

No. 693,413.

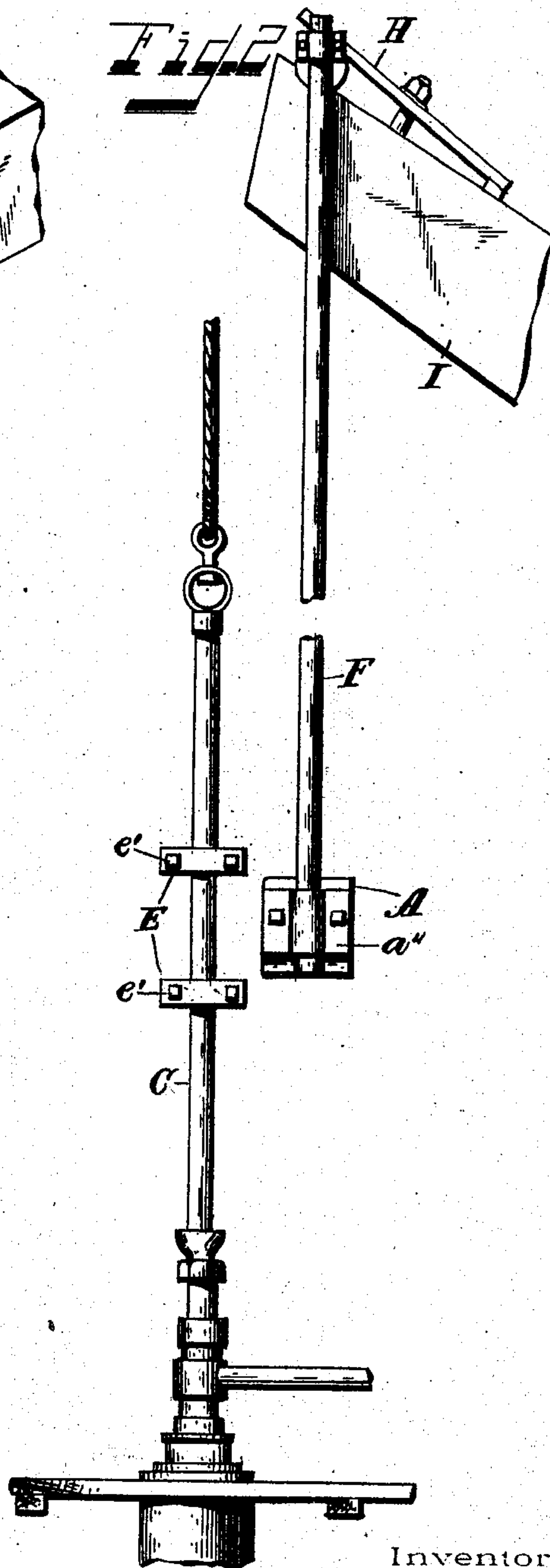
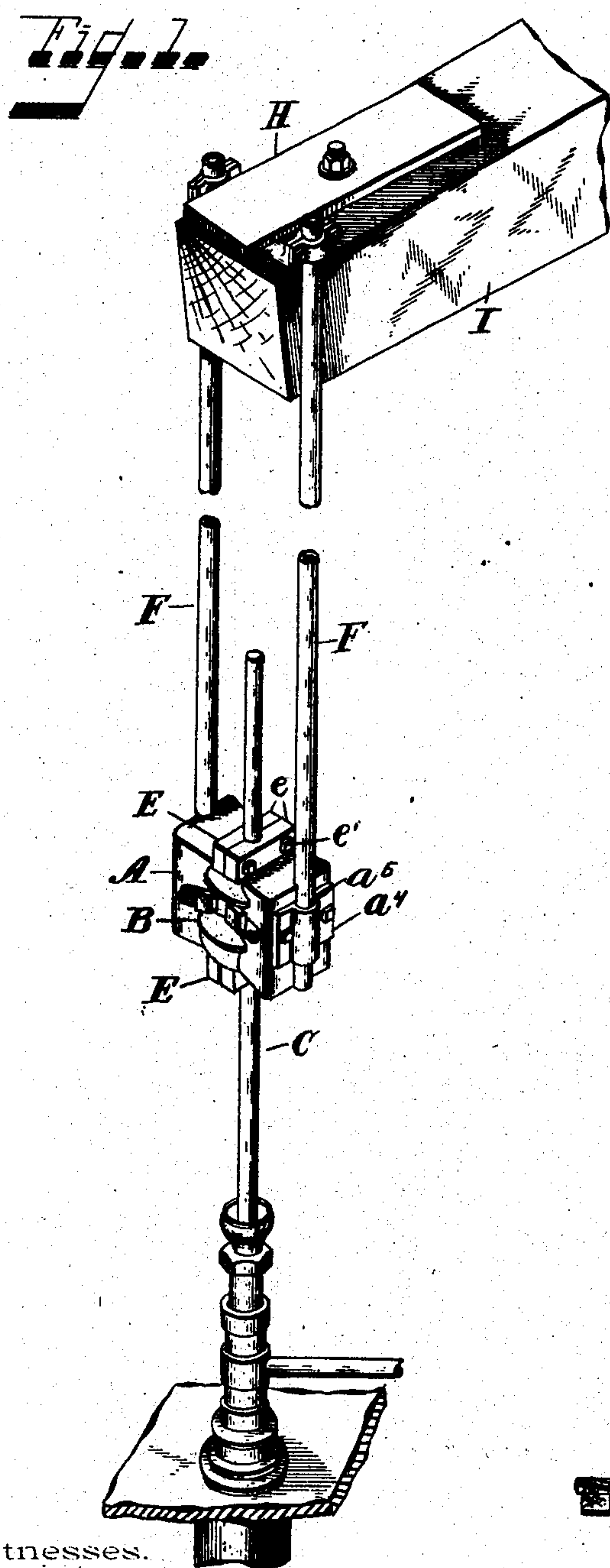
Patented Feb. 18, 1902.

C. F. LUFKIN.  
ADJUSTABLE GRIP.

(Application filed Dec. 14, 1896.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

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Richard S. Ryan.

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Chauncey F. Lufkin.  
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his Attorney.

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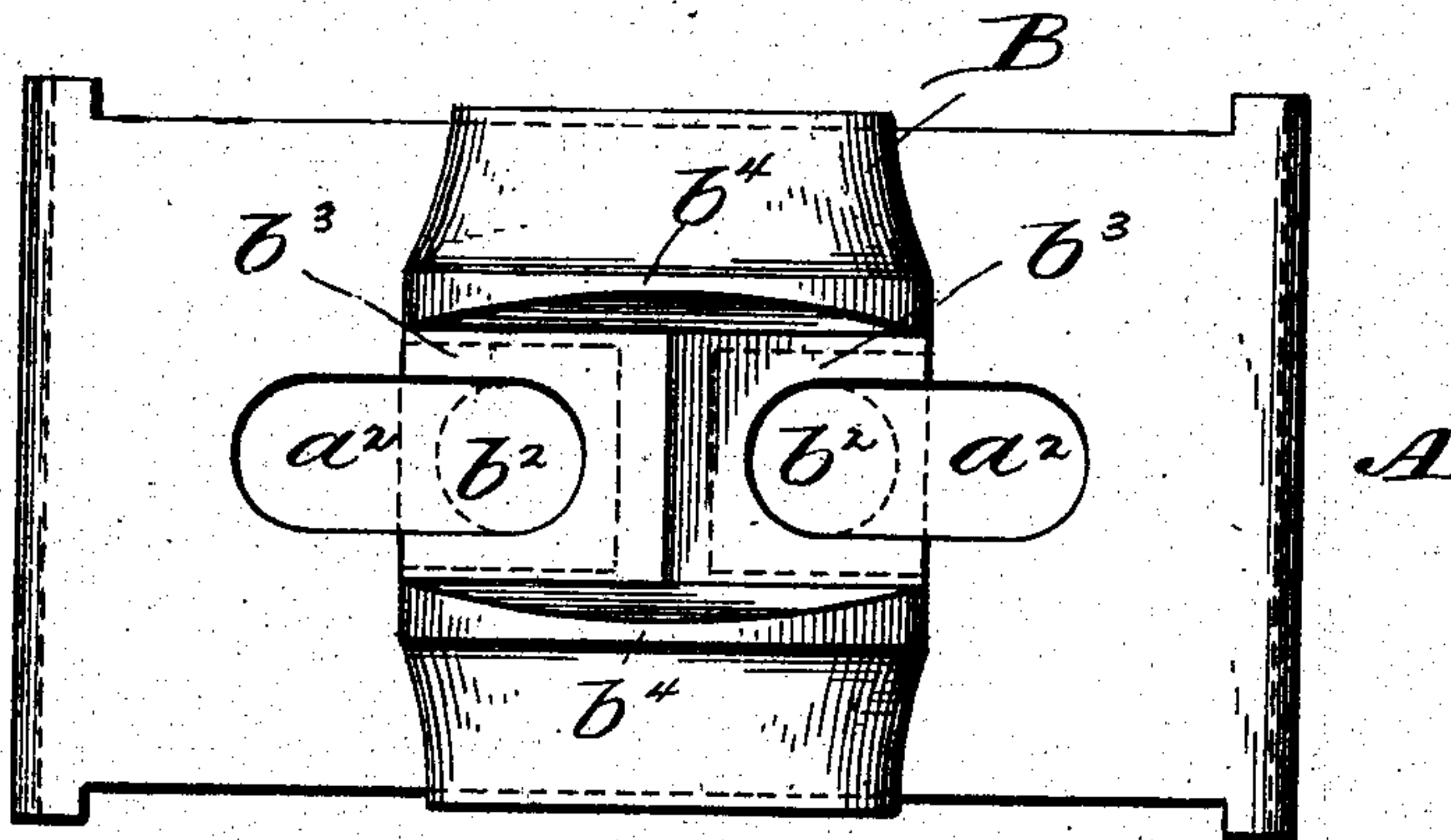
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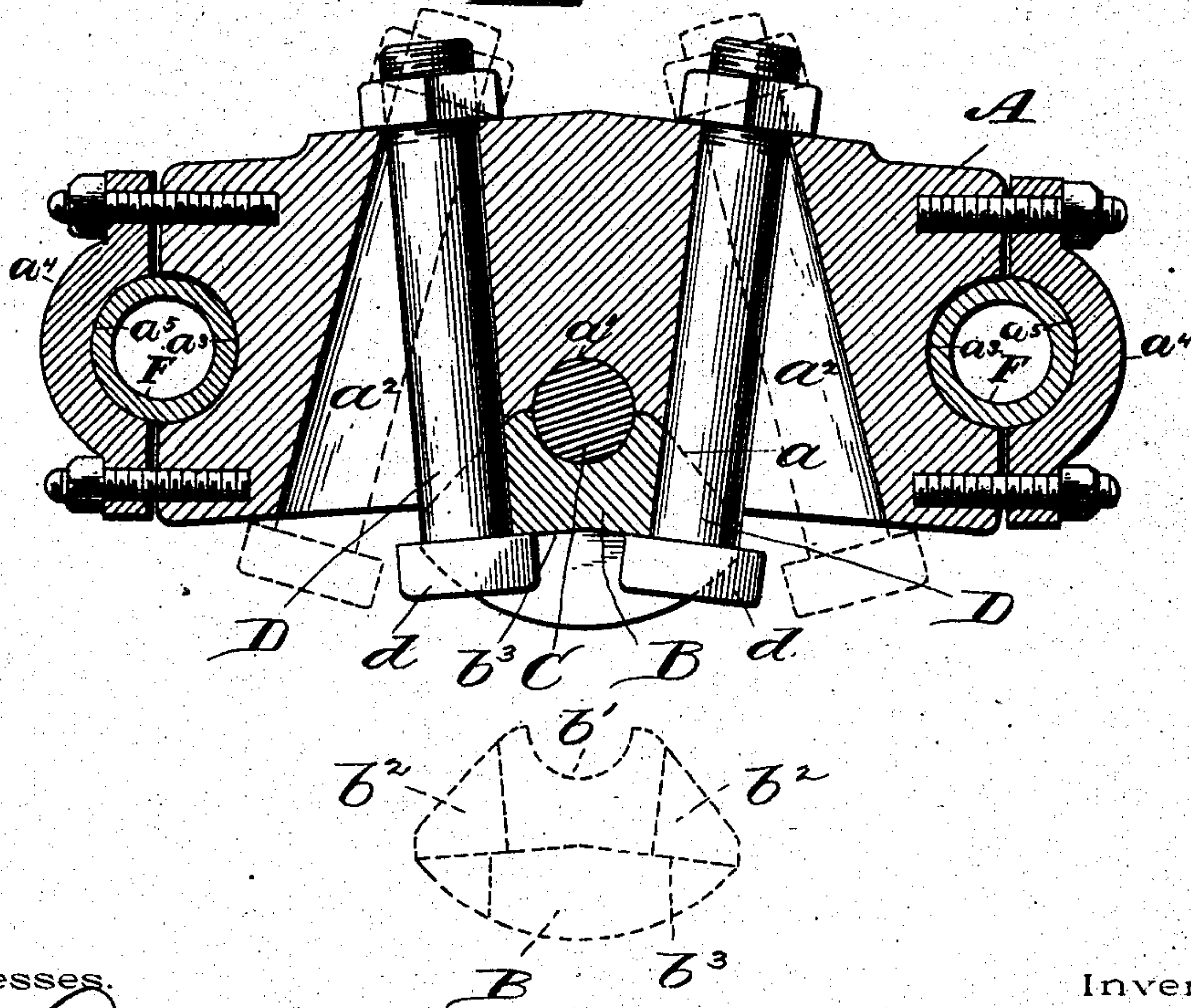
(No Model.)

**2 Sheets—Sheet 2.**

**Fig. 3.**



FF-4



Witnesses.

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# UNITED STATES PATENT OFFICE.

CHAUNCEY F. LUFKIN, OF LIMA, OHIO.

## ADJUSTABLE GRIP.

SPECIFICATION forming part of Letters Patent No. 693,413, dated February 18, 1902.

Application filed December 14, 1896. Serial No. 615,611. (No model.)

*To all whom it may concern:*

Be it known that I, CHAUNCEY F. LUFKIN, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have  
5 invented certain new and useful Improvements in Adjustable Grips, of which the following is a specification.

My invention relates to improvements in grips for adjusting the polish or sucker rods  
10 for wells.

It is frequently necessary to disconnect the walking-beam from the polish-rod of oil-wells or other wells for the purpose of adjusting the rod vertically to adapt it to the depth of  
15 the well, for the purpose of pulling out the rods to repair the valves, which are at a distance of from one thousand to three thousand feet below the surface, and for other purposes. A common but dangerous and inconvenient way of making such disconnection  
20 has been to climb up on the walking-beam, which is usually a distance of fifteen feet from the ground or derrick-floor, and disconnect the parts at that point. Then after the rods  
25 were withdrawn and replaced it was necessary to again ascend the walking-beam and connect it to the polish-rod.

The object of my invention is to provide a simple, effective, and durable device where-  
30 by the operator of an oil or other well may easily and quickly disconnect the polish or sucker rod from the walking-beam or connect it thereto while standing on the ground or derrick-floor without incurring the danger  
35 and inconvenience of climbing to the top of the walking-beam.

Another object of my invention is to provide supplemental grips to give additional gripping power, which is essential in very  
40 deep wells, and furnish at the same time a simple and effective means of permitting the polish-rod to be turned axially during the pumping operation for the purpose of removing the paraffin from the tubing, &c.

My invention consists in the novel features of construction and in the parts and combination of parts hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective  
50 view showing my improved grip in position upon the polish-rod of an oil-well, said grip being held between the lower ends of two con-

necting pipes or rods journaled to one end of a walking-beam and depending therefrom, the pipes being broken in two for lack of  
55 space on the sheet, said view showing also the casing-head of an oil-well and a portion of the derrick-floor. Fig. 2 is a view in end elevation of the main grip detached from the polish-rod (the supplemental grips only remaining thereon) and the walking-beam tilted  
60 upwardly to permit the fixed jaw of the main grip, the connecting-pipes, and end of the walking-beam to be swung to one side of the well to allow the polish-rod to be adjusted  
65 vertically or drawn out of the well by the derrick-rope, to which it is attached. Fig. 3 is an enlarged detail side view of my grip, showing the jaws in contact with each other and the enlarged ends of the holes in the station-  
70 ary jaw and side grooves in the movable jaw, into which the locking-bolts are adapted to take. Fig. 4 is a central sectional view of the two jaws locked together in position upon the polish-rod, showing also by dotted lines  
75 the position of the locking-bolts after the nuts thereon have been slightly loosened and the bolts thrown outwardly in the tapering holes free from engagement with the movable jaw  
80 to allow the latter to be detached, the dotted lines showing an end view of the same when detached.

My improved grip is composed of two jaws, the fixed jaw A being substantially rectangular in shape with a depression *a* and groove *a'*  
85 in one side to receive the polish-rod C and inner portion of movable jaw B. A horizontal tapering hole *a*<sup>2</sup>, with the larger end nearest to the depression *a*, is provided between each end and the center of the fixed jaw to receive  
90 the locking-bolts D, which are adapted to extend through the same and take into grooves *b*<sup>2</sup> in the sides of the movable jaw to hold the two jaws firmly gripped together upon the  
95 polish-rod, said holes being preferably made sufficiently wide at one end to permit the bolt-heads *d* when loosened to swing out of contact with the movable jaw and permit it  
100 to be removed and the polish-rod released from the grip for any desired purpose. While I prefer to have the holes tapering, they may be made the same width from end to end, any provision for adjusting the bolts laterally therein to bring them out of contact with the



movable jaw falling within the scope of my invention.

The fixed jaw A is preferably provided at each end with a depression  $a^3$  of any suitable shape to receive any desired form of depending connecting-pipe and is also provided with suitable means for clamping the pipe in said depression by which to hold the latter in position against the jaw. I prefer to secure the main jaw to the depending pipes or connections by means of caps  $a^4$ , each having a depression  $a^5$  corresponding with the depression  $a^3$  in the end of the jaw to fit said pipe, and said caps being securely fastened to the main jaw by stud-bolts, as shown, or otherwise, whereby said jaw is rigidly held between the lower ends of the two depending connecting-pipes. This means of fastening enables me to quickly and conveniently adjust the grip vertically to any desired elevation.

I preferably construct the movable jaw B in the shape of a sector, with the central portion of the arc cut away to form shoulders  $b^3$ , against which the under sides of the bolt-heads abut, the outer end portions of the arc being beveled, leaving two segmental walls  $b^4$ , which serve to strengthen the jaw and keep the bolt-heads from turning. The inner wedge-shaped edge of the movable jaw is cut away and a groove  $b'$  formed therein, into which the polish-rod partly takes. At each side of the movable jaw a groove  $b^2$  is formed to register with the tapering holes  $a^2$  in the fixed jaw when the two jaws are clamped together on the polish-rod and are adapted to receive the locking-bolts, which bind the parts securely together. The bolts employed may be of any suitable size and shape. The precise shape of the jaws is immaterial so long as they are adapted to grip the opposite sides of a polish-rod and be released therefrom by throwing the locking-bolts laterally in holes or grooves.

I have shown the fixed jaw suspended between two connecting-pipes F, depending from a journal mounted in a suitable bearing near the end of the walking-beam I, and held in place by a board H, clamped on top; but any other desired method of mounting at the top may be employed.

Directly above and below the main grip I preferably place supplemental grips E, each composed of two blocks  $e$ . Each of these blocks is provided with a side groove, into which the polish-rod is adapted to take. Each of these grips is secured to the polish-rod by bolts  $e'$ , which are inserted through the end of each block.

My gripping device is so constructed and connected that the polish-rod hangs between and substantially parallel with the two depending connecting pipes or rods, so that the power applied or imparted from one part to the other is in a direct vertical line and free from any lateral strain such as would have a tendency to disarrange or break the parts. It is quite essential that the polish-rod should

be perfectly smooth to secure perfect working through the packing of the stuffing-box. My method of securing both the main and supplemental grips causes the abutting surfaces of the respective jaws to grip the rod evenly at all points, and thus the danger of abrasion is overcome.

To connect the polish-rod to the walking-beam, place the two jaws of my grip over the rod, allowing the rod to rest in the vertical groove of each. Draw the locking-bolts inwardly toward each other until the bolt-heads take over the shoulders  $b^3$  of the movable jaw. Then raise or lower the polish-rod as may be necessary to bring the valves into proper working relation with each other. Then tighten the nuts upon the bolts, when the parts are securely gripped together. Then place one of the supplemental grips above the main grip and the other one below it and clamp them securely upon the polish-rod to serve as a gage in replacing the main grip between the supplemental grips after the former has been detached from the polish-rod for the purpose of repairing the valves or other portions of the pumping mechanism. To release the polish-rod from the walking-beam, loosen the locking-bolt nuts slightly and throw the bolts back into the recesses provided for them in the position indicated by the dotted lines in Fig. 4 and detach the movable jaw. Then tilt the walking-beam to the position shown in Fig. 2, when the fixed jaw will swing away from the polish-rod, leaving the supplemental grips in the position shown in Fig. 2. The polish-rod may then be withdrawn from the well by means of a rope, which goes over the derrick-pulley in the top of the derrick, usually about seventy feet high, or adjusted vertically, as desired. When the main grip is detached, the fixed jaw, locking-bolts, connecting-pipes, and journal are all left in place ready for reconnecting the polish-rod after it is put back into the well without the necessity of going upon the top of the walking-beam or again determining the proper position of the valves. To turn the polish-rod while the pump is in operation, slightly loosen the nuts on the locking-bolts until the jaws are released from the polish-rod. The upper and lower supplemental grips will continue to bear against the main grip and move the pumping mechanism up and down. At the same time the polish-rod is free to be turned axially.

I claim—

1. The combination of a walking-beam, journal, rods depending from said journal and adjustably connected to a grip, and said grip consisting of a fixed jaw provided with a tapering hole upon each side of the rod to be gripped and a movable jaw provided with corresponding side grooves, and bolts seated in said tapering holes and side grooves for securing said jaws together to grip and hold a polish-rod, substantially as set forth.

2. In an adjustable grip for polish-rods, a



fixed jaw having a depression and groove in one side to receive the movable jaw and polish-rod, respectively, and having a tapering hole extending through said jaw on each side of said polish-rod and at right angles thereto, and a movable jaw having a groove to receive the polish-rod, and having a groove upon each side of said movable jaw, bolts adapted to take into said tapering holes and side grooves, and nuts upon said bolts, a polish-rod and walking-beam and means to connect and secure said grip and walking-beam together, substantially as set forth.

3. The combination of a walking-beam, a journal mounted on the outer end thereof, depending rods, adjustably secured to each end of said journal, adjustable gripping mechanism secured to and supported by said rods, said gripping mechanism consisting of a main jaw provided with tapering holes, and a movable jaw provided with side grooves, and bolts and nuts for securing said jaws together to grip and hold a smooth polish-rod, and to disconnect the same therefrom when desired, substantially as and for the purpose set forth.

4. In an adjustable grip for polish-rods, a fixed jaw having a vertical groove in each end, a cap for each end, each cap being provided with a groove upon its inner surface and adapted to register with the vertical groove upon the end of the fixed jaw, bolts upon each side of said vertical grooves for securing said fixed jaw and caps together to grip holding-pipes, said holding-pipes, a movable jaw and

means for securing said jaws together to grip a polish-rod, substantially as set forth.

5. The combination of a walking-beam, journal, connecting pipes or rods depending therefrom, an adjustable grip consisting of a fixed jaw provided with tapering or elongated holes and a movable jaw provided with side grooves and means for securing said jaws together to grip a polish-rod, and supplemental grips consisting of blocks secured together by bolts taking through them, said supplemental grips being immediately above and below said main grip, substantially as set forth.

6. The combination in an adjustable grip for polish-rods, of a fixed jaw and a movable jaw adapted to be secured together upon a polish-rod to grip the same or be released therefrom by locking-bolts adapted to take over said jaws and through side grooves in one jaw and tapering or elongated holes in the other jaw at each side of the polish-rod whereby a more uniform and powerful grip is obtained, substantially as set forth.

7. The combination of a walking-beam, journal, pipes connected thereto, means consisting of a cap and bolts for adjustably securing each pipe to the respective ends of the fixed jaw of the grip by frictional engagement, said fixed jaw, a movable jaw, and means for securing said jaws together to grip a polish-rod, substantially as set forth.

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Witnesses:

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