

No. 638,746.

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S. A. NORTH.
DIE HOLDER.

Application filed Feb. 2, 1899.)

(No Model.)

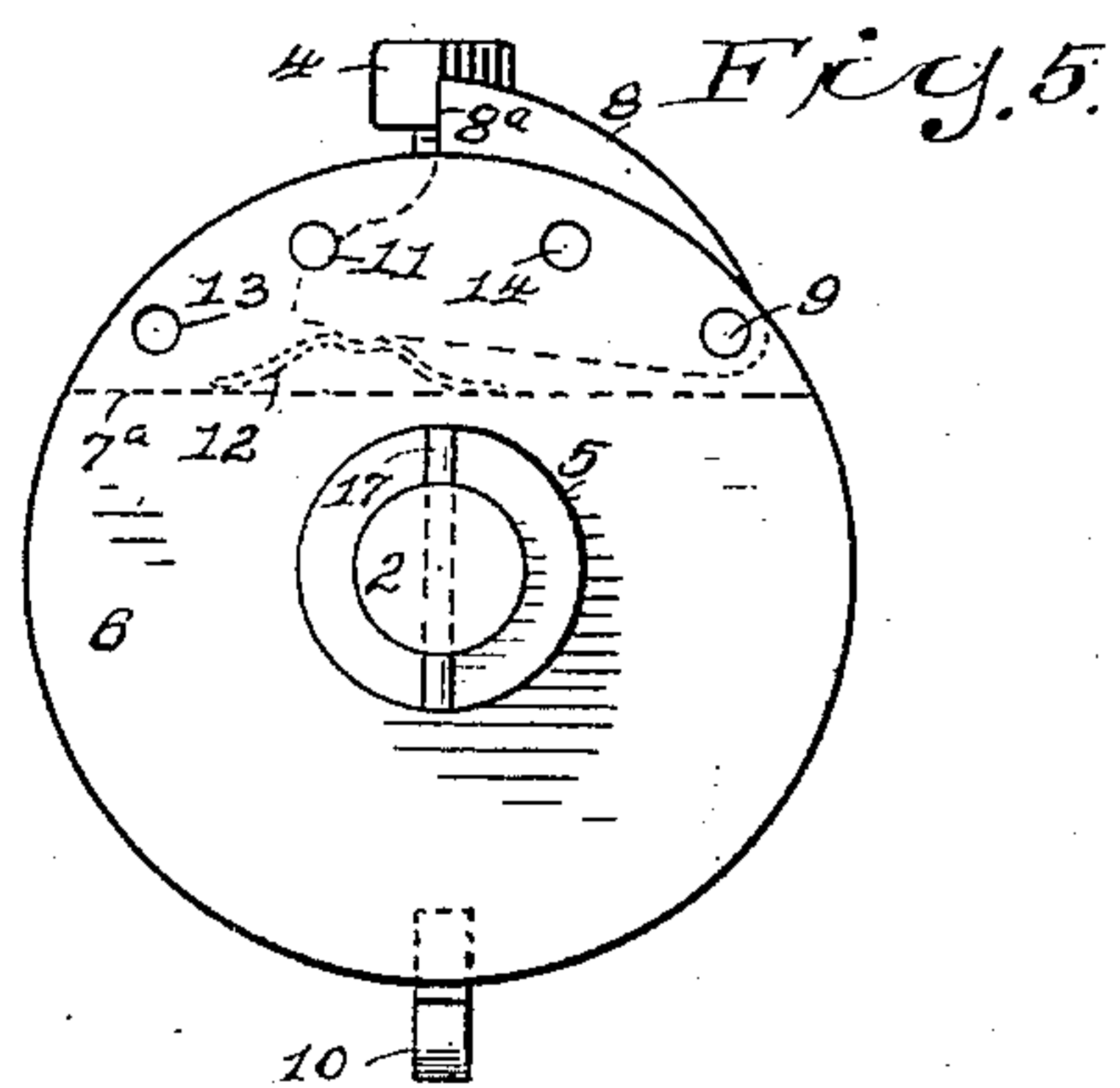
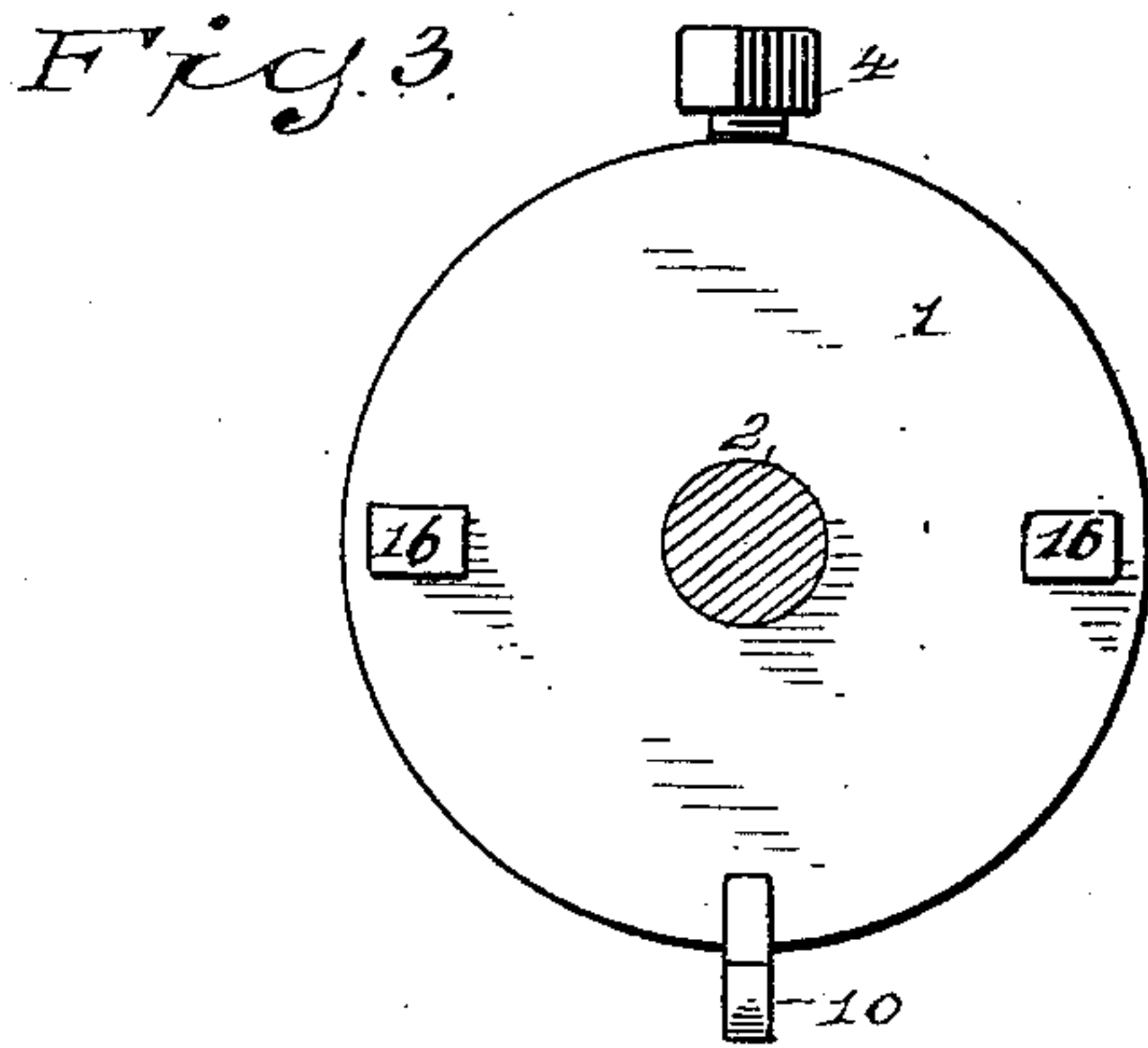
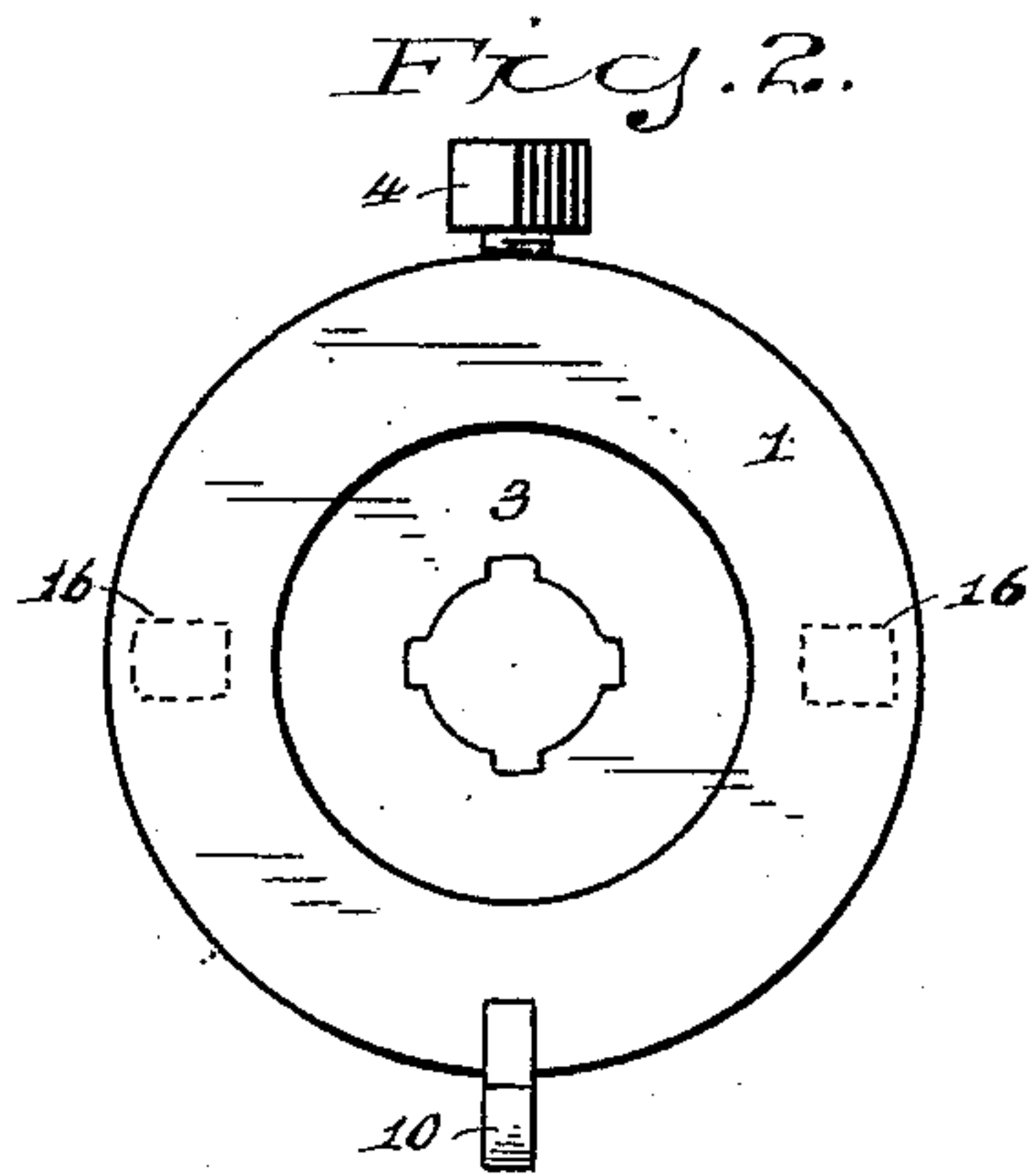
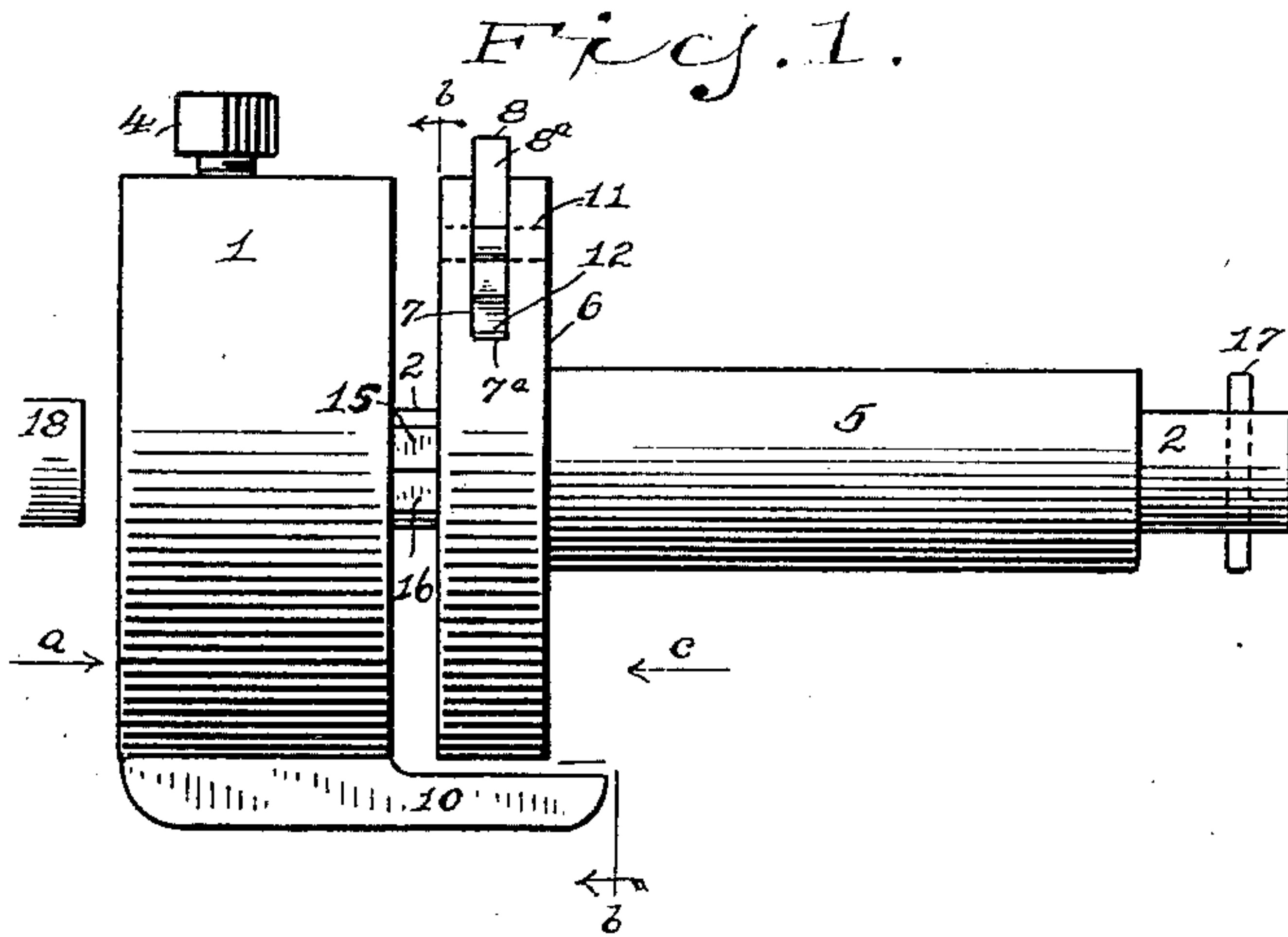
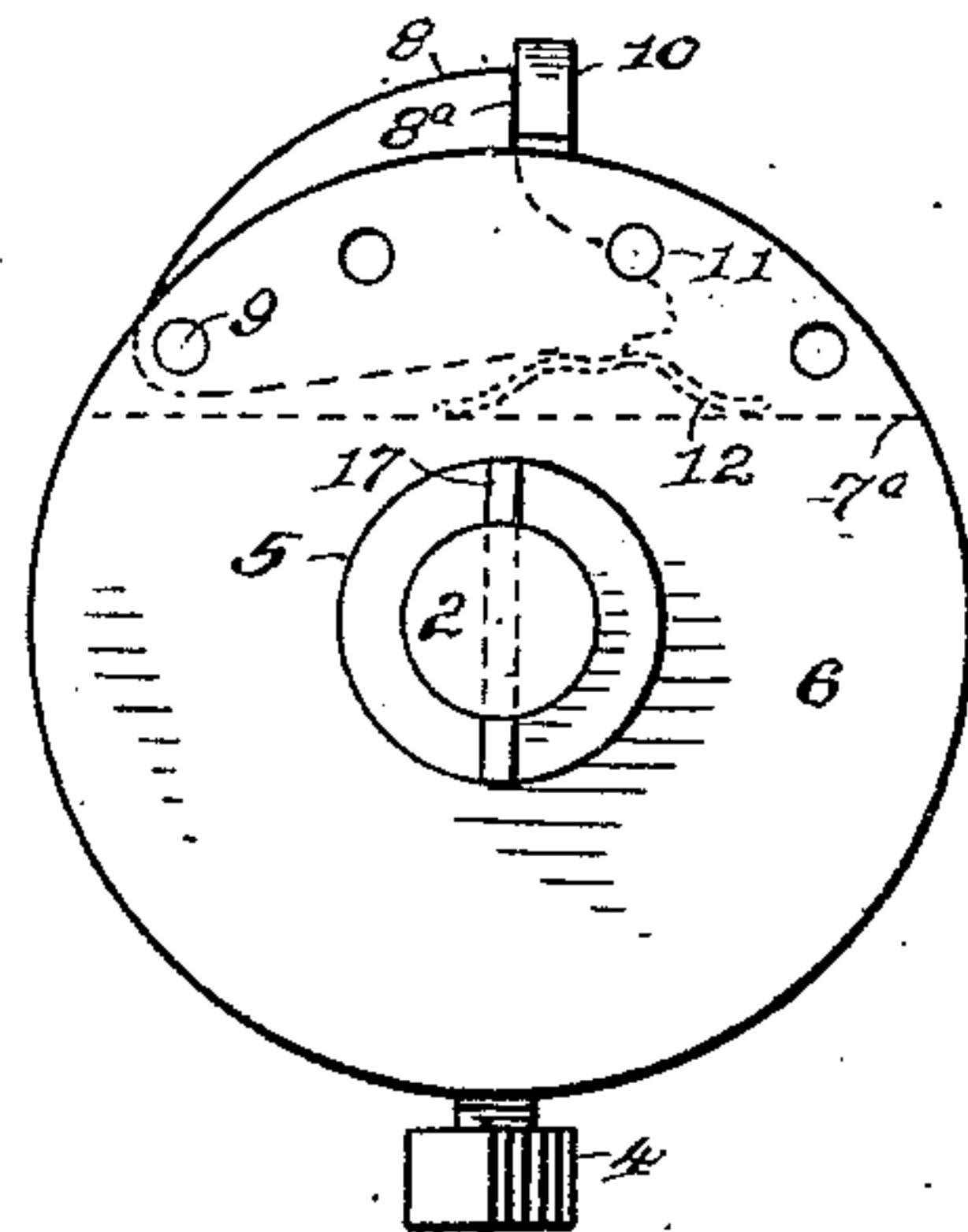
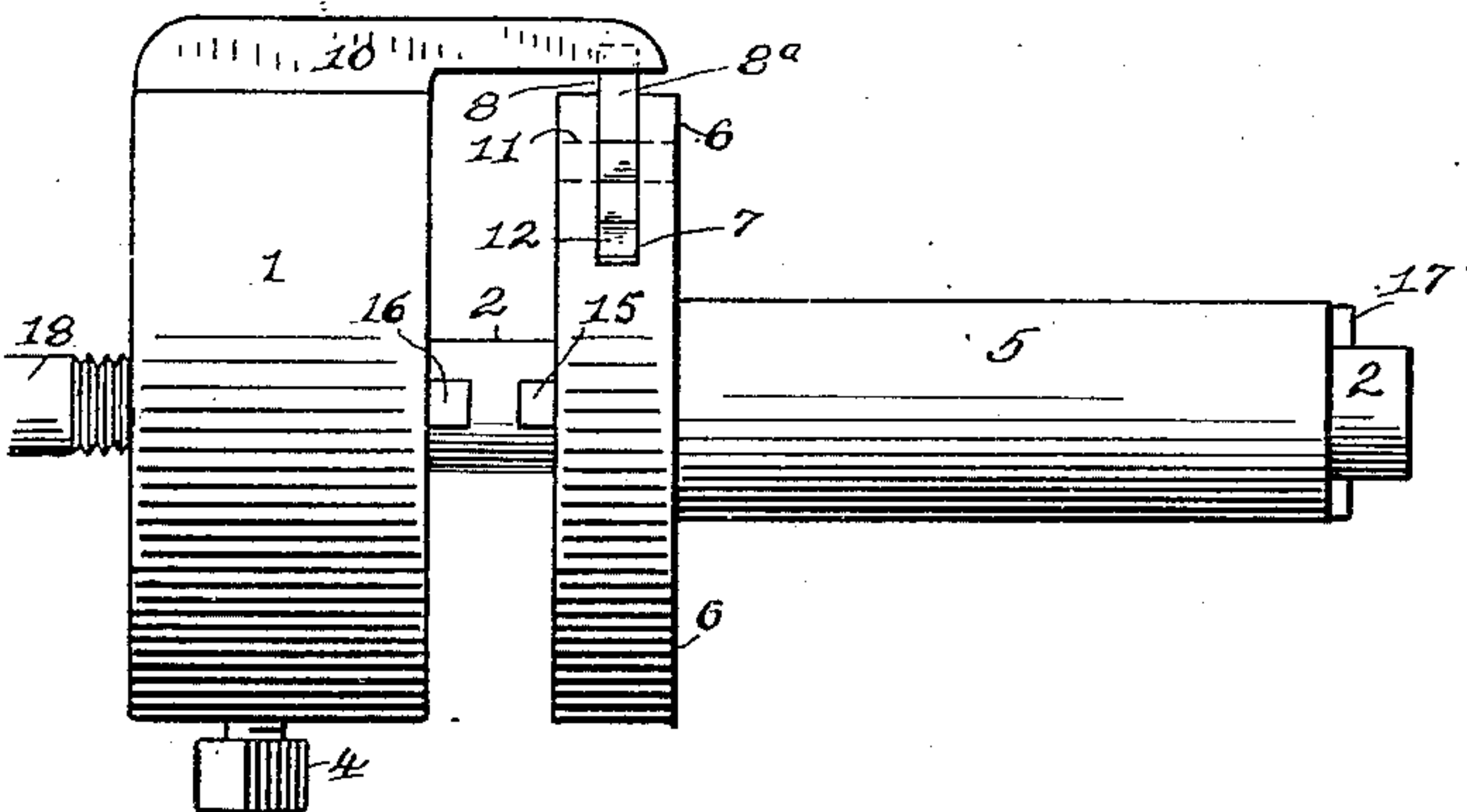


Fig. 4.

Fig. 6.



WITNESSES

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DIE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 638,746, dated December 12, 1899.

Application filed February 2, 1899. Serial No. 704,273. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL A. NORTH, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Die-Holders, of which the following is a specification.

My invention relates to an improvement in die-holders for screw-machines; and it consists in certain details of construction to be more fully set forth in the following specification.

To enable others to understand my invention, reference is had to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved die-holder, showing the head locked to the sleeve, also a broken view of a rod about to be threaded. Fig. 2 is a front elevation of the holder looking in the direction of arrow *a* of Fig. 1. Fig. 3 is a rear elevation of the holder and sectional view of its shank through line *b* of Fig. 1. Fig. 4 is a side elevation of the holder in open position, also section of a threaded rod. Fig. 5 is a rear elevation of the holder looking in the direction of arrow *c*, Fig. 1. Fig. 6 is a view similar to Fig. 5, except that the reversing catch or stop is turned around for left-hand threads.

Its construction and operation are as follows:

1 is the head of the die-holder, and 2 its shank. In the front of the head 2 is a circular recess or seat for the die 3, Fig. 2, which die is held therein by means of the set-screw 4. This feature being common in die-holders, further detailed description in this respect is unnecessary.

5 is a sleeve or bushing adapted to be firmly secured in one of the holes in the revolving turret (not shown) of a screw-machine. The shank 2 of the holder is adapted to have a free movement in said bushing. 6 is the flange portion of the said bushing, whose periphery is substantially the same as that of the head 1.

7 is a slot cut through the outer edge of the flange 6, the bottom of which is represented by the dotted line 7^a. (Shown at Figs. 5 and 6.)

8 is a catch operatively mounted on the pin 9 within said slot. This catch has the straight

face 8^a, which face is adapted to be engaged by reverse-stop 10, projecting rearward from the head 1.

11, Fig. 5, is a stop-pin passing transversely through the flange 6 and is adapted to limit the upward movement of the catch or stop 8. 12 is a spring placed under the forward end of said catch, and it rests on the bottom 7^a of the slot 7 to keep the straight face 8^a of said catch in its normal upward position above the periphery of the flange 6.

To change the catch from right to left hand, as shown at Fig. 6, the pin 9, Fig. 5, is removed from the hole it occupies and said catch is turned around and said pin is inserted in the opposite hole 13. The stop-pin 11 is also inserted in the hole 14. There are two lugs—one only, 15, being shown—on the rear face of the flange 6 to be engaged by the lugs 16 on the rear face of the head 1, whereby the said head is held stationary when cutting a thread.

17 is a pin driven through the shank 2 to keep the bushing 5 from dropping off said shank.

At present die-holders are made with the head 1 for the die, the shank 2, and the pin 17, as shown in the drawings. The bushing 5 is also mounted on the shank; but in such a construction the outer end of the bushing is provided with a notch to engage with the pin 17 to check the reverse movement, and in order to insure against wear the end of the bushing is hardened. When, therefore, the die has run up on the work the proper distance, it requires considerable force to start it back, which force is expended on this notch or, rather, the side of said notch when it strikes against the pin in the shank of the die-holder, and it frequently results in breaking the end of the sleeve off and of course necessitates the making of a new one. When the die-holder is used for cutting left-hand threads, it is always necessary to have an extra sleeve for this purpose, as the driving-face of the notch for checking a reverse movement of the die-holder when right-hand threads are cut is directly opposite to the one required when cutting left-hand threads.

In my improved die-holder the stops for checking the reverse movement are located at the periphery of the head 1 and the flange

6. This removal of the stops for checking the reverse movement of the die-holder from a point very close to the axis or central line of the shank 2 to the outer rim of the flange 5 6 and the head 1 will give a much greater leverage whereby to check this reverse movement. To explain what is meant by the "resistance to be overcome," reference is had to Fig. 1 of the drawings. 18 represents a section of a rod projecting from the chuck of a screw-machine. (Not shown.) The die-holder is in the proper position to be run up on this rod to cut a right-hand thread. When, therefore, the proper length of thread is cut, which 15 length is determined by the slide (not shown) carrying the turret in which the sleeve 5 is secured, and said slide is brought against a stop to limit its forward movement, the lugs 15 and 16 will then disengage. This will permit said holder to rotate freely with the rod 20 therein, the reverse stop or arm 10 simply revolving around the periphery of the flange 6, depressing the catch 8 at every revolution. Now as the die is firmly engaged with the rod 25 it will require considerable force to loosen its hold when the work-carrying chuck is reversed. This reverse movement will of course reverse the die-holder until the arm 10 strikes against the face 8^a of the catch 8, which will 30 hold the said die-holder while the rod is turning itself out of the cutting-die, as shown at Fig. 4. In the present style of die-holders this strain, as before mentioned, is on the small end of the sleeve 5 close to the shank 35 2, causing frequent breakage at that point; but with the increased leverage as located in my improved die-holder the reversing strain is not felt. When the die is brought against the rod to cut another thread, the holder will 40 rotate until stopped by the engagement of the lugs 15 and 16, and during this period of rotation the arm 10 will readily pass over the depressible catch 8.

The advantage of being able to convert the 45 die-holder into either right or left hand without making an extra sleeve or bushing will be greatly appreciated by all users of tools of this character.

The term "flange" as applied to the im- 50 movable part of the holder that carries the depressible and reversible catch or stop means any elevated portion of the sleeve or bushing,

and such elevated portion need not be constructed circular, as shown, but can be constructed of any shape or form so long as said 55 catch or stop is carried out far enough from the shank 2 to obtain the amount of leverage needed. Therefore the exact form of the part of the holder carrying the said stop or catch is immaterial. 60

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described improvement in die-holders for holding the same stationary 65 against a reverse movement, consisting of a rearwardly-projecting arm rigidly attached to the periphery of said holder, a stationary flange carrying a depressible catch or stop in its periphery to be engaged by said arm so as 70 to check a reverse movement of said holder, for the purpose set forth.

2. The herein-described improvement in die-holders consisting of a die-receiving head, 75 having a shank, a stationary sleeve or bushing in which said shank operates, a flange on said sleeve or bushing, means thereon and on the rear vertical face of said head to hold said head against the cutting strain, a rearwardly-projecting arm rigidly connected with 80 the periphery of said head, a depressible stop or catch operatively mounted in the periphery of said flange to engage said stop or catch and hold the head when the work is oppositely rotated and freely permit the arm to be car- 85 ried around the periphery of said flange when said head is running idle, for the purpose set forth.

3. The herein-described improvement in die-holders consisting of an immovable 90 flanged sleeve or bushing, a reversible stop-catch at or near the periphery of the flange of said sleeve or bushing, a spring for keeping said catch elevated, a stop on the head of the movable part of the die-holder to en- 95 gage with the catch on said flange, for the purpose set forth.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 1st day of February, A. D. 1899.

SAMUEL A. NORTH.

Witnesses:

SIG. DORMITZER,
WM. H. GARDNER.