BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G80.801.4
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AT&TCo Standard

TOOLS

LINEMEN'S CLIMBERS
SHARPENING GAFFS

1. GENERAL

1.01   This section replaces Issue 1. It provides instructions for properly sharpening gaffs on Linemen's Climbers. It has been revised to cover changes in sharpening techniques and to describe the plane and cutout tests of climber gaffs.

2. SHARPENING GAFFS

2.01   Climber gaffs should be kept sharp at all times. When sharpening a gaff, the original angle between the outer edge and the inner surface of the gaff should be maintained.

2.02   When placing the climber in a vise always protect the leg iron by placing wooden blocks between the vise jaws and the leg iron. This prevents scoring of the leg iron which may weaken it.

2.03   Use the standard Mill Smooth H File for sharpening gaffs. The file should be clean and sharp and should be kept clean during the filing operation by use of a carding brush. Grasp the file firmly so that its movement is controlled at all times. Apply even pressure throughout each forward stroke. On the return stroke the file should be raised slightly above the work to prevent dulling the file teeth.

Filing the Inner Surface

2.04   When sharpening a gaff, begin by filing on the inner surface, not including the point, until the gaff meets the thickness requirements given in Section G80.801.3, Part 4. Use the C Gaff Gauge for checking these dimensions. File the gaff as shown in Fig. 1 using a forward movement parallel to the surface being filed, using strokes at right angles to the long dimension of the gaff. Do not allow the file to rock over the gaff as this will result in rounded edges.
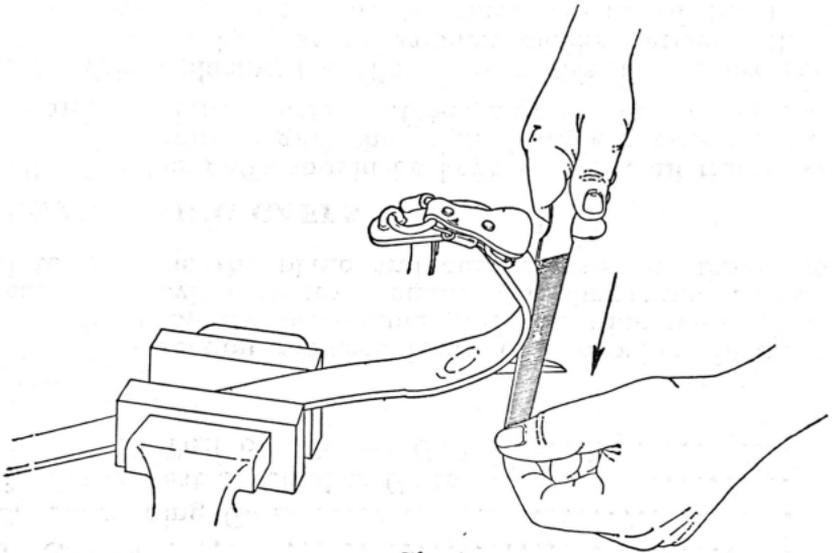

Fig. 1

2.05   Fig. 2 shows the manner in which the metal is removed from the inner surface of a gaff in the course of successive sharpenings. Take care to avoid scoring of the leg iron as such scores or scratches may weaken the leg iron. Avoid leaving file marks in the gaff as they may weaken the gaff.
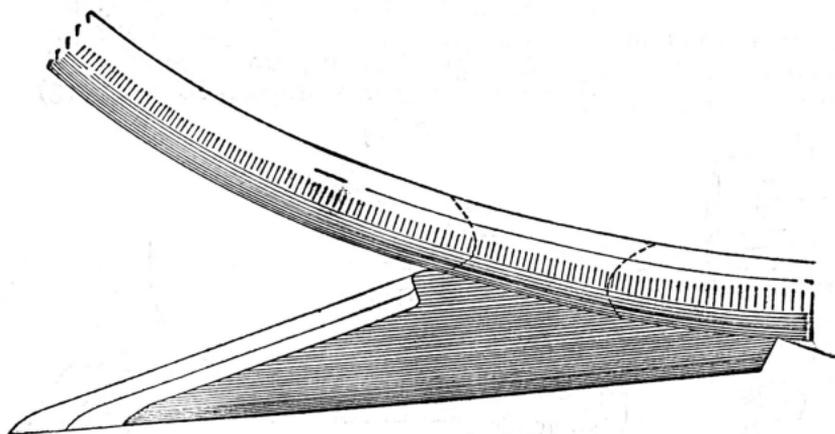
Fig. 2

Filing the Outer Rounded Surfaces

2.06   File the outer rounded surfaces of the gaffs using a rounding motion so as to retain the original gaff shape and so that the gaff meets width requirements given in Section G80.801.3, Part 4. **Do not file the straight outer edge of the gaff** as this will change the gaff angle.
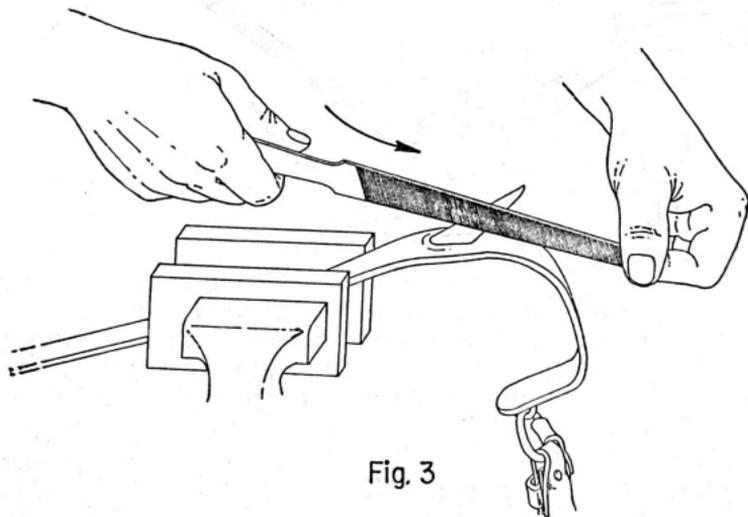

Fig. 3

Filing the Point

2.07   The point of the climber gaff should function as a chisel rather than as a nail or spike. When the gaff is maintained as a chisel it cuts its way into the pole surface.

When sharpened as a spike it must be driven into the wood. Spike pointed gaffs will cut out when the angle of penetration is reduced, as in the case when knees get too close to the pole (which, of course, must be avoided). Chisel pointed gaffs will cut deeper into the pole instead of cutting out, even when the angle of penetration is greatly reduced. To obtain chisel pointed gaffs proceed as follows:

(1) File the gaff against the point. Using light, even strokes, guide the file in arc as shown in Figs. 4 and 5 in order to form the curve at the point. Lift the file at the completion of each stroke. File the point of the gaff until it meets the profile requirements as shown in Section G80.801.3, Part 4.
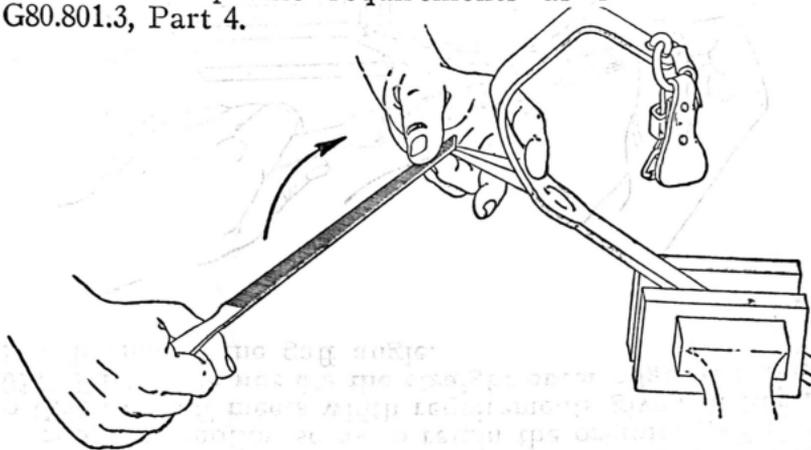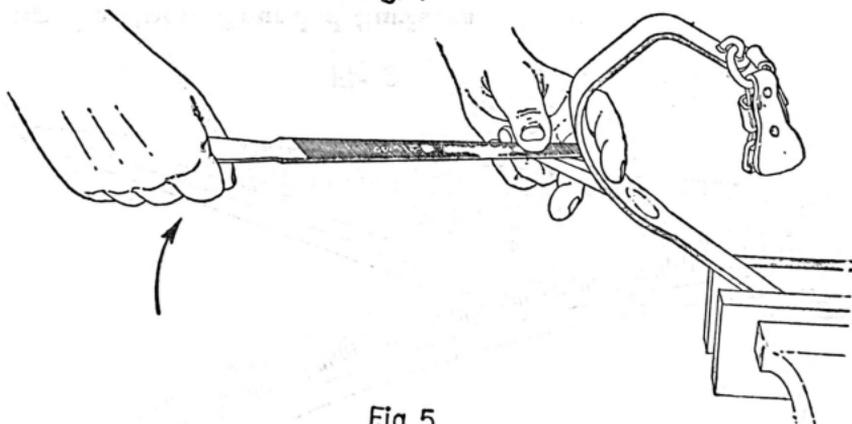

Fig. 4

Fig. 5

(2) This operation removes metal from the tip and will thus shorten the gaff slightly. Therefore, recheck the thickness and width of the climber gaff as shown in Section G80.801.3, Part 4 and refile if necessary.

(3) At this point check the length of gaff. If the filing operations have reduced the length of the gaff to less than 1-1/8 inches, the pair of climbers should be exchanged for a good pair.

Honing the Gaff

2.08   After the filing and gauging is completed, complete the sharpening by using the standard honing stone. Place a few drops of light machine oil on the stone and hone toward point as shown in Fig. 6.
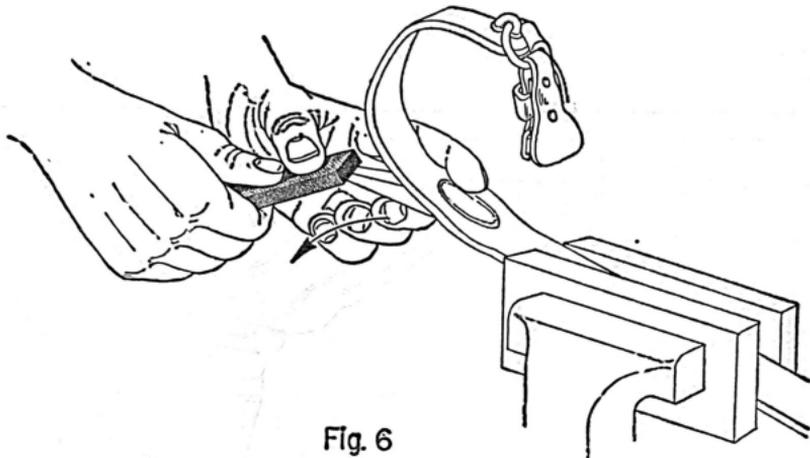

Fig. 6

2.09   Regular maintenance of climber gaffs with the hone will eliminate, to a large extent, the necessity for filing.
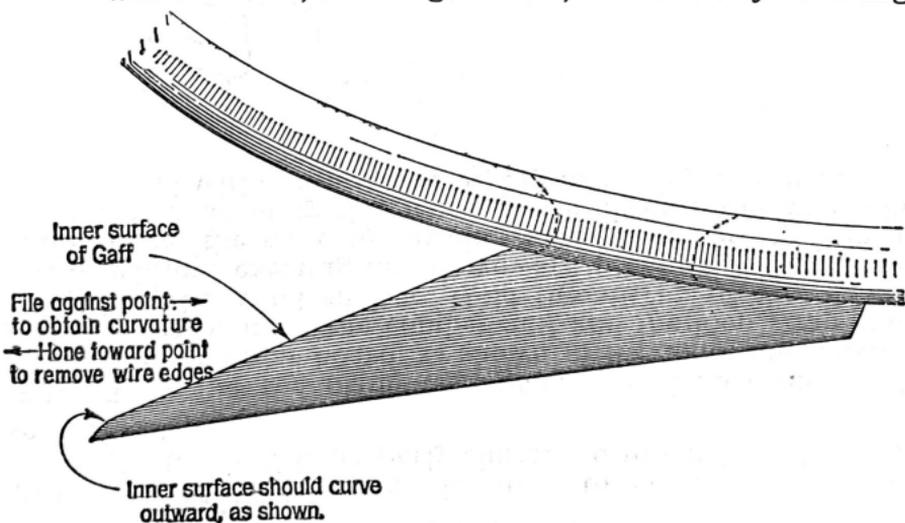

Inner surface of Gaff

File against point to obtain curvature
Hone toward point to remove wire edges

Inner surface should curve outward, as shown.

Fig. 7

3. PLANE TEST OF CLIMBER GAFFS

3.01   The plane test may be used to determine that the climber gaff is properly sharpened to cut into the wood like a chisel.

3.02   To make the plane test, place the climber on a soft pine or cedar board, as shown in the following illustration, with the point of the climber gaff and the loop strap resting against the wood surface. Hold the stirrup of the climber vertical without exerting any downward pressure and slide the climber along the wood by pushing forward on the leg iron. If the climber is properly sharpened, it will dig into the wood and begin to hold within a distance of approximately one inch.
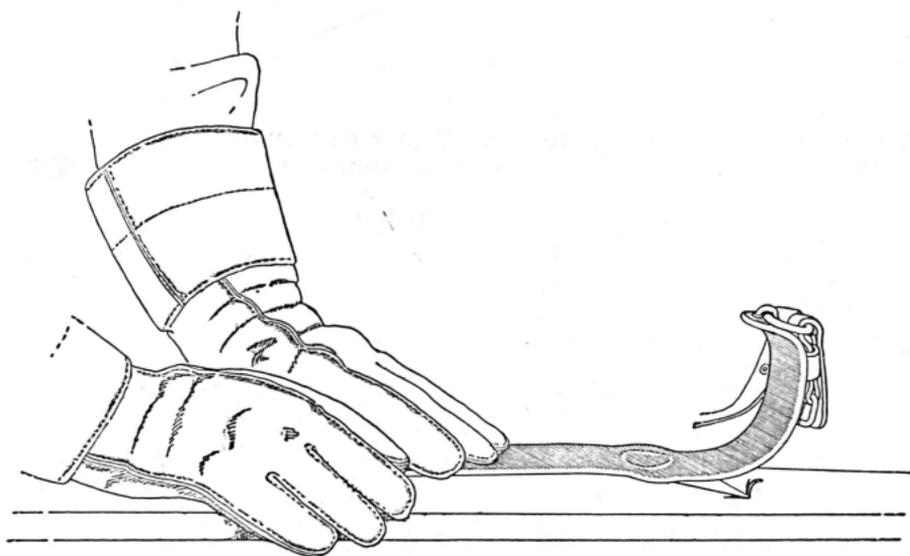

Fig. 8

3.03   If the climber gaff slides along the surface of the wood without cutting in, leaving only a line or mark on the wood as shown in the following illustration, the point has not been properly sharpened or the outer surface of the gaff has a hook nose or bow in it.
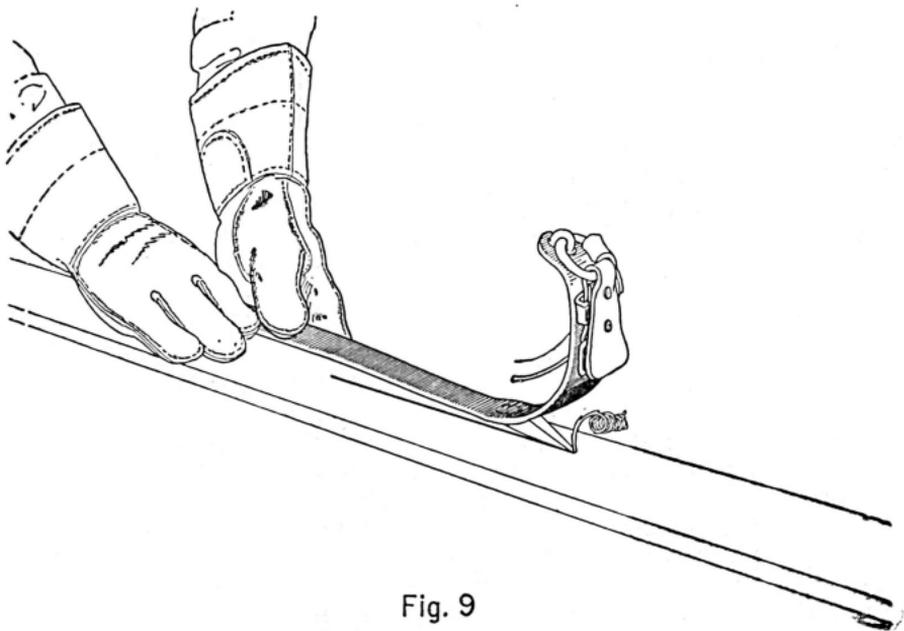
Fig. 9

4. CUTOUT TEST OF CLIMBER GAFFS

4.01   The cutout test may be made to show how the climber gaff cuts out when the angle is reduced beyond the critical point, when it is not properly sharpened or has a hook nose or bowed outer edge.

4.02   To make the cutout test, jab the gaff into a soft pine or cedar board with sufficient force for it to penetrate 1/4 inch or more at an angle of approximately 30 degrees, as shown in the following illustration.
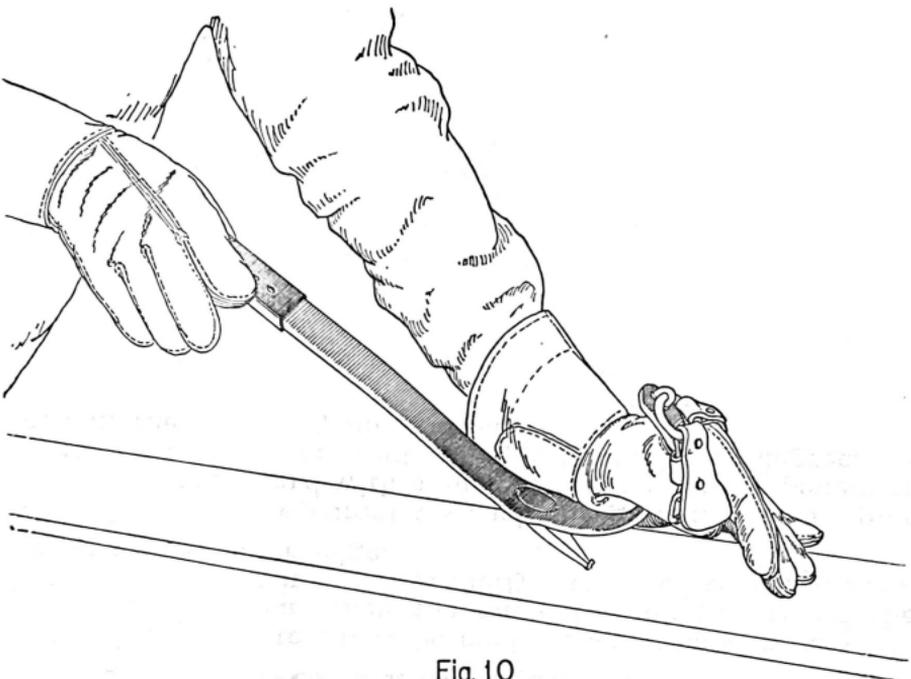
Fig. 10

4.03   Hold the gaff in place and push the leg iron down
        against the wood surface, then applying forward pres-
sure on the stirrup of the climber, push the climber forward
from the point of penetration. The improperly sharpened, hook
nose, or bowed back gaff will cutout after a distance of
1 to 3 inches, leaving a typical cutout mark as shown in the
following illustration. The properly sharpened gaff with a
straight back will tend to cut into the wood as it is moved
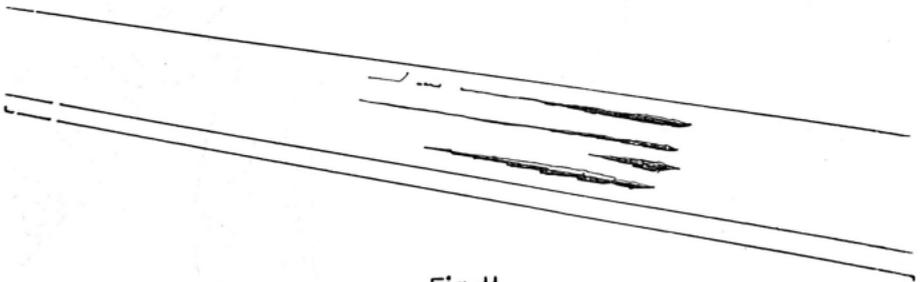forward rather than cutout.

Fig. 11