(No Model.)

H. P. WELLMAN.

CENTERING DEVICE.

No. 372,730. Patented Nov. 8, 1887.

Fig. 1.

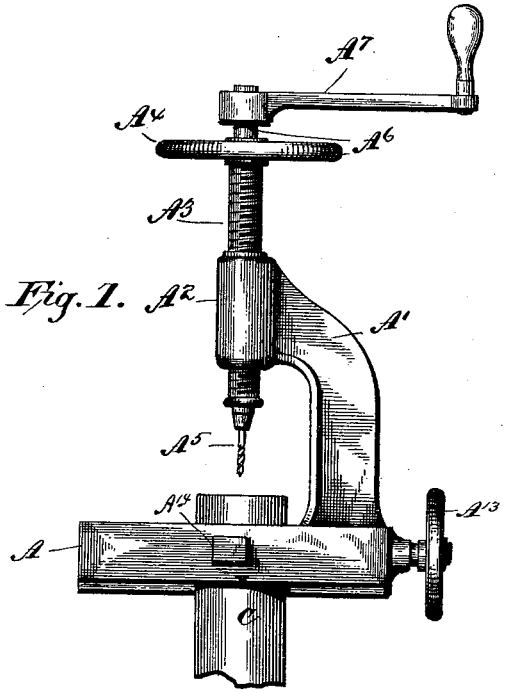


Fig. 2.

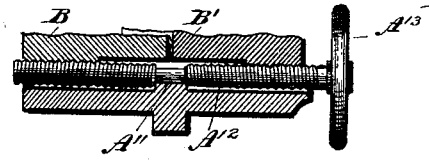


Fig. 3.

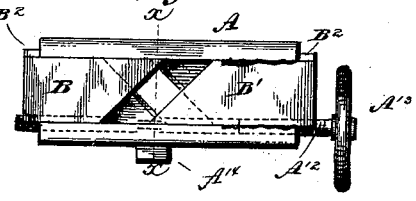
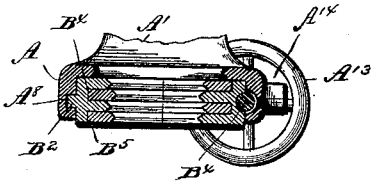


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

HARLAN P. WELLMAN, OF CATLETTSBURG, KENTUCKY.

CENTERING DEVICE.

SPECIFICATION forming part of Letters Patent No. 372,730, dated November 8, 1887.

Application filed May 4, 1887. Serial No. 237,083. (No model.)

To all whom it may concern:

Be it known that I, HARLAN P. WELLMAN, a citizen of the United States, residing at Catlettsburg, in the county of Boyd, State of Kentucky, have invented certain new and useful Improvements in Centering-Drills, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of this invention is to provide an economical hand-drill for centering shafts and bars of iron or steel, in order that the same may be mounted in a lathe for the purpose of truing or turning or otherwise working the shaft or bar to a proper shape and size. Heretofore complicated and costly machines, power-driven, have been provided for this work; but by my invention I propose to furnish a hand machine at a minimum cost that will perform the same work.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be specifically pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a hand-drill constructed in accordance with my invention. Fig. 2 is a longitudinal section of the bed-plate and centering-jaws, showing the means for adjusting the same. Fig. 3 is a plan of the same, and Fig. 4 is a transverse section on the line *x x* of Fig. 3.

Like letters of reference indicate like parts in all the figures of the drawings.

A represents a bed-plate or box, at one end of which is formed or attached thereto a standard, A′, formed with a vertical internally-screw-threaded bearing, A^2, adapted for the reception of an externally-screw-threaded feeding-sleeve, A^3, provided with a hand-wheel, A^4, for adjusting the feed of the drill-point A^5, fixed in the lower end of the drill-rod A^6, rotatably mounted in the sleeve A^3 and provided with an operating-crank, A^7.

If desired—and in practice it has been found preferable—the standard and bed-plate or box may be cast in a single piece, as not only is the cost of the machine reduced thereby, but material strength and rigidity of the two main elements of the same are secured. It will be seen that the machine is supported by the work upon which the centering operation is being performed, and that by the same means employed for properly presenting the material for the operation of the drill.

The top of the bed-plate in front of the standard A′ is open, and within said plate or box is formed, in each side thereof, longitudinal grooves or channels A^8, in one of which is a lug or bearing, A^{11}. Within this groove is a right and left screw-threaded jaw-operating shaft, a reduced central portion of which rests on the bearing A^{11} and is provided with an operating hand-wheel, A^{13}.

B B′ represent self-centering jaws, which may be made of steel or iron, as desired, and formed with any desirable form of face, one side of said jaws being provided with ribs or lugs B^2, and the opposite side being provided with internal screw-threaded channels or grooves, B^4, the screw-threads of one jaw being right and the other left. As the grooves in these jaws are semicircular, and are located opposite with and parallel to the groove in one side of the bed-plate, it is readily apparent that by operating the hand-wheel A^{13} the jaws will be fed toward each other, and the faces of the jaws being angular or L-shaped, as at B^5, any rod or bar will be brought to a common center immediately under the drill, regardless of its shape or size. The ordinary operation of centering, so well known, is then commenced. By means of the hand-wheel A^6 the drill A^5 is brought in contact with the rod or shaft to be drilled, when by revolving the crank A^7 a countersunk center for the reception of a lathe-center will be formed in the center of said shaft. The shaft may then be removed to a lathe and ground or turned to produce the proper size.

By experience it has been found that the better form of jaw is of an L or V shape, and it has also been found that means should be provided for retaining the jaws in parallelism beyond the rib B^{12} and the feeding-screw. For this reason I form diagonal grooves at each side of each of the faces of the jaws, (as shown by dotted lines, Fig. 3, and full lines, Fig. 4,) said grooves alternating in each jaw, so that the projections formed by the grooves in one jaw will be opposite to and pass within

the grooves of the companion jaw when the two are brought in close relation to each other. In this manner the jaws are held firmly in the same plane and no variation can occur as to the common center, regardless of the shape or size of the shaft being operated upon by the drill. Another and great advantage arising from the fact that the jaws take into each other is that no matter how diminutive the rod or bar to be operated upon is, it is brought to the common center. By this construction of the jaws the utilization of the greatly preferable V or L form of jaw is accomplished. If desired, a lug, A^{14}, may be cast, preferably, upon the screw side of the box A, whereby the drill may be clamped and supported by the jaws of an ordinary vise or bolted to a standard.

Having described my invention, what I claim is—

1. In a centering-drill, the combination of a bed-plate provided with longitudinal grooves at each side, one of which is formed with a bearing, with jaws mounted in said grooves provided on one side with a rib and on the opposite with a right and left screw-threaded channel and with a right and left screw-threaded feeding-shaft mounted in said bearing and in the screw-threads of the jaws, substantially as specified.

2. The combination of the bed-plate A, formed with the grooves A^8 A^{10} and lug A^{14}, the jaws B B′, having the rib B^2 and groove B^4, and with the feed-shaft A^{12} and hand-wheel A^{13}, substantially as specified.

3. The bed-plate A, formed with the drill-carrying standard A′, in combination with the jaws B B′, mounted in grooves in said bed-plate, and with the feed-screw A′ and its wheel A^{13}, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

HARLAN P. WELLMAN.

Witnesses:
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L. T. EVERETT.