



### BENDING

Continued from page 40 December issue.

Small sizes of rods may be bent easily by placing them in the hardie hole, or the pritchel hole, of the anvil to the point at which the bend is desired, and bending the end over. Some pieces may be bent by doing the work entirely over the face of the anvil, whereas other pieces are bent over both the horn and the face of the anvil at various stages of the operation.

#### An Eye Hanger

Suppose that it is desired to form the eye pipe hanger shown



Fig. 5A

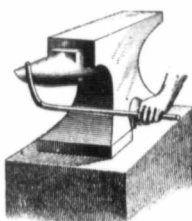


Fig. 5B

in Fig. 5a, to support a pipe 1 1/4 inches in diameter, the eye is to be bent to the form shown, but not welded. A rod 1/2 inch in diameter and slightly over 2 feet long is taken and marked at a distance of 6 inches from one end, this end is then heated to a bright red up to the point marked. The cool end of the rod is grasped with the left hand, and the marked point on the heated end is placed over the farther edge of the face of the anvil, or over the horn near its point. The heated end, which projects, is then bent down so that it points nearly at right angles to the rest of the rod. The rod is then turned on its axis half-way around so that the heated end points up instead of down. The very end of the heated part is then brought down so that it projects slightly over the end of the horn, as shown in Fig. 5b and the end of the rod is bent gradually by light hammer blows into a ring as shown in Fig. 5a.

### Forging a Staple

If a staple, like the one shown in Fig. 6a is to be made out of a piece of 1/4 inch round iron, the required length is first marked off

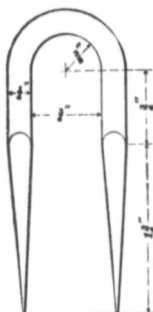


Fig. 6A

on the bar. On this a distance of 1 inch from the end is marked off, and the end is heated and drawn to a square point 1 1/4 inches long. The piece is then cut from the bar, using the hardie as shown in Fig. 6b and making the piece 5 1/2 inches long, over all. The other end is marked and drawn out to a point the same as the first, keeping both squares in line. The piece will now be about 6 1/4 inches long, 1/4 inch round in the middle, with a square tapering point 1 1/4 inches long at each end. The centre of the piece is then marked and heated, and the piece bent over the horn of the anvil to

the shape shown in Cut 6a, making the distance between the two straight parallel ends 3/4 inch. In bending over the horn of the anvil the piece is held against the large



Fig. 6B

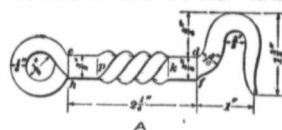
part of the horn and bent by light hammer blows, turning it to keep it round; then while hammering it the piece is gradually brought toward the point of the horn. When bent, the curve should be uniform and the two ends of the same length. If it is warped or twisted, it is flattened on the anvil with the hammer or the flatter.

### TWISTING

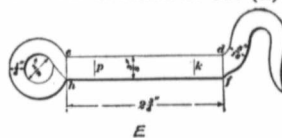
#### Forging a Gate Hook

If a hook like the one shown in Cut (a) is to be made of 1/2-inch square iron, the operation will be about as follows: It will take

about 4 inches of stock to make the hook, and this length is marked off from the end. It is



then heated and drawn out until it calipers 3/8-inch square, when it will be about 5 1/2 inches long. A length of 1 1/4 inches is then marked off from the end and drawn to a round of 5/16-inch diameter, keeping one side straight as shown at (d), Cut B on page 31. The shoulder (f) is formed over the edge of the anvil, as shown in Cut (c). By striking the upper edge with the hammer, as shown, the top will remain straight at (d), after which it can be finished with the swage to make it perfectly round. A length of 3/4-inch is then marked off on the 5/16-inch end and the point drawn down round, as indicated by the dotted lines, Cut B. The entire piece is then cut off from the bar and the other end of the 3/8-inch square marked off, making the distance between the shoulders 2 3/4 inches, and drawn to 1/4-inch round, as shown in Cut (b), keeping it straight at (e) and forming a shoulder at (h). The 3/4-inch round part is bent into a ring over the horn, and the 5/16-inch round end is bent into the hook as shown in Cut (E).



In bending the hook and the ring the piece is held with one round end projecting over the farther edge of the anvil, and this projecting end is bent back until it has the shape shown in Cut (D). The other end is then bent in this way, and the ring and hook formed over the horn of the anvil by light-hammer blows.

#### Twisting the Hook

Lengths of 1/2-inch are now marked off on the square part from the shoulders (f) and (h), giving the points (k) and (p) in Cut (E).

The portion between (k) and (p) is then brought to an even

Continued on page 31

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