

A. L. BOLSON.
ADJUSTING DEVICE FOR ROCK DRILLS.
APPLICATION FILED JULY 20, 1914.

1,155,034.

Patented Sept. 28, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

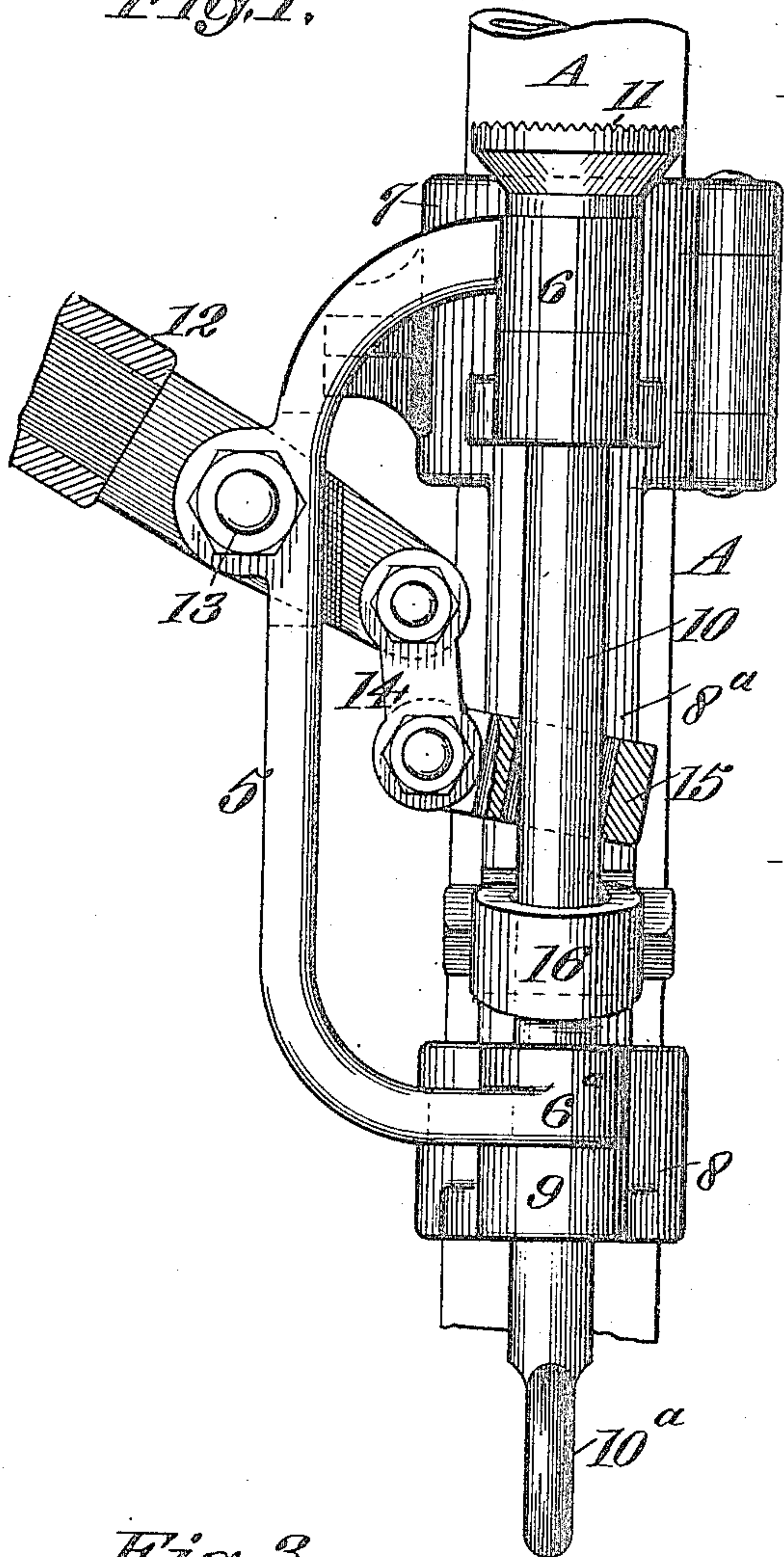


Fig. 2.

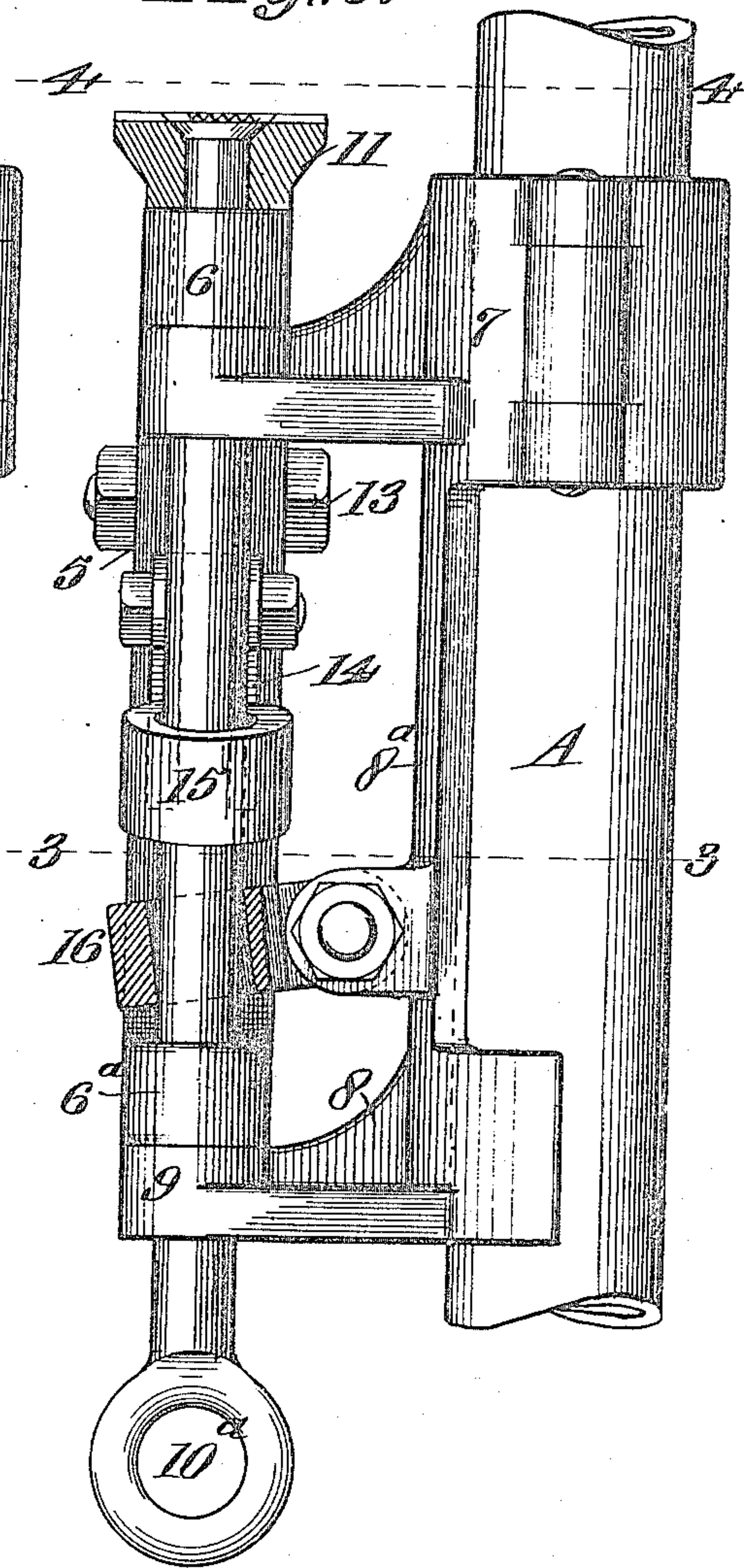
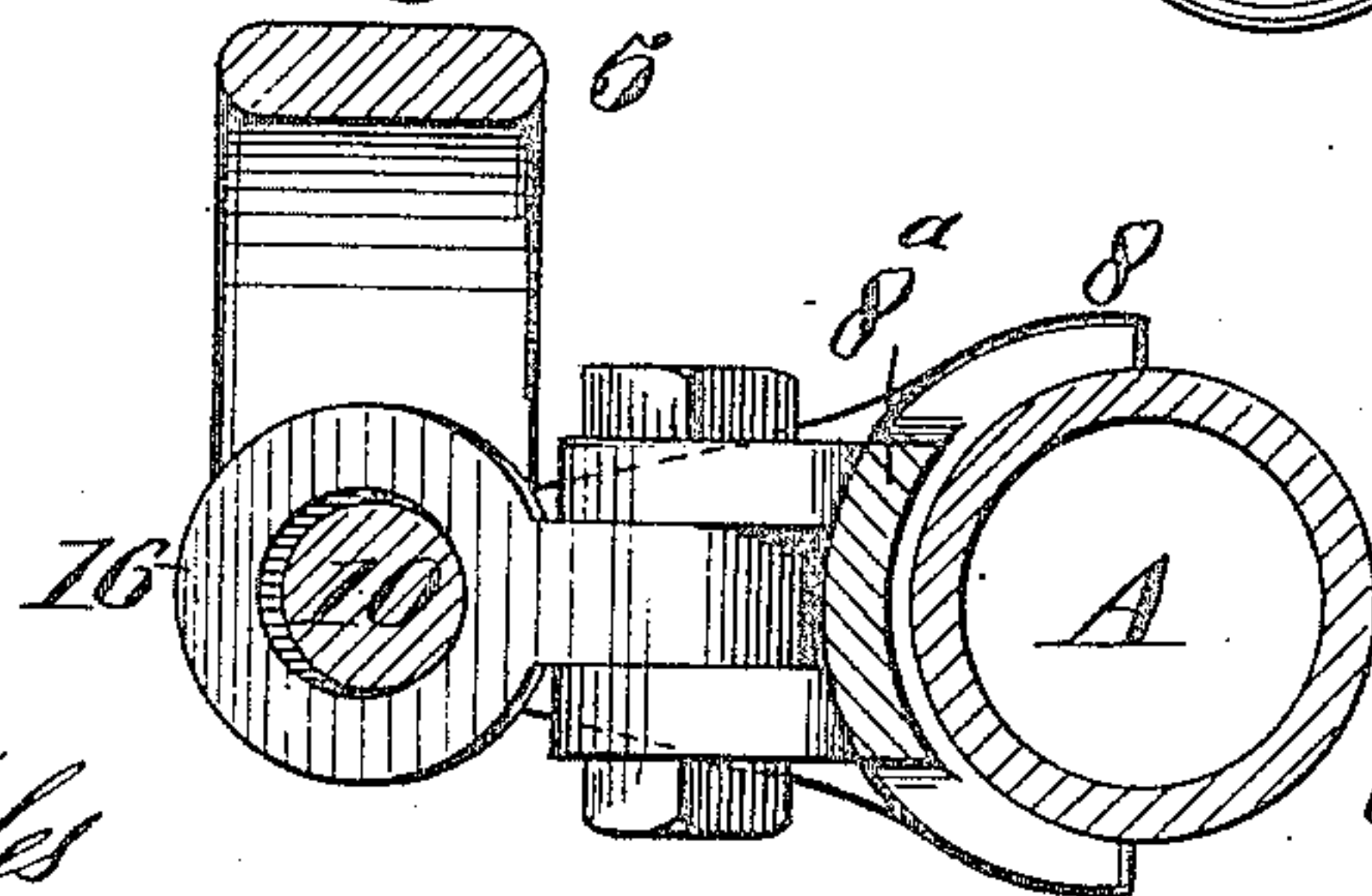


Fig. 3.



WITNESSES:

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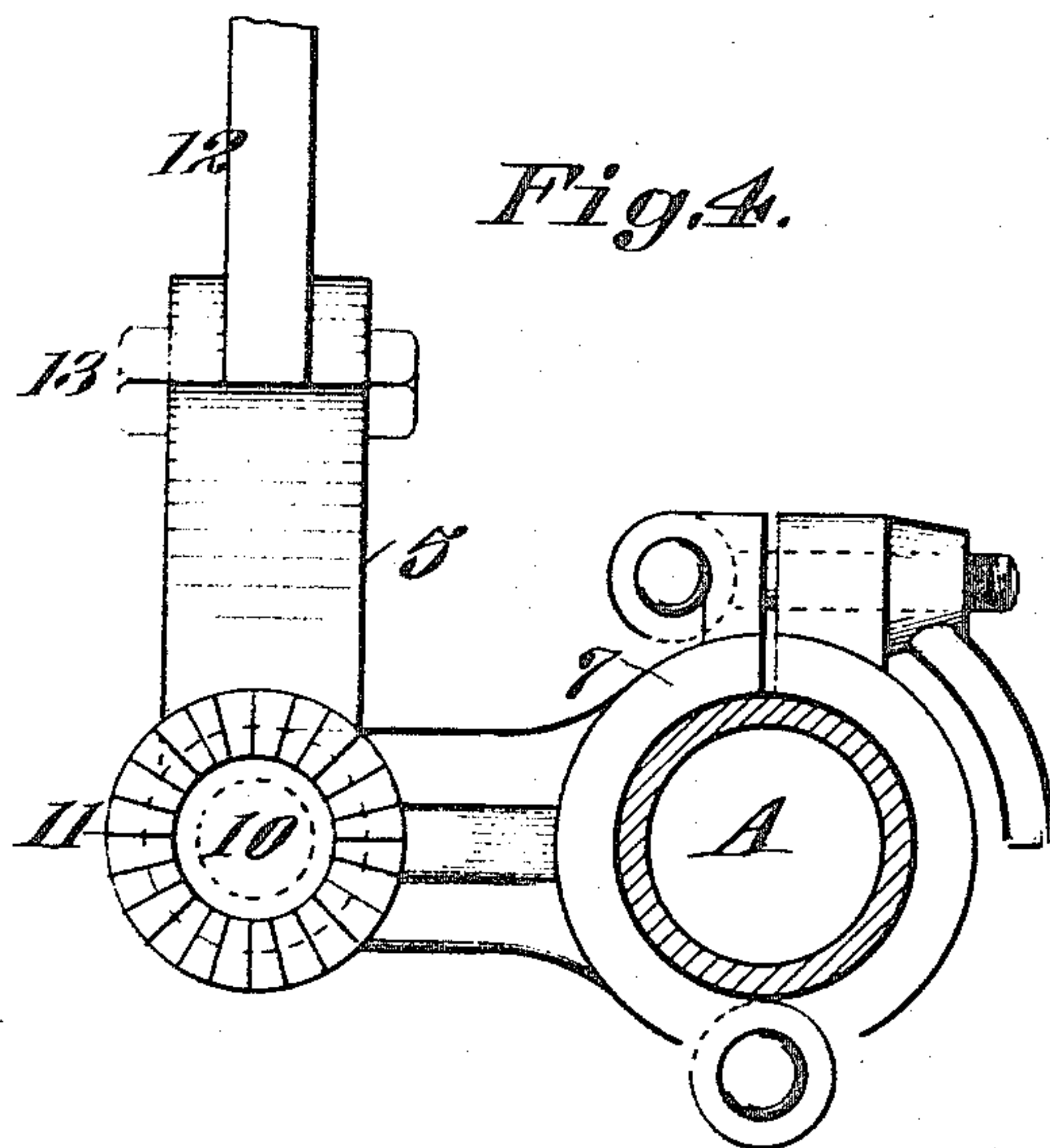
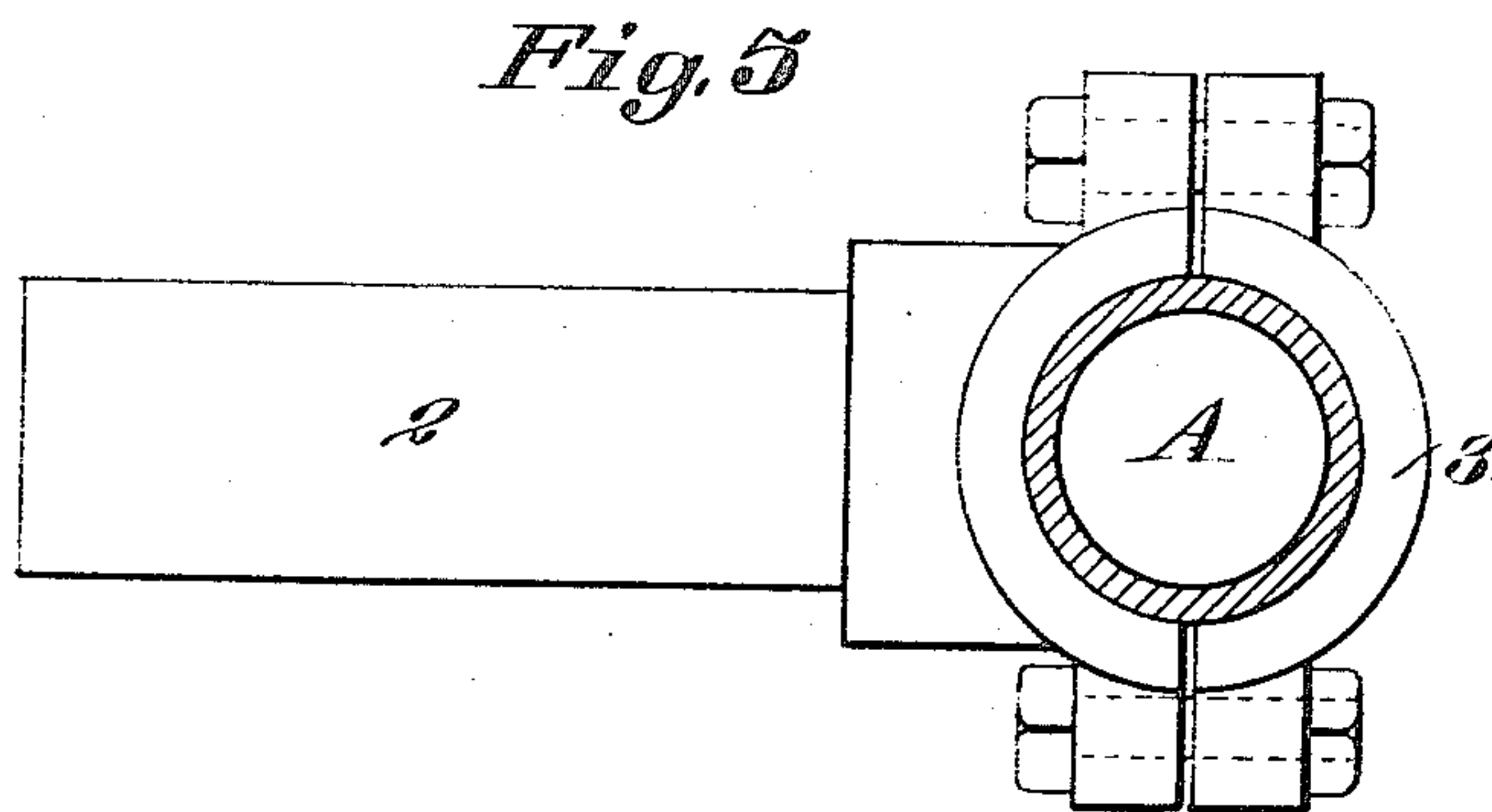
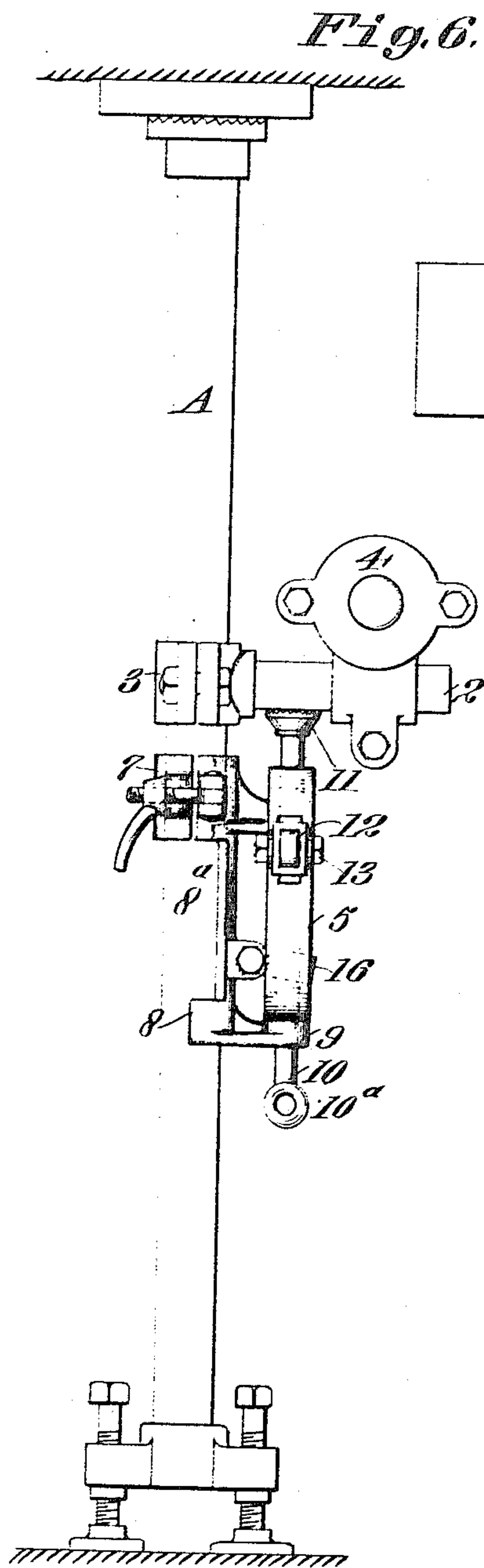
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ABERHAM L. BOLSON, OF MASON, NEVADA.

ADJUSTING DEVICE FOR ROCK-DRILLS.

1,155,034.

Specification of Letters Patent.

Patented Sept. 28, 1915.

Application filed July 20, 1914. Serial No. 851,914.

To all whom it may concern:

Be it known that I, ABERHAM L. BOLSON, a citizen of the United States, residing at Mason, in the county of Lyon and State of Nevada, have invented new and useful Improvements in Adjusting Devices for Rock-Drills, of which the following is a specification.

My invention relates to improvements in supporting attachments for rock drills, especially of that class in which the drilling mechanism is actuated by a compressed elastic fluid.

It consists in a device or carriage guided and movable upon the supporting column and adapted to raise or lower the arm upon which the drill is carried, and to adjust it to any desired relative position. It is designed for use in shafts or tunnels, where the operating space is exceedingly limited, to enable a single operator to raise, lower and adjust the heavy drilling apparatus without the necessity of employing several men.

The invention also comprises details of construction which will be more fully explained by reference to the accompanying drawings in which—

Figure 1 is a front elevation of the jack. Fig. 2 is a side elevation of same. Fig. 3 is a cross section on line 3—3 of Fig. 2. Fig. 4 is a cross section on line 4—4 of Fig. 2. Fig. 5 is a top view showing the pivot arm. Fig. 6 is an elevation of the device applied to a supporting column.

A represents the column which is adapted to be rigidly fixed in the shaft or tunnel in which the work is to be carried on by means of extending clamps in the usual manner.

2 is an arm having at one end a clamping device 3 by which it may be firmly clamped upon the column A at any point where it is desired to operate, and this arm carries a drilling mechanism, which is indicated at 4 and which may be adjusted and clamped upon the bar 2 so as to aline the drill properly with relation to the hole to be drilled.

In order to raise, lower and adjust the drill and its supporting arm, so that a single person can operate it, I have shown a carriage guided and slidable upon the column and having an independently adjustable support for the arm 2. This carriage consists of a bracket arm 5, preferably bent as shown, having one end, as 6, carried in a clamp which fits around the column A and may be secured thereto by a clamping bolt

and nut, as at 7. The lower end 6^a of this bracket arm 5 is turnable in a semicircular end 8 which fits against and is slidable upon the column at a considerable distance below the clamp 6, so that when the device is loosened it may be raised or lowered and guided upon the column, without binding when weighted to one side of its line of travel.

9 is a socket in line with a corresponding socket in the part 7, and through this socket a shaft or stem 10 is slidable. The upper end of this shaft is provided with a supporting head 11, upon which the bar 2 may rest and by which, when the clamp 3 of said bar has been released, the bar and the drill mechanism carried thereon may be raised or lowered with reference to the supporting bracket when the bar is supported upon the head 11.

In order to raise or lower the drill mechanism and its support, I have shown a device consisting of a lever 12 fulcrumed to the bracket arm 5, as shown at 13. The short inner end of this lever is connected by a link 14 with a clutch 15, which is slidable upon the shaft 10 when axially in line therewith, but which, when tilted, will bind upon the shaft and by the action of the lever will raise the shaft, head 11 and the parts carried thereby.

Below and pivoted to the portion 8^a, which is slidable upon the column, is another clutching device 16 which is so swiveled that, when the clutch 15 is operated to raise the shaft 10, it will allow the shaft to move freely through the clutching device 16, but when the lever 12 is moved so as to depress the clutch 15, the clutch 16 will bind and hold the shaft 10 while another movement of the lever takes place. It will be understood that any equivalent ratchet mechanism may be employed for this purpose; the object being to provide an adjustable bracket upon which a clutch or ratchet mechanism is carried and which is movable therewith so that the drill mechanism may be shifted to any point from the top to the bottom of the column and may also be turned thereon so that the drill can be directed to any point where it is desired to drill a hole. It will thus be seen that, when the clamp 7, which holds the bracket mechanism, is tightened to secure said mechanism firmly to the column, the shaft 10 may be raised into contact with the bar 2. The

clamp 3 being then released, the lever may be operated to either raise or lower the bar and its supported drill according to requirements.

5 The lower end of the bar 10 has formed upon it an eye or equivalent device 10^a to which a chain or rope may be attached. This will be operative when the bracket 5 is moved to the top of the column and the drill
10 is to be supported below the bracket. The chain may then be passed through the eye 10^a and around the shaft 2 when the operation of the parts will be affected in the same manner as above described.

15 A great advantage of a device of this sort is the ability to operate the heavy drilling mechanism by the aid of one man who can attend to all of the work and thus dispense with the additional cost of an extra man to
20 help raise or lower and adjust the mechanism.

In order to allow the lever to be turned to either side, the bracket arm 5, by reason of its swivel ends 6 and 6^a, may be readily
25 moved so that the lever may stand in any desired relation with the drill and column.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

30 1. In combination with a vertical support, a carriage vertically movable on said support, vertically adjustable means borne by the carriage and engageable beneath and with a mechanism adapted to be slidably
35 secured to the support and also locked thereto for raising or lowering the mechanism while the carriage remains stationary and means for actuating the first named means step by step and for automatically locking
40 same following each actuation.

2. In combination with a vertical support, a vertically adjustable carriage on the support, means to rigidly secure the car-

riage to the support, vertically adjustable means borne by the carriage and engage- 45 able with a mechanism adapted to be slidably secured to the support and also locked thereto to raise or lower the mechanism, and means associated with the carriage for raising or lowering said vertically adjust- 50 able means at spaced intervals of time and therewith the mechanism while the carriage remains stationary.

3. In combination with a vertical support, a carriage adjustable on the support 55 and having means to lock same rigid on the support, and means associated with the carriage and movable independently thereof and engageable with a mechanism adapted to be slidably secured to the support and 60 also locked thereto for periodically raising or lowering the mechanism while the carriage remains stationary.

4. In combination with a vertical support, a carriage slidable on the support, 65 means to lock the carriage to the support, and a raising and lowering device on the carriage engageable beneath a mechanism that is adapted to be slidably mounted on the support, said mechanism being capable 70 of being locked to the support whereby the mechanism upon release of its lock may be raised by said device then locked to the support, the device lowered, the carriage un- 75 locked and raised, relocked to the support and the device again raised to further elevate the mechanism upon further unlocking of the latter.

In testimony whereof I have hereunto set my hand in the presence of two subscribing 80 witnesses.

ABERHAM L. BOLSON.

Witnesses:

JOHN H. HERRING,
W. W. HEALEY.