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PATENTED OCT. 30, 1906.

C. E. BERRY.
 HOLDER FOR MAIN WHEEL ARBORS.
 APPLICATION FILED NOV. 27, 1905.

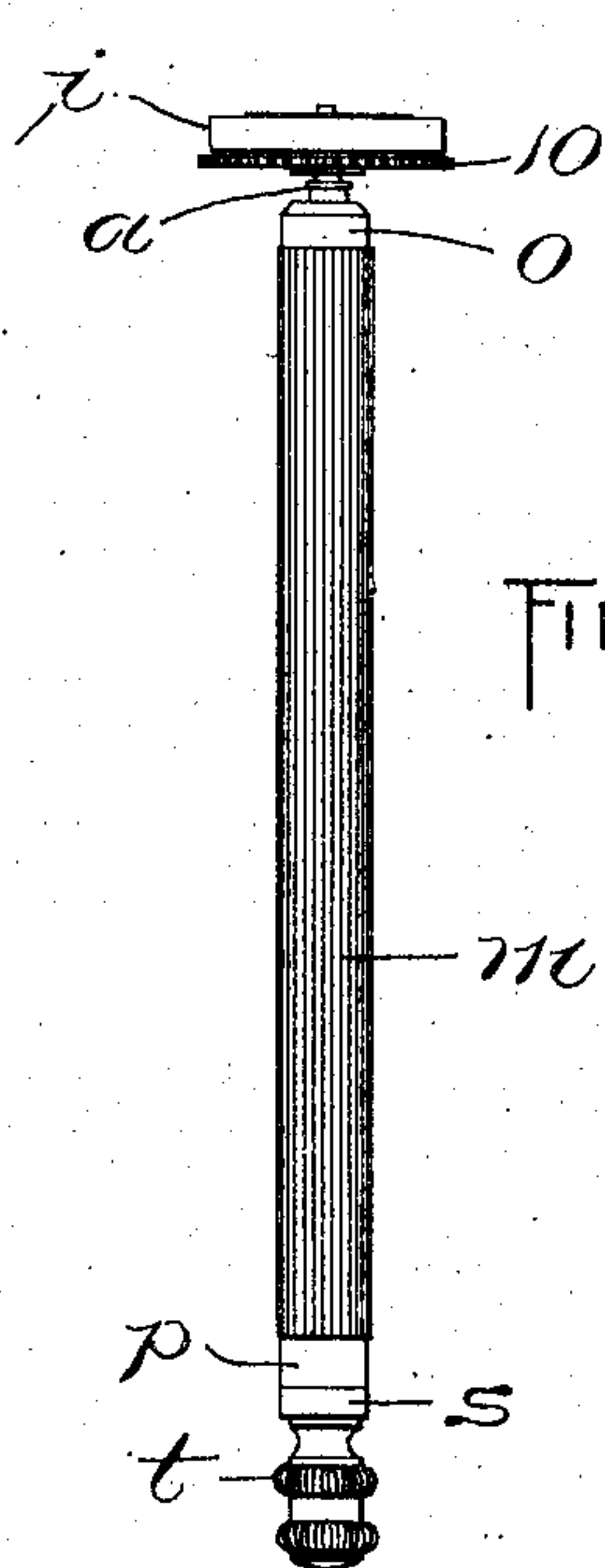


FIG. 1.

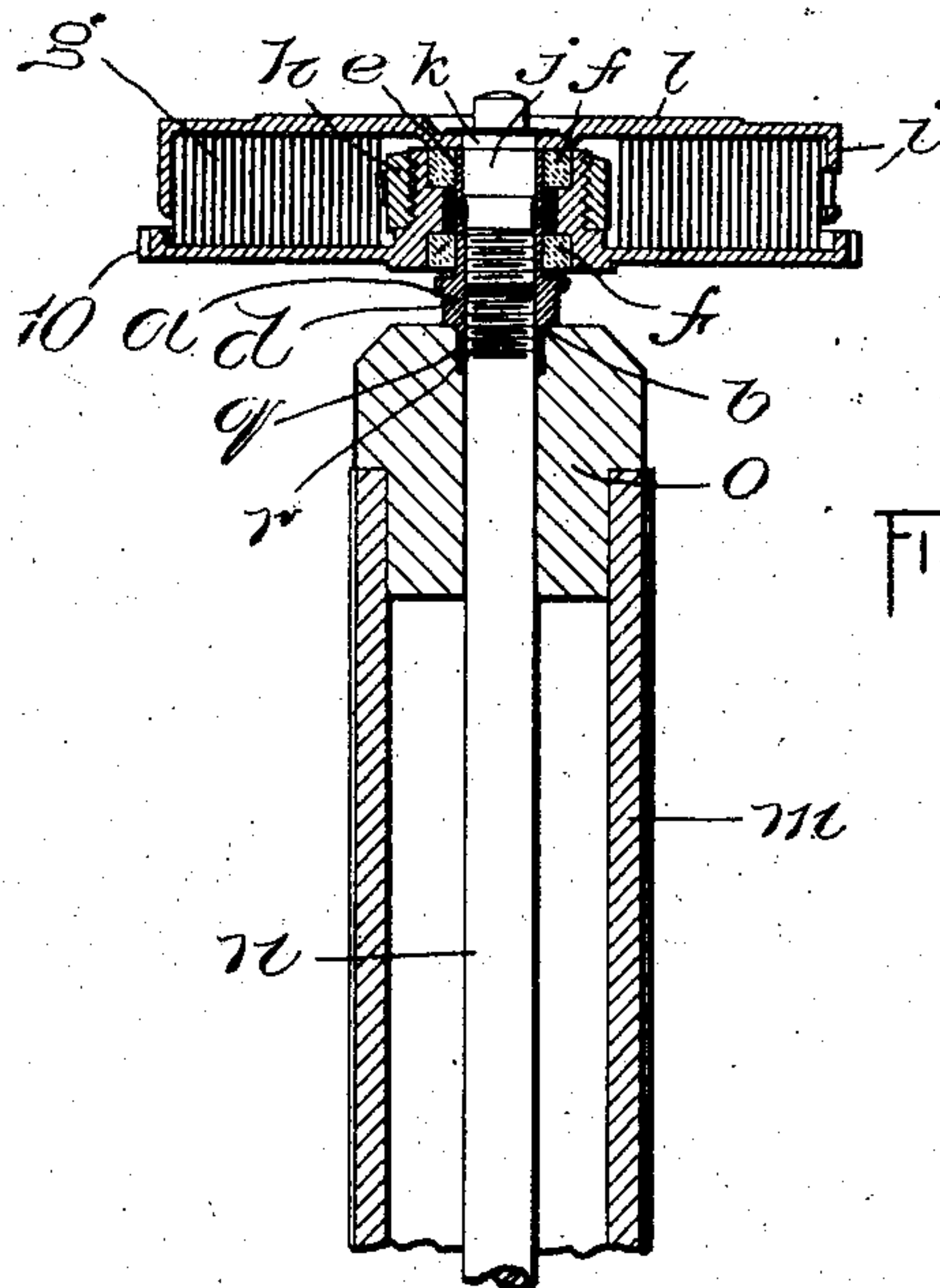


FIG. 2.

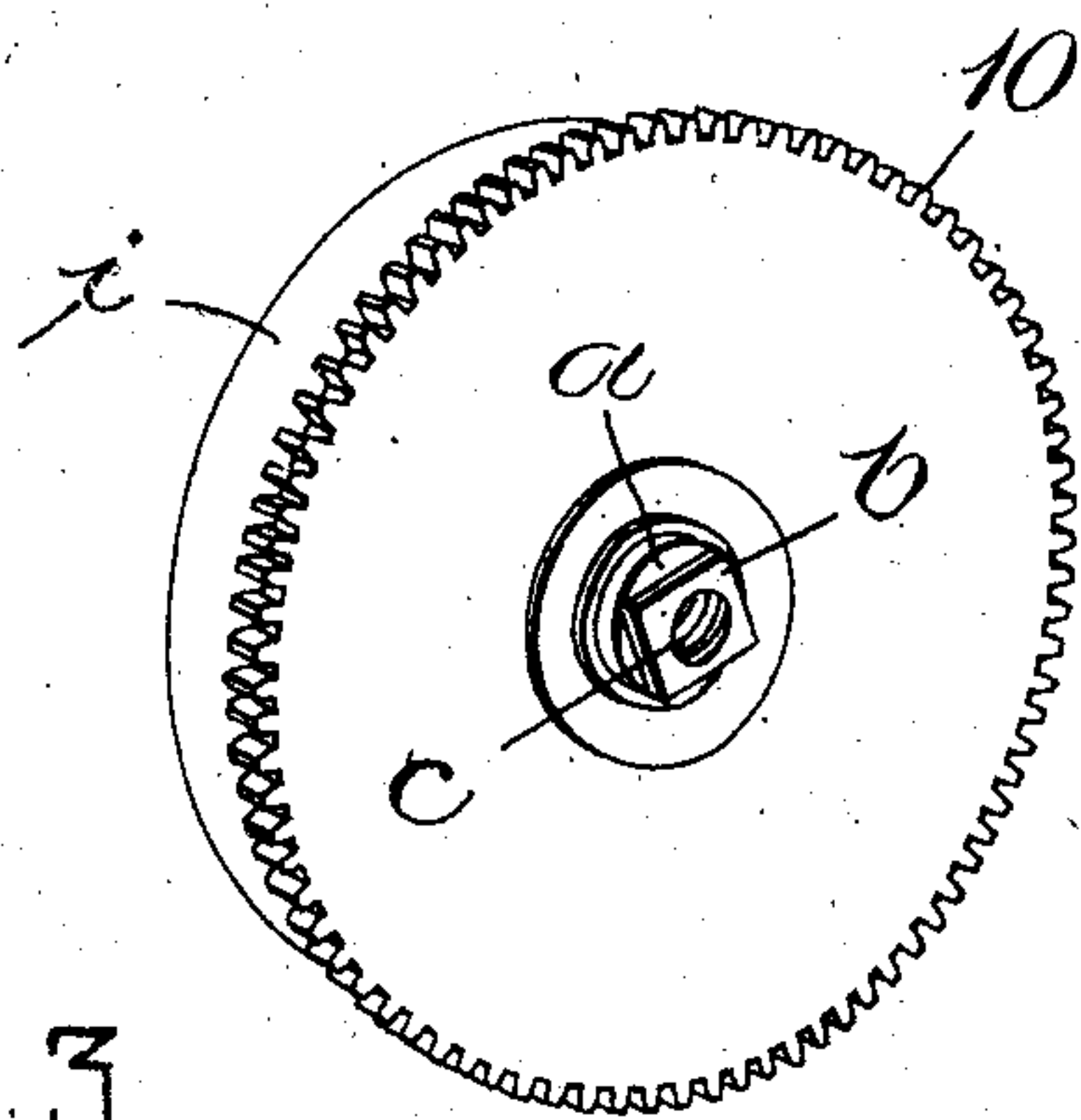


FIG. 3.

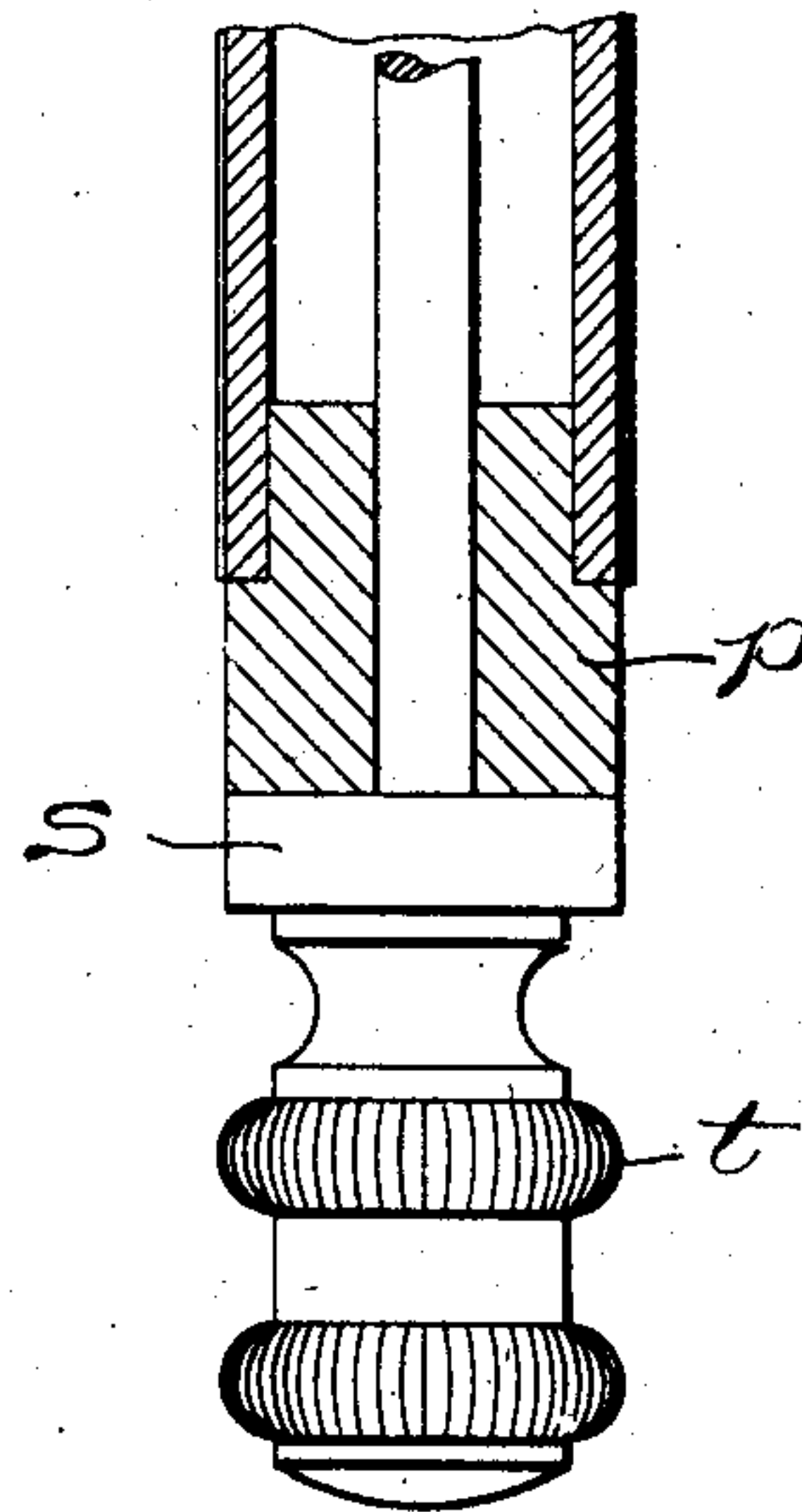
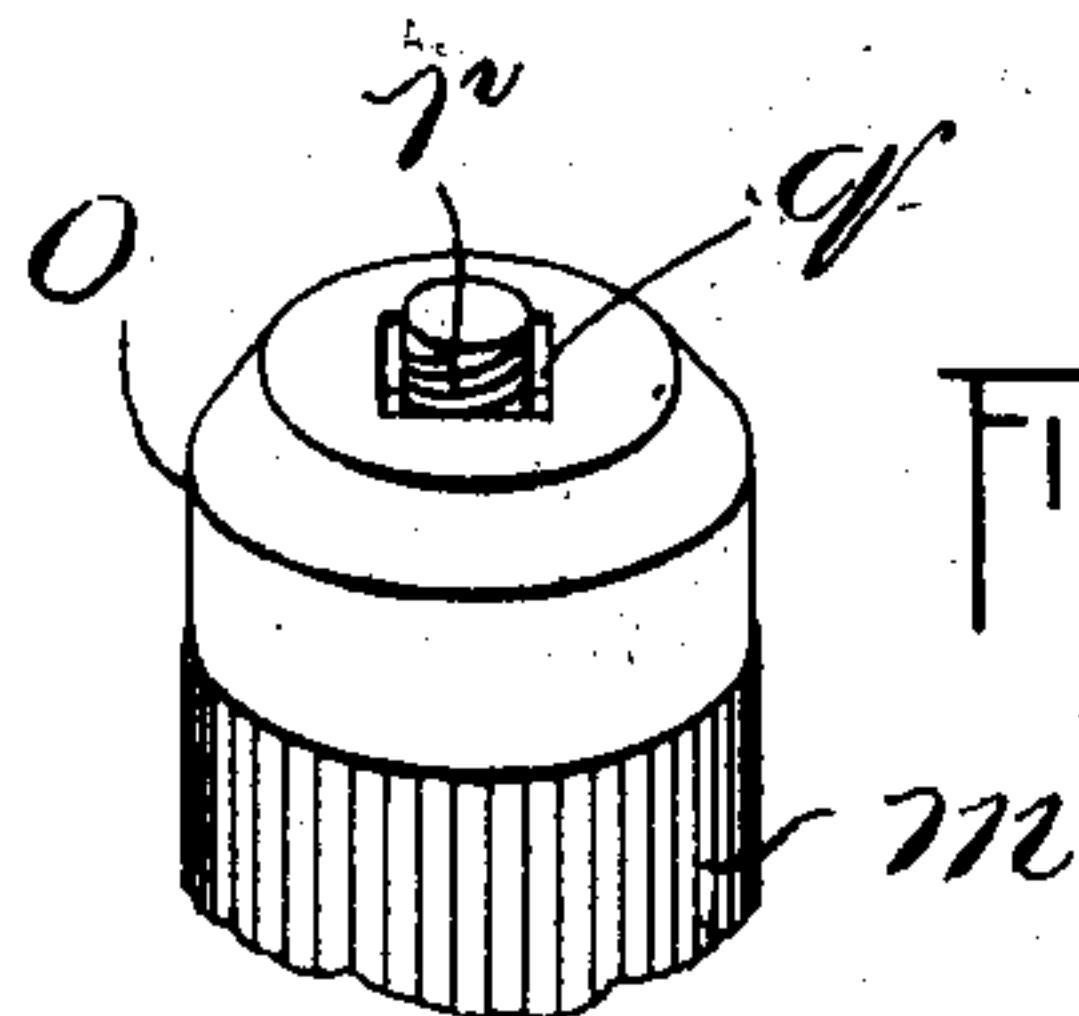


FIG. 4.

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UNITED STATES PATENT OFFICE.

CHARLES E. BERRY, OF WALTHAM, MASSACHUSETTS.

HOLDER FOR MAIN-WHEEL ARBORS.

No. 834,705.

Specification of Letters Patent.

Patented Oct. 30, 1906.

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To all whom it may concern:

Be it known that I, CHARLES E. BERRY, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Holders for Watch Main-Wheel Arbors, of which the following is a specification.

This invention is a device for holding the arbor of a watch main wheel while the wheel, mainspring, and spring-barrel are being assembled. Such an arbor is very small, and after the main wheel has been mounted thereon it has only a very short projecting end by which it can be held while the mainspring and barrel are being applied and secured in place. It has therefore been extremely difficult to hold the arbor firmly and at the same time prevent rotation thereof while attaching these parts. The arbors usually have on the end which projects from the main wheel a portion which is squared or given an otherwise non-circular shape, upon which the winding-wheel is placed and secured, and it has usually been the practice to insert such non-circular end into the socket of the winding-wheel or a key to hold the arbor from rotating when the screw which holds the barrel in place is driven in. As the squared portion, however, is very short, merely inserting it into the socket of a key does not hold the arbor firmly, and consequently the latter is always liable to tip over.

It is the object of the present invention to provide a tool which is large enough to be easily and firmly held in the hand of the workman and is provided with a socket for receiving the non-circular end of the arbor and also with a holding device for engaging and retaining the arbor in the socket, so that it will not slip out while the other parts are being assembled.

The preferred embodiment of my invention is illustrated in the accompanying drawings, in which—

Figure 1 represents an elevation of the tool with a main wheel and the operating parts assembled together and retained by the holder. Fig. 2 represents a longitudinal central section of the same on an enlarged scale. Fig. 3 represents a perspective view of the main wheel and its arbor. Fig. 4 represents a perspective view of the end of the holder.

The same reference characters indicate the same parts in all the figures.

The arbor of a watch main wheel is represented by *a* and consists of a sleeve which is

formed at one end with a portion *b*, such portion being so shaped that when placed in a socket of complementary shape it will not rotate therein. Preferably the end portion *b* is squared, though it may be given any other desired prismatic shape, or it may be cylindrical with a feather, groove, or some such non-circular offset. This portion *b* is adapted to be inserted into a correspondingly-shaped socket in a winding-wheel and secured by a screw threaded into the tapped bore *c* of the sleeve. The portion *d* is that which turns in the plate of the watch while the mainspring is being wound, and the part *e* serves as the bearing upon which the jewels *f* of the main wheel rotate as the spring unwinds to drive the watch.

g is the mainspring, which is connected at one end to a collar *h* on the hub of the main wheel and is wound about the same, being connected at its other end to the barrel *i*, this barrel being secured to the arbor by a screw *j*, having a threaded end engaging the tapped portion of the arbor *k* and a squared portion *l* passing through and engaging a correspondingly-shaped hole in the end *m* of the barrel.

In driving the screw *j*, which secures the barrel to the main-wheel arbor, it is of course necessary that the arbor, should be prevented from rotating and securely held. In order to so hold the arbor, I provide the tool of the present invention, which consists, essentially, of a tubular body portion *n* and a shank or rod *o*, extending longitudinally through the body portion. At the ends of the part *n* are heads *p* and *q*, which fit about and guide the rod *o*, and in the end of the head *p* is a socket *r*, which is exactly the shape of the end part *b* of the arbor and is adapted to receive the part *b* and to surround the same closely, embracing the non-circular portion of the arbor, so as to prevent it from rotating therein. This socket is so arranged with respect to the bore of the head *p* that the rod *o* passes through the center thereof and is adapted to project a short distance through the socket and beyond the end of the holder when located as shown in Fig. 2. The end *s* of the rod or bar *o* is threaded to fit the threads of the arbor-bore, and so when the arbor has been set in the socket *r* the rod *o* may be rotated and screwed into the arbor, whereby the latter may be positively engaged and retained in the socket.

On the end of the rod opposite to the

threaded portion *r* is a collar *s*, which abuts against the end of the head *p*, these portions *p* and *s* constituting abutments which prevent projection of the end *r* of the rod more than a certain predetermined distance beyond the end of the head *o*. The sizes and disposition of the parts are preferably such that the rod *n* may be screwed a sufficient distance into the arbor to bring the collar *s* against the head *p*, while the portion *b* of the arbor is in the head *o*, so that there will be not sufficient end play of the locking-rod *n* to permit disengagement of the arbor with the socket. When the arbor is so engaged, it is firmly held and can neither be rotated nor tipped out of the socket, and thus the main-wheel barrel may be easily and quickly placed upon the arbor and secured by screwing down the threaded member *j*. On the end of the rod below the collar *s* is a knurled handle part *t*, which may be grasped and turned so as to screw the rod into the arbor.

It will be seen that the body or handle portion *m*, which is made of such size that it can be firmly grasped and held in the hand, provides the part which holds the arbor from rotating, while the bar *n* serves as a locking means for retaining the end of the arbor in the holder and preventing accidental dislodgment thereof.

I claim—

1. A holder for watch-arbors comprising a body portion having a socket shaped to receive and fit the end of an arbor, and a locking device arranged to engage the arbor internally and retain it in the socket.

2. A holder comprising a main portion having a socket, and a locking member constructed and arranged to engage an arbor and draw its end into the socket.

3. A holder for watch-arbors comprising a body portion having a socket shaped to receive and fit the end of an arbor and prevent rotation thereof in the socket, and a locking device arranged to engage the arbor on different sides of its center and retain it firmly in the socket.

4. A holder for watch-arbors comprising a body portion having a socket shaped to receive and fit the end of an arbor, and a locking device constructed and arranged to enter a bore in the arbor and retain the same in the socket.

5. A holder for watch-arbors comprising a body portion having a socket shaped to receive and fit the end of an arbor, and a locking device constructed and arranged to extend through the socket and enter a bore in the arbor, to engage said arbor and hold the same in the socket.

6. A holder for watch-arbors comprising a body portion and a locking member asso-

ciated therewith, the body portion having a socket with a non-circular portion shaped to embrace a corresponding non-circular portion of a watch-arbor and hold the latter from rotating therein, and the locking member having provisions for positively engaging the arbor and retaining said portion thereof in the socket.

7. A holder for watch-arbors comprising a body portion and a locking member associated therewith, the body portion having a socket with a non-circular portion shaped to embrace a corresponding non-circular portion of a watch-arbor and hold the latter from rotating therein, and the locking member being screw-threaded to enter and mesh with a threaded bore of the arbor.

8. A holder for watch-arbors comprising a body having a socket formed with a non-circular portion, and a locking bar or rod associated with said body portion and arranged with its end adapted to extend through the socket, said end being screw-threaded.

9. A holder for watch-arbors comprising a body having a socket shaped to fit and embrace the prismatic end of a watch-arbor, and a rod or bar arranged with its end adapted to project through the socket and threaded to enter and mesh with an internally-threaded bore in the arbor end.

10. A holder for watch-arbors comprising a tubular sleeve forming the body or handle portion and having a socket in its end, and a rod extending longitudinally through the sleeve, one end being threaded and adapted to project through the socket.

11. A holder for watch-arbors comprising a tubular sleeve forming the body or handle portion and having a socket in its end, and a rod extending and being movable longitudinally through the sleeve, a shoulder on the rod adapted to abut against a shoulder on the sleeve, and the end of the rod being threaded and adapted to project through, and be withdrawn from, the socket.

12. A holder for watch-arbors comprising a tubular sleeve having a socket in its end, a rod threaded at one end arranged to extend and move longitudinally through the sleeve, being thereby adapted to project through and withdraw from the socket, a handle portion on the rod for rotating the same, and a shoulder connected thereto adapted to abut against a shoulder on the sleeve to limit the amount of projection of the threaded end.

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

CHARLES E. BERRY.

Witnesses:

OLOF OHLSON,
ANDERS AUNE.