

J. HARVEY.

Machines for Bending Pipe-Stems.

No. 139,148.

Patented May 20, 1873.

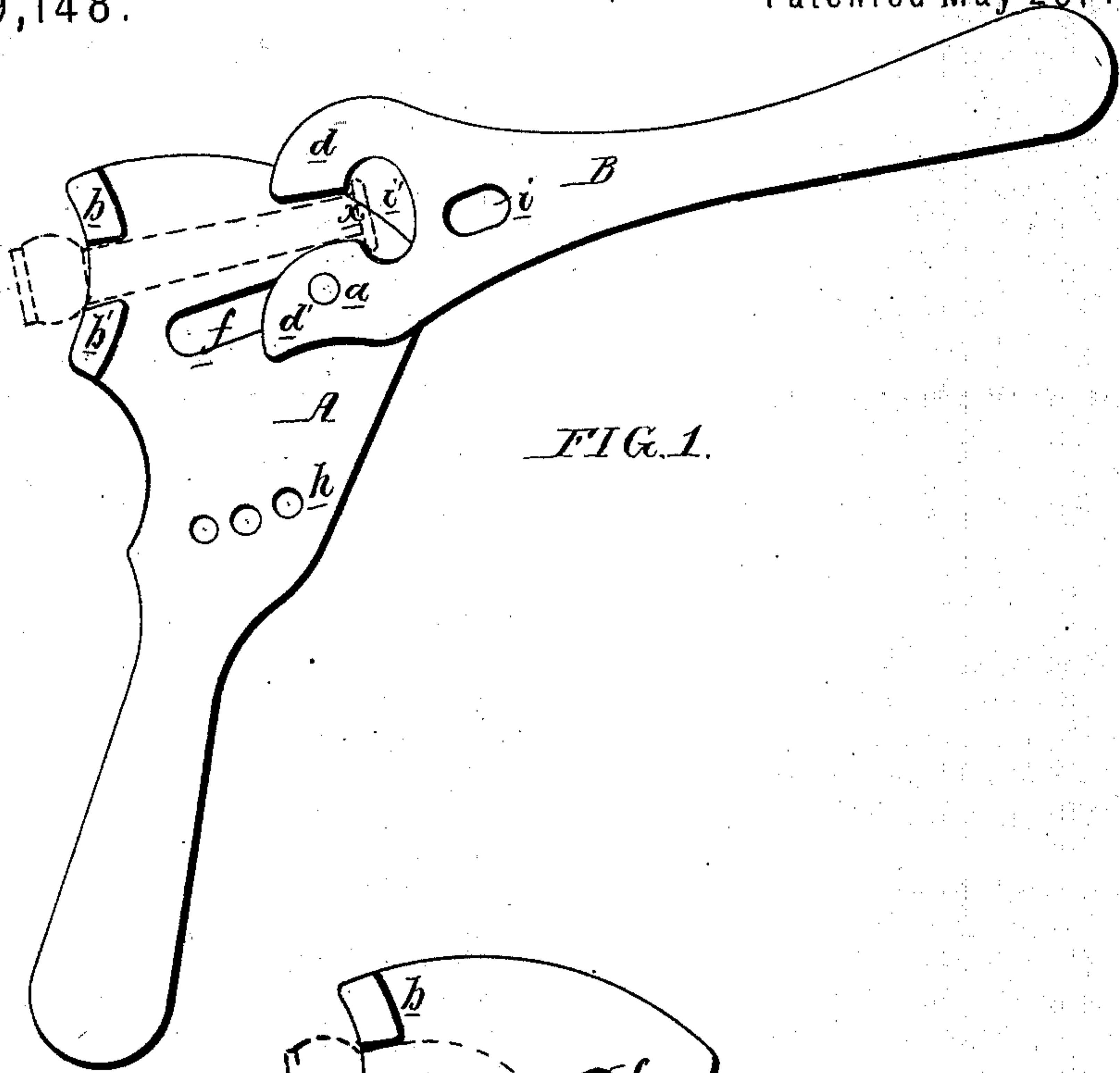


FIG. 1.

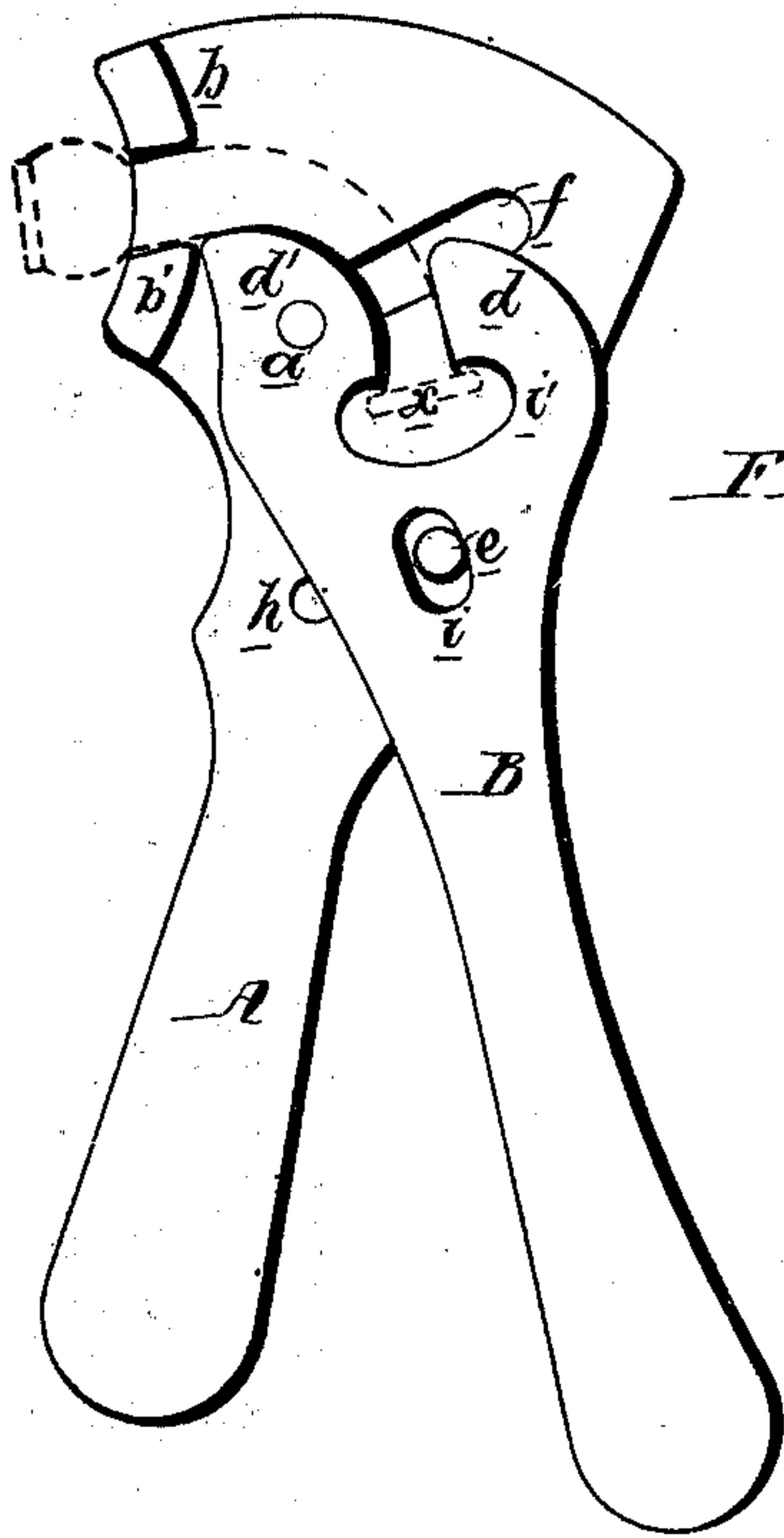


FIG. 2.

WITNESSES.

Hubert Hopson
Harry Smith

Joseph Harvey
by his attys.
Horsman & Son

UNITED STATES PATENT OFFICE.

JOSEPH HARVEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, MONTGOMERY FORD, OF SAME PLACE, AND WILLIAM HARVEY, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR BENDING PIPE-STEMS.

Specification forming part of Letters Patent No. **139,148**, dated May 20, 1873; application filed February 8, 1873.

To all whom it may concern:

Be it known that I, JOSEPH HARVEY, of Philadelphia, Pennsylvania, have invented an Improvement in Machines for Bending Pipe-Stems, of which the following is a specification:

The object of my invention is to provide a strong, cheap, and handy instrument for bending pipe-stems and other small articles, and this object I accomplish by combining with a handled plate, A, shown in Figure 1 of the accompanying drawing, a lever, B, having a shifting fulcrum, *a*, on the said plate, the stem being confined between projections *b b'* and *d d'*, on the plate and lever, so as to be bent when the latter is turned as shown in Fig. 2, and being retained in this bent condition until "set," by securing the lever to the plate, by means of a pin, *e*. The plate A is flat except that it has the above-mentioned projections *b* and *b'* near one edge, with sufficient space between them for the reception of the pipe-stem or other article to be bent, and the said plate has an inclined slot, *f*, into which projects the fulcrum-pin *a* of the lever, and a series of holes, *h*, for the reception of the retaining-pin *e*, which is passed through a slot, *i*, in the said lever. The projection *d'* of the lever, around which the pipe-stem is bent, is curved as shown, while the opposite projection *d* is straight, or nearly so; and if the instrument is to be used for pipe-stems exclusively the space between the projections is enlarged sufficiently at *i* to receive the enlarged end or mouth-piece *x* of the stem.

In using the instrument the operator adjusts the article to be bent (which, if a horn

pipe-stem, has been previously boiled in oil to render it soft and pliable) to the lever and plate, as indicated by dotted lines in Fig. 1, and then grasps the handled plate with one hand and the lever with the other, gradually turning the latter and bending the pipe-stem around the projection *d'* until the parts have been brought to the position shown in Fig. 2, when the lever is locked to the plate, and any recoil prevented by inserting the pin *e* through the slot *i* of the lever into one of the holes *h* of the plate, the instrument being left in this position until the stem has hardened, or set, in its bent condition, when it is removed and the instrument is ready to be used again.

The lever is provided with a shifting fulcrum in order that it may be self-accommodating to the thickness and length of the article to be bent, and so that it may yield during the bending operation, and thus prevent too great straining or compression of the article at any one point, and as a series of holes are provided for the pin *e* the stem or other article can be bent to any degree desired.

I claim as my invention—

A bending instrument in which a plate, A, provided with projections *b b'* is combined a lever B, provided with projections *d d'*, and having a shifting fulcrum upon the said plate, all substantially as specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH HARVEY.

Witnesses:

WM. A. STEEL,
HUBERT HOWSON.