

2 Sheets—Sheet 1.

No. 501,665.

Patented July 18, 1893.

Fig. 1

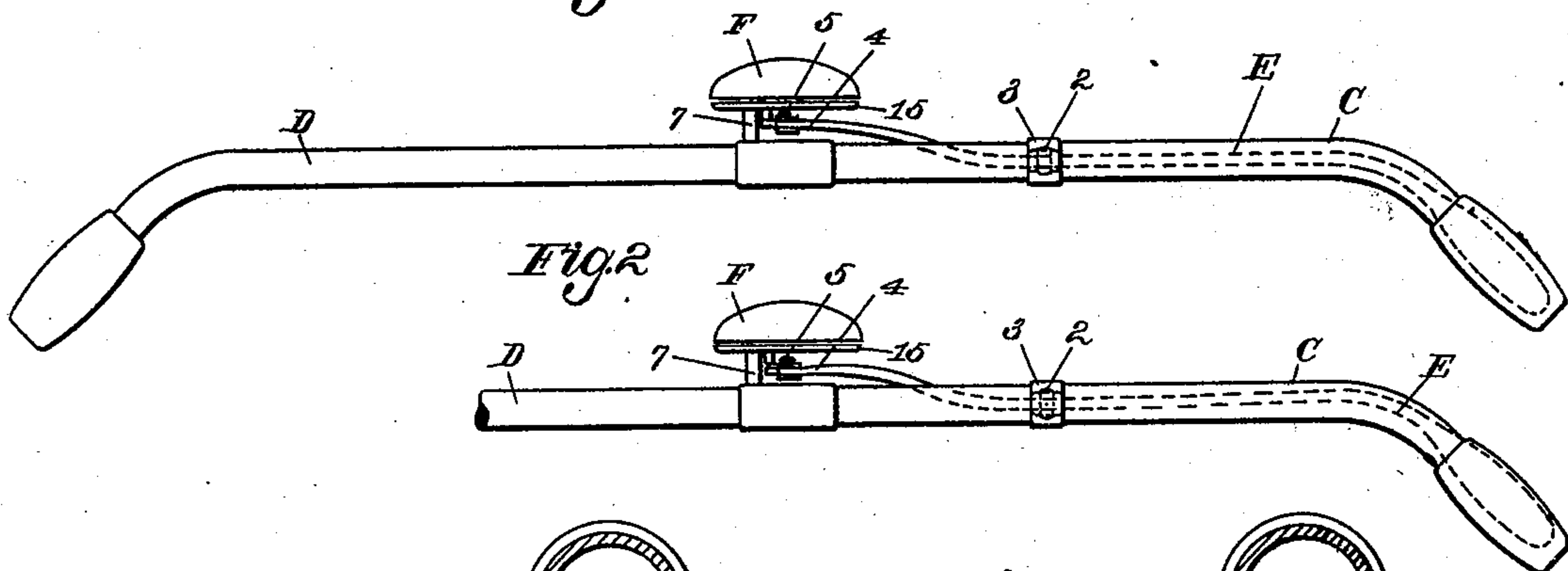


Fig. 2

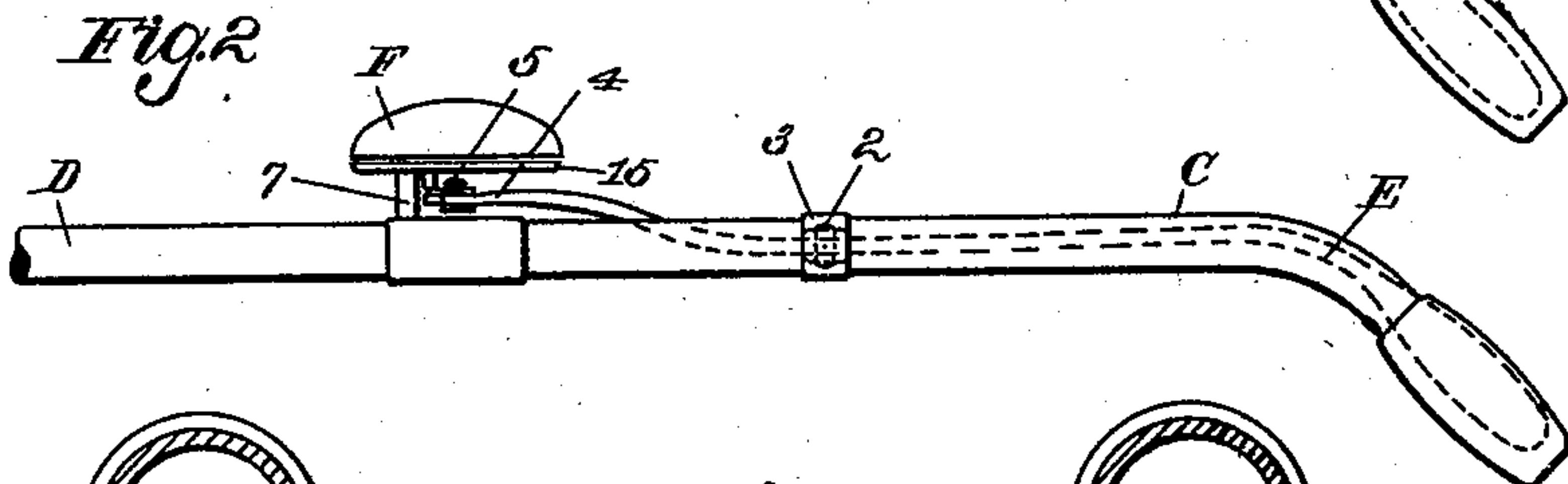


Fig. 3

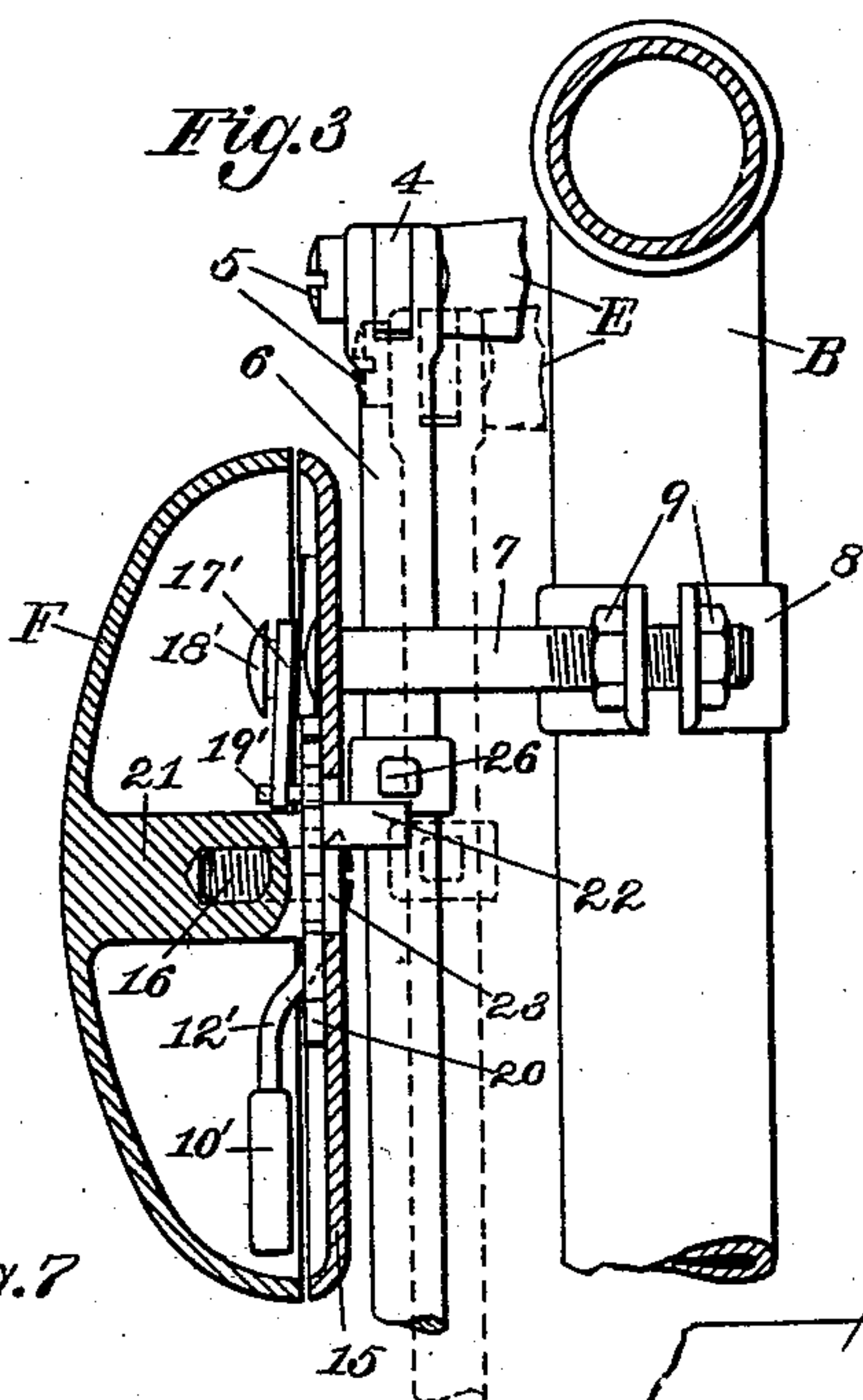


Fig. 4

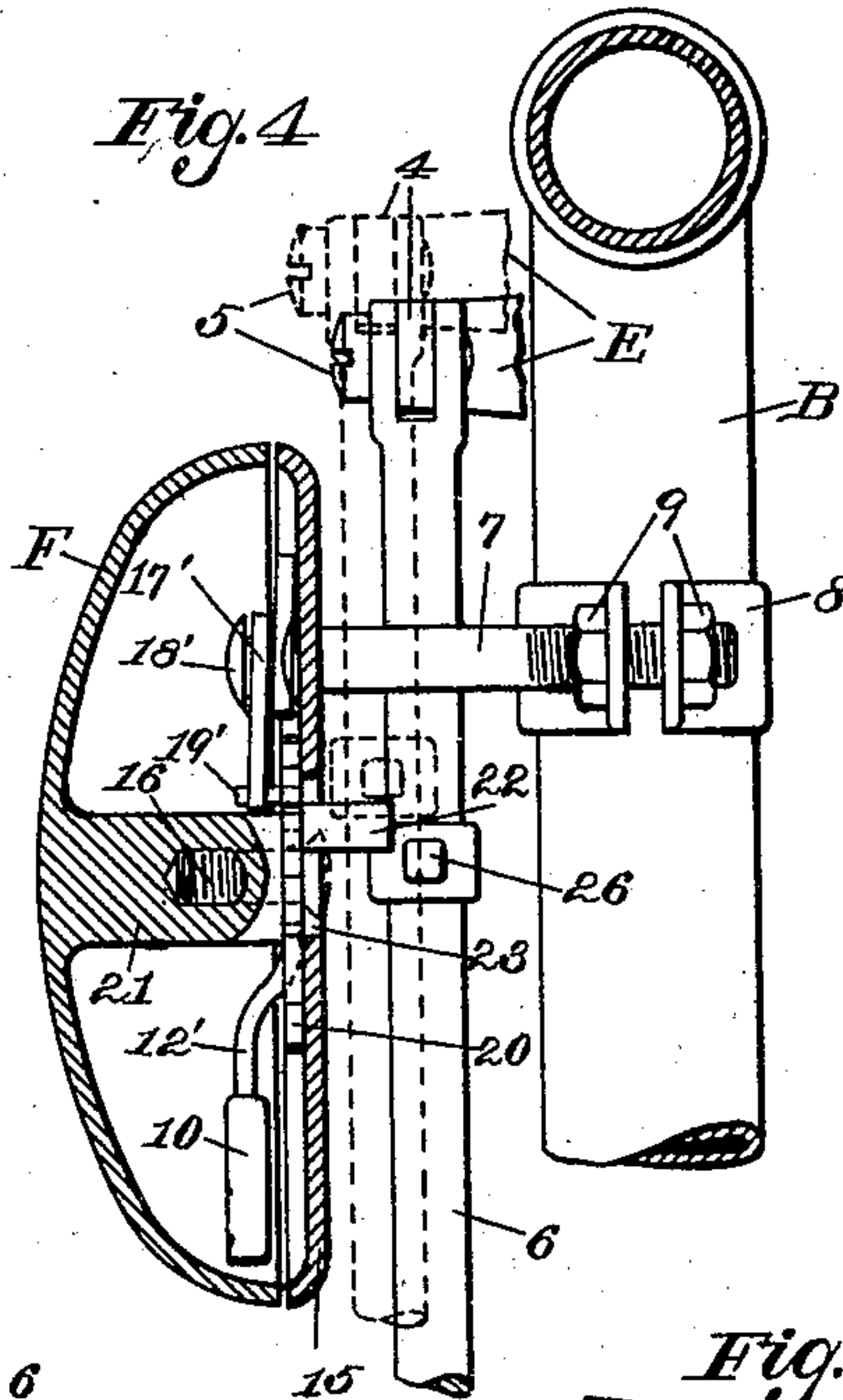


Fig. 7

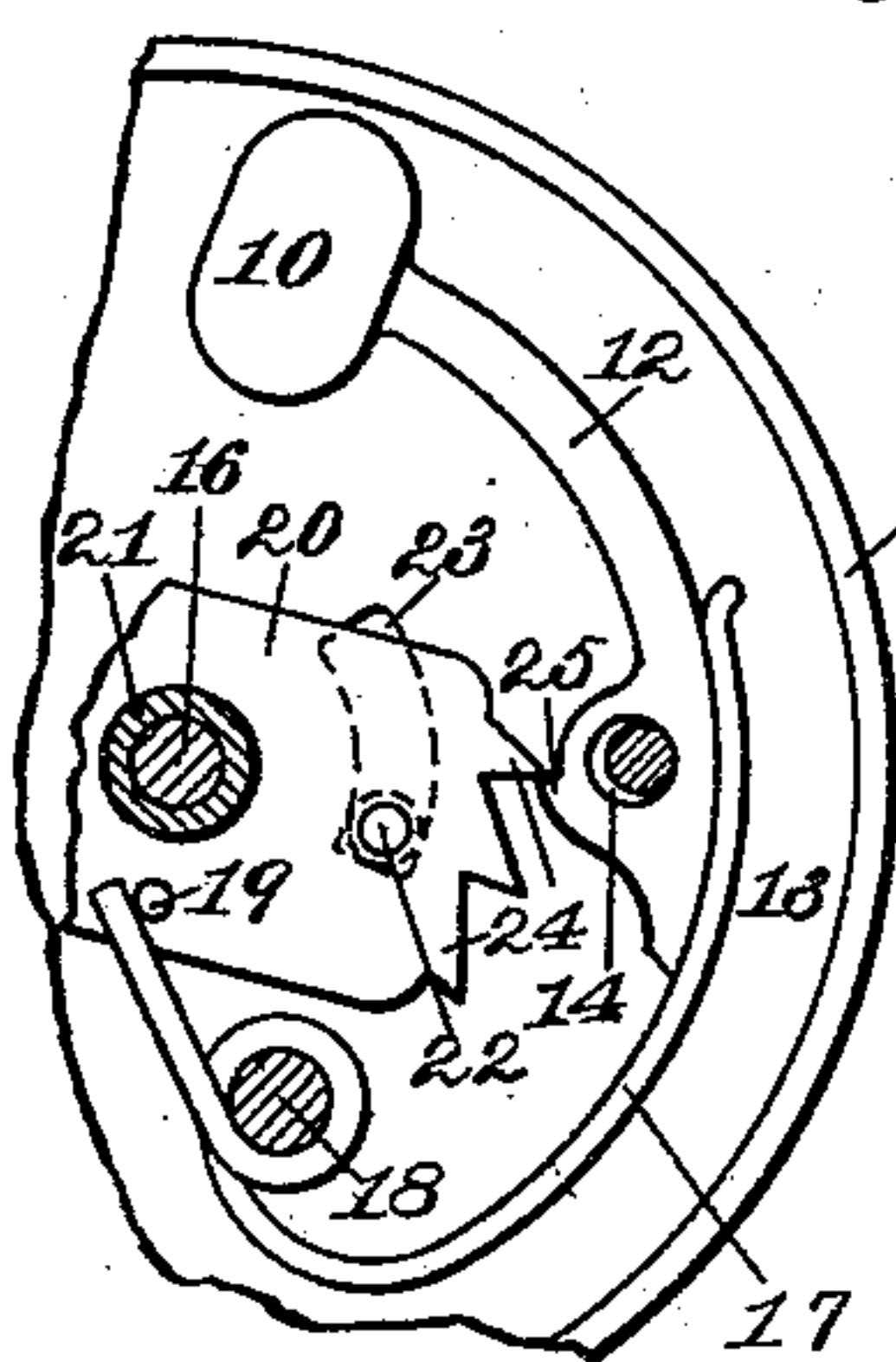


Fig.6

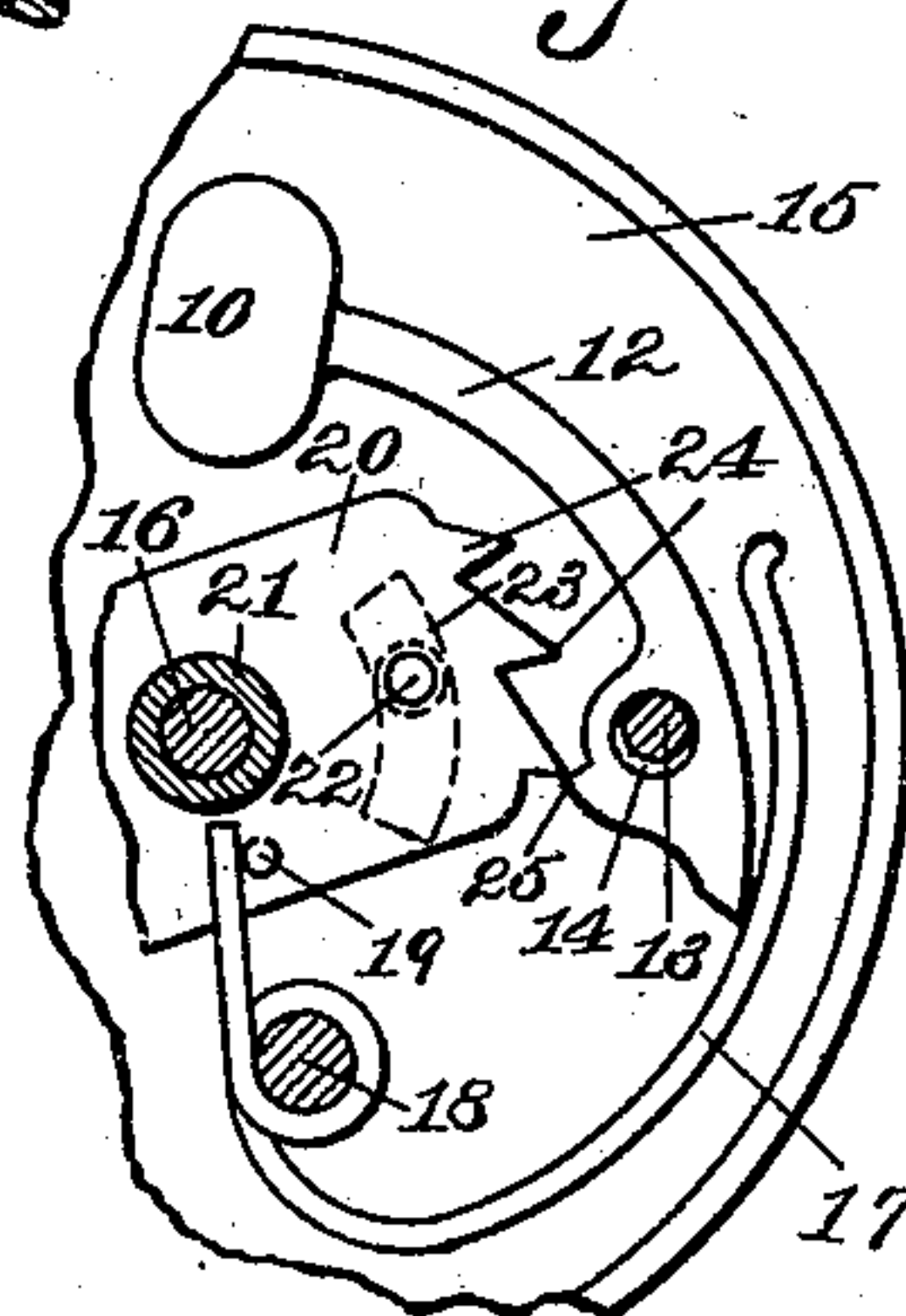
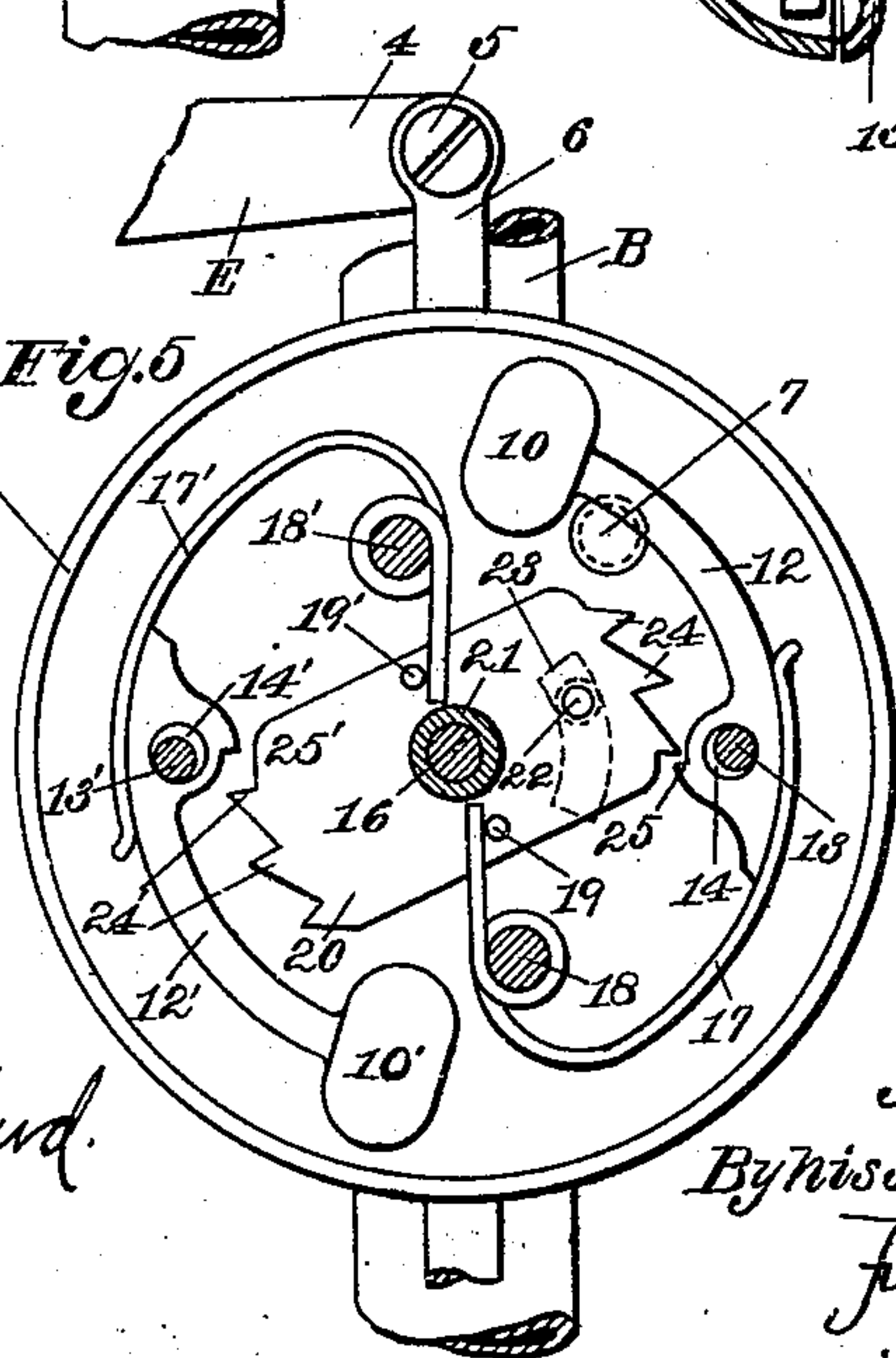


Fig.5



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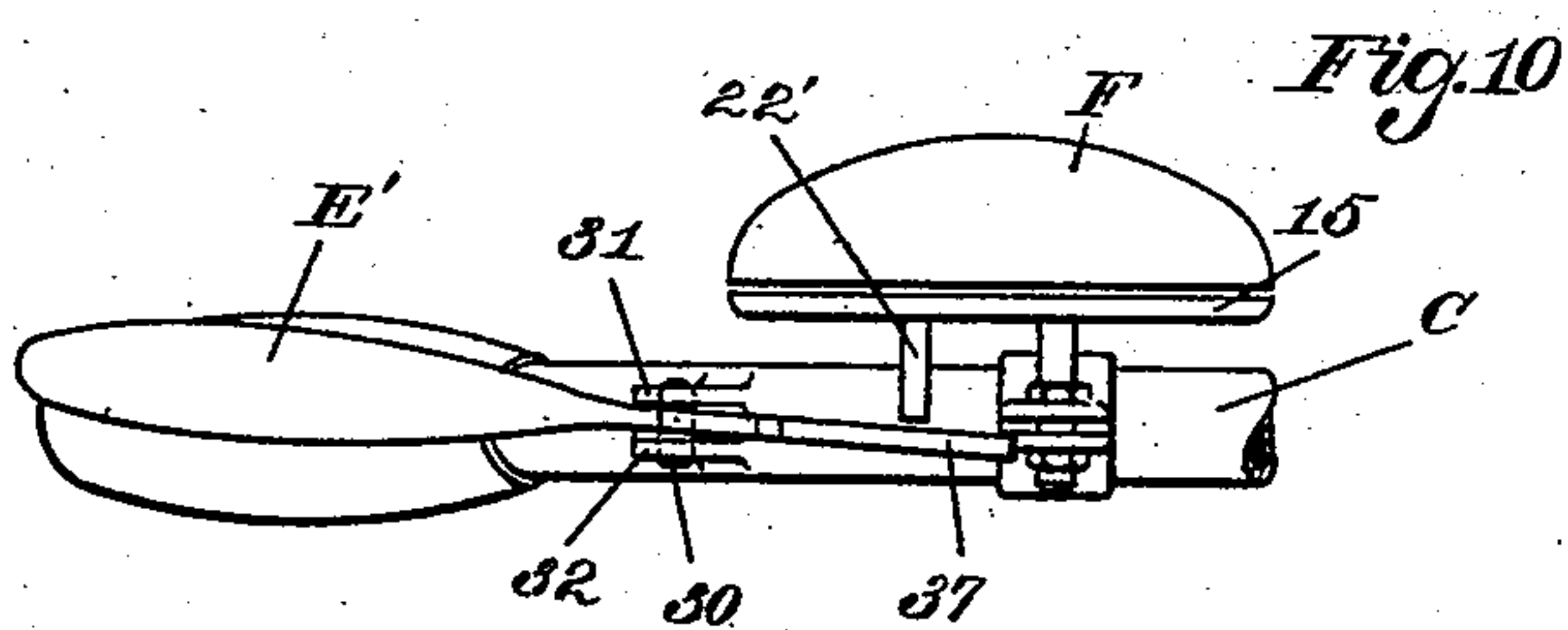
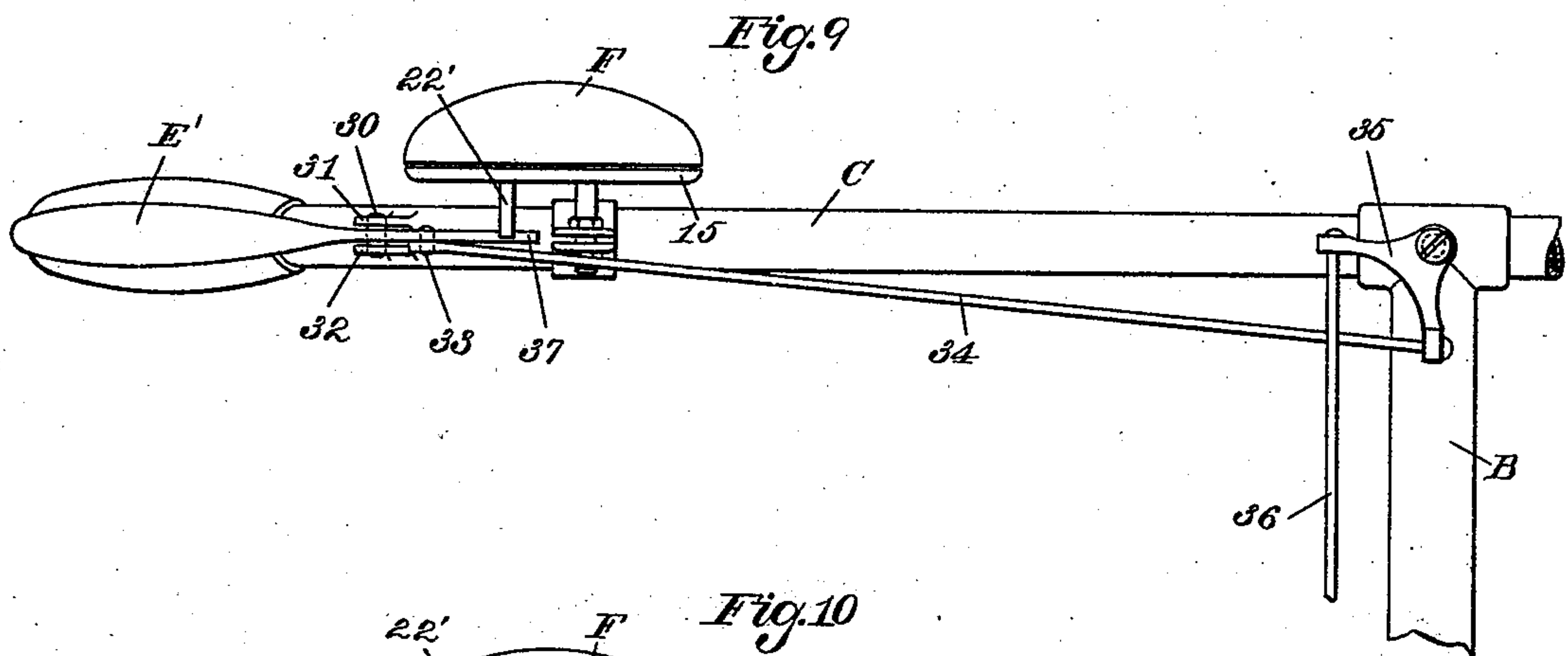
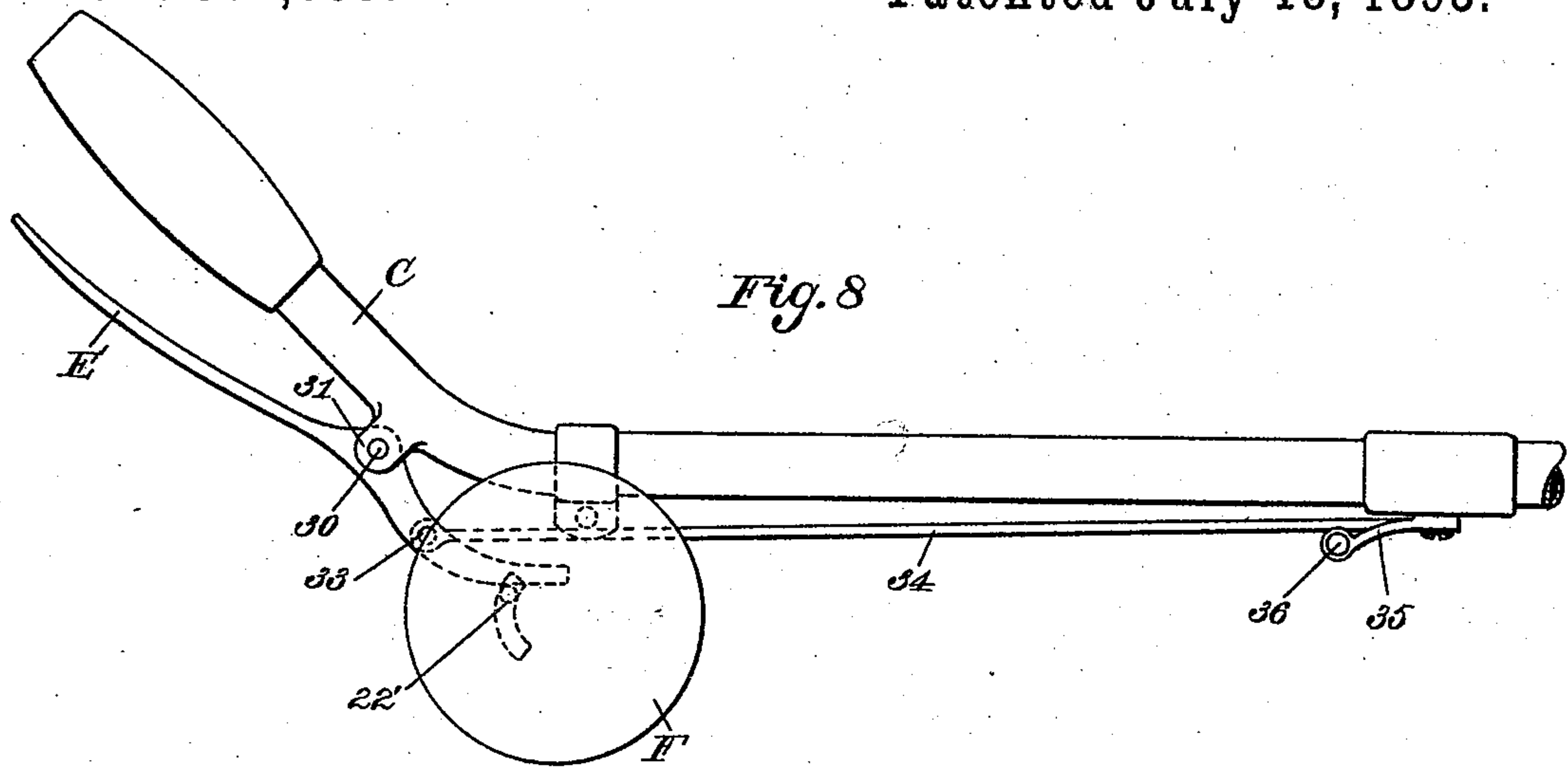
(No Model.)

2 Sheets—Sheet 2.

A. J. SANDGREN.
BICYCLE BELL.

No. 501,665.

Patented July 18, 1893.



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UNITED STATES PATENT OFFICE.

ARVID J. SANDGREN, OF HARTFORD, CONNECTICUT.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 501,665, dated July 18, 1893.

Application filed June 29, 1892. Serial No. 438,383. (No model.)

To all whom it may concern:

Be it known that I, ARVID J. SANDGREN, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Signal Apparatus, of which the following is a specification.

This invention relates to signal apparatus for bicycles; the object being to furnish an apparatus in which the signal-bell may be operated at will from the brake-lever of the machine, thereby enabling the bicyclist to sound an alarm without using an additional handle or other special bell-ringing device; and in which the brake-lever may be operated without actuating the signal device.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan view of the upper part of a bicycle, showing the handle-bars and brake-lever, and comprising a signal apparatus embodying my present improvements. Fig. 2 is a view similar to a portion of Fig. 1, showing some of the parts in a different position. Fig. 3 is an enlarged side view, partly in section, as seen from the left-hand in Fig. 1. Fig. 4 is a similar view as seen from the left-hand in Fig. 2. Fig. 5 is a front view of the apparatus, with the gong or sounding part of the bell removed the better to show the bell-ringing apparatus. Figs. 6 and 7 are views similar to a portion of Fig. 5, illustrating the operation of the bell-striker and its actuating devices. Fig. 8 is a plan view of a modified form of the apparatus in which the bell is operated directly from the brake-lever, instead of through a brake-operating connecting-rod as in the previous figures. Figs. 9 and 10 are front elevations of the same, and are illustrative of the operation of this modification.

Similar characters designate like parts in all the figures.

In the drawings, the upper end, or shaft, B, of the usual head of the bicycle, is furnished with the usual oppositely-disposed handle-bars C and D, for controlling the forward wheel of the bicycle. The brake-lever, E, is shown pivotally supported, or fulcrumed, at 2, by a bolt or pin carried, in the ordinary manner, by a suitable bracket or like part, as 3, fixed on one of the handle-bars, as will be

understood from the drawings. The working end, 4, of the brake-lever is connected by a pivot, 5, to the upper end of the usual brake-rod, 6, which rod extends downward to and connects with the usual brake, in the ordinary manner.

In Figs. 1 to 5, inclusive, the signal bell, F, is supported in a position forward of the handle-bars near where these join the shaft B, being attached by its stem 21 and screw 16 to a plate, 15, which is carried by a suitable arm, as 7, that is attached to said shaft (or to the handle-bars, if so preferred,) by a suitable clamp, as 8; which clamp, as shown in the drawings, is held in place by suitable clamp-nuts, as 9.

The signal apparatus is shown provided with two tongues, or bell-strikers, operated from the same source, and so arranged as to strike alternately. The hammers, 10 and 10', are carried by arms, 12 and 12', which are loosely pivoted on the studs, or pivots, 13 and 13', that pass through the enlarged holes, 14 and 14', in said arms respectively, and are fixed in the aforesaid back-plate, 15, of the bell. The springs 17 and 17' are carried by screws, 18 and 18', respectively, in the back-plate. The longer ends of said springs engage the arms 12 and 12', respectively, and tend to hold said arms and their hammers normally in the middle position shown in Fig. 5. The opposite ends of the said springs engage the pins 19 and 19', respectively, which are fixed in the hammer-actuating plate 20, that is pivotally supported on the stem, or hub, 21, of the bell. Said plate 20 is provided with a pin, or arm, 22, which projects rearwardly through an opening, 23, in the back-plate; and the edge of said actuating-plate has formed thereon teeth, as 24 and 24', which teeth engage the catches, 25 and 25', of the hammer-arms 12 and 12', respectively, on the rotation of said plate.

The plate 20 is oscillated by means of the brake-lever E through the brake-rod 6; said rod having adjustably fixed thereto, by suitable means, (as for instance, by a set-screw, not shown,) an arm, 26, for engaging the aforesaid arm 22. The operator may cause the catch 26 to engage the pin 22 of the plate 20 on the downward movement of the

rod 6, thus causing said plate to turn on its pivot, when the teeth 24 thereof engage the catches 25 of the hammer-arms to draw back the hammers, or tongues, 10, ready for striking a blow on the bell. In Fig. 6 the hammer 10 is shown thus drawn back. On the continued turning of the plate 20, the first tooth will pass off from the catch 25, and the spring 17 will operate to quickly throw forward the hammer 10 to strike the bell, when the next tooth of the series 24 will engage the catch 25, again drawing back the hammer as before. Thus, by means of the construction described, the bell may be sounded several times in quick succession, by a single movement of the striker-actuator.

In Figs. 1 and 3, the brake-lever E is shown (by solid lines), with its working end 4 in position for the arm, or catch 26 to engage the striker-actuator pin 22 on the downward movement of said working end. If the rider wishes to apply the brake without sounding the bell, he may, by a slight movement of the hand, (the lever E having the requisite lateral movement,) throw the brake-lever into the position shown in Fig. 2, when the arm 26 will pass by and be free of the pin 22, as shown in solid lines in Fig. 4. Or, this arrangement may be reversed, and the lever E and its connections be fitted so that the position shown by solid lines in Figs. 2 and 4 will be the normal position of the brake-lever, and that when it is desired to sound the bell, the rider must throw said lever into the position shown in Fig. 1 and in solid lines in Fig. 3, before operating the lever to work the striker-actuator.

By referring again to Fig. 5, it will be observed how the spring 17 bears against the hammer-lever 12, and extends upon said lever upon both sides of the pin 14, so that said lever will be returned to its normal position shown in said figure, whichever way the lever may have been swung on its pivot. This equipoise of the lever by means of the spring provides for the required "over-throw" feature of the operation of the hammer, so that when this is returned by the spring from its position in Fig. 6 to its position in Fig. 5, the momentum of the hammer will carry the same against the bell, after which the spring, acting at its extreme point against the lever-arm 12, will again return the hammer to its normal position. The return of the striker-actuator 20 while the hammer is in its normal position shown in Fig. 5, is provided for by an enlargement of the pin-hole 14 in the lever 12. When the actuator is moved forwardly as described in connection with Figs. 6 and 7, the actuator-teeth, or catches, engage the catch 25 of the hammer-lever, and draw this downward upon the pin as shown in Fig. 6. On the reverse movement of said actuator, the inclined rearward sides of the actuator-catches 24 bear against the lower side of the catch 25, and thus push the actuator-lever

upward and outward sufficiently to allow the actuator-catches to pass the same; the spring 17 yielding to permit of that movement.

In the modification shown in Figs. 8, 9 and 10, the brake-lever E' is somewhat differently arranged upon the arm C of the bicycle, and the bell is correspondingly moved in its location, without, however, materially affecting the principle and mode of operation of the signal apparatus. In this instance, said lever E' is pivoted at 30 between the ears 31 and 32 extending from said handle-bar C, and may be connected, through the pin 33, connecting-rod 34, angle-lever 35 and rod 36, with the usual brake of the bicycle, which, not being directly related to my present improvements, is not herein shown.

As described in connection with Figs. 1 to 7, inclusive, the lever E', shown in Figs. 8, 9 and 10, is a double-function lever, having a movement toward and from the handle-bar for the purpose of actuating the brake, and having a lateral movement for the purpose of throwing it into or out of connection with the striker-actuator. This lateral movement and the resulting two positions of the lever are shown in Figs. 9 and 10. In Fig. 9, the lever E' is shown with its working end 37 raised into engagement with the striker-actuator-pin 22', while in Fig. 10 said lever-end is shown depressed out of engagement with said actuator-pin. The operation here described is, however, deemed to be included under the terms of the claims herein made. And it will be understood that my improved signal apparatus may, by means of immaterial modifications, be arranged and adapted for use on any convenient part of the bicycle, within the scope and limits of my present invention.

Having thus described my invention, I claim—

1. In a signal apparatus for bicycles, the combination with the bell, its striker, and striker-actuator, of the fulcrumed brake-lever capable of a double, or horizontal and vertical movement, the brake-rod connected to said lever and carrying a catch adapted to be engaged with the actuator; one movement of the lever in one direction actuating the brake-rod alone, and the other movement thereof throwing said rod laterally and bringing the catch into engagement with the striker-actuator, substantially as set forth.

2. In a signal apparatus, the combination with the bell and means for supporting the same, of an oscillating striker-actuator having catches for engagement with the striker-lever, the pivotally-supported bell-striker-lever having a catch to be engaged by said actuator, a spring connecting said actuator and bell-striker, and means for imparting movement to the actuator, consisting of a fulcrumed brake-lever capable of a double or horizontal and vertical movement, and a brake-rod connected to said lever and carrying a catch

adapted to be engaged with the actuator whereby one movement of the lever in one direction actuates the brake-rod alone, and the other movement thereof throws said rod laterally bringing its catch into engagement with, and operating the striker actuator, substantially as described.

3. In a signal-apparatus, the combination with the bell and the back-plate 15 having the opening 23, therethrough, (the said bell and back-plate being connected together and supported substantially as described,) of the oppositely-arranged bell-strikers 12, 12', loosely pivoted to the back-plate and having projections to be engaged by a projection upon the striker actuator, an oscillating striker-actuator pivoted centrally within the bell and having the pin 22 projected through the opening 23, and having catches at its either end to engage the projections upon the bell-strikers, two oppositely-arranged springs bearing against the strikers at one end, and connected with the actuator at the other end, and means

to impart an oscillating movement to the striker actuator, substantially as and for the purpose set forth.

4. In a signal apparatus, the combination with the bell and the back-plate connected together and supported as described, of a striker-actuator pivotally-supported upon the back-plate and capable of an oscillating motion, and having projections at opposite ends, a plurality of bell-strikers loosely mounted upon pivots upon the back-plate and having catches to be engaged by the catches upon the actuator, springs in contact with the strikers and actuator, a brake-rod 6 having a projection to engage with and oscillate the striker-actuator, and a pivotally-supported lever to actuate said brake-rod, all substantially as and for the purpose described.

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Witnesses:

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