

No. 750,182.

PATENTED JAN. 19, 1904.

Z. T. FURBISH.
REVERSIBLE SCREW DRIVER.
APPLICATION FILED APR. 17, 1902.

NO MODEL.

Fig. 1.

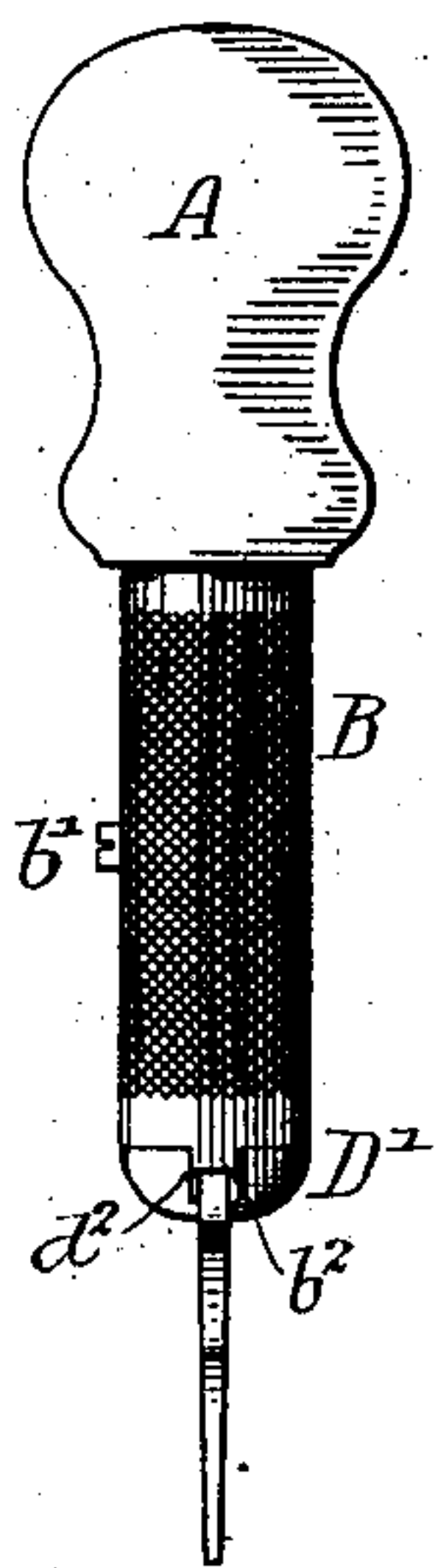


Fig. 2.

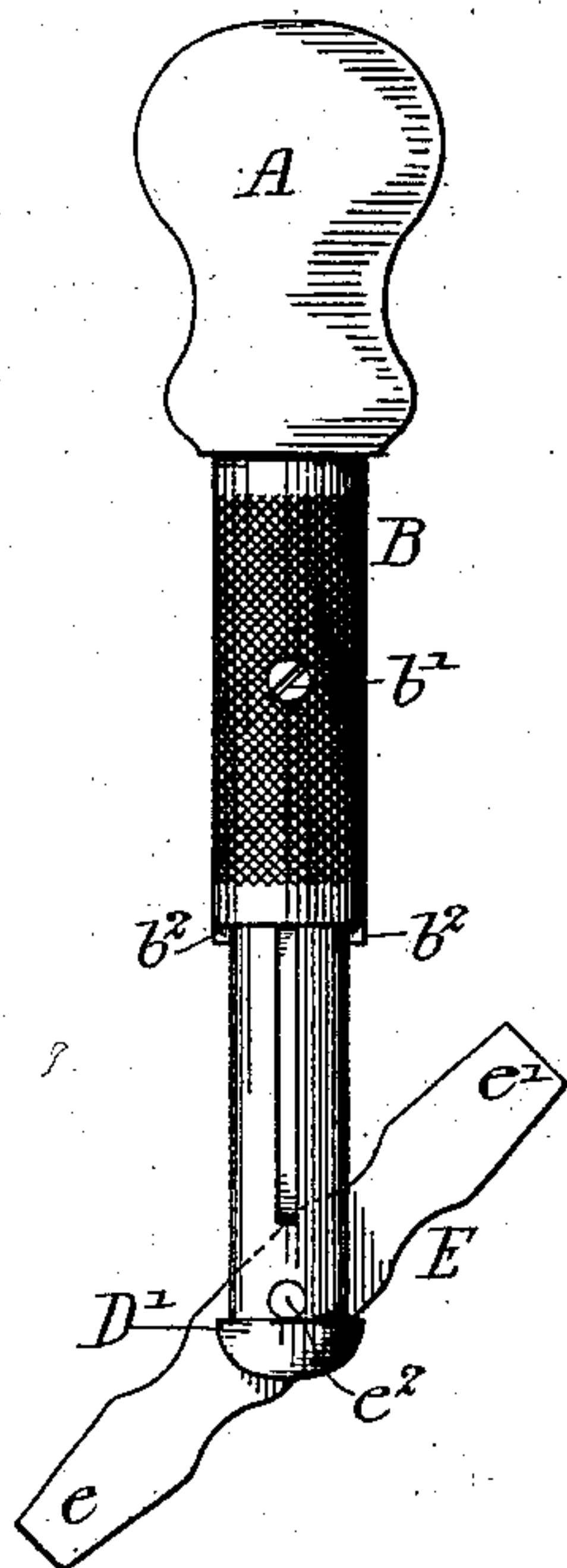


Fig. 3.

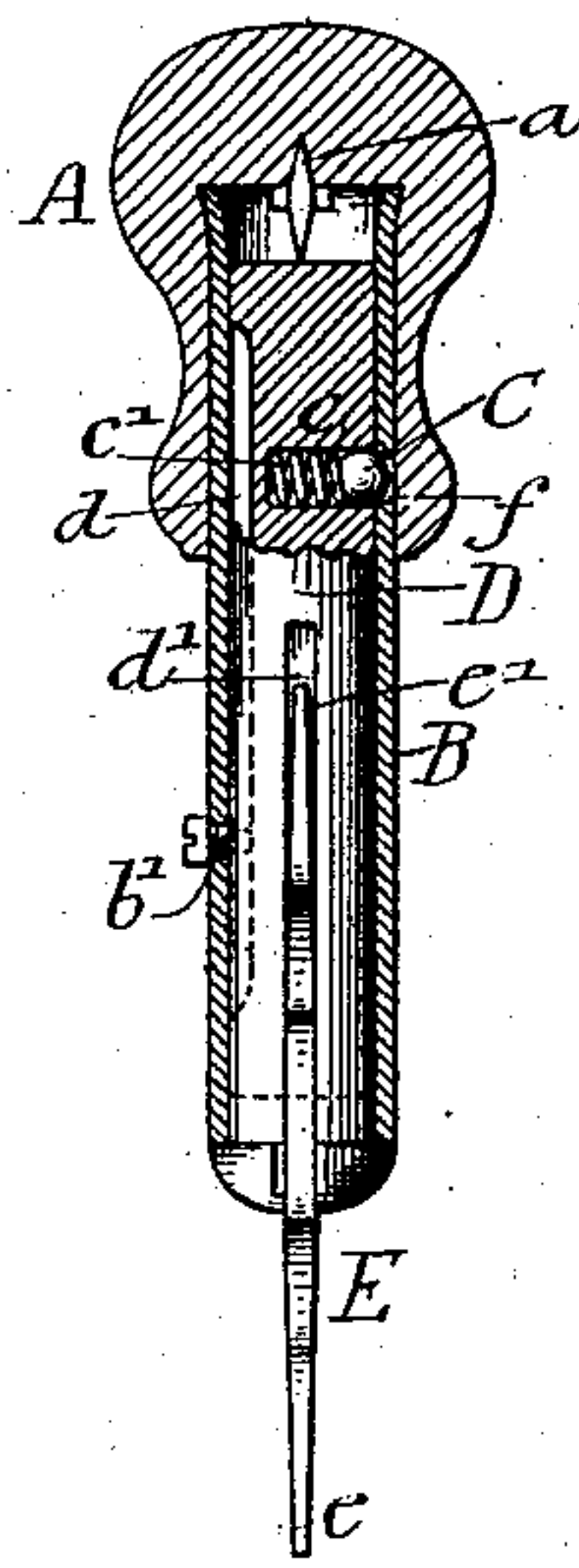


Fig. 7.

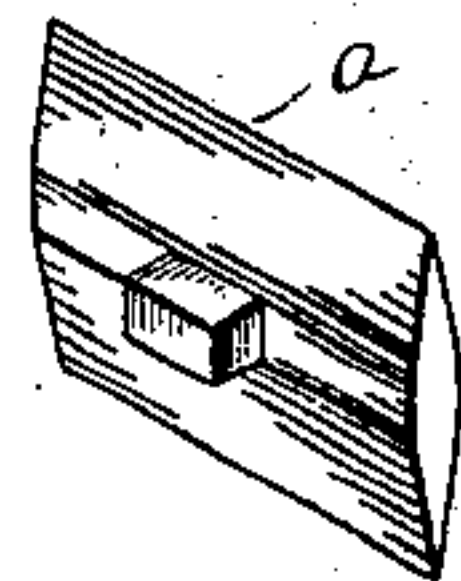


Fig. 4.

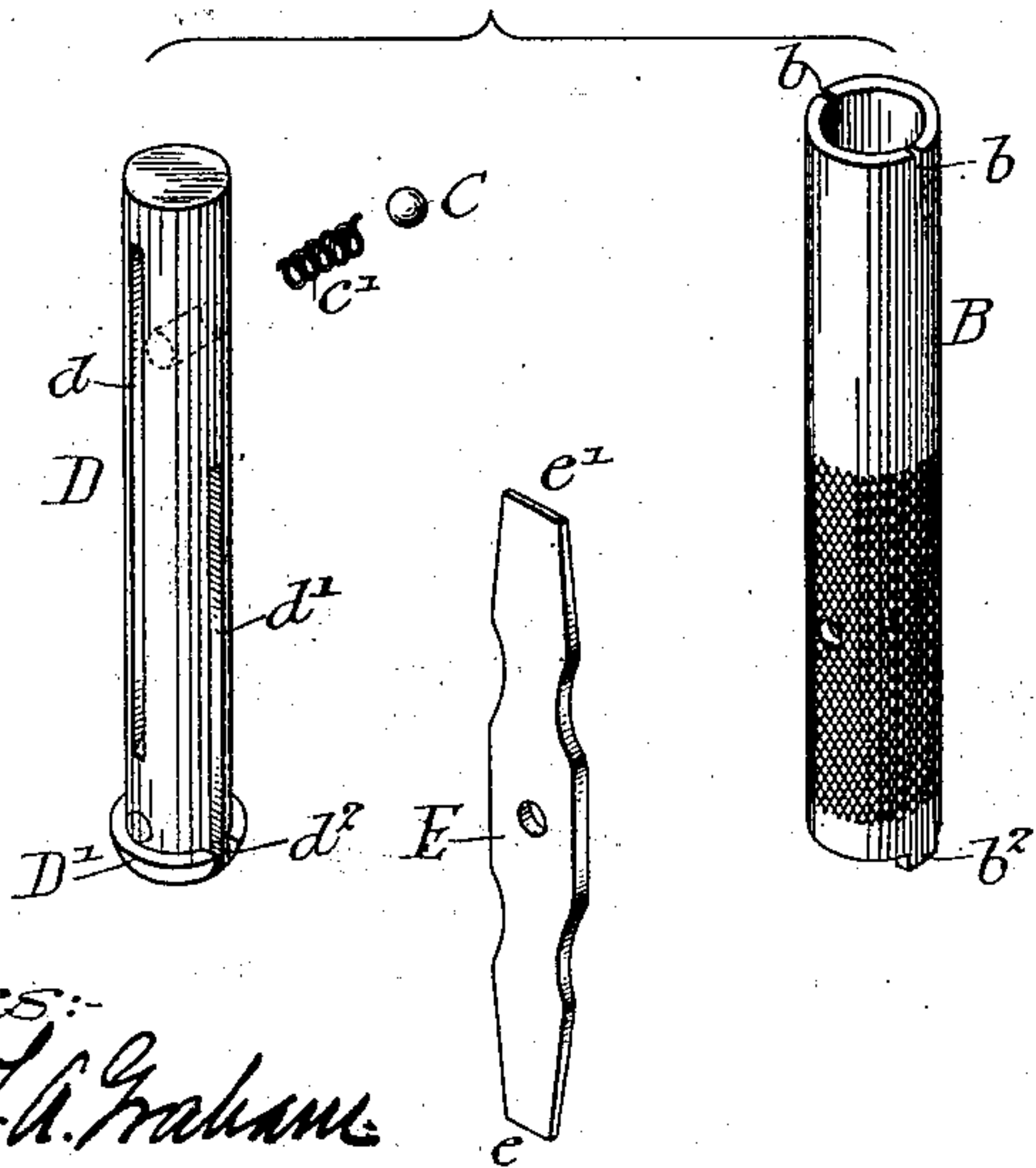


Fig. 5.



Fig. 6.



Witnesses:-

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UNITED STATES PATENT OFFICE.

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REVERSIBLE SCREW-DRIVER.

SPECIFICATION forming part of Letters Patent No. 750,182, dated January 19, 1904.

Application filed April 17, 1902. Serial No. 103,379. (No model.)

To all whom it may concern:

Be it known that I, ZACHRY T. FURBISH, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Reversible Screw-Drivers, of which the following is a specification.

My invention relates to certain improvements in reversible screw-drivers.

The object of my invention is to so construct
10 a screw-driver of this type that it will be compact, substantial, and can be held rigidly in either position when in use. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

15 Figure 1 is a side view of my improved screw-driver. Fig. 2 is a view showing the carrier extended. Fig. 3 is a sectional view. Fig. 4 is a perspective view showing the parts detached. Figs. 5 and 6 are views of modifications of the blade, and Fig. 7 is a perspective view of the key-plate.

A is the handle of the screw-driver, made of wood or other material.

25 B is a shell of metal which is driven into the handle and is held from turning by a key-plate *a*, which enters slots *b* in the end of the shell B. This key-plate is pointed at each end and has a shoulder. One end is driven into the handle A and the other acts as a spreader for
30 the end of the shell, so as to prevent it from being withdrawn. Arranged to slide within the shell is a carrier D. (Shown in detail in Fig. 4.) This carrier has a groove *d* at one side, and passing into this groove is a pin *b'*,
35 preferably in the form of a screw. This pin allows the carrier to slide in and out in the shell and yet will prevent it turning independently of the shell.

40 E is the double-ended blade of the screw-driver, having at one end a narrow portion *e* and at the other end a wide portion *e'*. The carrier D is slotted at *d'* for the reception of one-half of this blade E, and the pivot-pin *e''* passes through the carrier and through a central hole in the blade and acts as a pivot for
45 the blade, so that it can be turned either to project the narrow end *e* or the wide end *e'*. When the parts are in the position shown in

Figs. 1 and 3, a tongue *b''* on each side of the shell B extends into the widened portion *d''* of
50 the slot *d'*. This widened portion is in the head D' of the carrier, so that when the screw-driver is turned the strain is taken off the screw *b'*. In order to retain the carrier in the closed position, as in Figs. 1 and 3, I mount
55 in a socket *c* in the carrier B a ball or other suitable bolt C, back of which is a spring *c'*, which tends to force the bolt out, and in the shell B within the handle is a hole *f*, into which the ball can project when in the posi-
60 tion shown in Fig. 3. The ball and cavity are so formed that by a little effort the carrier can be extended so as to turn the blade; but under ordinary conditions it will hold the carrier in its closed position. If the parts are in
65 the position shown in Fig. 1 and it is wished to reverse the blade, all that is necessary is to pull hard upon the blade, so as to release the ball-bolt C and extend the carrier as in Fig. 2. When the carrier is in this position, the blade
70 can be reversed by simply turning it on its pivot, and the carrier is then pushed back in its shell and the ball-bolt will lock it to the shell.

When the screw-driver is in use, the strain is
75 taken by the tongue *b''*, as mentioned above.

This construction makes a very compact screw-driver which can be cheaply manufactured and which will be substantial.

While I have shown in Figs. 2 and 4 a blade
80 having a screw-driver at each end, a single blade may be used, as shown in Fig. 5, so that the tool can be used as a pocket screw-driver, or the blade may be formed as shown in Fig.
85 6, one end of which is in the form of a screw-driver and the other in the form of a drill.

It will be understood that the blade may be modified without departing from the main feature of my invention.

I claim as my invention—

90 1. The combination in a reversible tool, of a handle, a shell secured to the handle, a carrier within the shell, a double blade pivoted to the carrier, a head on the outer end of the carrier, said head being slotted, a tongue on the
95 end of the shell arranged to enter the slot, and

a friction-bolt for retaining the carrier in its closed position, substantially as described.

2. The combination in a reversible tool, of a handle, a shell secured to the handle, a carrier arranged to slide within the shell, said carrier being slotted from the outer end, a blade pivoted to the carrier and arranged to turn in the slot, a head on the end of the carrier, said slot being cut through the head, tongues on the end of the shell entering the slot beyond the blade, and a friction-bolt tending to keep the carrier in its closed position, the tongues preventing the carrier moving in the shell, substantially as described.

3. The combination in a reversible tool, of a handle, a shell secured to the handle, tongues on the outer end of the shell, a carrier arranged to move in the shell and having a head at its outer end, said carrier being slotted, the

slot in the head being enlarged, a double-ended blade pivoted to the outer end of the carrier, the tongues on the end of the shell entering the enlarged slots in the head when the tool is closed, a spring-pressed ball mounted in the carrier and arranged to enter a hole in the shell so as to frictionally hold the carrier in its closed position, substantially as described.

4. The combination of a handle, a slotted shell within the handle, a key-plate having each end tapered and having a shoulder, substantially as described.

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

ZACHRY T. FURBISH.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.