(No Model.)

N. G. SÖRENSEN.

LOCK HANDLE.

No. 437,007. Patented Sept. 23, 1890.

Fig: 1.

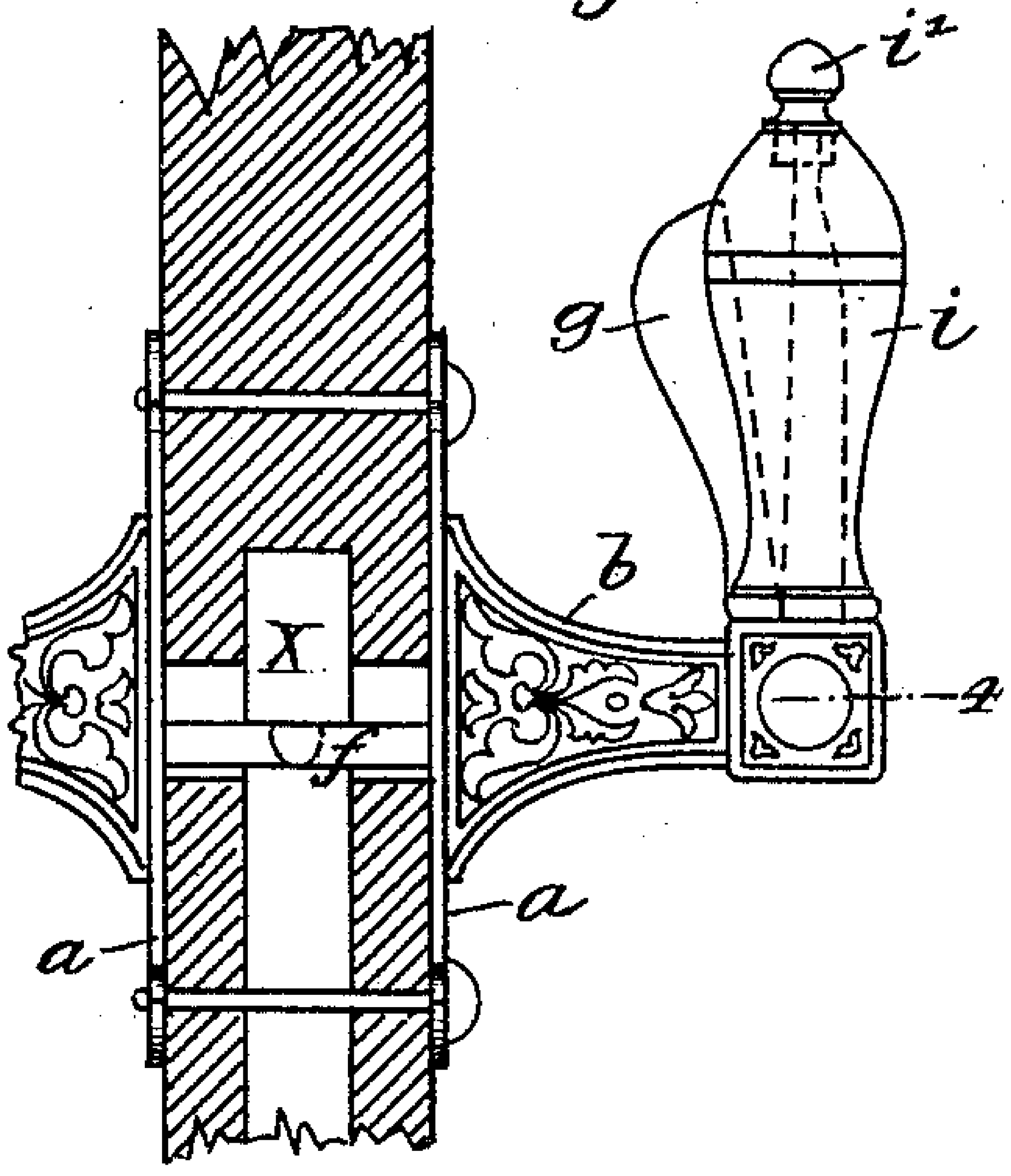


Fig: 2.

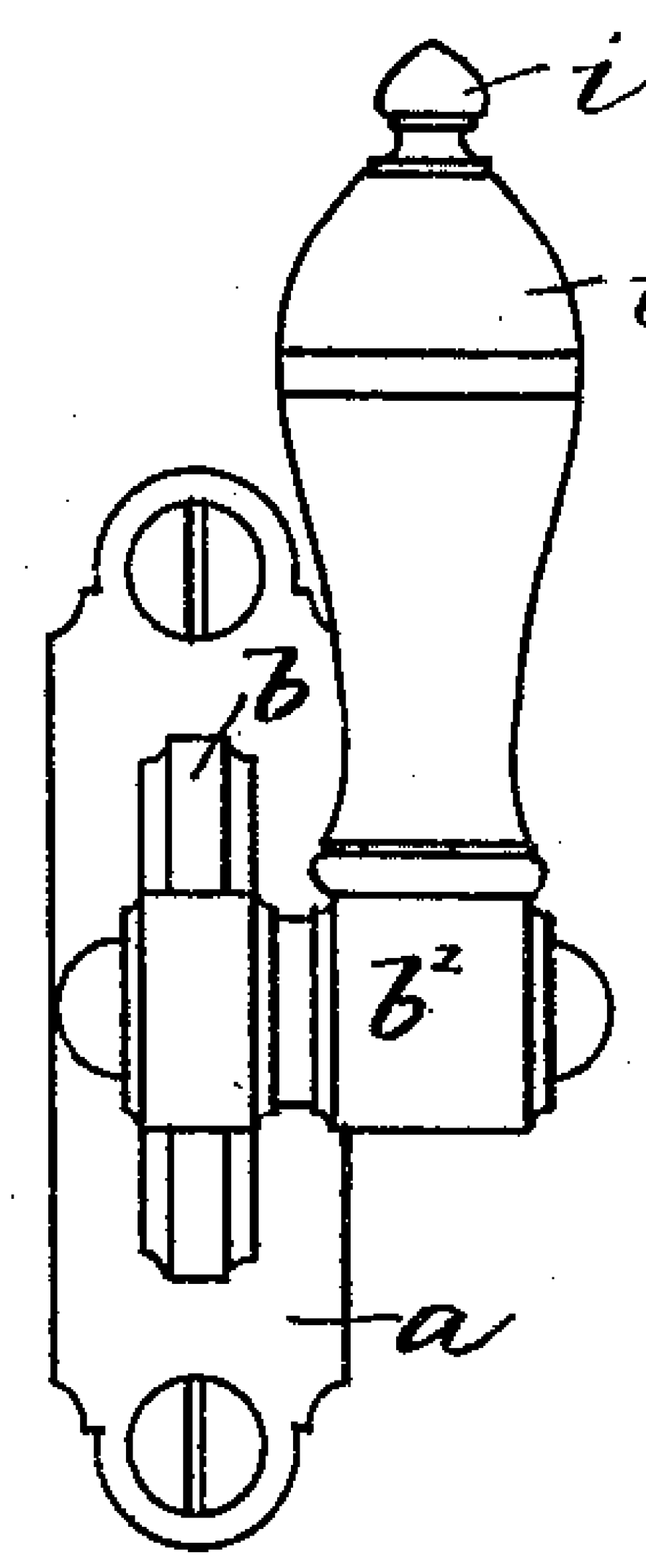


Fig: 3.

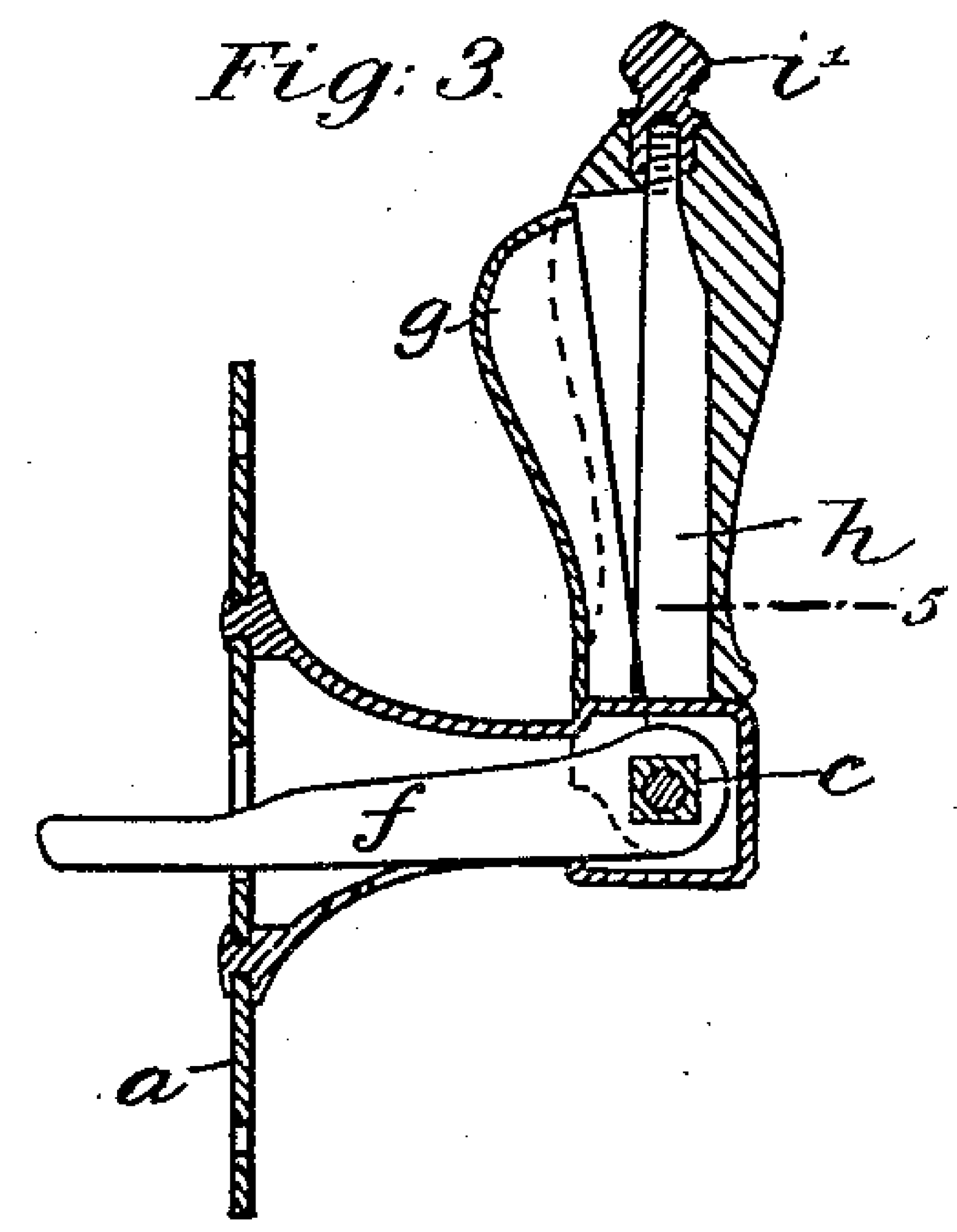


Fig: 6.

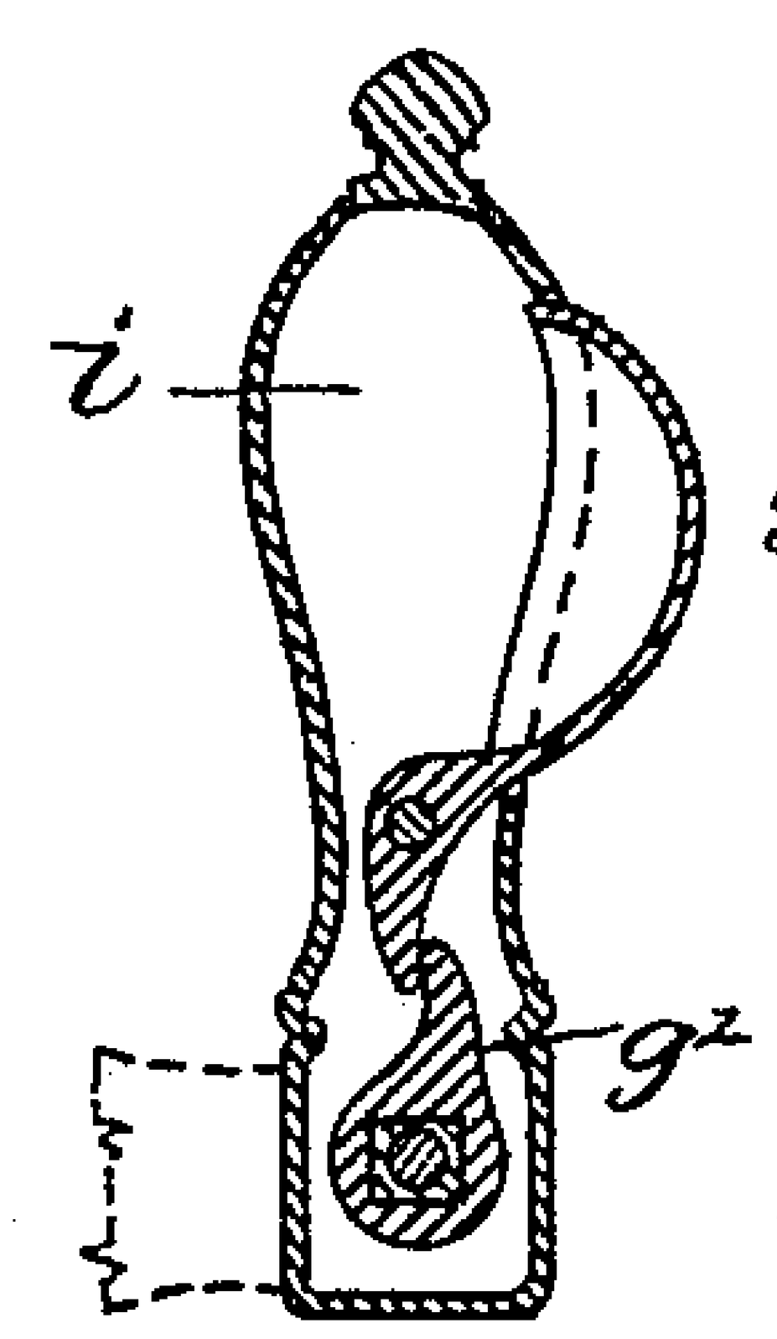


Fig: 4.

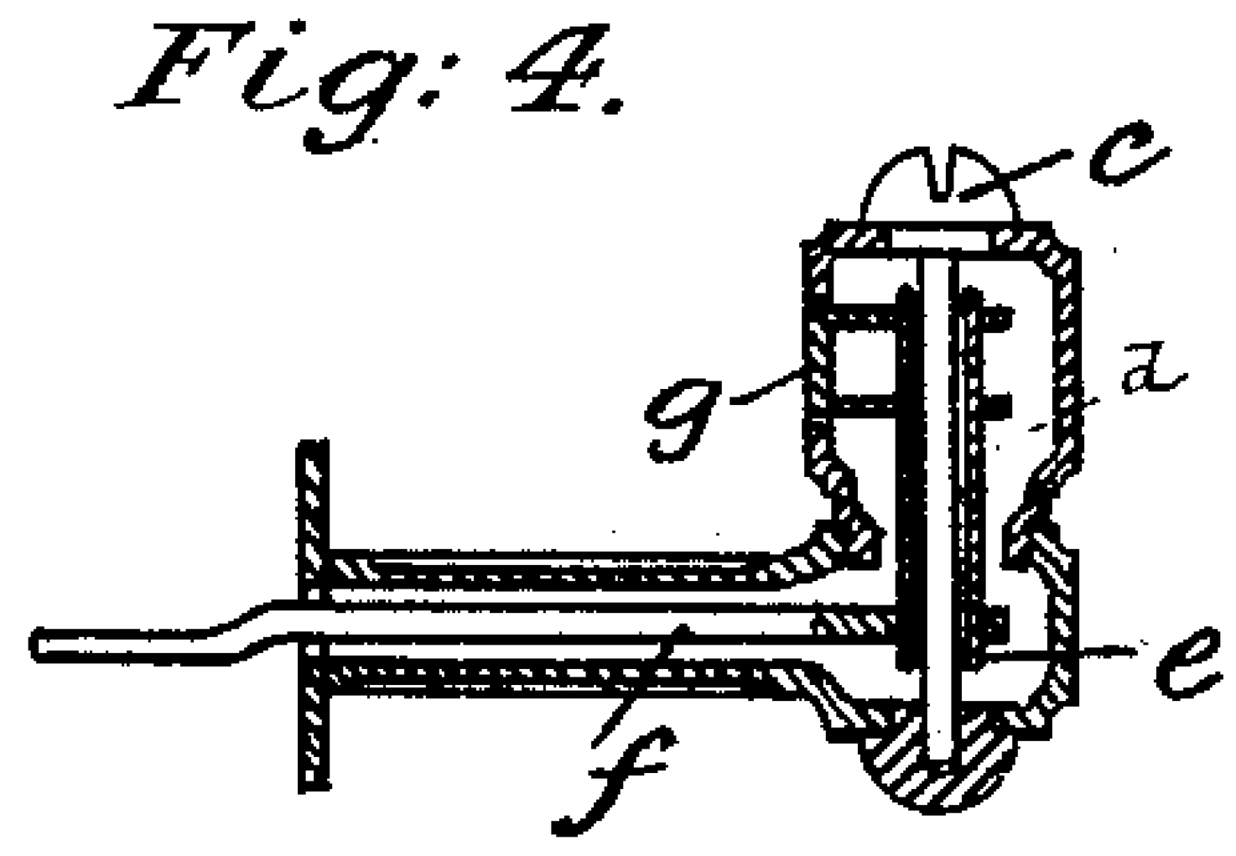


Fig: 5.

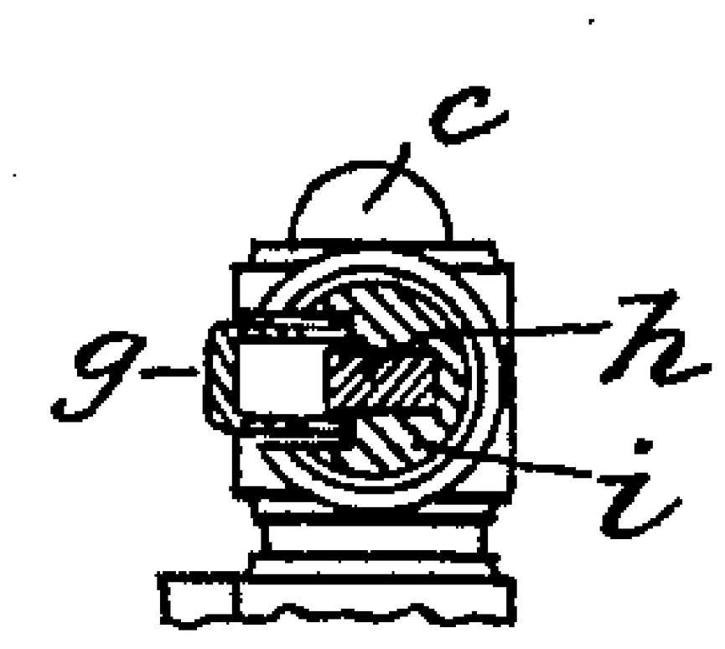


Fig: 8.

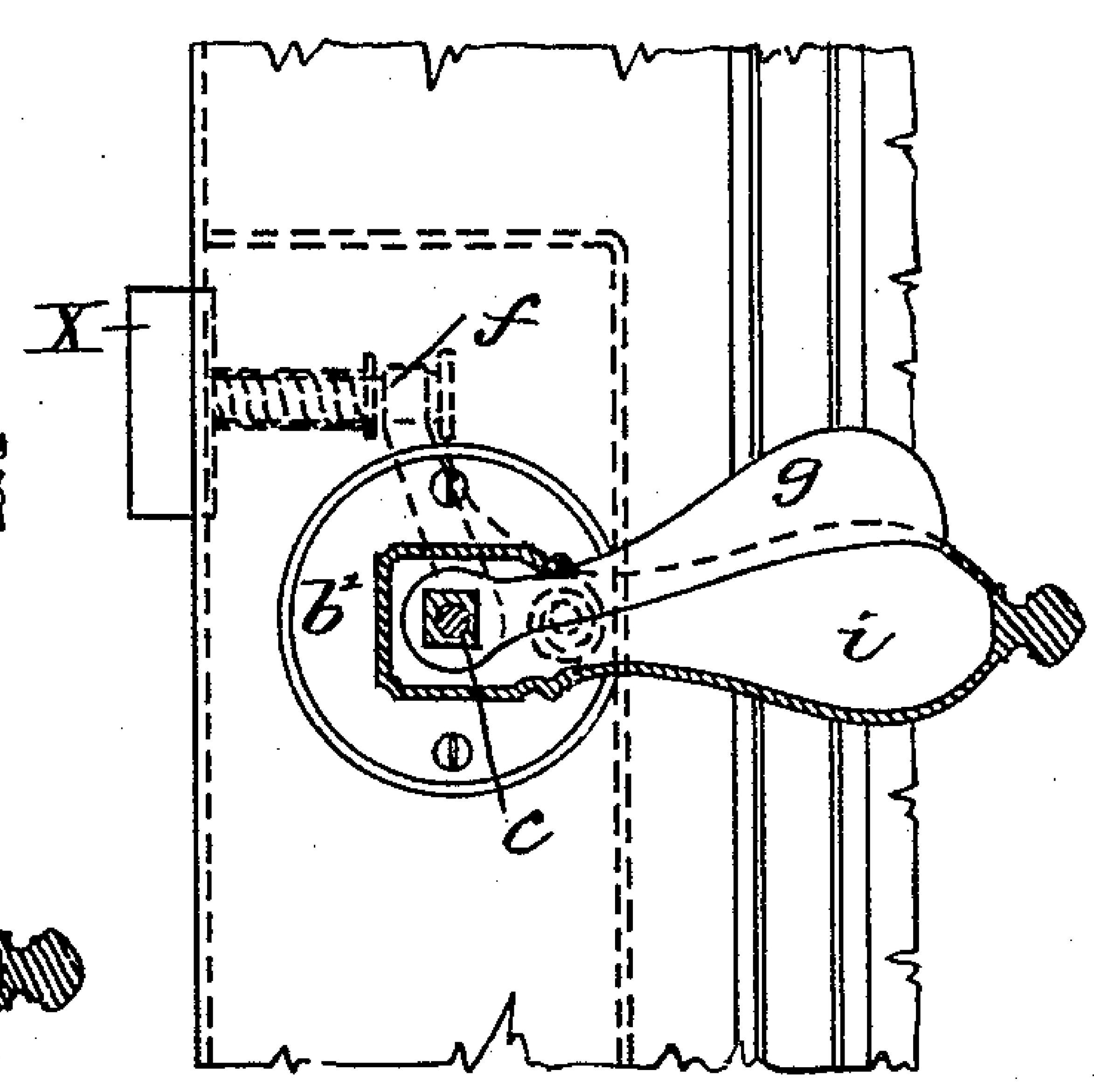
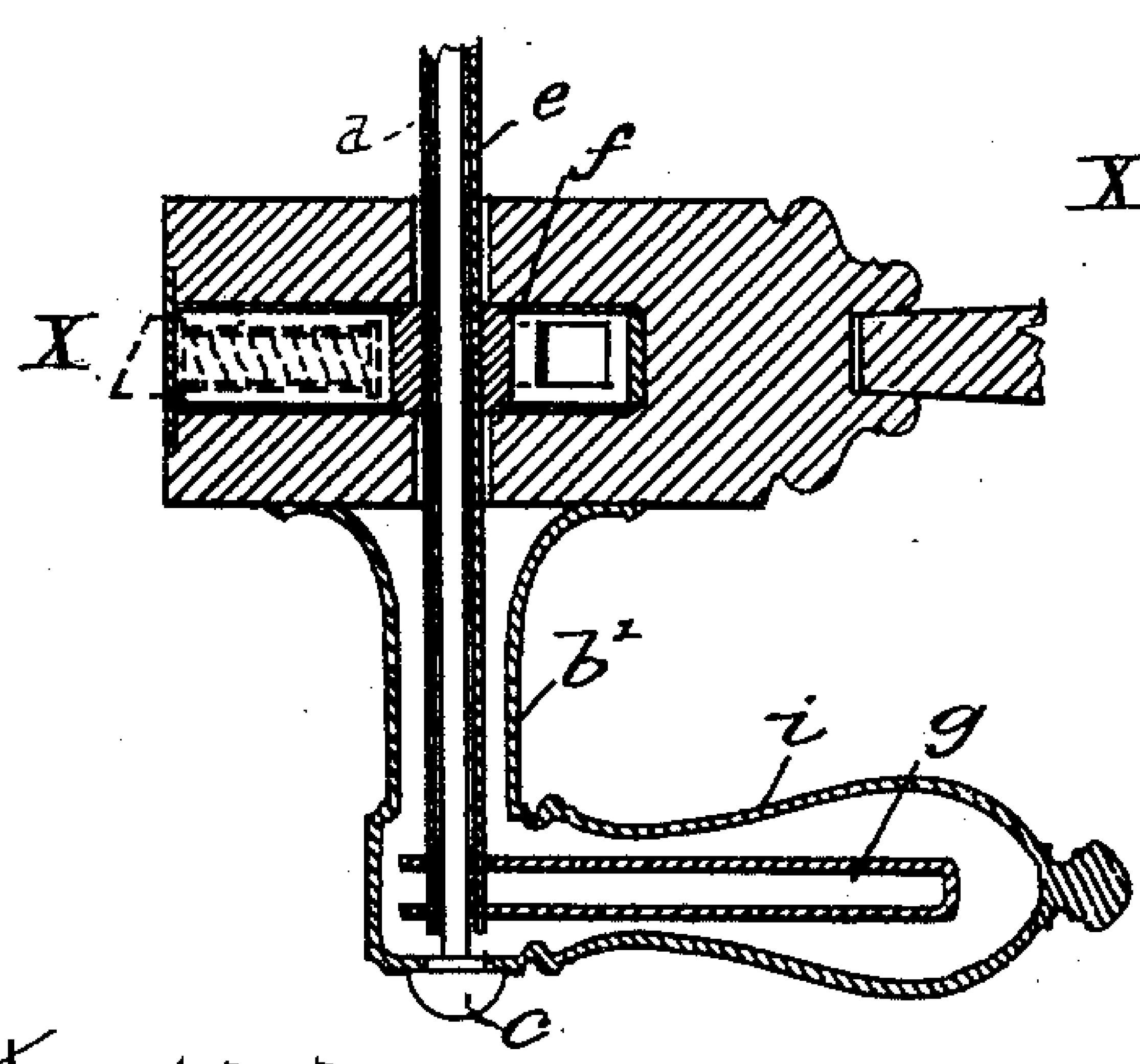


Fig: 7.



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UNITED STATES PATENT OFFICE.

NIELS GEORG SÖRENSEN, OF STOCKHOLM, SWEDEN.

LOCK-HANDLE.

SPECIFICATION forming part of Letters Patent No. 437,007, dated September 23, 1890.

Application filed January 4, 1890. Serial No. 335,912. (No model.)

To all whom it may concern:

Be it known that I, NIELS GEORG SÖRENSEN, a subject of the King of Sweden, residing at Stockholm, Sweden, have invented certain Improvements in Lock-Handles, of which the following is a specification.

My invention relates to a handle for door and other locks, wherein the movable handle of the ordinary lock is replaced by a fixed handle carrying a moving projecting lever or "trigger," whereby when the handle is grasped this trigger is pressed into a recess or cavity formed in the stationary knob to receive it and communicates its movement to the latch-bolt, which is thereby disengaged from its socket.

My improved handle is adapted to locks of all descriptions, but particularly to the lock shown and claimed in my pending application, Serial No. 299,967, in which the bolt is actuated solely by its own weight.

In order that my invention may be fully understood, I will now describe it, with reference to the accompanying drawings, wherein—

Figure 1 is a side elevation of one embodiment of my invention, showing my improved handle applied to a door-lock, the door being in section. Fig. 2 is a front or face view of the handle seen in Fig. 1, and Fig. 3 is a vertical mid-section of the same. Fig. 4 is a horizontal section of the same, taken in the plane indicated by line 4 4 in Fig. 1; and Fig. 5 is a detached section on line 5 5 in Fig. 2. Fig. 6 is a sectional view similar to Fig. 3, illustrating a slightly modified form of the handle. Figs. 7 and 8 are respectively a horizontal section on line 7 7 in Fig. 8 and a vertical section on line 8 8 in Fig. 7, illustrating a second embodiment of my invention particularly adapted to spring-locks.

Referring primarily to the first five figures of the drawings, which illustrate the application of my invention to a gravity latch or lock, such as that of my before-mentioned application, *a* is the metallic base-plate or "escutcheon" of the handle, which is provided with screw-holes *a'*, whereby it may be secured to the door. From the outer face of this plate *a* rises a tubular pillar or stem *b*, preferably rectangular in cross-section, as represented in Fig. 2. At its outer end this stem *b* branches at a right angle, the branch *b'* thereof being circular in cross-section and also tubular. From the upper face of this branch *b'*, at or near the outer end thereof, projects a slender spindle *h*, provided with screw-threads at its upper end and adapted to receive the knob or handle proper *i*, which has a longitudinal channel to receive it. The spindle *h* is preferably square or angular in cross-section and the channel in knob *i* is cut to conform thereto to admit of the said knob being properly set thereon. This knob *i* may be of any suitable material, as bronze, glass, porcelain, &c., and may have any form. The knob *i* is secured to the spindle by means of a screw-cap *h'*, which screws over the threads on the upper end thereof, the knob being recessed to receive it.

Extending lengthwise through the branch *b'* is a slender screw or headed bolt *c*, which when in place forms the pivot-center for the moving parts. The end of this bolt *c* is screw-threaded and screws into the wall of the branch *b'* at the end thereof, as clearly seen in Fig. 4. Over the bolt *c* is slipped a tubular shaft or sleeve *d*, the outer end of which bears a lever *g*, which I will call the "trigger." This trigger passes through an opening in the upper face of the branch *b'* and the knob *i*, which is recessed at its back to receive the same when the latter is pressed in. On the opposite end of the hollow shaft *d* is fixed a lever *f*, which projects through the hollow stem *b* into the lock-casing and takes under the outer end of the latch-bolt, as will be readily understood.

Now when the knob *i* is grasped with the hand sufficient pressure will be exerted on the trigger *g* to press the same into its recess in the rear or back face of the knob *i*, thereby imparting a partial rotation to the tubular shaft *d* and raising the outer or free end of lever *f*, on which rests the latch-bolt. This raising of the latch-bolt will disengage it from its socket, and the door may then be opened, as will be readily understood. On releasing the knob the parts may be retracted by gravity, or a spring may be employed for this purpose, if thought necessary.

The construction illustrated in Fig. 6 is the same as that just described, except that the trigger *g* is pivoted in the knob *i* and engages

a dog g' at its lower end, which dog is fixed on the end of shaft d. In order that this device may operate to raise the latch-bolt, it is necessary that the trigger shall be set in the front or face of knob i, which is here represented as integral with the branch b'.

In Figs. 7 and 8 I have shown another form of my improved handle adapted for spring-locks. In this construction the trigger projects from an opening in the upper surface of a fixed knob i, which is formed integrally with the hollow stem b', which is substantially the same as the branch b' of Fig. 3, the stem b being omitted from this construction. The trigger g is fixed on the outer end of a tubular shaft d, which passes through the door and receives a second trigger at its opposite end, whereby the bolt is operated from the other side of the door. A slender screw or bolt c extends through the door and both handles and forms the pivot or center for the shaft d, taking the place of the ordinary knob-spindle. This bolt or stationary spindle c, with its sleeve d, will by preference pass through the door immediately under the bolt, and has of course proper bearings in the outer faces of handles b'. Upon this shaft d, at its middle portion or under the latch-bolt X, is fixed a lever f, bent as seen in dotted lines in Fig. 8, the end of which takes between collars on the inner end of the bolt X, whereby when the shaft d is rotated by the grasping of knob i by the hand the lever f is thrown backward, withdrawing the bolt from its socket in the jamb of the door. In this case the parts are retracted by a spring about the bolt. (Seen in Fig. 8 in dotted lines.)

The object of providing the branch b', as illustrated in Fig. 2, and of mounting the handle horizontally, as seen in Fig. 7, is to provide space for grasping the knob properly with the hand, the constructions providing sufficient room for this in the case of doors with narrow rails, where, if double doors, the handles would be inconveniently close together, or, if a single door, to the door-jamb.

It is obvious that the constructions illustrated in Figs. 3 and 7 are the same, except as to some slight variation in the form of the parts and the manner of mounting them in the casing. Indeed, for all purposes the construction seen in Fig. 3 is the equivalent of that of Fig. 7, with the stem b added and the whole turned about.

I do not of course limit myself to the precise constructions and arrangements herein shown, as these may be changed to some extent.

Having thus described my invention, I claim—

1. In a handle for locks, latches, &c., the combination, with the casing, of a pivotal bolt or shaft fixed therein, a sleeve or tubular shaft mounted on said fixed shaft, said sleeve bearing a trigger at its outer end and provided at its opposite end with a lever projecting through the lock-casing and engaging the latch-bolt, whereby pressure on said trigger operates to rotate said sleeve and through said lever thereon to disengage the latch-bolt from its socket.

2. In a handle for locks, latches, &c., the combination, with the casing comprising a hollow stem and a fixed knob or handle proper, of a pivotal bolt or shaft fixed in said casing, a sleeve or tubular shaft mounted on said fixed shaft, said sleeve bearing a trigger projecting through the casing beside the fixed knob thereof and provided at its opposite end with a lever projecting through the lock-casing and engaging the latch-bolt, whereby the grasp of the hand on the fixed knob and the trigger presses the said trigger up to said knob, rotates said sleeve, and through the lever thereon disengages the latch-bolt from its socket.

3. In a handle for locks, latches, &c., the combination, with the casing comprising the hollow stem b, the branch b', extending therefrom, and the recessed knob i on said branch, of a pivotal bolt or shaft c, fixed in said branch b', the sleeve or tubular shaft d, mounted on said shaft c and bearing at its one end the trigger g, projecting through the casing in front of the recess in the knob to which it is adapted to conform, and at its opposite end the lever f, extending through the tubular stem b into the lock-casing and engaging the latch-bolt at its free end, whereby the grasp of the hand on knob i and trigger g presses said trigger into the recess in said knob, rotates the sleeve d, and through the lever f disengages the latch-bolt from its socket.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

NIELS GEORG SÖRENSEN.

Witnesses:

NERE A. ELFWING,

ERNST SVANQVIST.