DIRECTIONS FOR SPLICING AN EYE INTO THE END OF A WIRE ROPE

First. Place a tie wire on the short end at its contact with the thimble.

Second. Remove the tie wires from the end of the rope, unlay and spread the strands and cut off the core as near to the throat as possible.

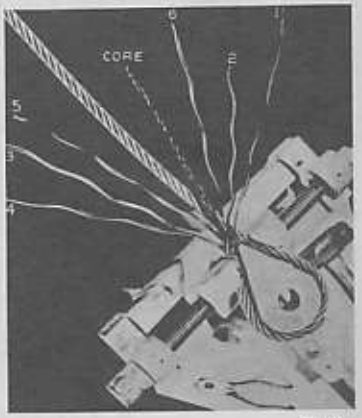


FIG. NO. 1

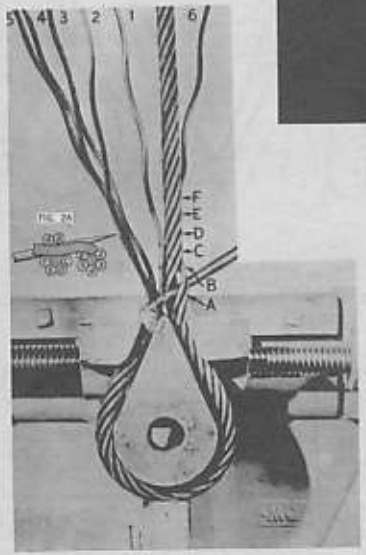


FIG. NO. 2

Force a splicing pin or "spike" under strands A and B, lying nearest to the thimble, on top surface.

DIRECTIONS FOR SPLICING AN EYE INTO THE END OF A WIRE ROPE

FIG. NO. 3

Rotate the spike away from the throat, bring strand 1 over the rope and insert through the opening alongside the spike.

Rotate the spike back toward the throat, at the same time pulling in strand 1, so that the two parts of rope are brought firmly together and strand 1 forced toward the throat as much as possible.

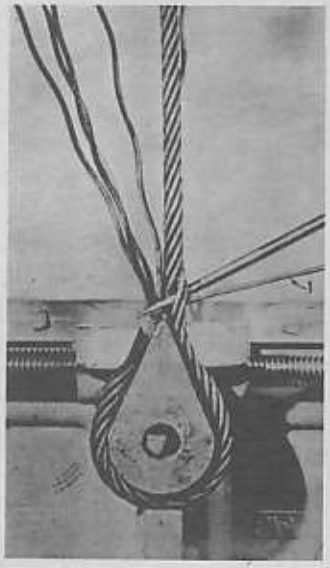


FIG. NO. 4

Repeat this tucking-in operation for all the other strands, tucking strand 2 under strand B, strand 3 under strand C, strand 4 under strand D, strand 5 under strand E, strand 6 under strand F as is seen below. Thus all strands have received one tuck.

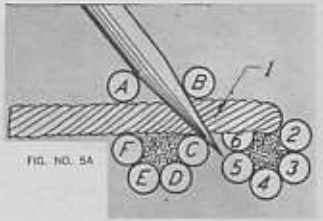


FIG. NO. 5A

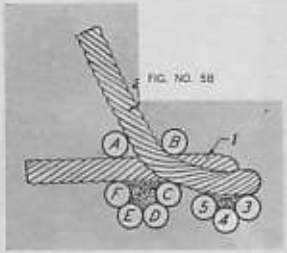


FIG. NO. 5B

To tuck strand 2, push spike under strand B as shown in Fig. 5A.

Fig. 5B will show strand 2 under strand B. Proceed with the other strands in numerical number.

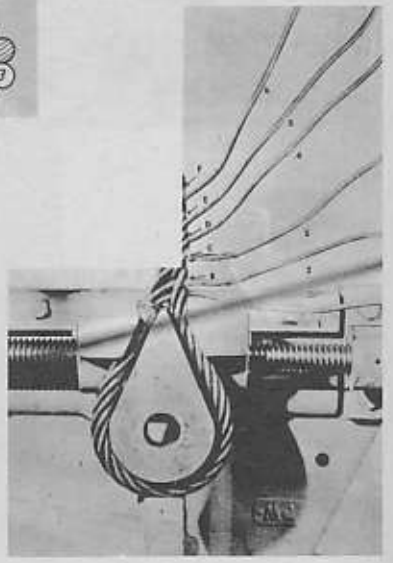


FIG. NO. 5

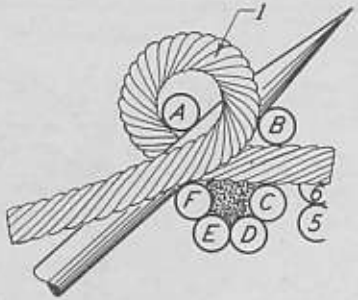


FIG. NO. 6

To give a strand an additional tuck, that strand end is wrapped around the strand from under which it comes out. For example: strand 1 comes out from under strand A.

Force the splicing pin under strand A and over strand B and lay strand 1 round and under strand A through the opening made by the pin. Pull strand 1 in a tight loop around "A" and force this loop back as far toward the thimble as it will go.

Thus a second tuck is made in strand 1.

For ropes smaller than ⅞" diameter it is practice to give each strand 4 tucks; completely tucked splice.

For ropes of ⅞" diameter and larger, each strand is given 2 full tucks and strands 1 and 2 each a third tuck. All six strands are then split and one-half of each of the six strands given at least 2 additional tucks; the other half of each strand trimmed off close.

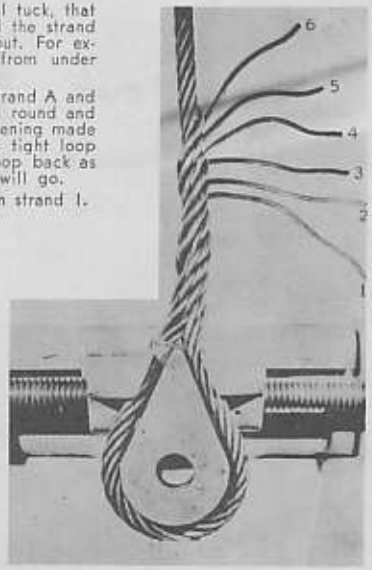


FIG. NO. 7

DIRECTIONS FOR SPLICING AN EYE INTO THE END OF A WIRE ROPE

The photos show a temporary block inserted to form a desired sized loop, while making the splice.

When all the preceding steps have been finished, lay the splice on a wood block and while rotating the rope, pound the splice out smooth and round, as in Fig. 9.

FIG. NO. 8

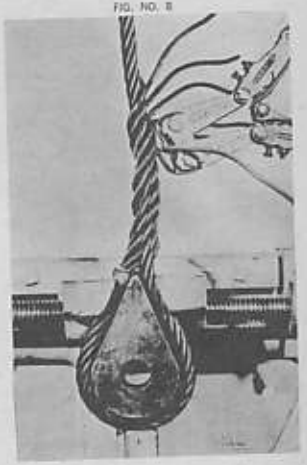
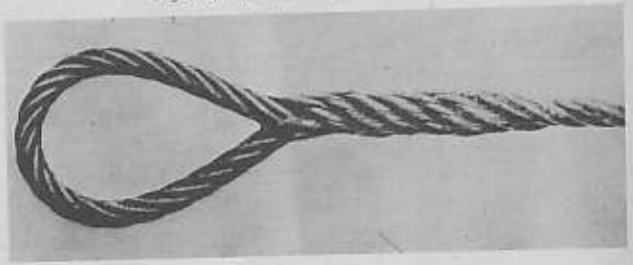


FIG. NO. 9

Fig. 10, the finished, rounded splice.



DIRECTIONS FOR MAKING AN ENDLESS OR LONG SPLICE IN WIRE ROPE

FIG. NO. 1

These directions for six stranded ropes apply to those having either hemp centers or Independent Wire Rope Centers, except for the handling of the I.W.R.C. as will be explained.

For making the Standard Short Endless Splice in wire rope, there will be required a length IN FEET equal to 32 times the diameter of the rope in inches, or a length IN INCHES equal to 384 times the diameter of the rope, designated as 384d" length. One-half of this length, "l" is measured from the ends A and B of the two ropes, as AC and BC as in Fig. 1.

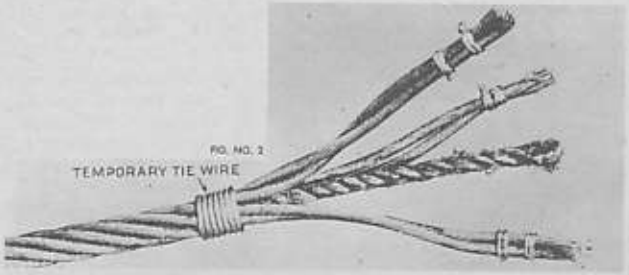


FIG. NO. 2

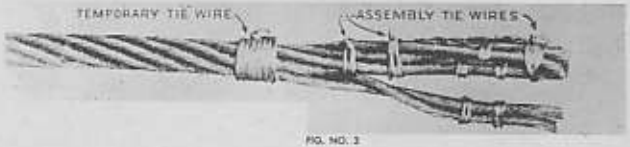


FIG. NO. 2

For the Extra Long Endless Splice, for long lay ropes and some other special uses of regular lay ropes, the length IN FEET will be 60d' or IN INCHES, 720d".

FIRST: On each end of the ropes to be spliced, measure back the length "l" and put on one tight seizing at "C" as in Fig. 1.

SECOND: Place a temporary seizing or tie wire on the rope about 6" to 8' from the end and remove the other tie wires, as seen in Fig. 2.

THIRD: Separate into three pairs of adjacent strands, being sure not to change the relative position of the strands within each pair, and bind securely with tie wire as in Fig. 2.

FOURTH: Reassemble and securely tie all the elements together except for any one pair of strands, as in Fig. 3.

FIFTH: Remove the temporary tie wire from the ropes and unlay the one pair of strands back to the tie wire of point "C", keeping the other strands and core bound intact, as in Fig. 4.

FIG. NO. 4

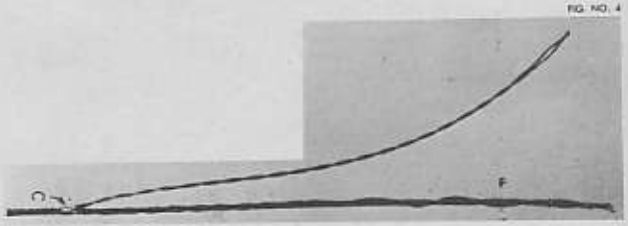
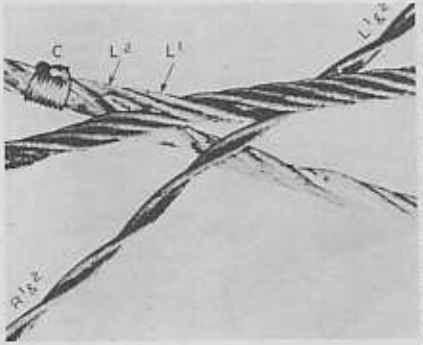


FIG. NO. 5



The preceding five steps are to be carried out on both rope ends to be spliced.

The next step is to bring the points "C" of the two ropes to adjacent position; remove the "C" tie wire from, say, the rope on the right.

Forcing points "C" of the two ropes together, unlay strands R1 and 2 and immediately lay in their place in the right hand rope, strands L1 and 2 from the left hand rope, as in Fig. 5.

FIG. NO. 6

Remove the assembly tie wires from the ends of the two ropes and take loose the pair of R3 and 4 strands, and L3 and 4 strands, unlaying these two pairs of strands until they are free up to the point "C", the junction of the two ropes.

Remove the "C" tie wire from the rope on the left.

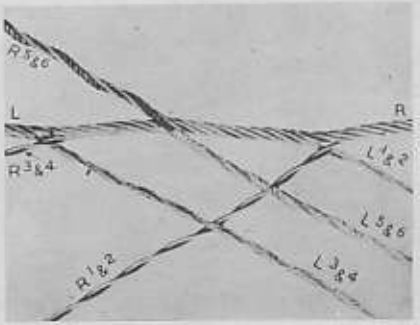
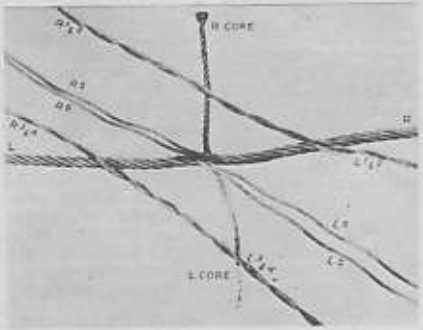


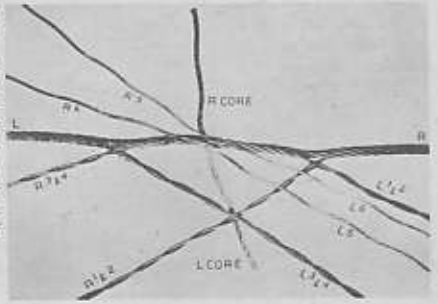
FIG. NO. 7



Now unlay strands L3 and 4 and immediately lay in their place strands R3 and 4. The rope will then appear as in Fig. 6.

Next separate the strands 5 and 6 of each rope from their cores and from each other, as in Fig. 7, and allow the cores to protrude from opposite sides of the rope.

FIG. NO. 8



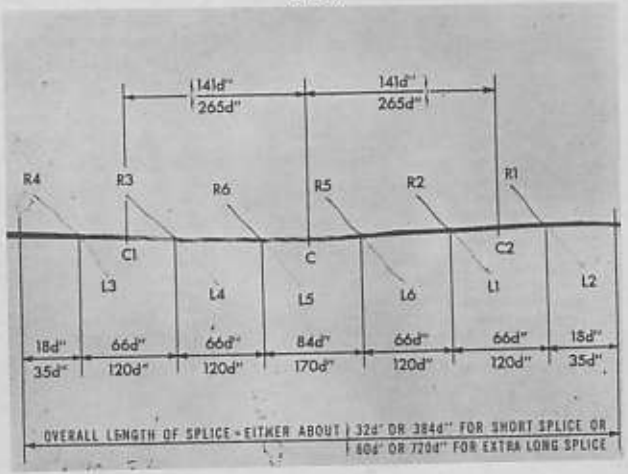
NOTE: — The important step now is to rearrange the strands in this group; reading from left to right, so that as in Fig. 8, first "L5", then "R6", "L6" and "R5" alternate each other like interlocking fingers of two hands.

The next step is to separate these three groups of two pairs of strands each, into six pairs. At point "C1" unlay strand L3 to the left and immediately lay in its place strand R4; unlay strand R3 to the right and immediately lay in its place strand L4.

Repeat this operation for the other two points "C" and "C2".

Cut the two core ends at "C" so that when they are tucked inside the rope, they will just abut. Trim off excess length of strand ends. The rope will then have the appearance of Fig. 9 with the six pairs of strands equally spaced about the original center point "C" and at distances IN INCHES (times the rope diameter) as shown in Fig. 9, depending upon whether the Standard Short Splice (upper figures) or Extra Long Splice (lower figures) is made.

FIG. NO. 9



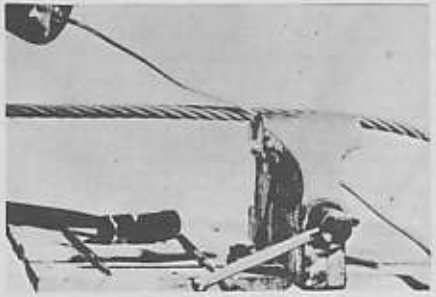


FIG. NO. 10

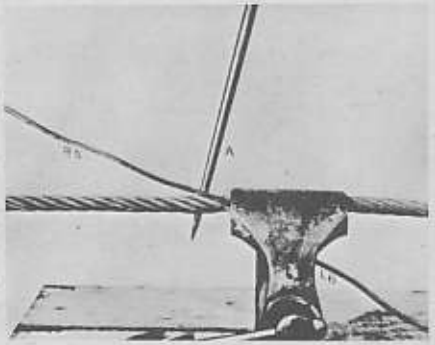
We are now ready for completing the splicing job.

Take any point as the R5-L6 pair.

Place the rope into the jaws of a bench vise so that the junction point of the two strands comes just to the left of the vise, as in Fig. 10.

Trim the end of the strand to a length of 18d" or 35d", depending upon which length of splice is to be made, but in no case even for small rope should this trimmed end be less than 10" to 12".

FIG. NO. 11



Wrap the end of the strand with tire tape both to hold the wires together and to build up a little greater diameter of strand to tuck inside the rope. Drive a splicing pin or spike "A" through the rope under strand L6 and the next two adjacent strands as in Fig. 11.

Drive in a second spike "B" through the same opening with spike "A".

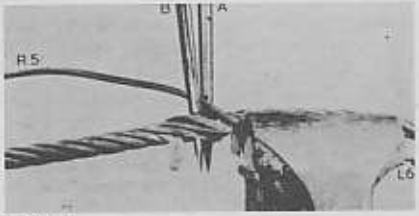


FIG. NO. 12

By reversing the movement of the tops of the spikes, and by holding "A" and moving "B", a little practice will enable one to force the strand down into the center of the rope, alongside strand L6.

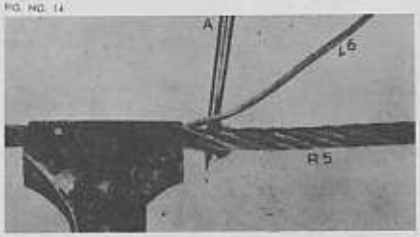
Hold "A" still and rotate "B" with the lay of the rope toward the left, forcing strand R5 continuously into the center of the rope, while at the same time pulling the core out with the advancing spike, as in Fig 13.

Cut the core and pull the left end through the bottom of the opening.

Pulling the top of spike "B" toward the splicer and pushing top of "A" away from the splicer, place strand R5 between the spikes, and force the strand down as near the rope as possible, as in Fig. 12.

FIG. NO. 13

FIG. NO. 14



When the taped strand end is tucked inside the rope, cut the "L" core so that when it is tucked back into the center of the rope, it will just abut the strand end.

To tuck the other strand, "L6", move the rope to the right side of the vise as in Fig. 14, spike "A" having been left in place.

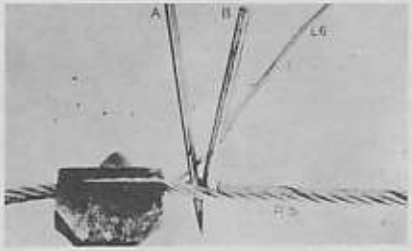


FIG. NO. 15

Drive spike "B" into the same opening with "A" as in Fig. 15.

Place the strand end between the two spikes, per Fig. 16, as was done in the case of the strand end R5 as explained above for Fig. 12. In this case the strand L6 will lie behind strand R5. Run the strand all the way in with "A" and tuck the end in as above and the splicing of these two strand ends is complete.

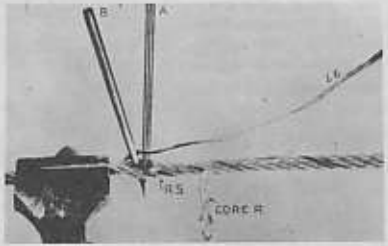


FIG. NO. 16

FIG. NO. 17

Pound the point where the two strands enter the rope with a wooden mallet on a wooden block or between two wooden mallets, and the finished splice point will look like Fig. 17.

As seen in Fig. 18, straighten the "set" helix from all the strand ends that are to be tucked.

As seen in Fig. 19, wrap friction tape over the entire length of the straightened strand ends so that the strand diameter is increased by about 25%.

Proceed to splice as described in the foregoing.

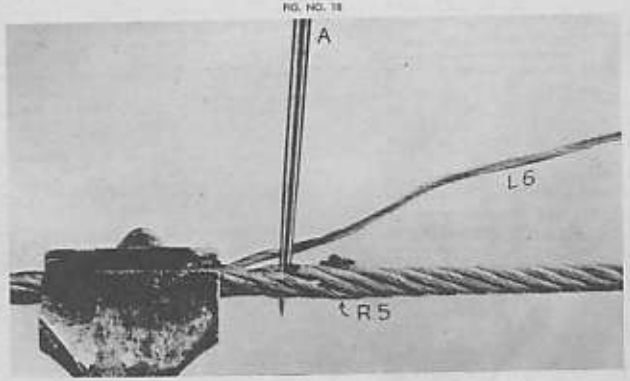
Directions For Splicing Wire Rope Having INDEPENDENT WIRE ROPE CORE

Start and proceed with the splice as in the case of hemp centered ropes except that the strand ends to be tucked must start at point "C" and will be so cut for length that they will each abut the adjacent end, so fully filling the center of the rope for the entire length of the splice.

The I.W.R.C. will be wormed out as the successive strand ends are run in and tucked, and the I.W.R.C. cut and tucked back into the rope to just abut the last tucked strand end.

All strand ends, whether of ordinary or of Preformed ropes, when splicing ropes have an I.W.R.C., must be built up in size by friction tape as described above under instructions for Preformed rope.

FIG. NO. 18



DIRECTIONS FOR SPLICING LANG LAY WIRE ROPE

Proceed as in all the above through the various steps until ready to tuck strand "L6" as in Fig. 14. The rope with the spike "A" is placed at the right of the vise the spike being behind strand "R5", as in Fig. 18.

Remove spike "A" and drive it and spike "B" IN FRONT of "R5", and under three strands.

Pull the core out from the bottom of the rope.

Place strand "L6" between the two spikes; that is, behind "B" and in front of "A", as in Fig. 19.

This will make two strands cross each other; twist strand "L6" so as to unlay the wires; forcing this part of the strand into the center of the rope, these loosened wires will lay more smoothly and with less hump across strand "R5".

As was done in worming and tucking "R5", so, by holding spike "B" and worming spike "A" toward the right, force the strand "L6" inside the rope, pulling out the core.

Complete the tucking of "L6", cut off the core so that when it is tucked back inside the rope. It will just abut the end of "L6".

Pound the splice round and even, and it will look like Fig. 20.

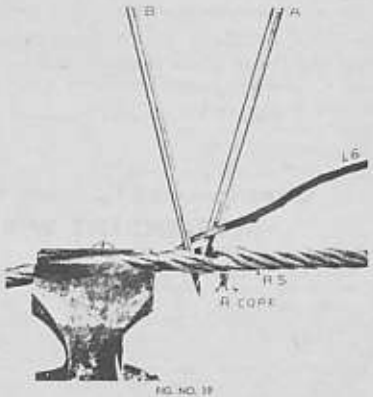
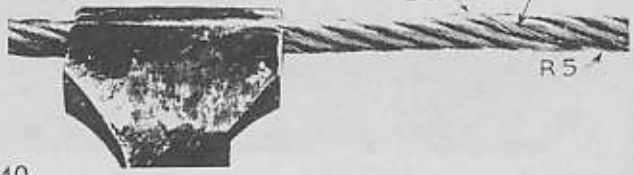


FIG. NO. 19

FIG. NO. 20



DIRECTIONS FOR SPLICING EIGHT STRANDED ROPE

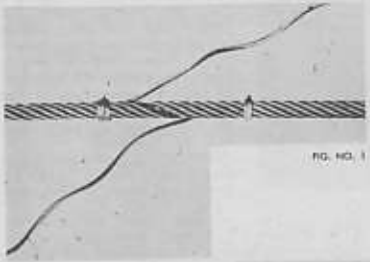


FIG. NO. 1

Place seizings one rope lay apart on either side of each of the eight tuck points as in Fig. 1.

Split each strand end in two, as in Fig. 2.

An eight stranded rope cannot be spliced the same way as a six stranded rope as its hemp center is considerably larger than the steel strands.

Using a length of splice about the same as for the standard for six stranded rope, the rope ends are prepared similar to Fig. 4.

Continue as for six strand, hemp centered ropes, to prepare for tucking as in Fig. 9, except that now we have eight tuck points spaced approximately a length of 30d" apart with strand ends about 12" long.

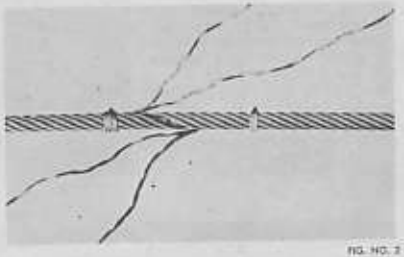


FIG. NO. 2

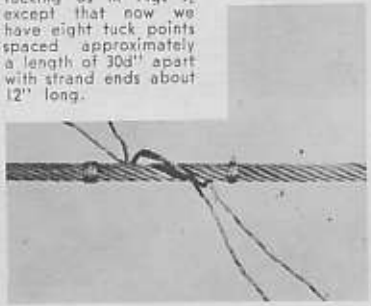
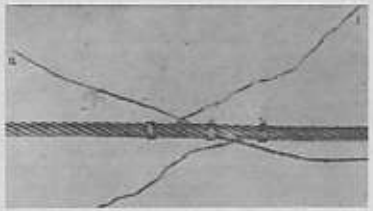


FIG. NO. 3

Take one half of each strand and tie a double knot, as in Fig. 3, but being sure to pick two half strands that together will form a complete, round strand.

EIGHT STRANDED OR THE TIED "CHICAGO" SPLICE

FIG. NO. 4



Pull this knot tight, using a pair of "come along" or other type clamps, pulling in with tackle if necessary. When tight, put a seizing over the center of the knot to hold it securely as in Fig. 4.

The four half strands must now be tucked:

Remove one end seizing and insert a splicing pin beneath the three strands next adjacent to the left of the half strand "a" being tucked as in Fig. 5; insert the strand end "a" under the three raised strands and in a direction at right angles to these three strands.

Next raise the three strands next adjacent to the right of half strand "j" and tuck this half strand under these three strands and at right angles to them as in Fig. 6.

FIG. NO. 5

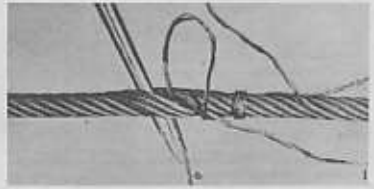
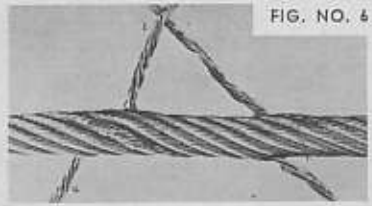


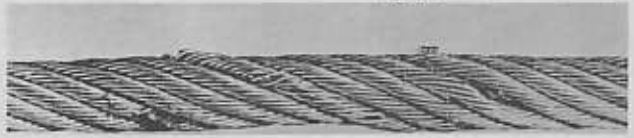
FIG. NO. 6



Trim the wires close to the rope as in Fig. 7 and duplicate the process with the two other half strands at this tuck point.

When all ends at the eight tuck points have been tucked and trimmed, remove all seizings and hammer the rope round and smooth as possible with a pair of wooden mallets and the splice is complete.

FIG. NO. 7



LACED BLOCKS

This method of making up a set of falls, is a poor excuse for rigging. This is especially so, when using four sheave blocks and up. These blocks are heavy and laced blocks have a tendency to tilt the travelling block when running empty, which will cause excessive wear and damage to the sheaves and load line.

RIGHTANGLE REEVING

From five parts to thirteen parts.

Blocks used for rightangle reeving should be identical, especially square in relation to each other, when right-angled to each other. This prevents siwashing of the cable against the sheaves, when the blocks are working close together.

The illustrations and directions for rightangle reeving are on the following pages.