

D. J. ELLIOTT & W. W. REILLY.
HEAD GATE LOCK.

APPLICATION FILED JULY 6, 1910.

976,254.

Patented Nov. 22, 1910.

3 SHEETS-SHEET 1.

Fig. 1.

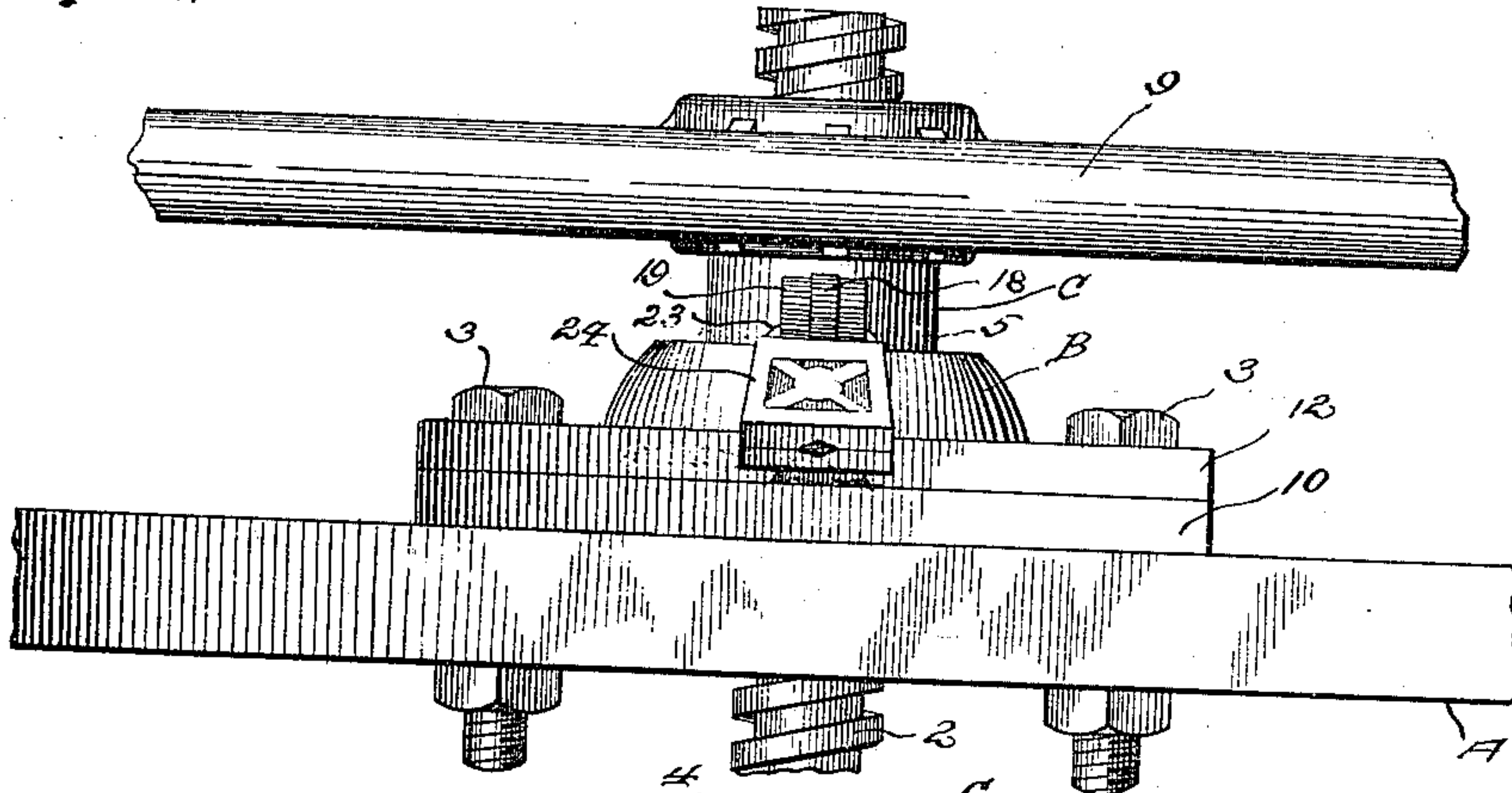


Fig. 2.

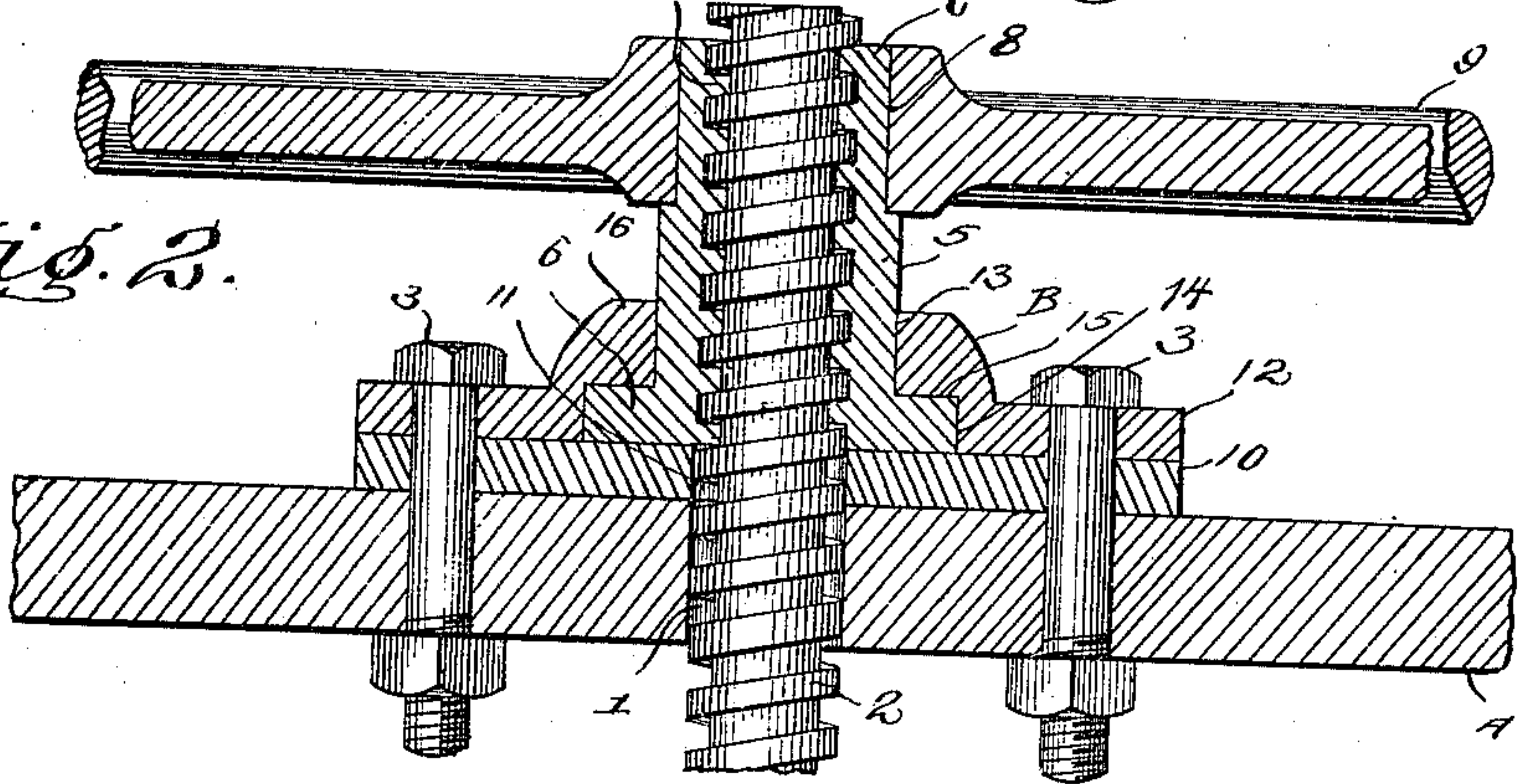
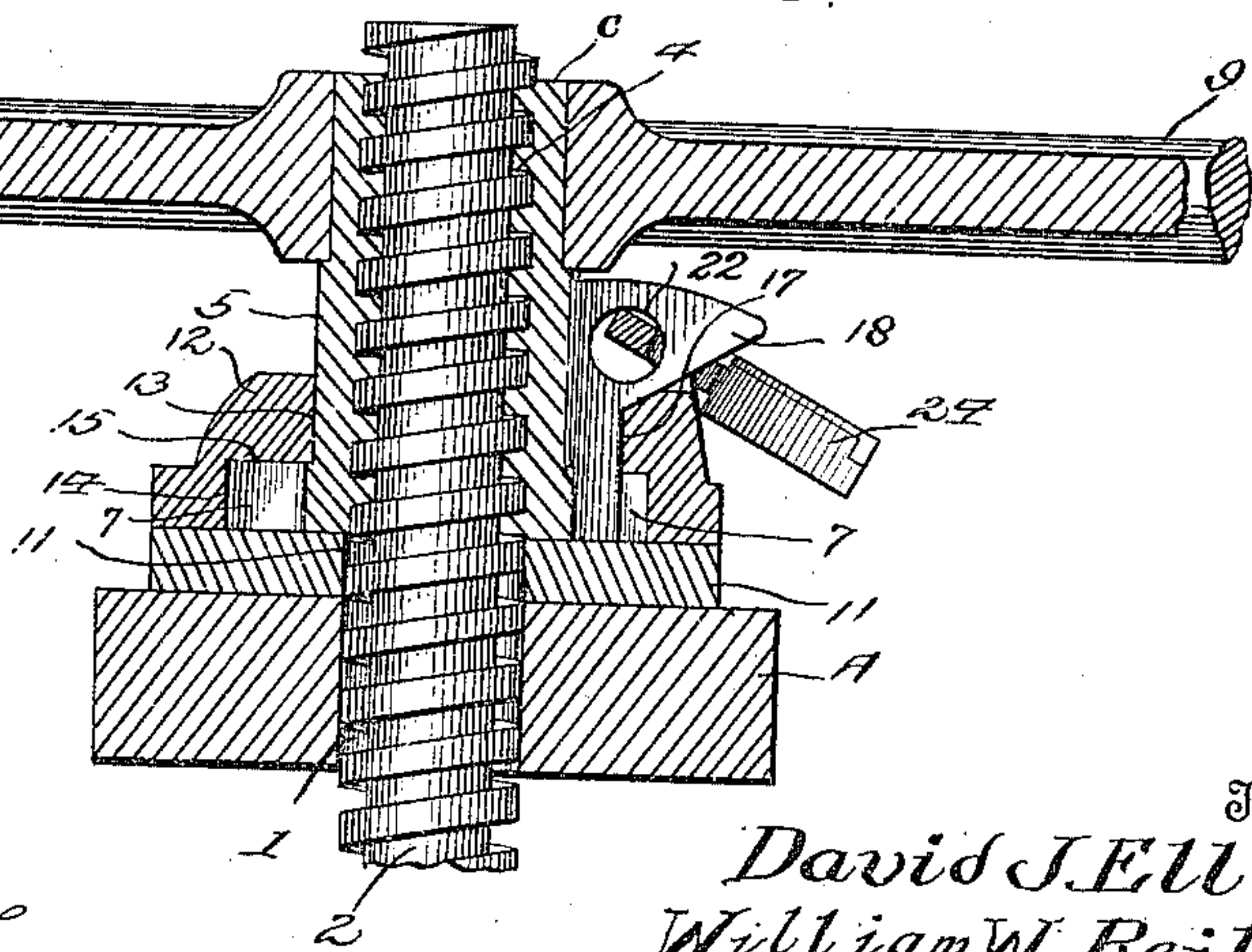


Fig. 3.



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3 SHEETS—SHEET 2.

Fig. 4.

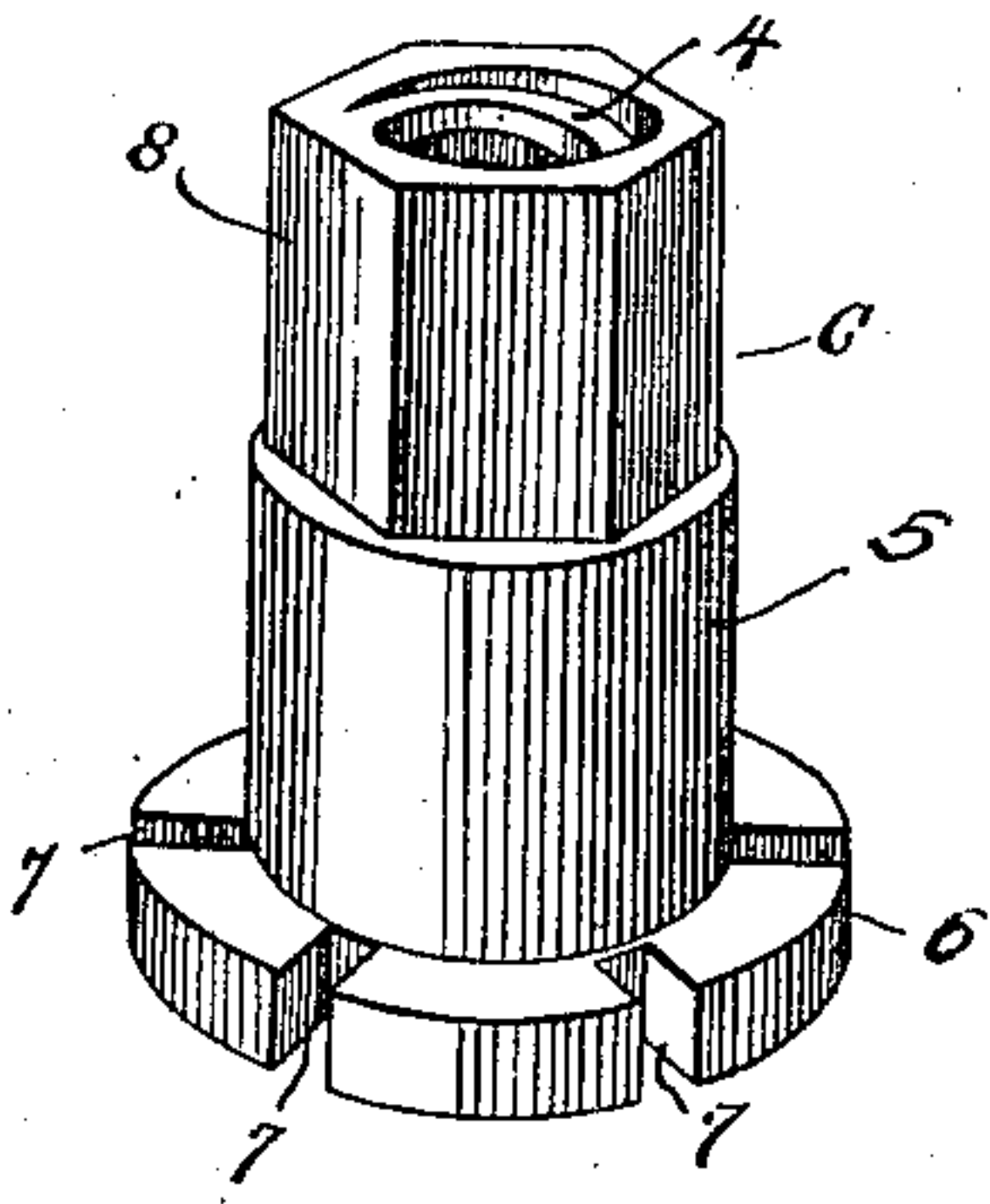


Fig. 5.

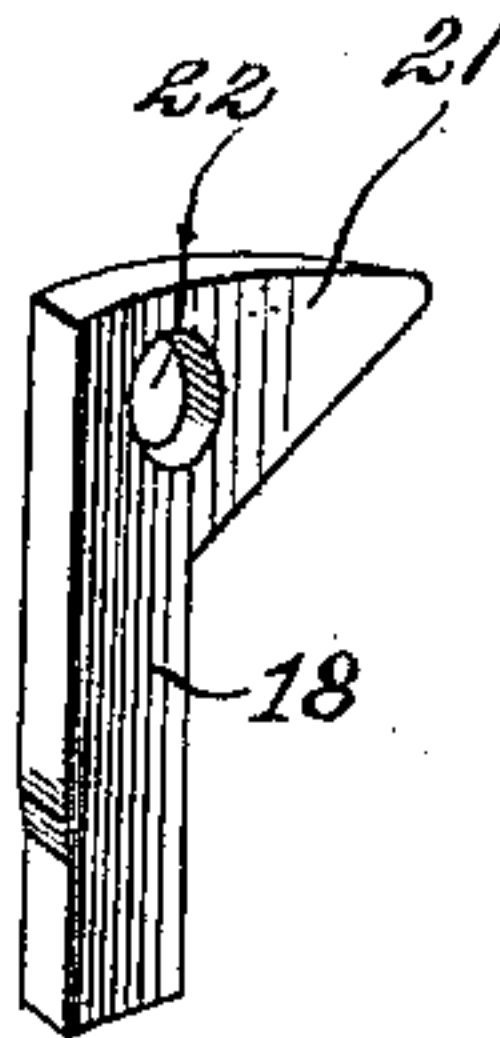


Fig. 6.

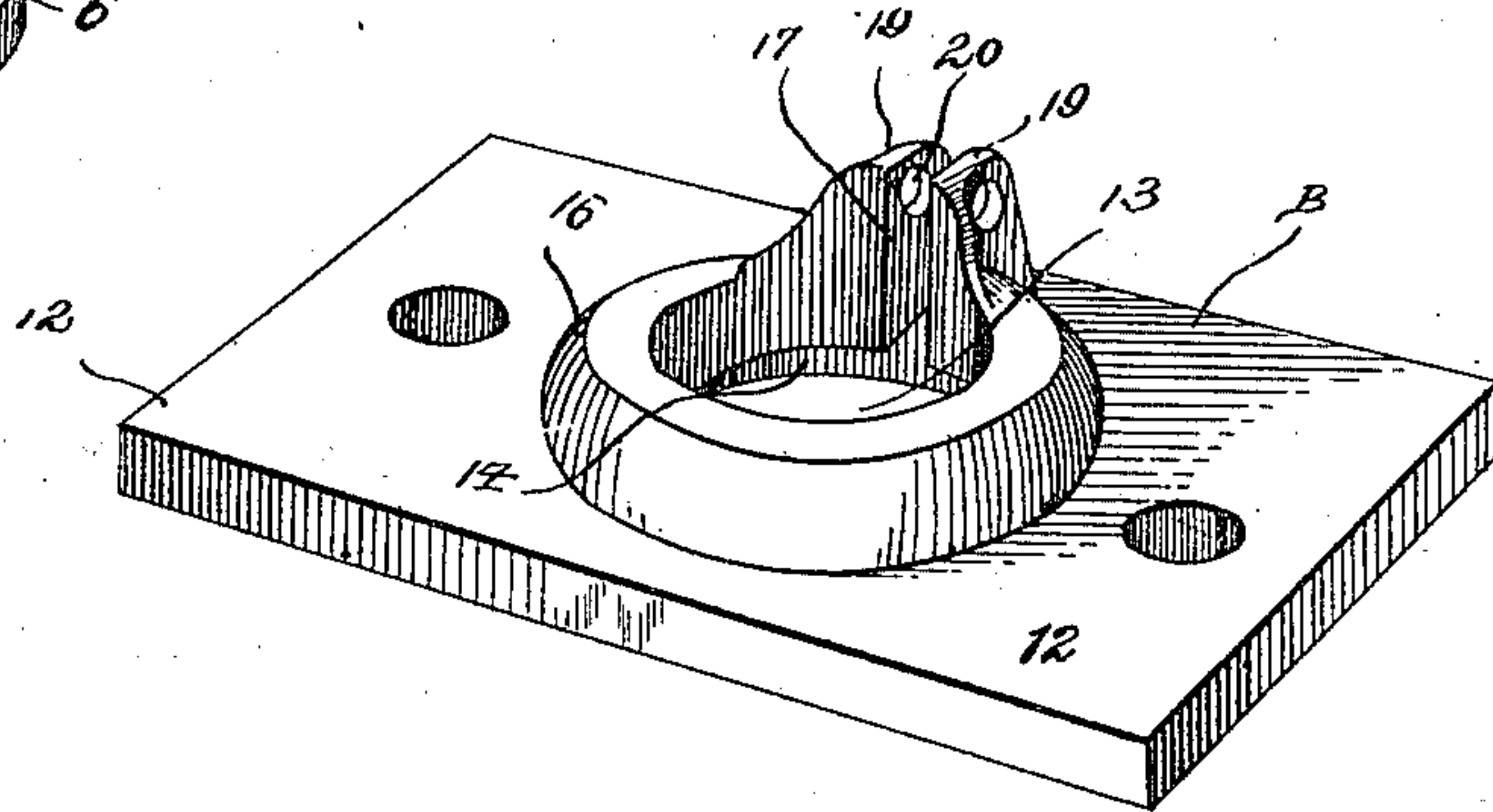
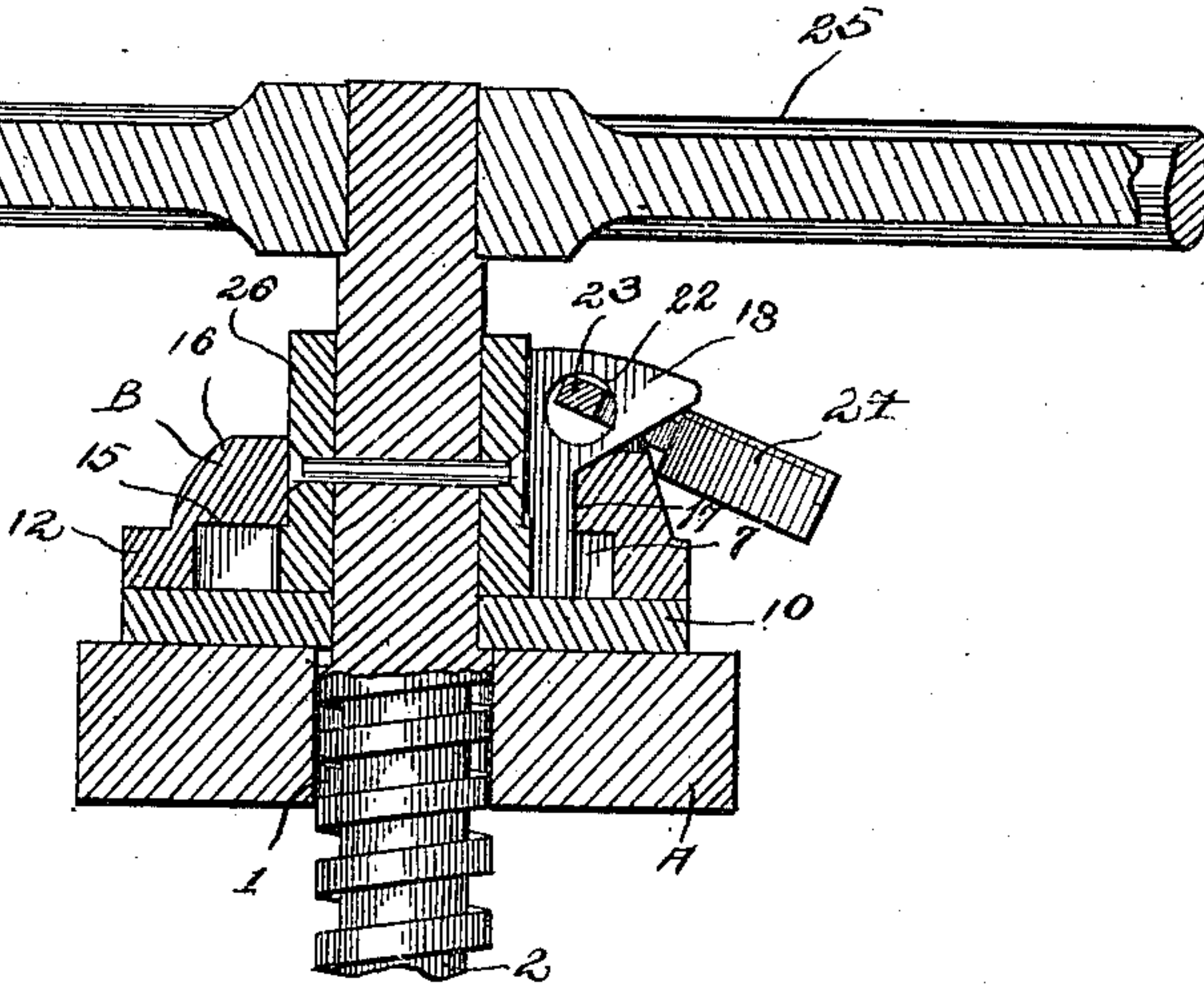


Fig. 7.



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3 SHEETS-SHEET 3.

Fig. 8.

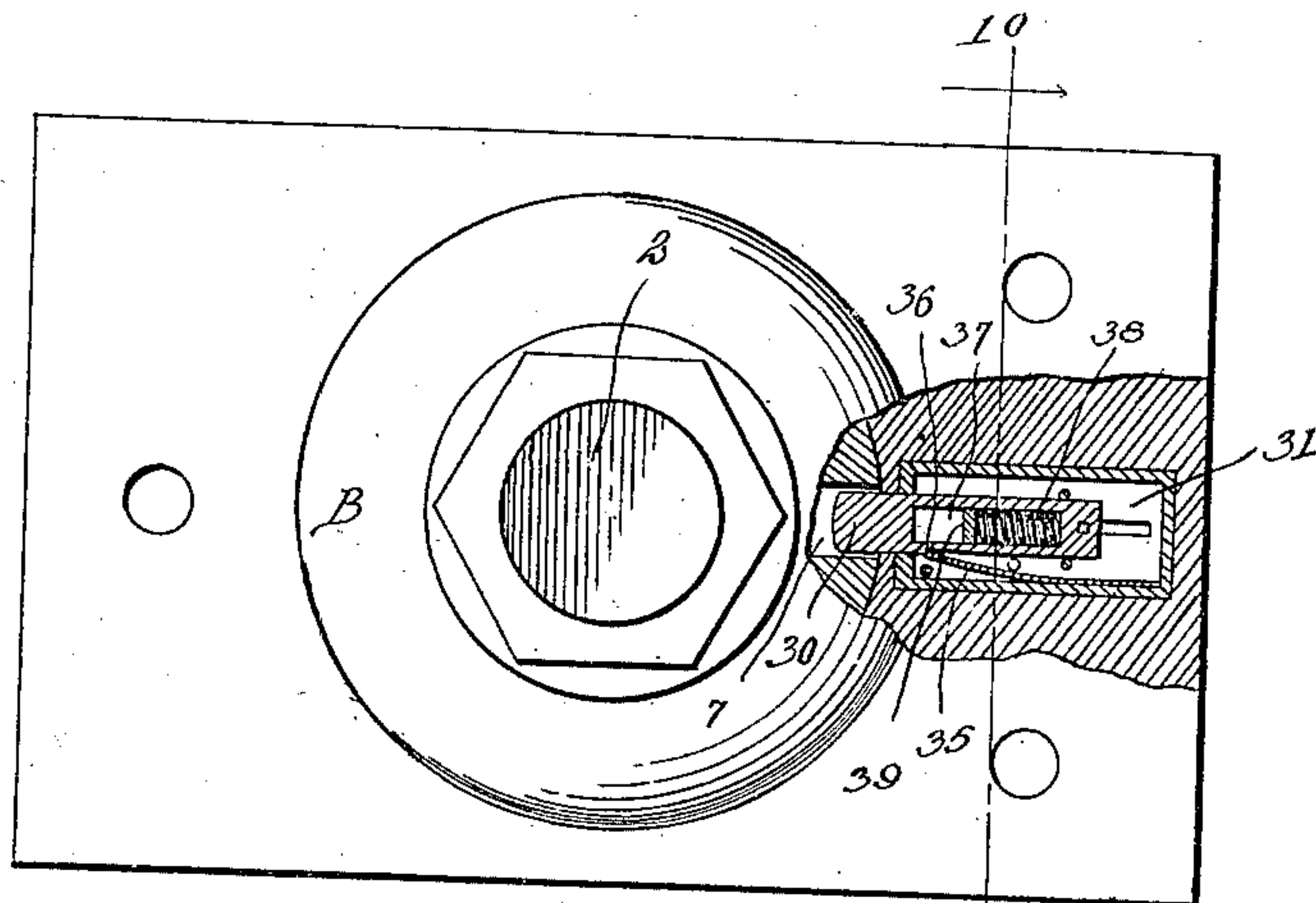


Fig. 9.

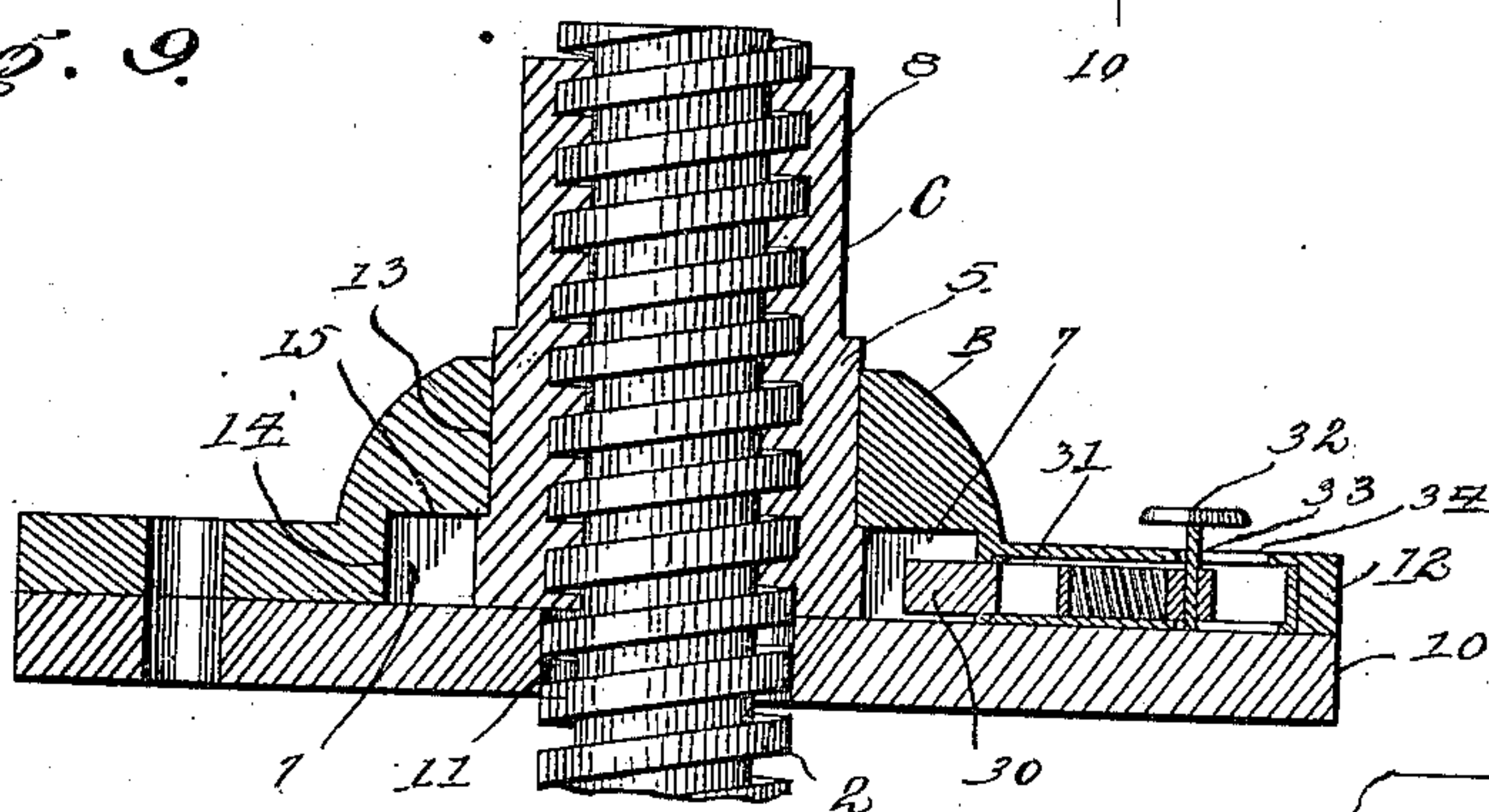


Fig. 10.

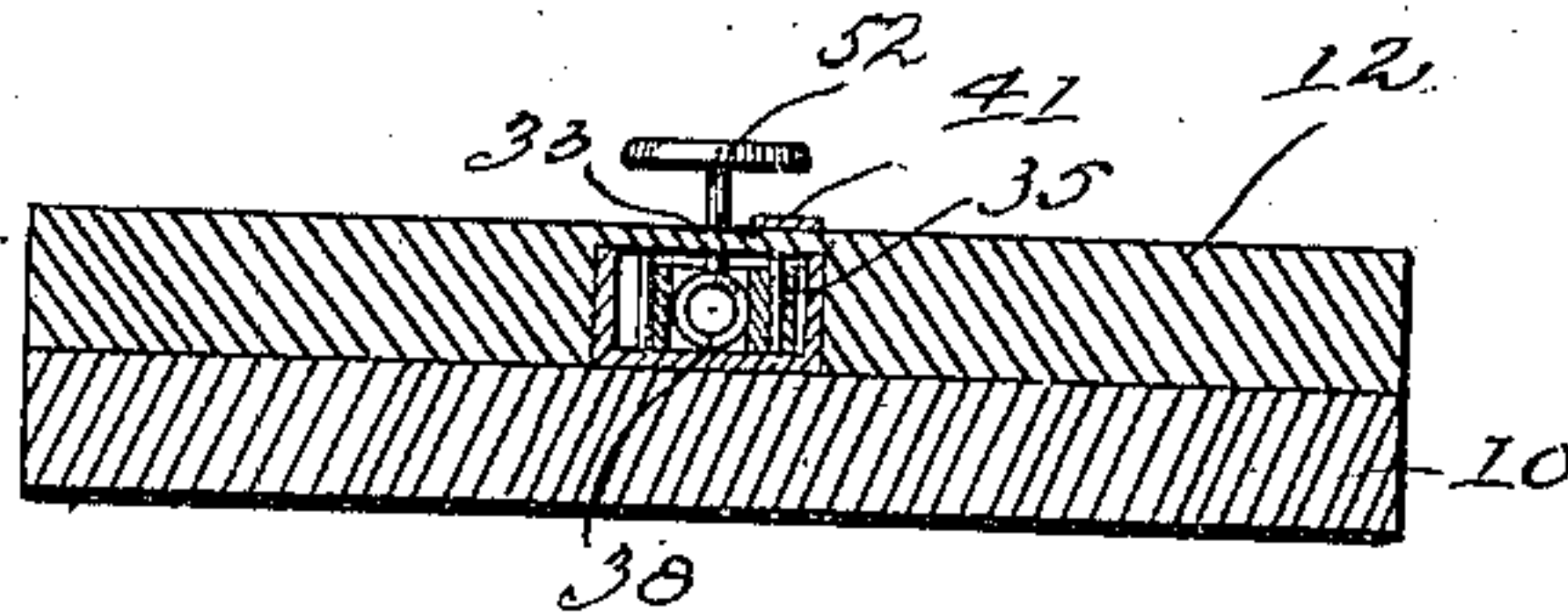
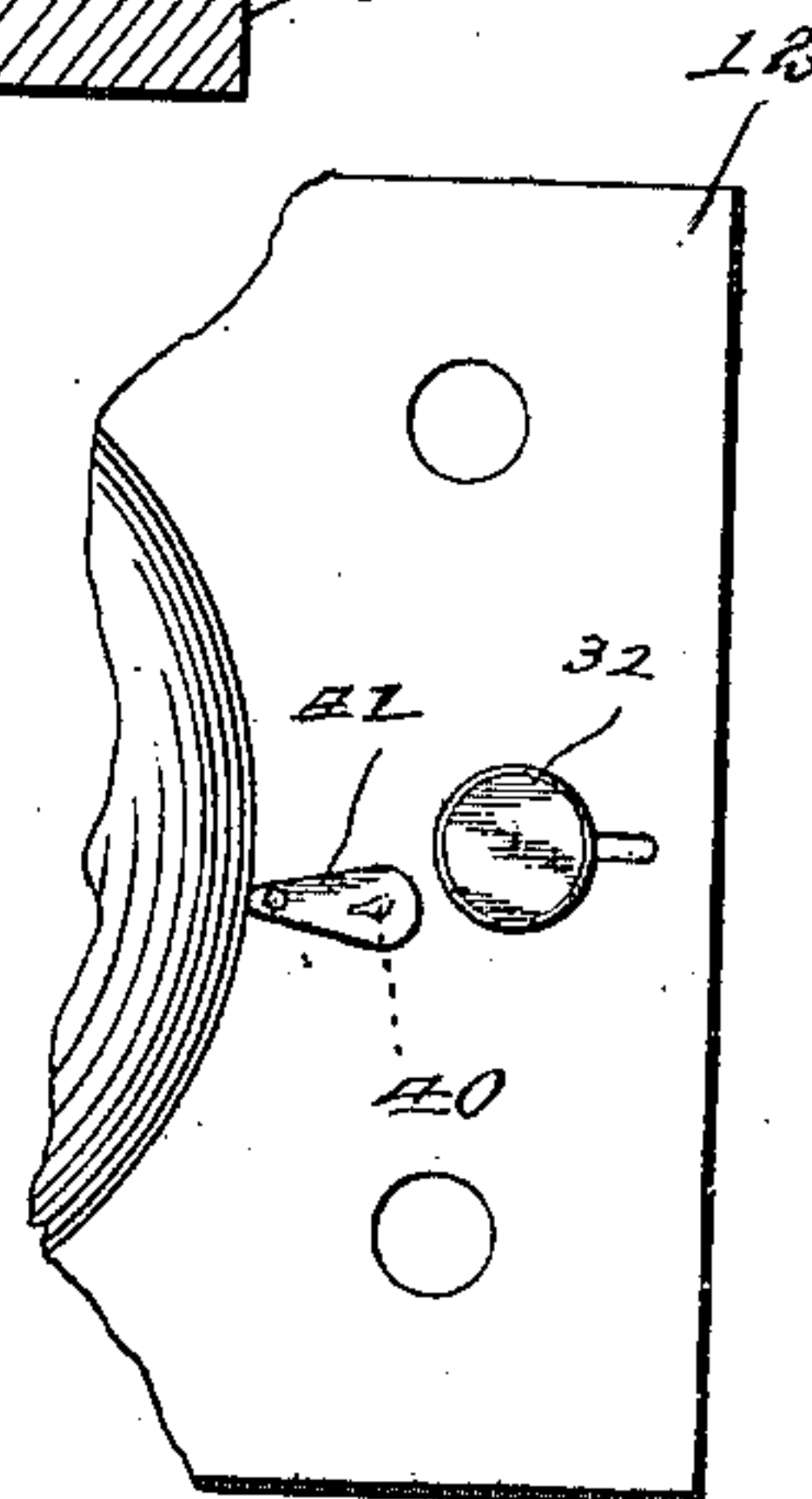


Fig. 11.



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UNITED STATES PATENT OFFICE.

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HEAD-GATE LOCK.

976,254.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed July 6, 1910. Serial No. 570,677.

To all whom it may concern:

Be it known that we, DAVID J. ELLIOTT and WILLIAM W. REILLY, citizens of the United States, residing at Monte Vista, in the county of Rio Grande and State of Colorado, have invented new and useful Improvements in Head-Gate Locks, of which the following is a specification.

This invention relates to locking devices for head lock operating screws, but it is not necessarily limited to this use.

The invention has for one of its objects to provide an extremely simple, practical and inexpensive locking device which can be readily locked and unlocked.

Another object of the invention is the provision of a lock which includes a rotary collar, nut or the like which turns during the opening and closing movement of the gate, and this nut or collar is also locked against movement by a key, pin or bolt which can itself be held in place by a pad lock or other character of lock.

With these objects in view, and others as will appear as the description proceeds, the invention comprises the various features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention:—Figure 1 is a side view of the device used in connection with a vertical gate operating screw. Fig. 2 is an enlarged sectional view taken longitudinally through the device. Fig. 3 is a vertical transverse section thereof. Fig. 4 is a perspective view of the screw operating nut. Fig. 5 is a perspective view of the upper section of the bearing for the operating nut. Fig. 6 is a perspective view of the locking key. Fig. 7 is a sectional view of a modified form of the device. Fig. 8 is a plan view of another modified construction with portions in section. Fig. 9 is a central vertical section. Fig. 10 is a section on line 10—10, Fig. 8. Fig. 11 is a fragmentary plan view.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawings, A designates a cross beam of a gate frame that has an opening 1 through which extends the vertically operating screw 2 for the gate. This screw passes through a bearing B which is

fastened by bolts 3 to the supporting beam A and housed within this bearing is a screw operating nut C which is provided with threads 4 for engaging the threads of the gate operating screw. This nut is provided for moving axially and hence as the nut turns the screw will move up or down, it being understood that the lower end of the screw will be rigidly connected with the gate that is opened or closed thereby. The nut C consists of a cylindrical body 5 that has on its lower end a peripheral flange 6 that is provided with radial notches or recesses 7 for receiving a locking key for preventing the nut from turning. The upper end 8 of the nut or screw operating element C is non-circular so that a hand wheel 9 can be applied to the nut for conveniently turning the same.

The bearing B forms a housing for the lower portion of the nut and this bearing consists of a bottom plate 10 which has a similar opening 11 through which the screw passes and resting on this bottom plate or section 10 is a top plate or section 12 that has an opening 13 of substantially the same diameter as the cylindrical body of the nut to receive the same and this opening 13 is enlarged at its lower end or counter-sunk at 14 so as to receive the flange 6 of the nut and by enlarging the opening 13 a shoulder 15 is formed which engages the top of the flange 6. Thus when the plates or sections of the bearing are clamped together the nut will be retained in the bearing but it will be free to rotate. The nut will be supported by the plate 10 on which it rotatably bears. When the top section of the plate is comparatively thin the central portion thereof will be formed into a boss 16 which provides its substantial bearing surface for the cylindrical body of the nut. At one side of the opening in the top plate is a vertical slot 17 which is disposed in alinement with the flange 6 of the nut so that any notch or recess thereon can be brought into alinement with the said slot, and on the latter is locked a key or pin 18 that has its lower end engaged in one of the recesses 7 of the nut so as to prevent the turning thereof. On the boss 16 at opposite sides of the slot 17 are lugs 19 that have alining openings 20, and on the pin is a head 21 that has an opening 22 which registers with the openings 20 in the lugs when the pin is set in the slot 17. Through these registering openings the

yoke 23 of a pad lock 24 is inserted for locking the pin in place.

Whenever it is desired to operate the gate it is first necessary to unlock and remove the pin 18. To do this the pad lock is opened by a key and detached from the pin and lugs of the bearing. The pin 18 can now be taken out and the nut will then be free for raising or lowering the screw. After the gate has been moved to the proper point the nut is turned to bring one of the notches 7 into alinement with the slot 17 so as to receive the lower end of the locking pin which is now inserted. After this is done the pad lock is applied and fastened so that the key can be received. It will be obvious that as long as the key or pin is thus retained no one can interfere with the gate.

In the modified form shown in Fig. 7 the screw 2 is adapted to turn. The lower end of the screw will of course have a threaded connection with the grate and the upper end of the screw will be provided with a hand wheel 25. Arranged in the bearing B is a collar 26 which is pinned or otherwise rigidly secured to the screw. This collar will be constructed substantially as the nut C, as before described, except that the collar will not be necessarily threaded, but otherwise the parts of the device are the same and are similar in operation.

Referring to the construction shown in Figs. 8 to 11, inclusive, the locking element for preventing the nut or shaft from being turned takes the form of a sliding bolt 30 arranged in a chamber 31 in the top plate 12, and this bolt is provided with a knob 32 that has its shank 33 extending through a slot 34 in the plate 12. The bolt is held in locking position by a key-released spring catch 35 disposed in the chamber 31 with its free end adapted to engage a shoulder 36 on one side of the bolt 30. The bolt has a longitudinal opening 37 in which is arranged a helical compression spring 38 that has bearing at one end in the opening and the other end bearing on a fixed abutment 39, so that the spring tends to move the bolt outwardly to released position. The bolt is adapted to engage any one of the notches 7 in the operating nut C and thereby prevent the gate from being tampered with. In the top plate 12 is a key hole 40 that is normally closed by a guard 41, and by introducing a key into the hole 40 and turning the key, the spring catch 35 can be moved to one side so as to disengage it from the shoulder on the bolt, and when this occurs, the spring 38 retracts the bolt out of engagement with the operating nut C. When the bolt is to be again locked, the knob 32 is pressed toward the nut C so as to slide the bolt into the alining slot 7 of the nut, and as soon as the spring 35 engages behind the shoulder 36, the bolt will be held in locking position and cannot

be released until the key is introduced to remove the spring 35 from the bolt.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operating will be readily apparent to those skilled in the art to which the invention relates, and while we have described the principle of operation of the invention, together with the device which we now consider to be the best embodiment thereof, we desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what we claim as new, is:—

1. A device of the class described comprising a housing composed of two parts separable in a horizontal plane, a rotary element extending therethrough and provided with an annular flange rotatable between the two parts of the housing, said flange serving to hold the element against longitudinal movement, a seat in the periphery of the flange, a locking member disposed in the housing and arranged to engage the said seat, and means for holding the member in locking position.

2. A device of the class described comprising a stationary member, a rotary element extending therethrough and having an annular flange provided with a plurality of spaced notches, a locking element arranged to engage in any one of the said notches for preventing turning of the rotary element, and a key-released device for holding the locking element in operative position.

3. The combination of a housing consisting of two sections having alining openings, an element extending through the openings, a member surrounding the element and rotatably mounted in the housing, a key extending into the housing and engaging said member and insertible in a direction parallel with the axis of the said element, and a locking device for holding the key in the said bearing.

4. The combination of a housing composed of plates separably connected and having openings, the openings of one plate being larger than the openings of the other, a rotatable member in the plate having a larger opening, said member having a peripheral flange provided with radial notches and the flange serving to prevent axial movement of the member in the housing, an element passing through the member and operatively connected therewith, a key extending parallel with the said element at one side of the member and extending into the housing with one end engaged in one of the said notches, and a locking device for holding the key in place.

5. The combination of a housing having an opening and provided with a slot at one side of the opening, a rotatable member mounted in the opening and having a plurality of key receiving seats disposed in a circle to present any seat to be in registry with the said slot, a key disposed in the slot and engageable in any one of the said seats, an element passing through the member and operatively connected therewith, and means for retaining the key in place.

6. The combination of a housing having an opening and provided with a slot at one side of the opening, a rotatable member mounted in the opening and having a plurality of key receiving seats disposed in a circle to present any seat to be in registry with the said slot, a key disposed in the slot and engageable in any one of the said seats, an element passing through the member and operatively connected therewith, apertured lugs formed on the housing at opposite sides

of the slot, said key having an apertured head, and a pad lock having its yoke passing through the apertures of the lugs and head of the key to retain the latter in place. 25

7. A device of the class described comprising a housing composed of separable sections, a rotatable member mounted in the housing and provided with a peripheral flange engaging between the sections of the housing to retain the member in place, said flange having a seat, a locking member carried by the housing and arranged to engage the said seat, and a key-released means for holding the locking member in engagement with the seat. 30 35

In testimony whereof we affix our signatures in presence of two witnesses.

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WILLIAM W. REILLY.

Witnesses:

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