No. 724,759. PATENTED APR. 7, 1903.

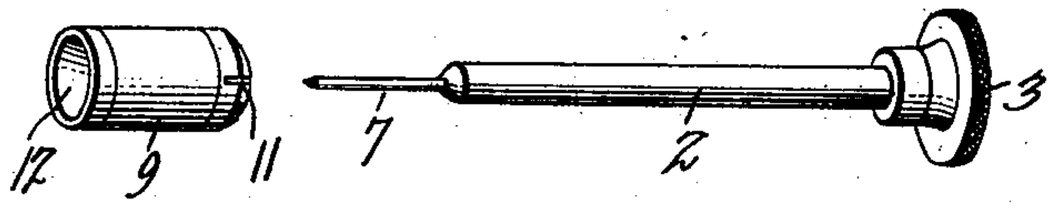
S. G. TWAMBLEY.

CENTERING TOOL.

APPLICATION FILED JUNE 23, 1902.

NO MODEL.

Fig. 2.



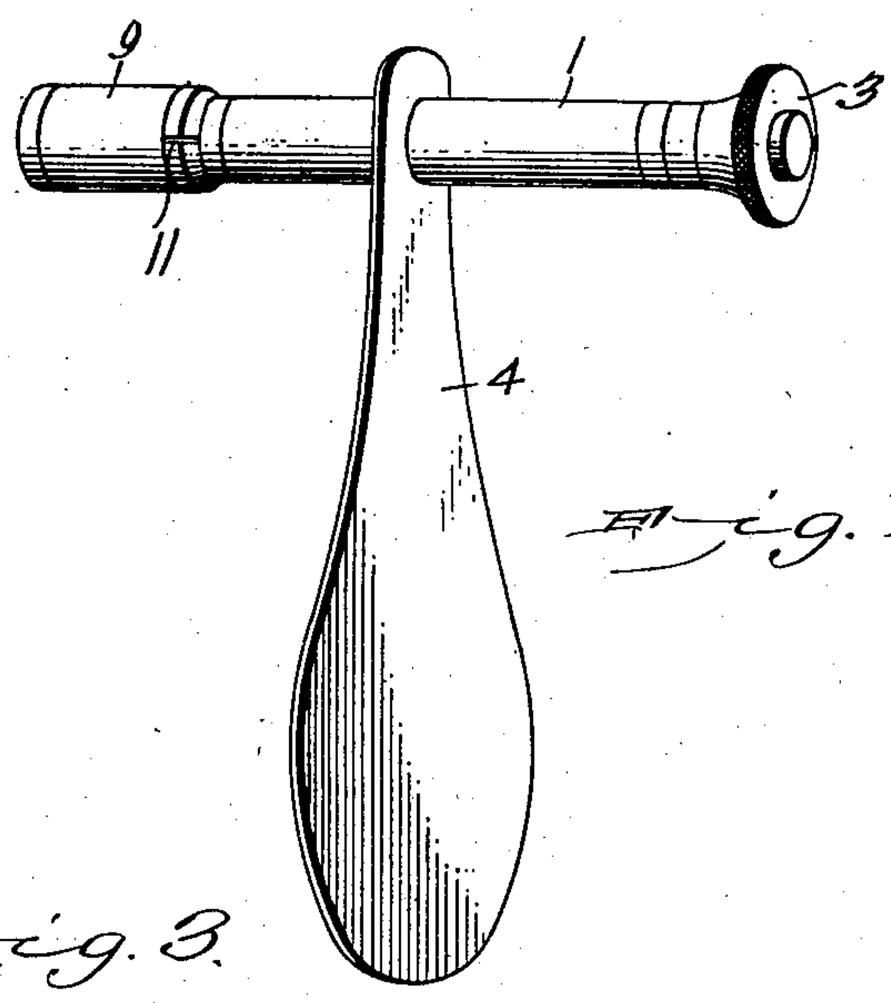


Fig. 1.

Fig. 3.

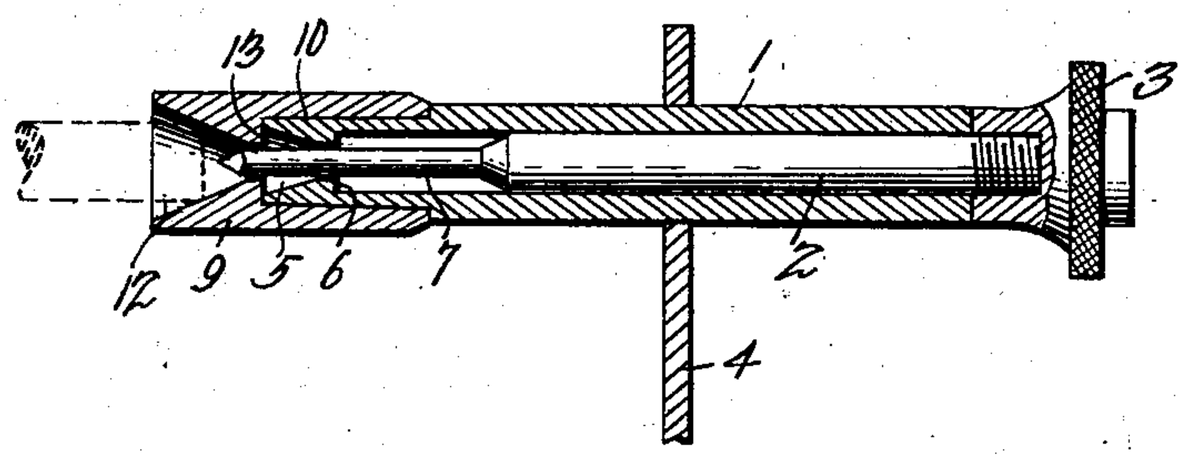
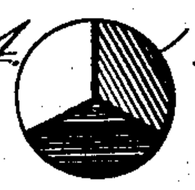


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL G. TWAMBLEY, OF BIDDEFORD, MAINE.

CENTERING-TOOL.

SPECIFICATION forming part of Letters Patent No. 724,759, dated April 7, 1903.

Application filed June 23, 1902. Serial No. 112,868. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL G. TWAMBLEY, a citizen of the United States, residing at Biddeford, in the county of York and State of Maine, have invented a new and useful Centering-Tool, of which the following is a specification.

The object of the present invention is to provide a simple and convenient tool for accurately centering staffs and arbors in the manufacture or repair of watches.

The tool is designed principally as an aid to watchmakers and jewelers in marking or forming a slight indentation in the exact center of a broken arbor or staff to form a firm stand for the drill; but it may be employed in the form of a larger tool or apparatus for centering spindles, shafts, or other devices which are to be turned or drilled.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of a centering-tool constructed in accordance with my invention. Fig. 2 represents details of portions of the tool detached. Fig. 3 is a longitudinal sectional elevation of the tool drawn to an enlarged scale. Fig. 4 is an end elevation of the needle or center-marking device.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the centering of a staff or arbor as practiced in watch repairing at the present time the staff or arbor is mounted in a metallic or cement chuck, and after facing off the broken end the center is marked by a graver or similar tool in order that the drill may be correctly entered. This operation is difficult and tedious, and the present invention aims to reduce the time and labor involved by providing a tool which will automatically center the staff or arbor, so that a mark or indentation may be made in the exact center where the drill is to enter.

In the drawings, 1 designates a guiding-cylinder bored out for the greater portion of its length and adapted for the reception of a sliding rod 2, having a suitable knob or handle 3, by which the rod may be moved to and fro or turned within the cylinder. The cylinder is provided at a suitable point intermediate of its length with a handpiece 4, by which the tool may be held up to the work. At one end of the cylinder is a conical opening 5, extending from the extreme end of the cylinder to a shoulder 6, through which a contracted opening is formed for the passage of the marking-needle 7, the latter being secured to the end of the rod 2. The outer end of the needle is pointed in the manner shown in Fig. 4, its end being ground down to form three facets the angular meeting edges of which will form a strong but delicate point which will readily mark or slightly indent the end of the staff or arbor.

In using the device the staff or other device to be centered is mounted in a chuck with the broken end outward, and the broken pivot is faced off in the usual manner. The end of the staff or arbor is then entered in the conical opening, while the tool is held in axial alinement with the staff, the handpiece 4 being held in the left hand, while the knob or handle 3 is held between the thumb and finger of the right hand and pressed inwardly until the pointed end of the needle is in contact with the end of the staff. To make a slight indentation, the lathe-chuck is turned in one direction while the knob 3 and needle are held or slightly turned in the opposite direction. As the needle is fitted accurately in the opening in shoulder 6 and rod 2 fits snugly in the bore of the cylinder, the centering-mark will be made in the exact center of the end of the staff or arbor without regard to the diameter of the latter, arbors or pivots of small diameter extending much farther into the conical opening than those of larger diameter.

The tool as thus far described is used for centering very small pivots, and for larger work, as where in some cases it may be necessary to center from the face of a pinion or a large arbor, I employ an additional centering device comprising a cylinder 9 of any desired diameter, said cylinder being provided with a slightly-tapering bore adapted to fit over the slightly-tapering end portion 10 of the cylinder 1. The cylinder-bore and the surface 10 may be of uniform diameter, if de-

sired, but are preferably made slightly tapering in order that they may be more firmly held together, and to assist in binding the parts the inner end of the cylinder 9 is slightly split, as indicated at 11.

The outer end of the larger cylinder 9 is provided with a conical centering-opening 12, into which arbors and other devices of comparatively large diameter may be readily inserted and centered. The conical guiding-opening terminates a shoulder 13, in which is formed a guiding-opening for the end of the needle 7, and when the larger cylinder 9 is in use the needle has a support in both cylinders and cannot move from place.

The device may be employed on a larger scale for centering objects of any diameter, and while the construction herein described and illustrated in the accompanying drawings is the preferred form of the device it is obvious that various changes in the form, proportion, size, and minor details of structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim is—

In a device of the class specified, a bored cylinder having at one end a conical opening for the reception of the device to be centered, a rod mounted in the cylinder-bore and having an operating-knob, a pointed needle carried by said rod and adapted to a guiding-opening to the rear of the conical opening, a handpiece secured to said cylinder, an auxiliary cylinder having a tapering bore adapted to fit on the correspondingly-shaped portion of the main cylinder, said auxiliary cylinder having a needle-guiding opening and being provided with a conical opening of a different size from the conical opening of the bored cylinder for the reception of the device to be centered.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL G. TWAMBLEY.

Witnesses:

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JNO. E. PARKER.