of commercial soft-annealed steel wire or commercial soft-iron wire, thoroughly and smoothly tinned or galvanized. The solder must be half-and-half tin and lead. The melting point of this solder varies from 320 to 390°F., and the tensile strength is about 5700 lb. per sq. in.

The solder flux is a compound of stearic acid (no mineral acid present) and resin, with a composition of 25 to 50 per cent stearic acid and 75 to 50 per cent resin. A warming gluepot is used to keep the flux fluid.

Before the cable is cut, the wires are soldered together to prevent slipping. The better process is to tin and solder the cable thoroughly for 2 or 3 in. by placing in a solder trough, and then to finish smooth with a soldering tool. The cable may be cut diagonally to conform to the required taper finish.

After being soldered and cut, the cable is securely bent around the proper size thimble and clamped, taking care that the cables lie close and