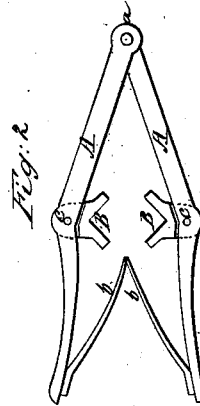
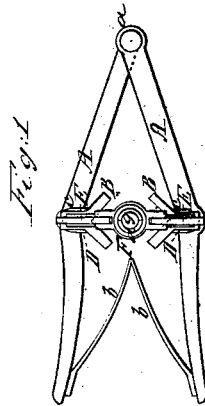
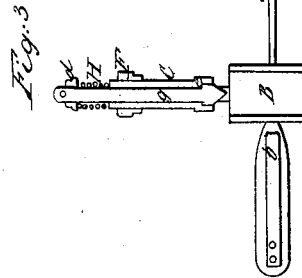
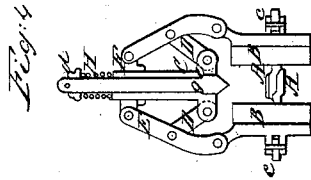


M. Bowker
Centerer.

N^o 50442.

Patented Oct. 17, 1865.



Witnesses
W. P. Hale &
Charles A. Tradition

Inventor
Milton Bowker.
by his attorney
R. H. Eddy

UNITED STATES PATENT OFFICE.

MILTON BOWKER, OF FITCHBURG, ASSIGNOR TO WARREN N. ABBOTT, OF BOSTON, MASSACHUSETTS.

CENTER-PUNCH.

Specification forming part of Letters Patent No. 50,442, dated October 17, 1865.

To all whom it may concern:

Be it known that I, MILTON BOWKER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful or Improved Apparatus for Centering a Shaft or Article to be Turned in a Lathe; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view; Fig. 2, a horizontal section, taken longitudinally; Fig. 3, a longitudinal and vertical section, and Fig. 4 a transverse and vertical section.

In the said drawings, A A are two levers, which are jointed together at one end of each, the joint being shown at *a*. These levers have two springs, *b b*, applied to them for the purpose of opening them apart, the arrangement of such springs being as shown in the drawings. To the middle of each of the said levers a recessed or V-shaped jaw, B, is jointed, the joint or connection being shown at *c*. Above the said jaws, and midway of them, is a tubular punch-carrier, C, which, at or near its foot, is connected or jointed to two toggles, D D, which, in turn, are jointed to the middles of the arms E E. These arms at their lower ends are jointed to the two jaws, while at their upper ends they are similarly jointed to a slider or annulus, F, which encompasses and slides freely on the punch-carrier.

A punch, *g*, is arranged within the carrier F, and is provided with an elevating-spring, H, overriding it and being arranged between the upper end of the carrier and an annulus,

d, fixed on the upper end of the punch. A shoulder, *e*, formed on the lower part of the punch, serves to limit the elevation of the punch by the spring. The lower end of the punch is to be conical in form.

When any cylindrical shaft or piece of metal is placed between the jaws and they are closed on its curved surface, they will so adjust the said piece of metal that its axis will be in the prolongation of that of the punch, the said punch, by the peculiar action of the two levers A A and the mechanism for guiding it and connecting it with the jaws, being caused under any movement of the jaws, either away from or toward each other, to be centralized relatively to them, or to have its axis preserved in a line which, when extended, will always pass midway between the jaws. On striking with a hammer on the head of the punch such punch may be driven down upon an article grasped by the jaws, and will duly center the end of the article or make a correct depression in the center of such end.

I claim—

The improved shaft-centering apparatus as composed of the levers A A, the recessed jaws B B, the punch *g*, the punch-carrier C, the arms E E, the toggles D D, and the slider F, arranged and jointed or applied together substantially in the manner and so as to operate as specified.

MILTON BOWKER.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.