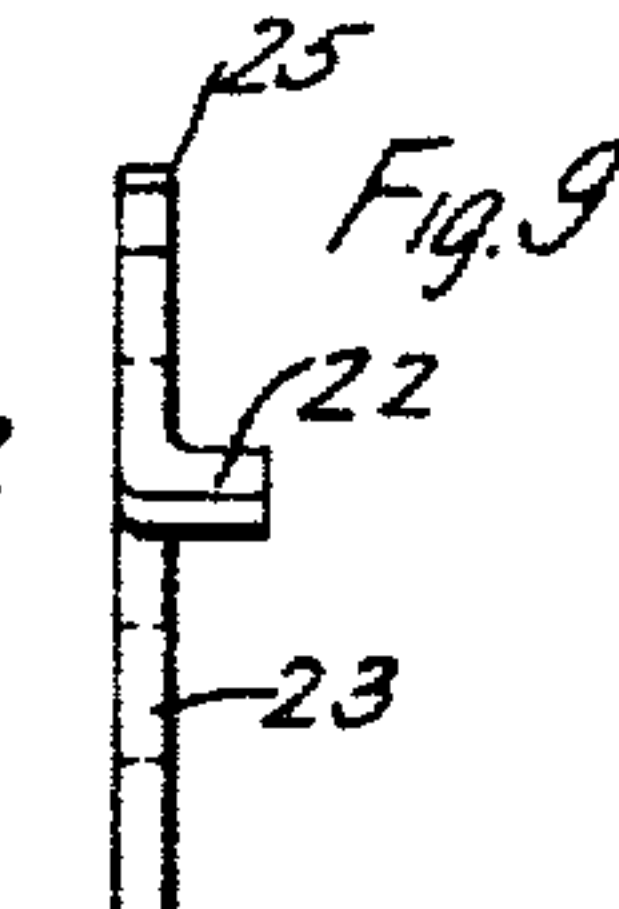
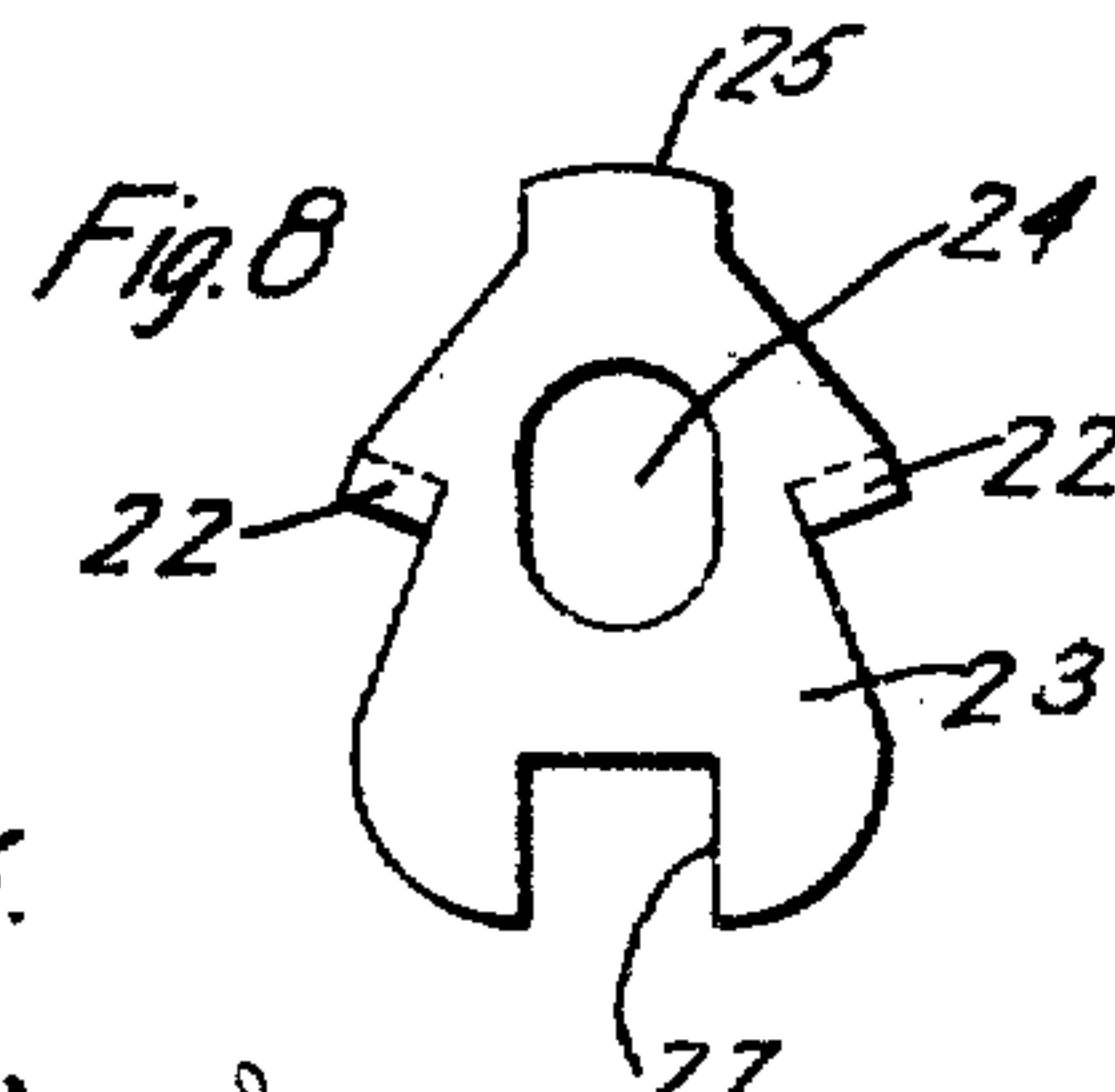
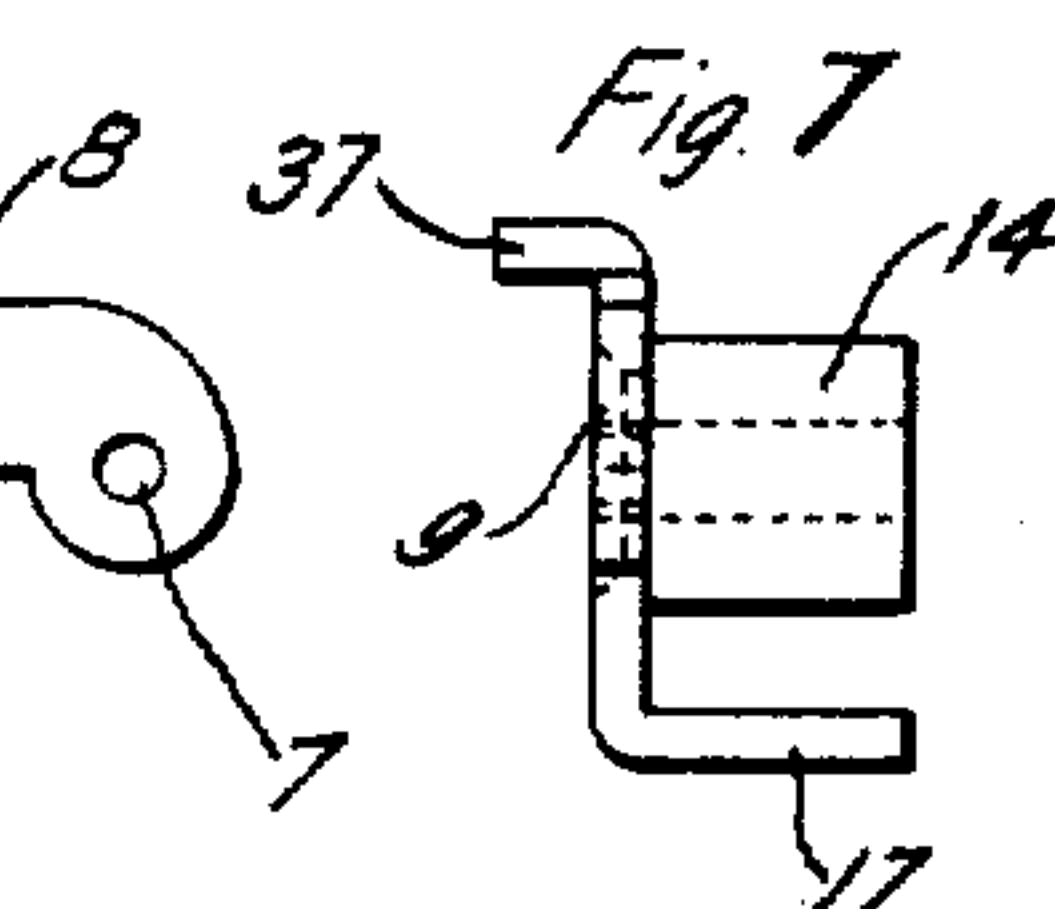
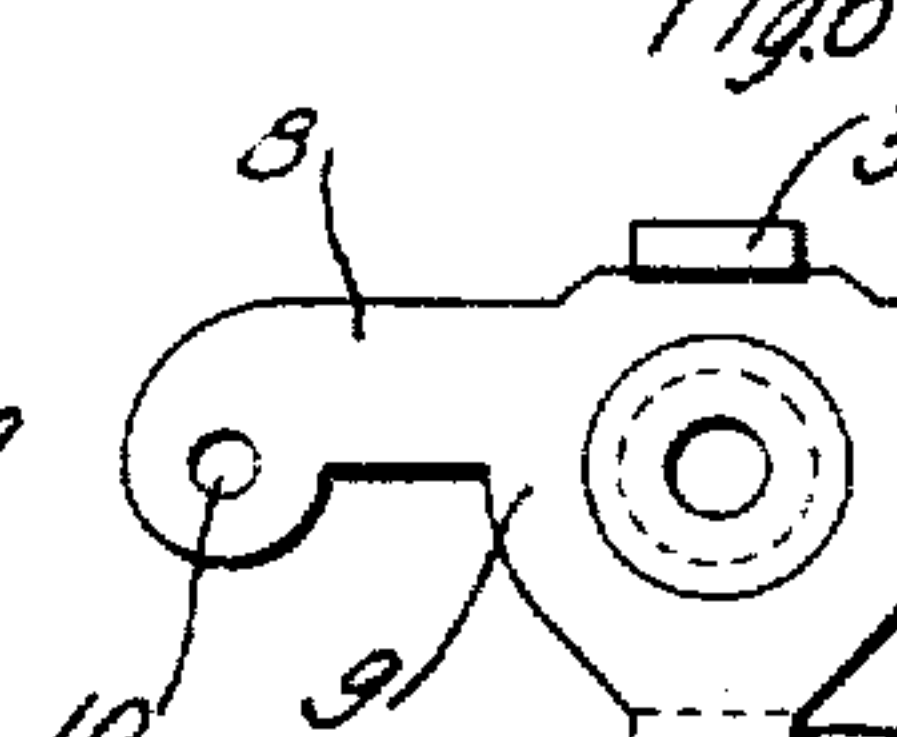
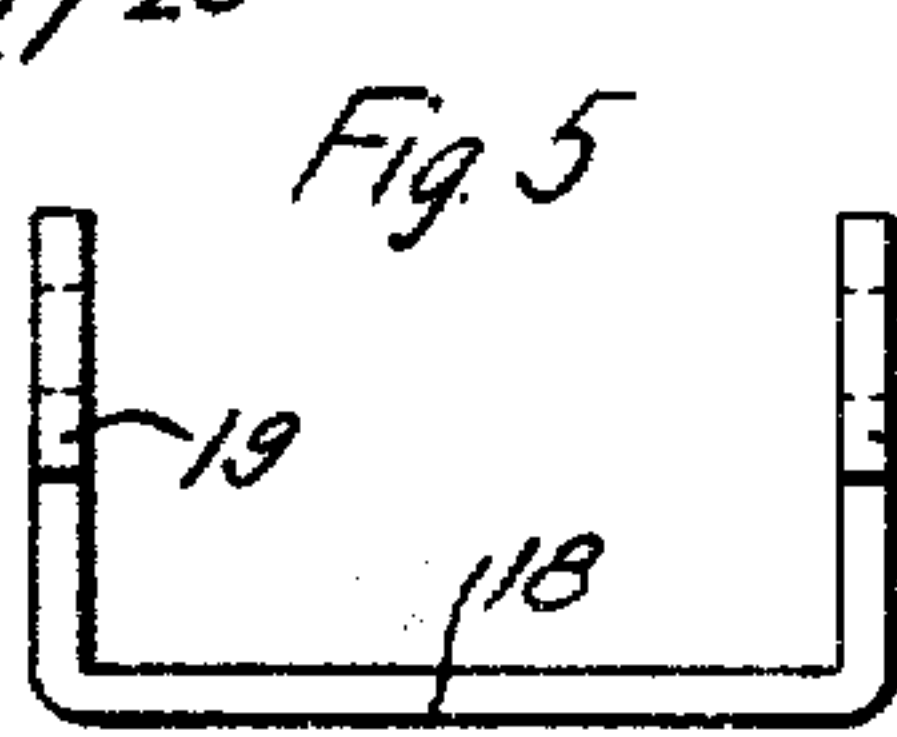
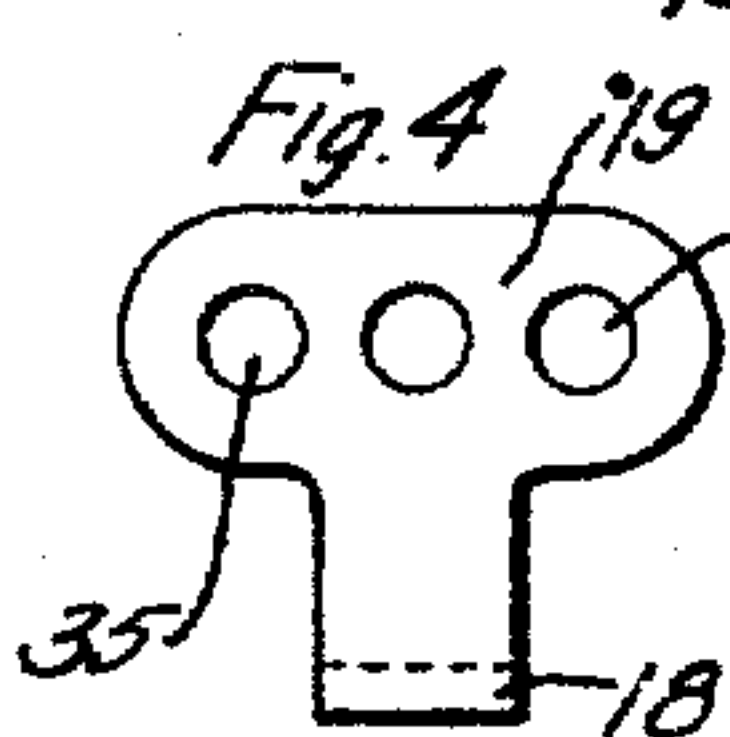
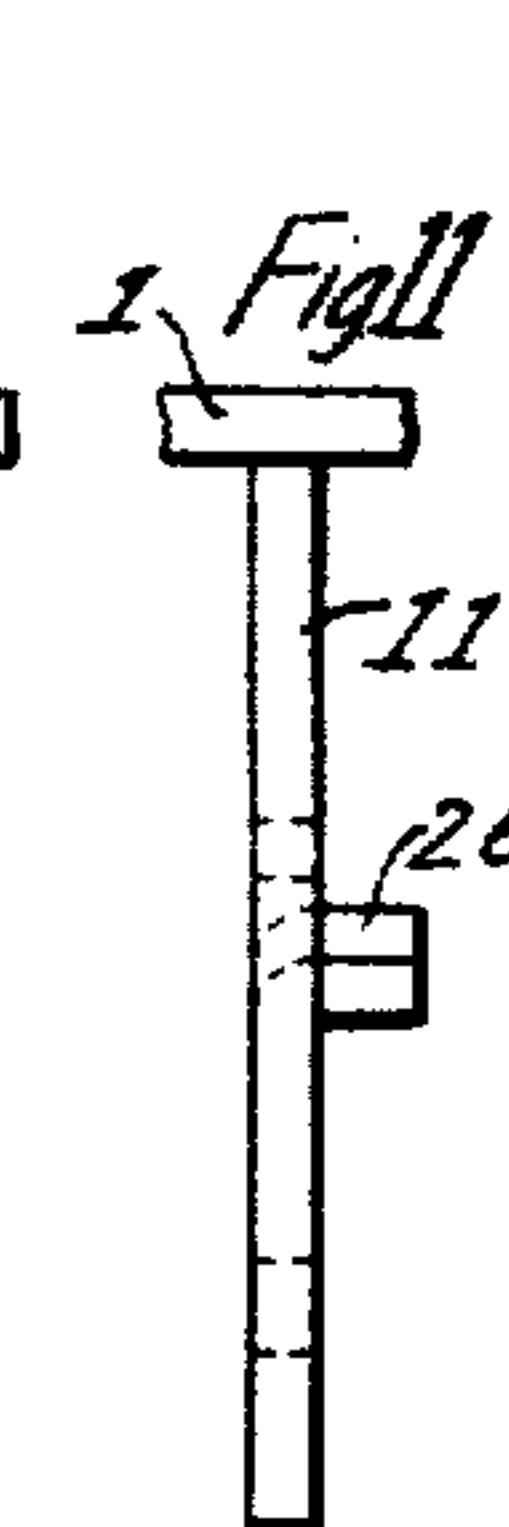
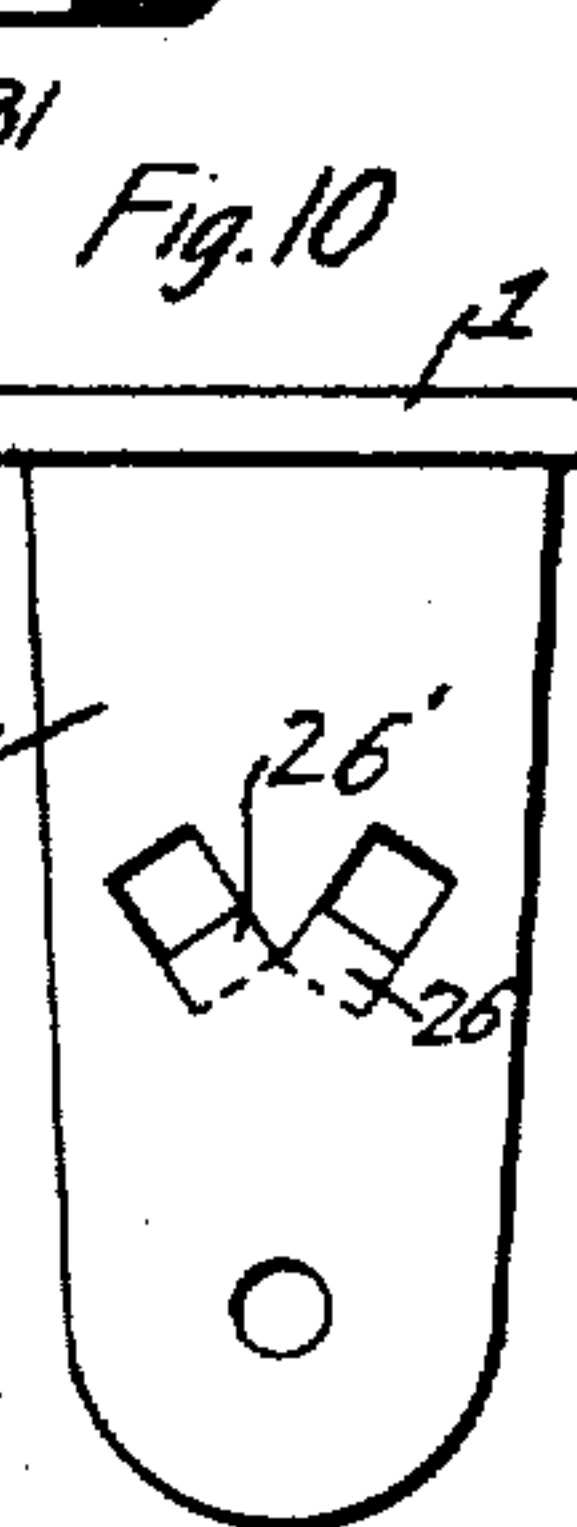
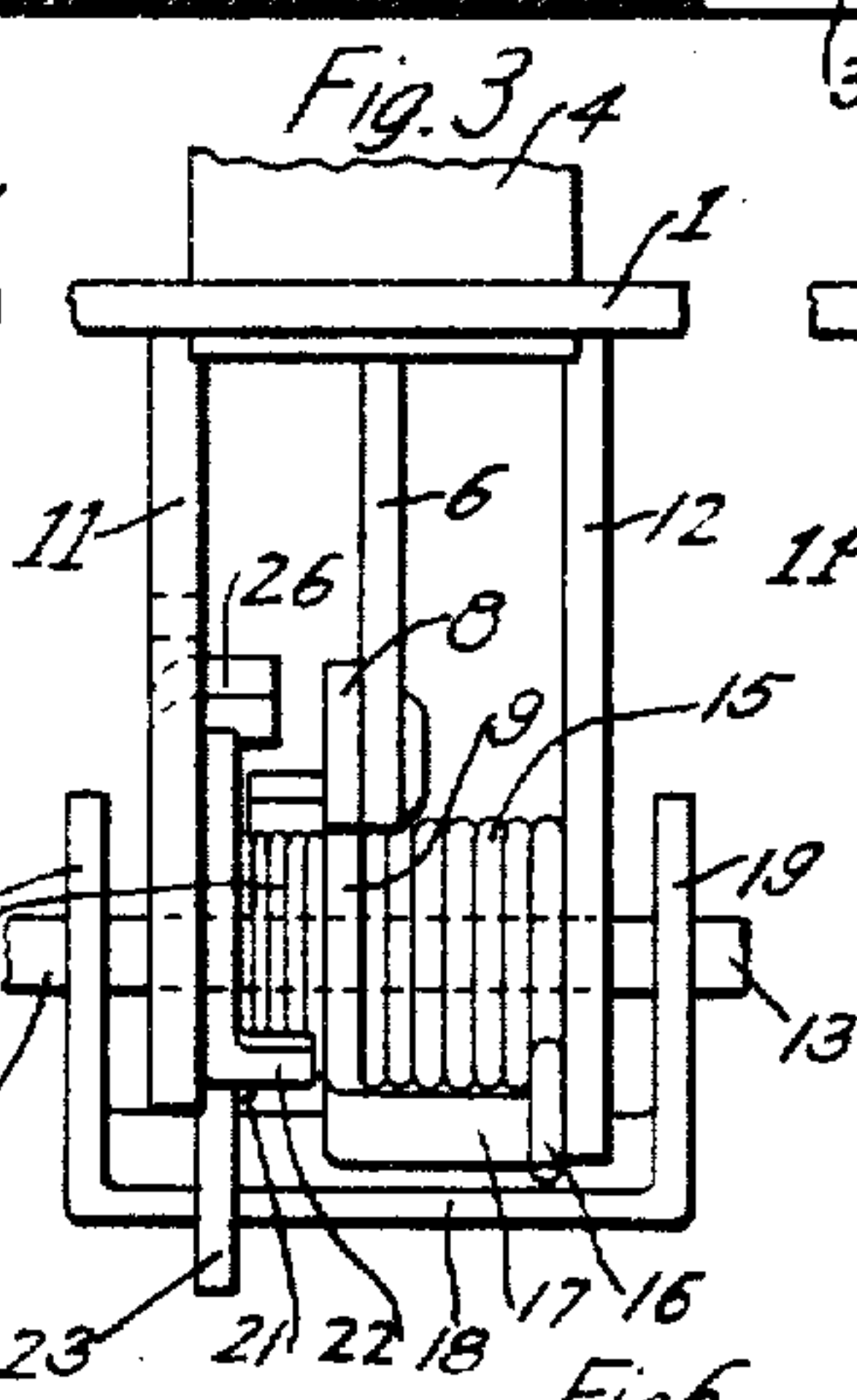
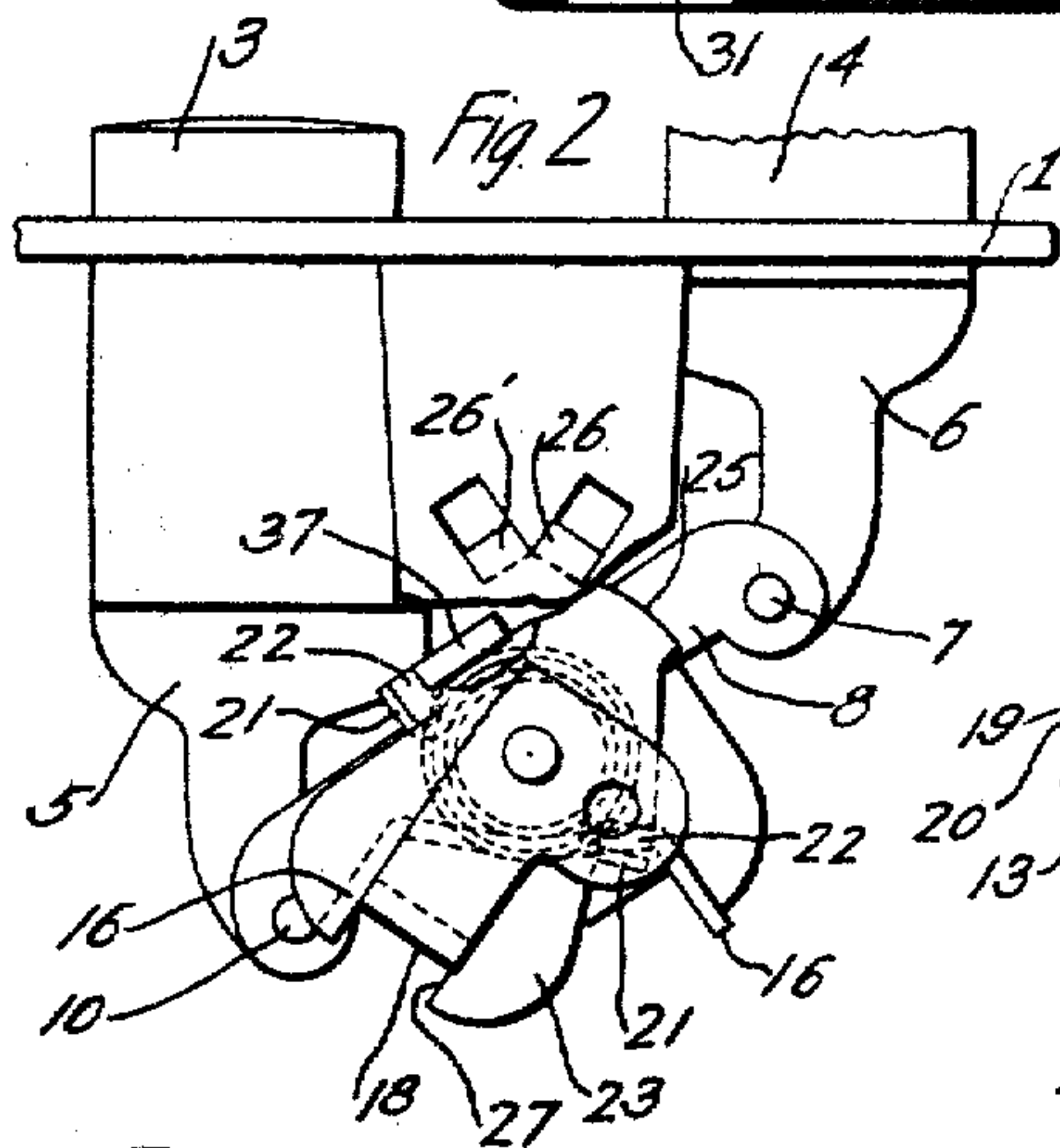
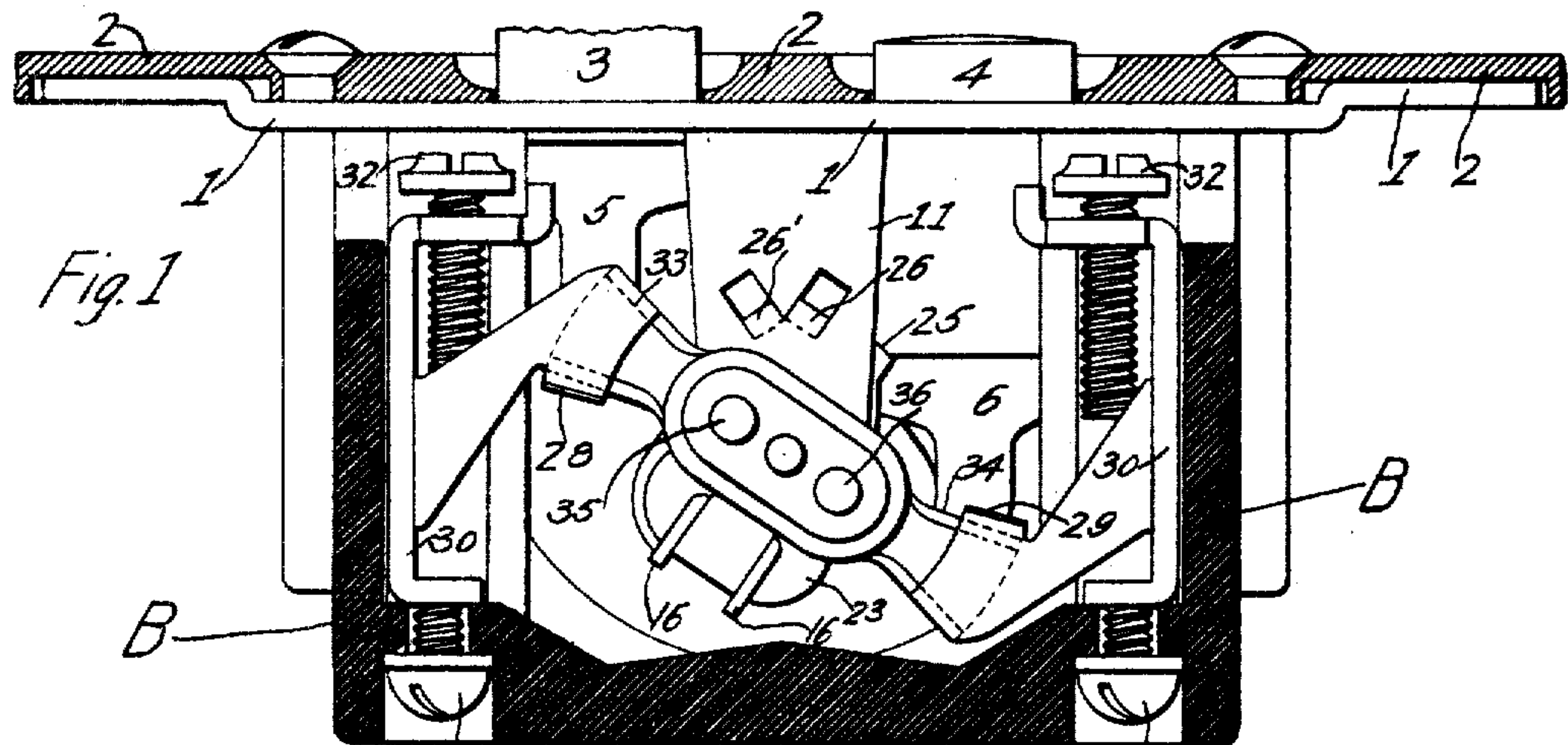


J. H. WYATT.
SNAP SWITCH.

APPLICATION FILED APR. 28, 1906.

924,952.

Patented June 15, 1909.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES H. WYATT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO WILLIAM M. SCOTT,
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SNAP-SWITCH.

No. 924,952.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed April 28, 1908. Serial No. 429,608.

To all whom it may concern:

Be it known that I, JAMES H. WYATT, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a certain new and useful Improvement in Snap-Switches, of which the following is a specification.

My invention relates to an electrical switch and more particularly to a snap switch of the type to be operated by push button or the like.

It is the object of my invention to produce a snap switch of the type disclosed which shall make and break circuit with a sharp decisive movement with a minimum expenditure of effort on the part of the operator, and which shall be incapable of assuming any position other than the full open circuit or the full circuit closing position.

With these objects in view, I have provided a snap switch in which the contact carrying member is held restrained in both of its positions by a detent or latch member, which both reciprocates and rotates, the spring winding member serving to actuate and control said detent or latch member.

My invention comprises further features hereinafter described and pointed out in the claims.

For an illustration of one of the forms my invention may take, reference is to be had to the accompanying drawing, in which:

Figure 1 is a vertical sectional view through the cover and switch box, the switch parts being shown in elevation. Fig. 2 is a side elevation of the isolated switch mechanism, the switch contacts being omitted and parts cut away for the sake of clearness. Fig. 3 is a vertical elevational view looking at the side of the mechanism shown in Fig. 2. Fig. 4 is an end elevational view of the contact carrying member. Fig. 5 is a side elevational view of the contact carrying member. Fig. 6 is an end view of the spring winding member. Fig. 7 is a side view of the same. Fig. 8 is a plan view of the detent or latch member. Fig. 9 is an edge view of the same. Fig. 10 is a front elevational view of one of the switch shaft or pivot supports. Fig. 11 is an edge view of the same.

Referring to the drawing, B is a box, receptacle, or casing of insulating material, such as molded porcelain, adapted to contain and surround the switch contacts and mechanism. Upon the top of the receptacle

is secured the base plate 1 from which is supported the entire switch mechanism, with the exception of the stationary contacts. A finishing plate 2 is secured to the base plate 1.

Through apertures in the base plate 1 and the finishing plate 2 extend the two push buttons 3 and 4 mounted respectively upon the vertically disposed metallic members 5 and 6. The member 6 is pivoted at 7 to the arm 8 of the spring winding member 9. And the other button member 5 is pivoted at 10 to the other end of the arm 8 of the spring winding member.

Extending downwardly from the underside of the base plate 1, and secured to or integral therewith, and disposed between the two buttons 3 and 4, are the two downwardly extending switch supporting members 11 and 12. Extending horizontally from the supporting members 11 and 12 approximate their lower ends, is the switch supporting pivot or shaft 13. The operating or spring winding member 9 has secured thereto a bushing 14, as shown in Fig. 7, through which the shaft 13 passes. A coiled spring 15 surrounds the bushing 14, while the ends 16 of the spring extend downwardly one on each side of the horizontal lug or projection 17 formed on the spring winding member 9. These ends 16 of the coiled spring 15 also engage or straddle the horizontal portion 18 of the contact carrying member, shown in Figs. 4 and 5, having the end portions 19, 19 pivoted upon the shaft 13 and adapted to have secured thereto, but insulated therefrom, the movable switch contacts.

To the left of the spring winding member 9, as viewed in Fig. 3, and surrounding the bushing upon the pivot or shaft 13, is a second coiled spring 20 whose two ends 21, 21 engage under the lugs 22, 22 of the detent or latch member 23, the latter shown isolated in Figs. 8 and 9. This detent or latch member 23 has an elongated aperture 24 which embraces a bushing carried upon the pivot or shaft 13, the member 23 being by this means able to rotate upon the bushing and to reciprocate relatively thereto. At its upper end the member 23 has a lug or extension 25 adapted to engage the lugs 26 shown disposed at an angle to each other and struck out of the switch supporting member 11. The latch member also has a recess 27 by which it straddles and engages the contact

carrying member 18. The spring 20 is so tensioned that its ends 21, engaging under the lugs or ears 22, tend to raise and hold raised the entire detent or latch member 23.

Returning to Fig. 1, the stationary switch contacts 28 and 29 are mechanically and electrically secured to the posts 30 fastened in recesses in the receptacle B by screws 31. Upon the tops of the posts 30 are the binding screws 32 to receive the circuit wires. Co-operating with the stationary switch contacts 28 and 29 are the movable contacts 33 and 34 respectively, secured at 35 and 36 by eyelets, rivets or the like, suitable insulating material intervening, to the end heads 19 of the contact carrying member 18.

The operation is as follows: With the parts in circuit closing position as shown in Fig. 1, to break circuit the operator depresses button 3. When it has been depressed to the position shown in Fig. 2, the parts are about to snap to open circuit position. As the operator begins to depress the button 3 the arm 8 of the spring winding member 9 is rotated in a counter-clockwise direction as viewed in Fig. 2, thus winding up the spring 15 whose one end 16 is carried around by the spring winding member and whose other end is held against the contact carrying member 18, the latter being held locked by the detent or latch member 23, embracing the contact carrying member with its notch 27, the lug 25 on the member 23 being in engagement with the lug 26 struck up from the supporting member 11. As the depression of the button 3 continues and the tension on spring 15 is increased, the lug 37 upon the spring winding member engages upon the top of the ear or lug 22 of the detent member 23, thus pushing the detent member downwardly, as viewed in Fig. 2, against the opposition of the spring 20. The depression of the button 3 continues until finally the detent 23 is depressed far enough to allow the lug 25 to pass free of the lugs 26. At this moment, the parts become unlocked and the spring 15 quickly throws the parts to open circuit position. At the completion of this movement, the lug 25 has passed the other lug 26, as seen in Fig. 2, and the spring 20 is again free to lift the detent 23 so that the lug 25 rides up behind the left-hand lug 26 and again locks the parts, this time in open circuit position. To close the circuit again, button 4 is depressed and the same cycle of operations is repeated. From this description, it is seen that the switch is not freed until approximately the very end of the button depressing movement and that the contact carrying member is locked and controlled by a detent member which first has a longitudinal or reciprocatory movement to unlock the parts and which thereafter rotates with the contact carrying member.

What I claim is:

1. In a snap switch, the combination with a pivoted contact carrying member, of a detent member engaging and rotating with the same, ears upon said detent member, a coiled spring engaging said ears to hold said detent member in normal position, an operating spring, a spring winding member, and a projection on said spring winding member for engaging said ears upon said detent member to shift the same.

2. In a snap switch, the combination with a pivoted contact carrying member, of a detent member engaging and rotating with the same, ears upon said detent member, a coiled spring engaging said ears to hold said detent member in normal position, an operating spring, a spring winding member, and a projection on said winding member adapted to engage said ears upon said detent member at the end of the movement of said winding member.

3. In a snap switch, the combination with a pivoted contact carrying member, of an operating spring, a spring winding member, a detent member engaging and traveling with said contact member, a fixed member with which said detent member engages to lock said contact carrying member, oppositely disposed ears upon said detent member, a coiled spring engaging said ears with its ends to hold said detent member in normal position, and means on said spring winding member for engaging said ears to shift said detent member to free it from said fixed member.

4. In a snap switch, the combination with a pivoted contact carrying member, of a spring, a spring winding member, a detent member adapted to rotate with said contact carrying member, ears on opposite sides of said detent member, a coiled spring engaging said ears with its ends, and means on said spring winding member for shifting said detent member in opposition to said coiled spring to unlock said contact carrying member.

5. In a snap switch, the combination with a spindle, of a contact carrying member pivoted thereon, a detent member engaging and rotating with said contact carrying member, ears upon said detent member, a spring coiled around said spindle and engaging said ears to hold said detent member in normal position, an operating spring, a spring winding member, and a projection on said spring winding member for engaging said ears upon said detent member at the end of the travel of said spring winding member to shift said detent member.

6. In a snap switch, the combination with a spindle, of a contact carrying member pivoted thereon, a spring for shifting said contact carrying member, a member for winding

said spring, a detent member engaging and adapted to rotate with said contact carrying member, a spring coiled about said spindle and engaging with its ends ears or lugs upon
5 said detent member, and means on said spring winding member for radially shifting said detent member in opposition to said coiled spring at the end of travel of said spring winding member.

10 7. In a snap switch, the combination with a fixed member, of a spindle supported thereby, a pivoted contact carrying member, a spring for shifting said contact carrying member, a member for winding said spring,
15 a detent member engaging and adapted to rotate with said contact carrying member, a

lug struck up from said fixed member and adapted to be engaged by said detent member, ears upon said detent member, and a spring engaging said ears to hold said detent
20 member in engagement with said lug, said spring winding member adapted to engage an ear upon said detent member to shift the same.

In testimony whereof I have hereunto af-
25 fixed my signature in the presence of the two subscribing witnesses:

JAMES H. WYATT.

Witnesses:

ANNA E. STEINBOCK,
DANIEL WEBSTER, Jr.