

No. 817,386.

PATENTED APR. 10, 1906.

C. E. PICKRELL.
METAL BENDING APPLIANCE.
APPLICATION FILED JAN. 11, 1905.

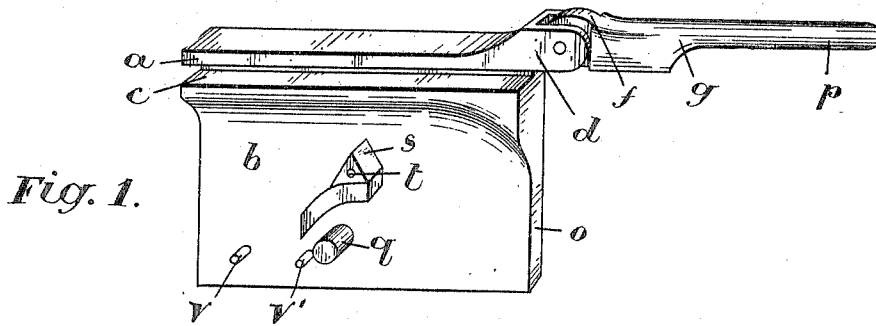


Fig. 1.

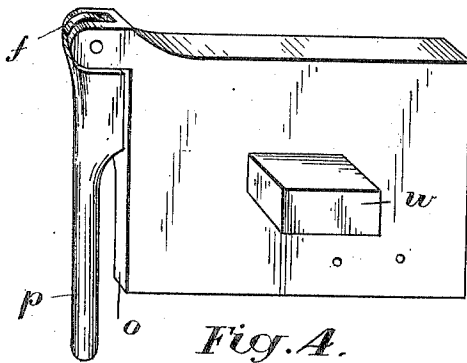


Fig. 4.

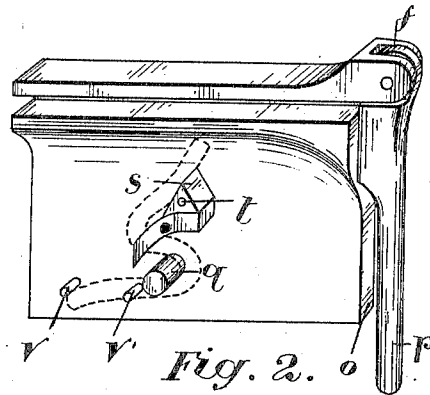


Fig. 2.

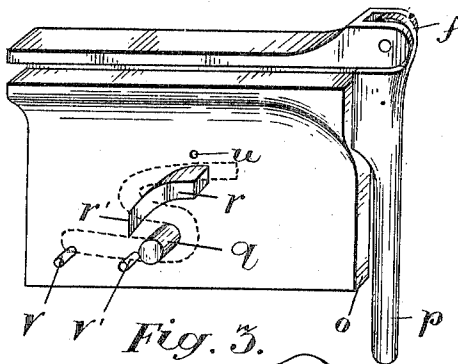


Fig. 3.

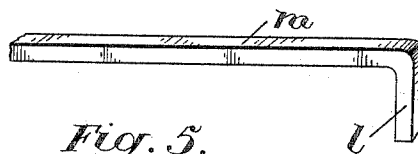


Fig. 5.

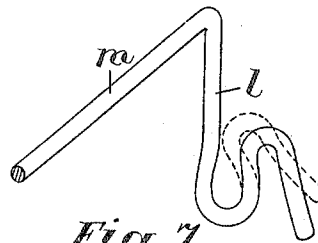


Fig. 7.

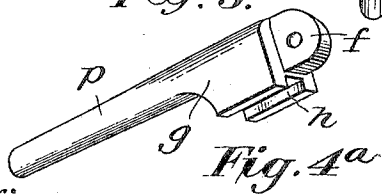


Fig. 4a.

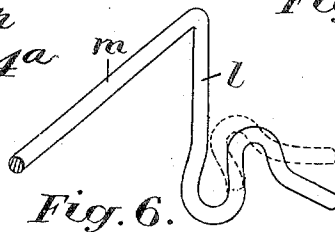


Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

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METAL-BENDING APPLIANCE.

No. 817,386.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed January 11, 1905. Serial No. 240,631.

To all whom it may concern:

Be it known that I, CHARLES EDWARD PICKRELL, of Georgetown, in the county of Halton and Province of Ontario, Canada, have invented certain new and useful improvements in Metal-Bending Appliances; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to a metal-bending appliance to be stationarily held between the fixed and movable jaws of a vise, the object of the invention being to so construct the metal-bending appliance that by it sheet or bar metal may be bent into any required shape of an angular or curved conformation, this object being attained by the device hereinafter described, and illustrated in the accompanying drawings, and which may be said to consist, essentially, of a rigid body portion having therein, preferably contiguous to one edge, a longitudinal groove or channel to receive the bar or sheet metal to be shaped, and a metal-bending lever fulcrumed to the body portion, so as to be extended either into a plane parallel with the groove or channel prior to the bending of the metal or to be moved into a position where it will lie across the end of the groove or channel at a substantially right angle to it to bend the material, such lever having a metal-bending die to engage and hold the material during the bending operation, the body portion of the metal-bending appliance having metal-bending dies attached to or capable of being attached to one of its side faces.

For a full understanding of the invention reference is to be had to the following description and to the accompanying drawings, in which—

Figure 1 is a perspective view of the metal-bending appliance, showing the metal-bending lever extended to allow of the metal being placed in position in the groove or channel prior to being bent. Fig. 2 is a similar view to Fig. 1, showing the position of the lever on the completion of the bending of the metal. Fig. 3 is a similar view to Fig. 2 with one of the metal-bending dies detached from the side face of the body portion. Fig. 4 is a similar view to Figs. 2 and 3 looking at the metal-bending appliance from the reverse side. Fig. 4^a is a perspective view of the metal-bending lever, showing the grooved face. Fig. 5 is a perspective view of a piece of bar metal, showing the shape of the bend when formed by the lever. Fig. 6 is a per-

spective view of a piece of bar metal bent by the dies shown in Figs. 1 and 2. Fig. 7 is a similar view to Fig. 6 of a piece of bar metal bent by the dies shown in Fig. 3.

Like letters of reference refer to like parts throughout the specification and drawings.

Contiguous to the edge *a* in one side of the body portion *b* is a groove *c* to receive the bar or sheet metal to be bent, and projecting from one end of the body portion *b* between the groove *c* and edge *a* are two lugs *d*, between which is fulcrumed the end *f* of the bending-lever *g*. The bending-lever *g* where it crosses the end of the groove *c* is recessed longitudinally to form a groove *h*, into which enters the projecting part *l* of the metal bar *m* to securely hold the metal bar when bending it into the shape shown in Fig. 5. When the lever is turned from the position shown in Fig. 1 to that shown in Figs. 2, 3, and 4, the sides of the groove *h* engage the sides of the bar and prevent its lateral displacement during the bending operation. To facilitate the manipulation of the bending-lever *g*, the handle portion *p* is shaped so that the hand may readily seize it without coming into contact with the metal bar before, during, or after the bending operation. Prior to the bending of the metal bar the bending-lever *g* is in the position illustrated in Fig. 1, with the projecting part of the metal bar contained in the groove *h*. When the bar has been properly positioned, the lever is moved into the position illustrated in Figs. 2, 3, and 4, the sides of the groove *h* then engaging the sides of the metal bar to hold it, and thus prevent its lateral displacement as it bends it upon the corner formed by the side *o* and the adjoining side of the groove or channel *c*, the groove *h* being of sufficient depth only to receive the bar, so that when the lever *g* has been moved into the position shown in Figs. 2, 3, and 4 the bent portion of the bar will contact with the side *o* and produce a substantially sharp angle at the point where the bend occurs.

On the same side face of the body portion *b* as the groove *c* is a cylindrical die *q* and a curved die *r*, concentric with the die *q* and at a sufficient distance therefrom to permit of the bar being interposed between them. The outer surface of the curved die *r*, as shown in Figs. 1 and 2, has a triangular projection *s*, which may either form an integral part of the curved die *r* or be detachably fitted thereto by a pin *t*, projecting into a corresponding opening *u* in the body portion *b*. Attached to

the side face of the body portion *b*, contiguous to the cylindrical die *q*, are two pins *v* and *v'*, respectively, to hold the free end of the metal bar as it is bent around the cylindrical die *q* and curved die *r*. In bending the bar shown in Fig. 6 the free end of the bar is held beneath the pin *v*, and the bar is then bent over the pin *v'* and under and around the cylindrical die *q*, which brings it into position to be bent around the end *r'* and the outer surface of the curved die *r* until it comes into contact with the triangular projection *s*, as shown in dotted lines in Fig. 2, the triangular projection *s* slightly flattening the bar after the curved die *r* has formed it.

For forming the bar into the shape shown in Fig. 7 the free end is placed over the top of the pins *v* and *v'*, and the bar is then bent around the cylindrical die *q* and curved die *r* in the manner above described, as shown in dotted lines in Fig. 3.

On the reverse side of the body portion is a block *w* to be engaged by the jaws of the vise

or other holding means, such as are ordinarily used by mechanics for work-holding purposes.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A metal-bending appliance comprising a rigid body portion having in one face a groove extending from one side to the other of the body portion, a lever fulcrumed to one end of the body portion and adapted to be extended into a plane parallel with the groove or to be moved into a position to lie at right angles across the same and having a groove to receive the material to be bent, and a holding-block on the reverse side of the body portion to be engaged by the holding device.

Georgetown, November 29, A. D. 1904.

C. E. PICKRELL.

In presence of—

JOHN EVANS,
A. CAMPBELL.