

J. P. O'DONNELL.
 AUTOMATIC STOPPING AND LOCKING DEVICE FOR ELEVATORS.
 APPLICATION FILED MAY 18, 1908.

929,872.

Patented Aug. 3, 1909.
 2 SHEETS—SHEET 1.

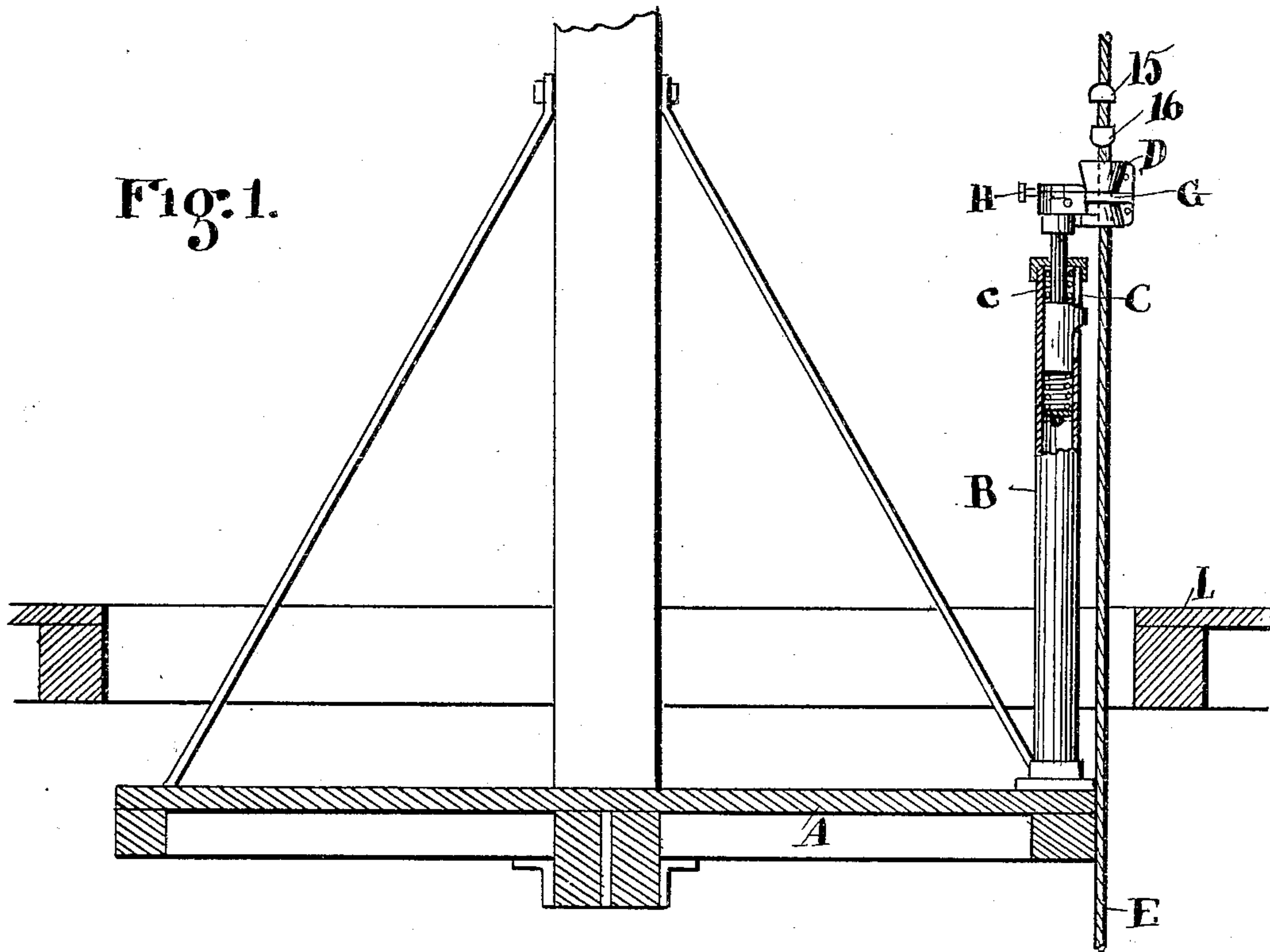


Fig. 2.

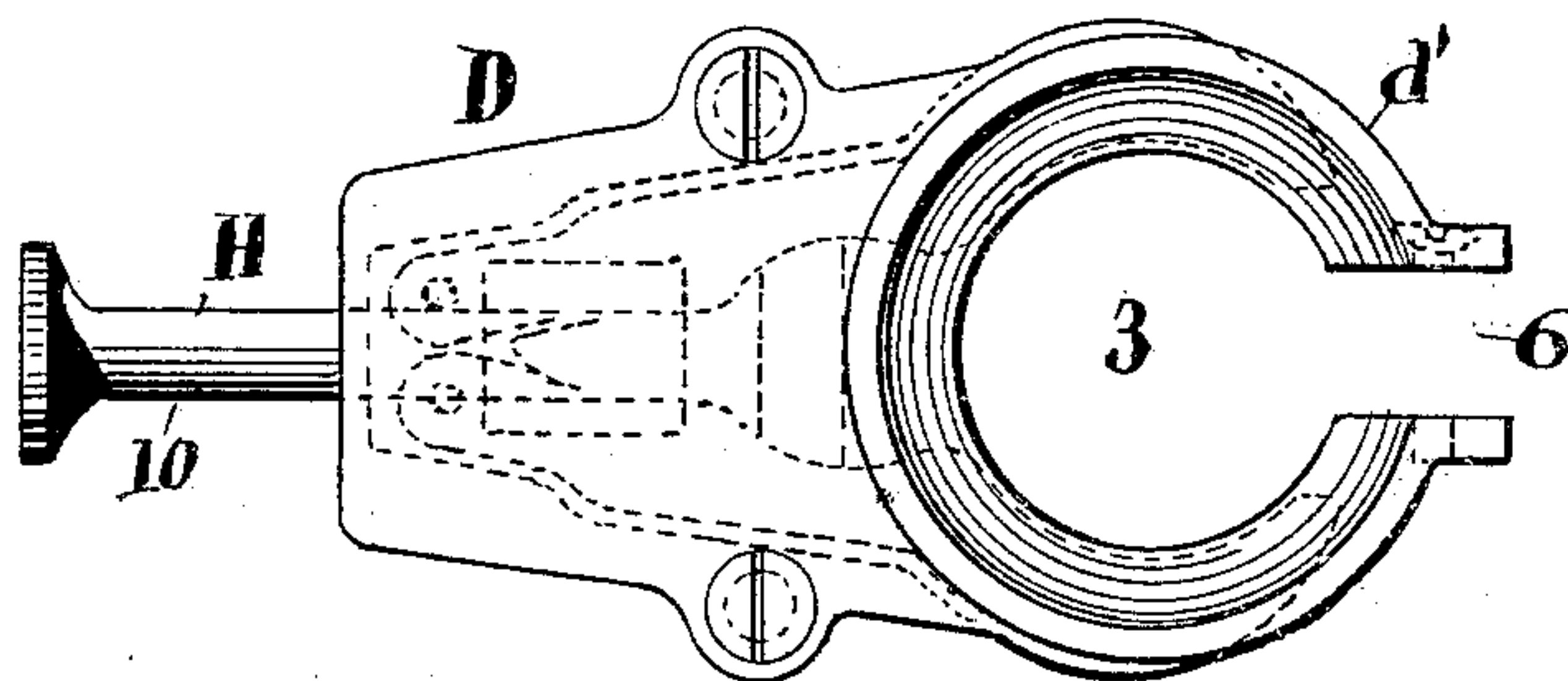
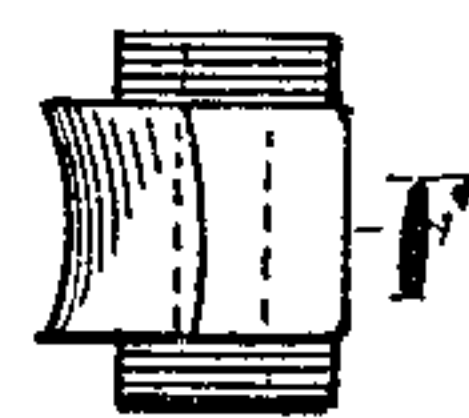


Fig. 3.



ATTEST
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Fig. 4.

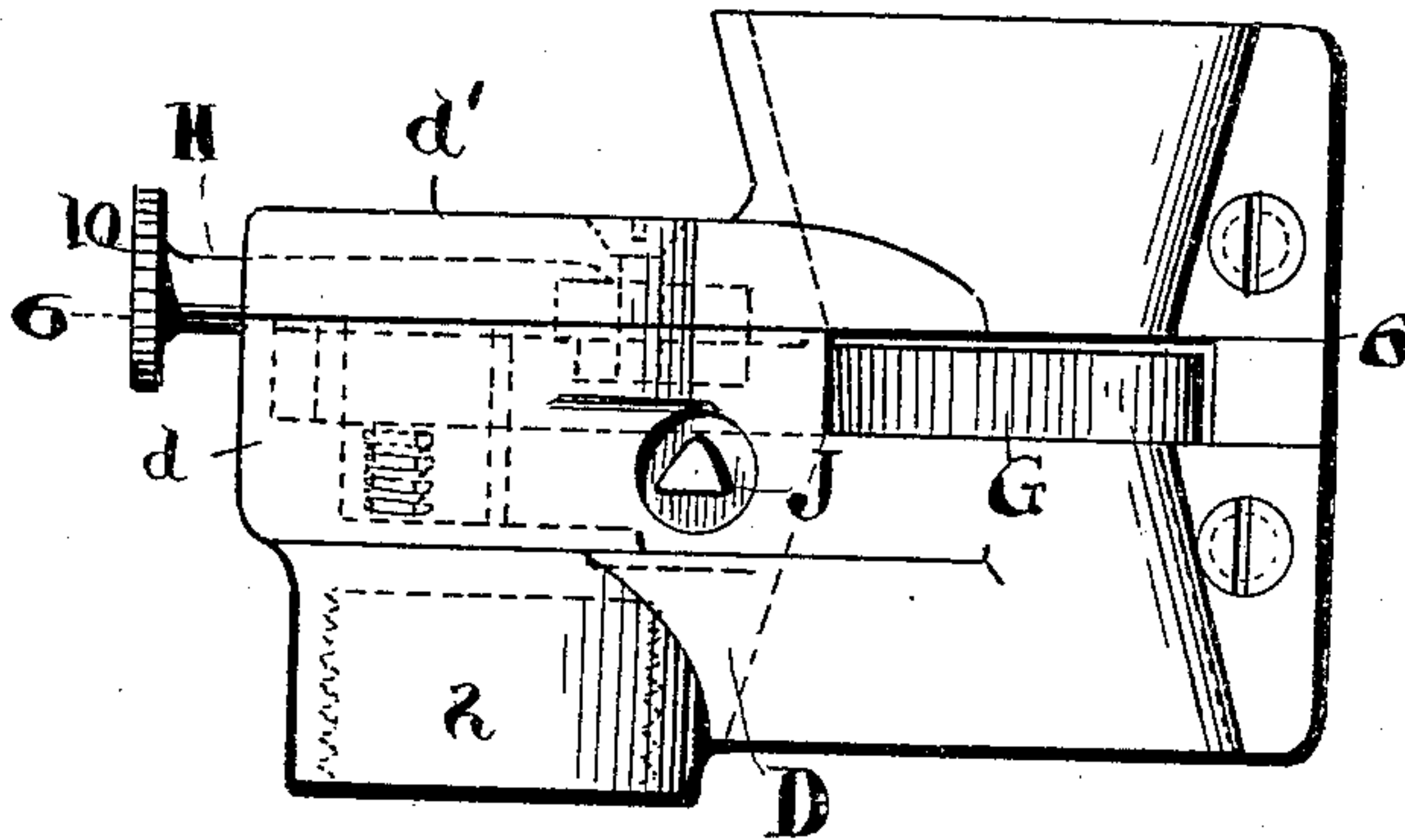


Fig. 5.

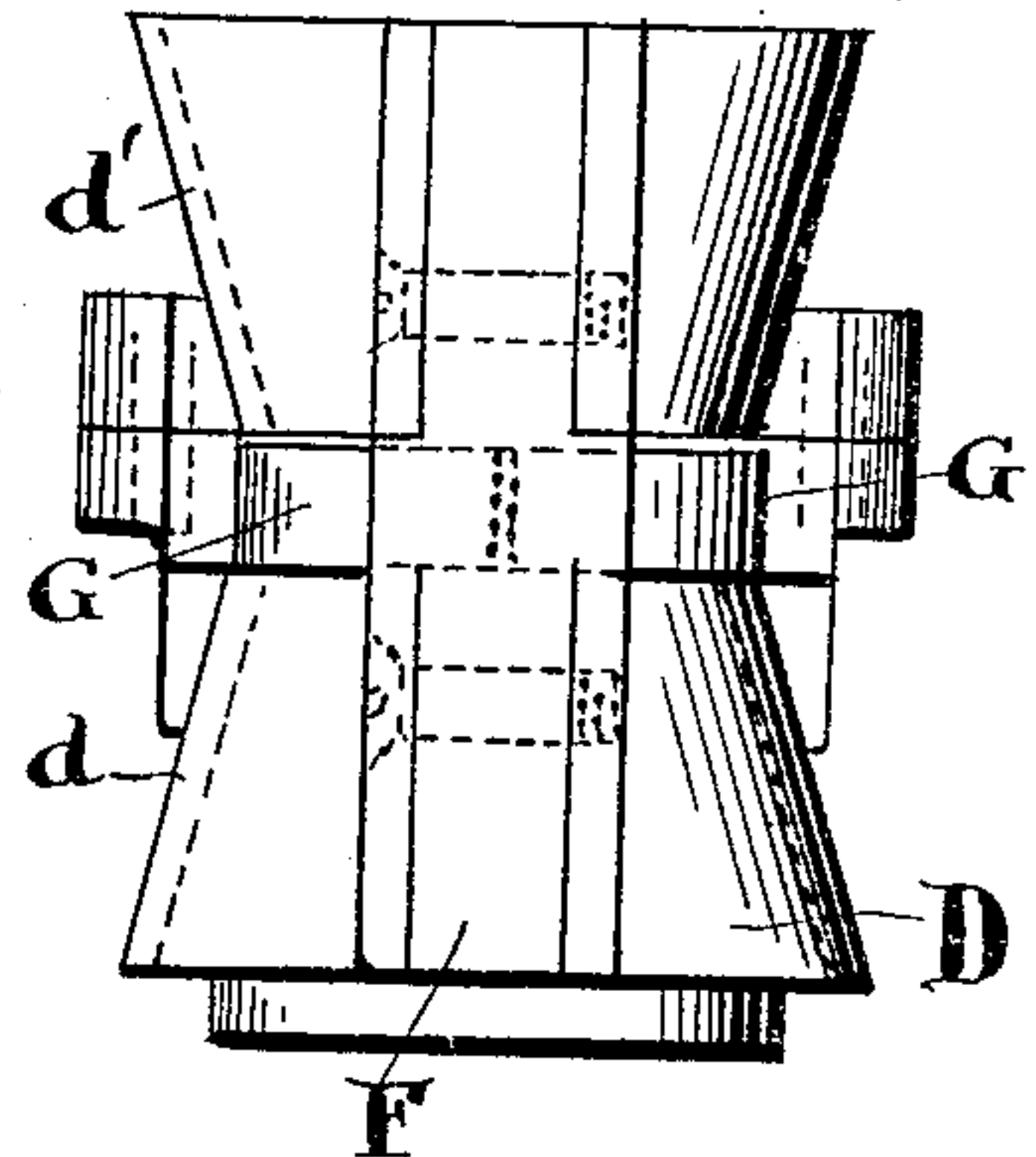


Fig. 6.

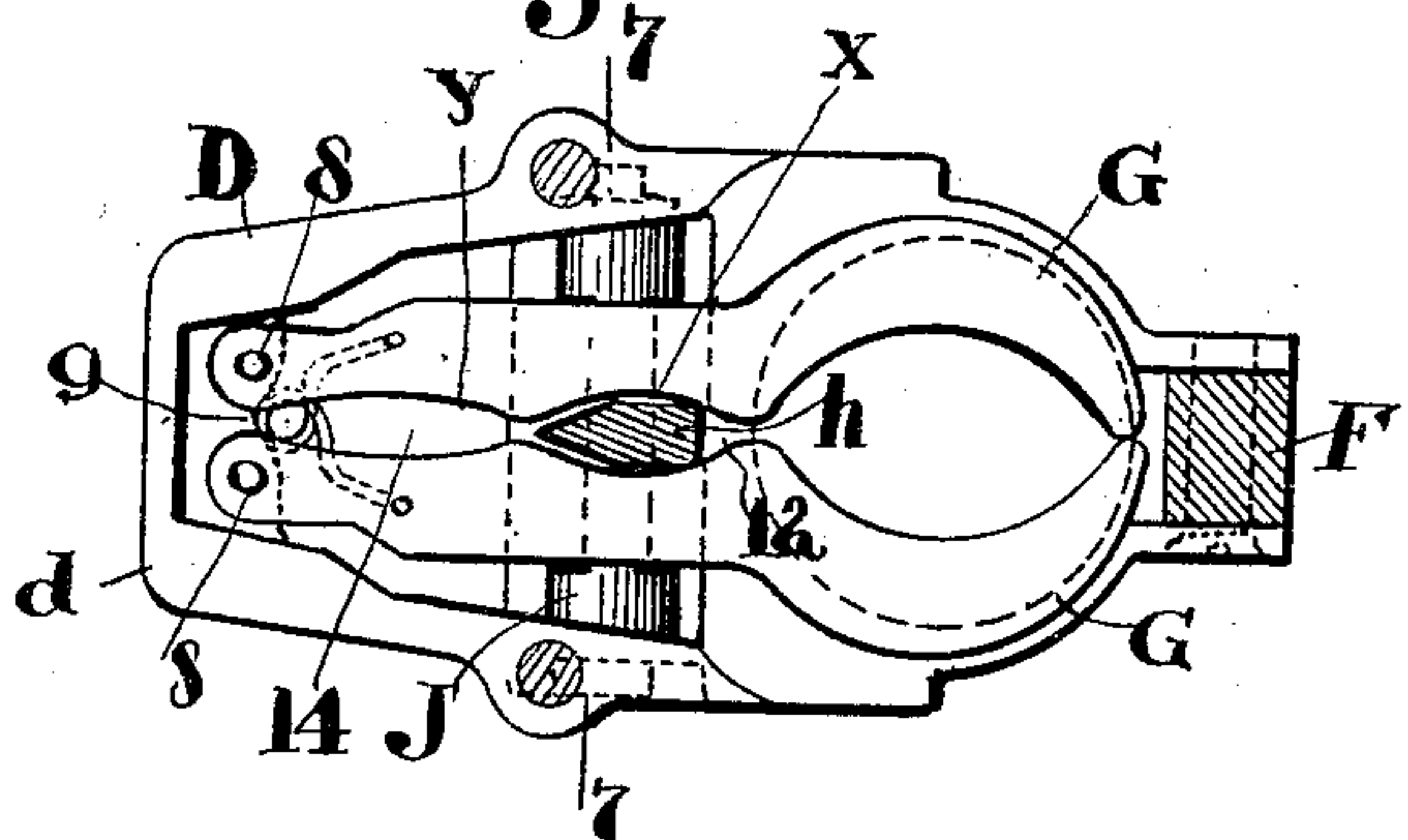


Fig. 7.

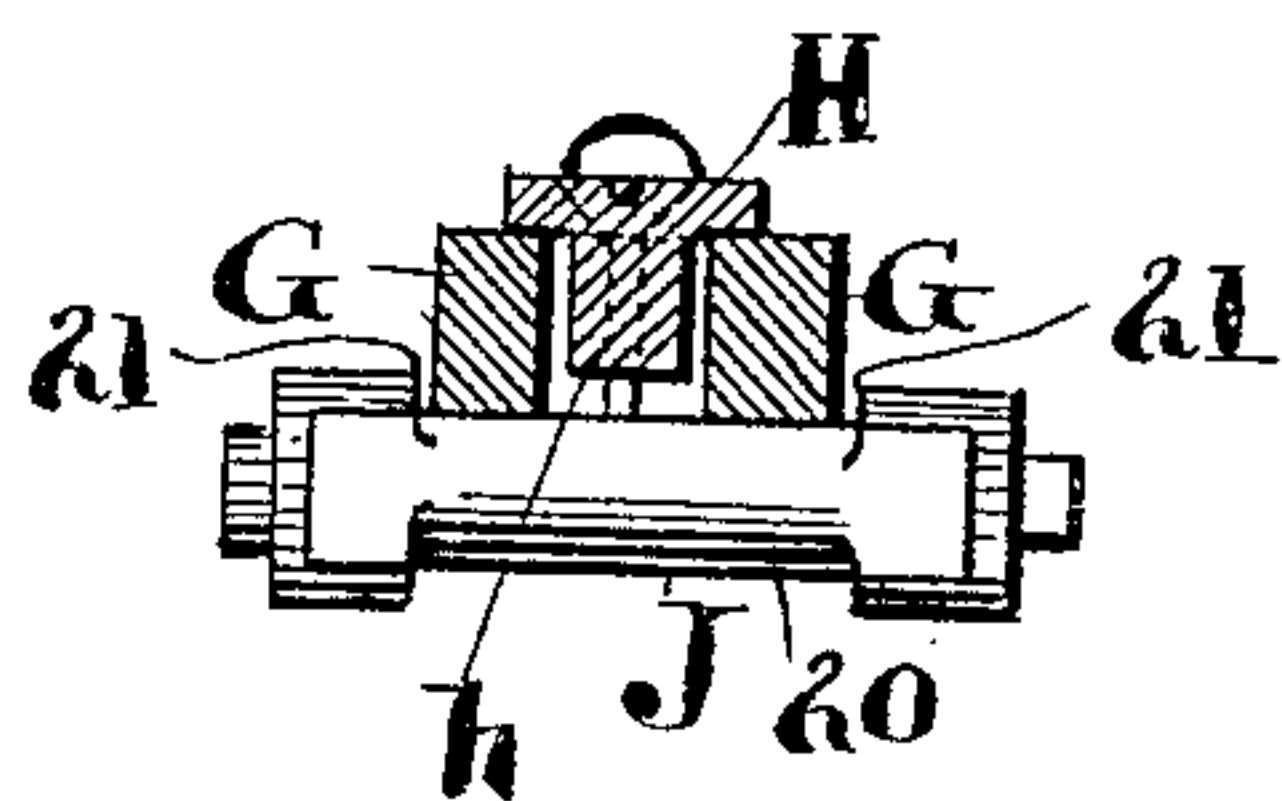


Fig. 8.

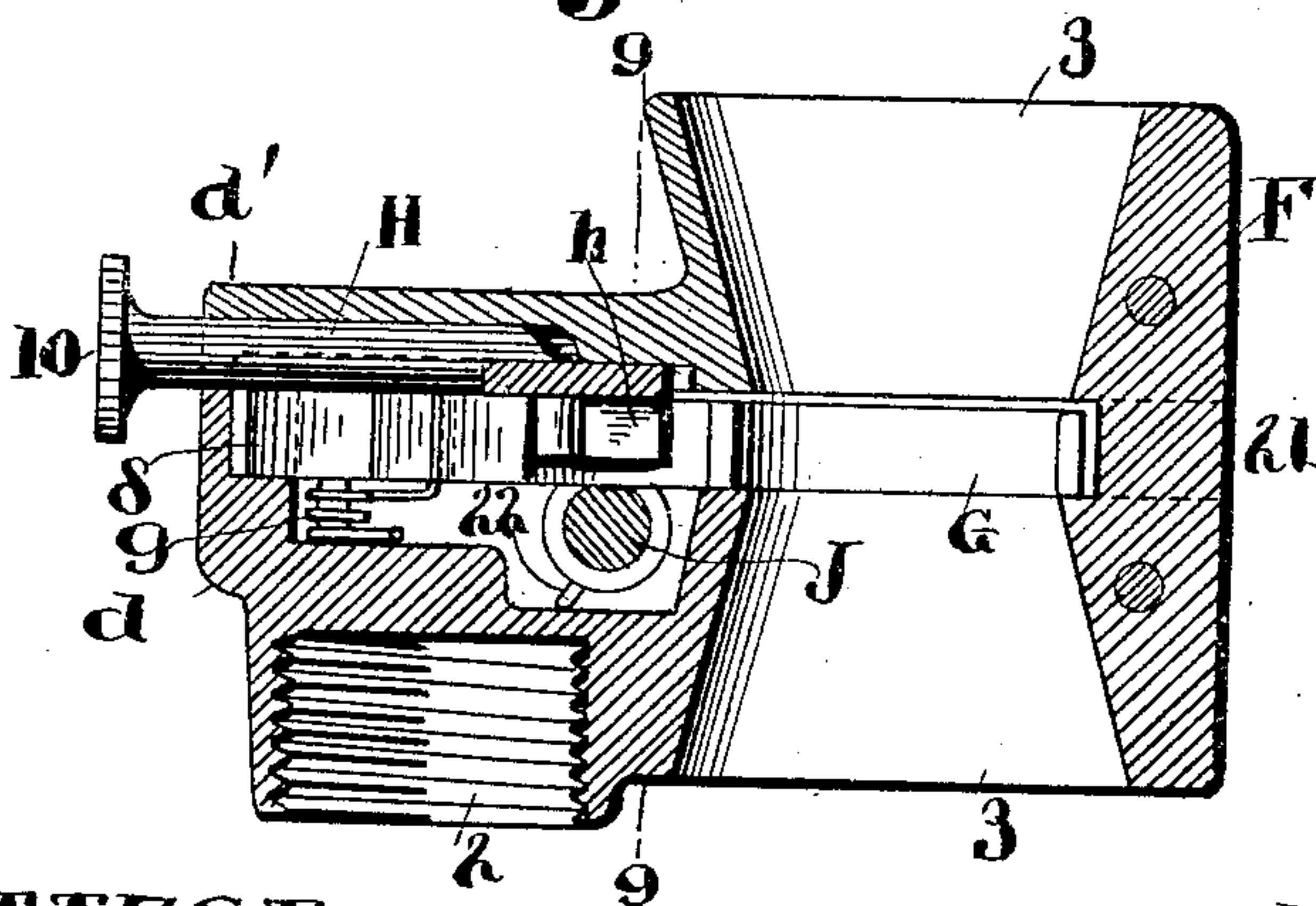
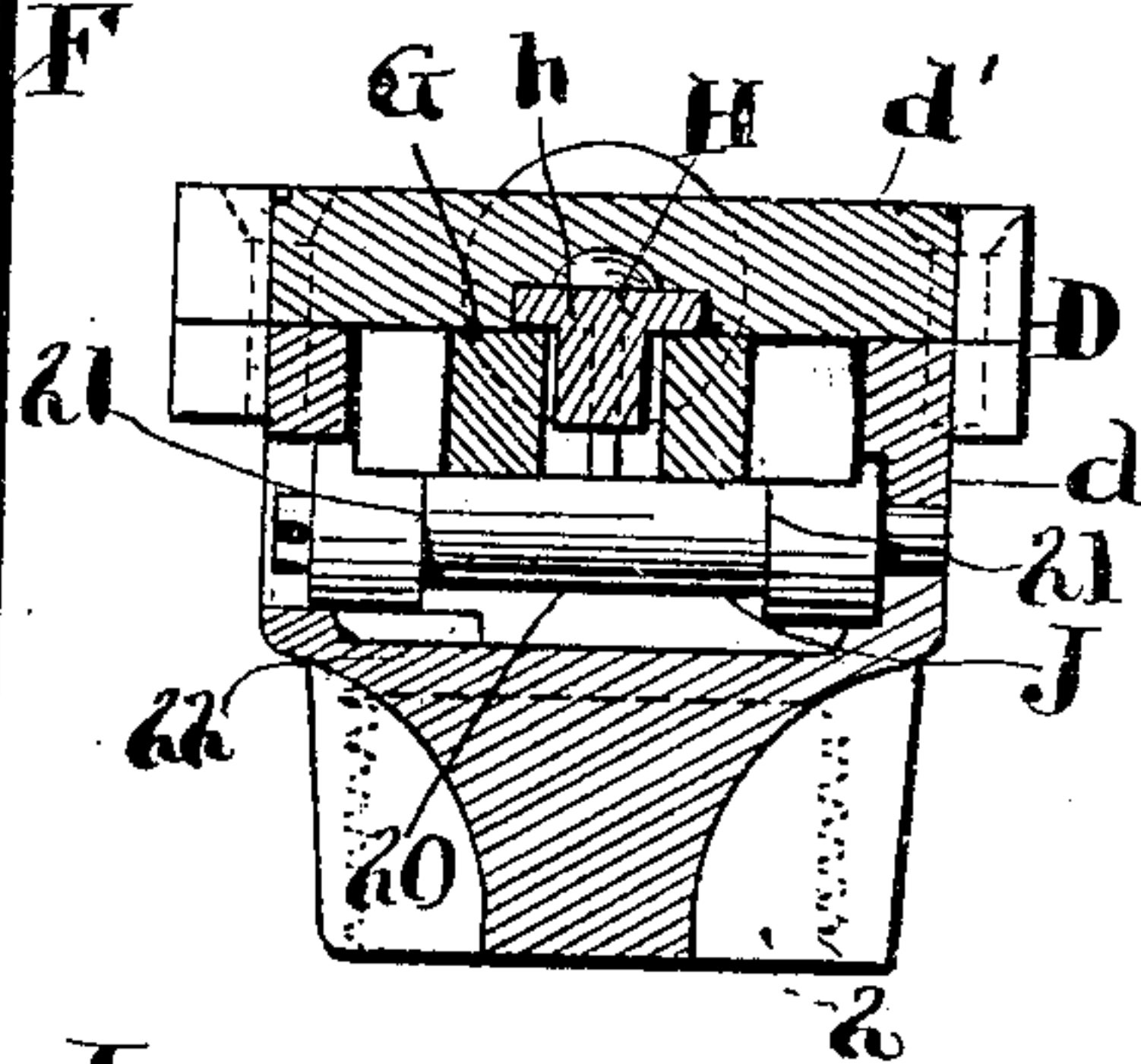


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOSEPH P. O'DONNELL, OF CLEVELAND, OHIO.

AUTOMATIC STOPPING AND LOCKING DEVICE FOR ELEVATORS.

No. 929,872.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed May 18, 1908. Serial No. 433,388.

To all whom it may concern:

Be it known that I, JOSEPH P. O'DONNELL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automatic Stopping and Locking Devices for Elevators, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic stopping and locking devices for elevators; and the invention consists in the construction and combination of parts substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a section of a hatchway and an elevator platform having my improved automatic mechanism mounted thereon. Fig. 2 is a plan of the stopping device enlarged, and Fig. 3 is a plan of the filler employed to close the otherwise open space between the sides of the casing and through which the cable is introduced. Fig. 4 is a side elevation of the stopping device complete, and Fig. 5 is an end elevation thereof. Fig. 6 is a plan of the lower section of the casing and the stopping members therein, line 6—6, Fig. 4, and Fig. 7 is a cross section corresponding to line 9—9, Fig. 8, showing only three members however, as will hereinafter fully appear, and Fig. 8 is a vertical sectional elevation of the device complete. Fig. 9 is a cross section of Fig. 8 on line 9—9, showing the jaws closed as in Fig. 6.

The idea of the invention thus disclosed is to provide an elevator with a safety attachment adapted to prevent starting of the elevator from a landing without the knowledge and coöperation of the party in charge of the elevator at such landing, thereby overcoming the very serious objection in elevators as they are ordinarily operated, and which have no such locking control. For example, the ordinary elevator, and particularly a freight elevator, is adapted to be started in either direction by any one at any landing by simply pulling on the cable. Serious accidents are constantly occurring on this account, because freight may be transferring to or from the elevator at a given floor while a person appears at another floor and gives the cable a jerk and starts the elevator up or down. Both life

and property are put in jeopardy by such defective arrangements, and my invention is designed to overcome these objections and render such perilous operations impossible. To these ends the platform A of the elevator is equipped with a safety attachment comprising a post or standard B fixed thereto and adapted to carry the safety devices at its top. In this instance a slidable member is mounted within said standard which is capable of a limited up and down movement under heavy spring pressure by springs c both above and below, thus affording a cushioned engagement for the grip with the cable, and avoiding strain when it acts and which is especially noticeable in fast running elevators. The cable engaging mechanism is mounted on this member C at its top or any equivalent arrangement for supporting said mechanism may be used. Said mechanism comprises a suitable casing D with a threaded socket 2 in its bottom for supporting member C and a circular vertical opening 3 for cable E. Said casing furthermore is formed in upper and lower parts, of which part *d* is the body and part *d'* the cover, and opening 3 is formed alike through both said parts and flares outwardly in each from the narrowest point at jaws G, which are located centrally in said casing and reach around opposite sides of opening 3. A filler F occupies the open space between the sides of both parts of said casing, and which is removable for getting the device into working relations with the cable. The casing is further provided with a suitable recess or space between the sections for engaging members or jaws G, which have shanks pivoted respectively at their extremities 8 and constructed to close upon the cable from opposite sides as shown. Spring 9 tends to hold said jaws in closed relation, and they can be spread only by the deliberate action of the operator. Various means might be suggested to accomplish this purpose, but I prefer a sliding spreader H, mounted in the casing and having a substantially wedge shaped portion *h* on its bottom adapted to enter between the shanks of said jaws and spread the same in wedge fashion. To this end said jaws have two substantially elliptical or equivalent spaces *x* and *y* between them, and when head or wedge *h* is in space *x* the jaws stand closed, but when drawn outward into space *y* nearer pivots 8 the jaws are spread, and held open.

Any construction of the edges of said jaws that will enable this to be done by the spreader may be employed, and the spreader is operated by means of stem or arm 10.

5 When the spreader is drawn outward and the jaws are thrown wide open the elevator is free to be run up and down without interruption by this mechanism.

E represents the usual operating cable on 10 which are a pair of spaced knobs or balls 15 and 16 corresponding to the respective landings L. Said balls are semi-spherical with their flat sides opposite each other and spaced apart sufficiently to allow the jaws 15 to engage the cable between them when otherwise closed and thus bring the elevator to a standstill automatically, and this occurs traveling either way. By shaping the said balls as shown the first one will pass with 20 its rounded side through the jaws, but the next one will come to the jaws with its flat side and engage the same. Now, having effected stoppage of the elevator automatically in this way, the pause can be indefinitely protracted and the parts locked 25 against possible starting by any one at any part of the cable other than upon the platform and by the person having the controlling key, and for this purpose I employ 30 a rotatable locking barrel J. Said barrel or lock is located transversely in the lower member d of the casing and is adapted to be given a quarter turn by means of a suitable key to be applied by the operator and 35 kept by him. The jaws G rest normally on this barrel at about their middle, and are free to slide laterally thereon at one portion thereof to wide open position. But to lock said jaws on the cable against being opened 40 and to prevent operation of the cable I have recessed one side of the barrel a sufficient depth to form shoulders 21 at the ends of the recess or scarf 20 adapted to engage against the outer edges of the said jaws and 45 prevent their being spread while the barrel retains this position, Fig. 8. Finger 22, Fig.

9, limits the rotation of the barrel to either position.

What I claim is:

1. A safety attachment for elevators consisting of a two-part casing having oppositely flared openings and an elevator cable in said opening, a pair of jaws adapted to engage about said cable, a slidable spreader 50 between the shanks of said jaws constructed to open the same and a locking device adapted to directly engage and lock the said jaws. 55

2. A safety attachment for elevators comprising a suitable casing having a passage 60 and a cable therein, a pair of jaws adapted to close upon said cable and a rotatable lock constructed to engage the sides of said jaws and hold them in locked position.

3. In cable operating and locking devices 65 for elevator cables, engaging mechanism for the cable comprising a pair of pivoted jaws, and means to open said jaws consisting of a slidable spreader mounted in said casing above said jaws and having a tapered portion engaged between said jaws, and a 70 rotatable member having shoulders adapted to engage the jaws to lock the same in closed position.

4. A safety device for elevator cables comprising a separable casing and a pair of jaws 75 pivoted at one end in the same, in combination with a spreader between the jaws having an operating stem slidably mounted on the meeting lines of said casing and having 80 a wedge shaped spreading portion engaging said jaws, said casing having an opening for a cable and being spaced apart at its front and a removable filler piece within said spaced front opposite said cable opening. 85

In testimony whereof I sign this specification in the presence of two witnesses.

JOSEPH P. O'DONNELL.

Witnesses:

R. B. MOSER,
F. C. MUSSUN.