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PATENTED NOV. 19, 1907.

H. McBRIER & J. McGARVEY.

ADJUSTABLE GRIP FOR SURFACE PUMP RODS FOR OIL WELLS.

APPLICATION FILED OCT. 20, 1905.

2 SHEETS—SHEET 1.

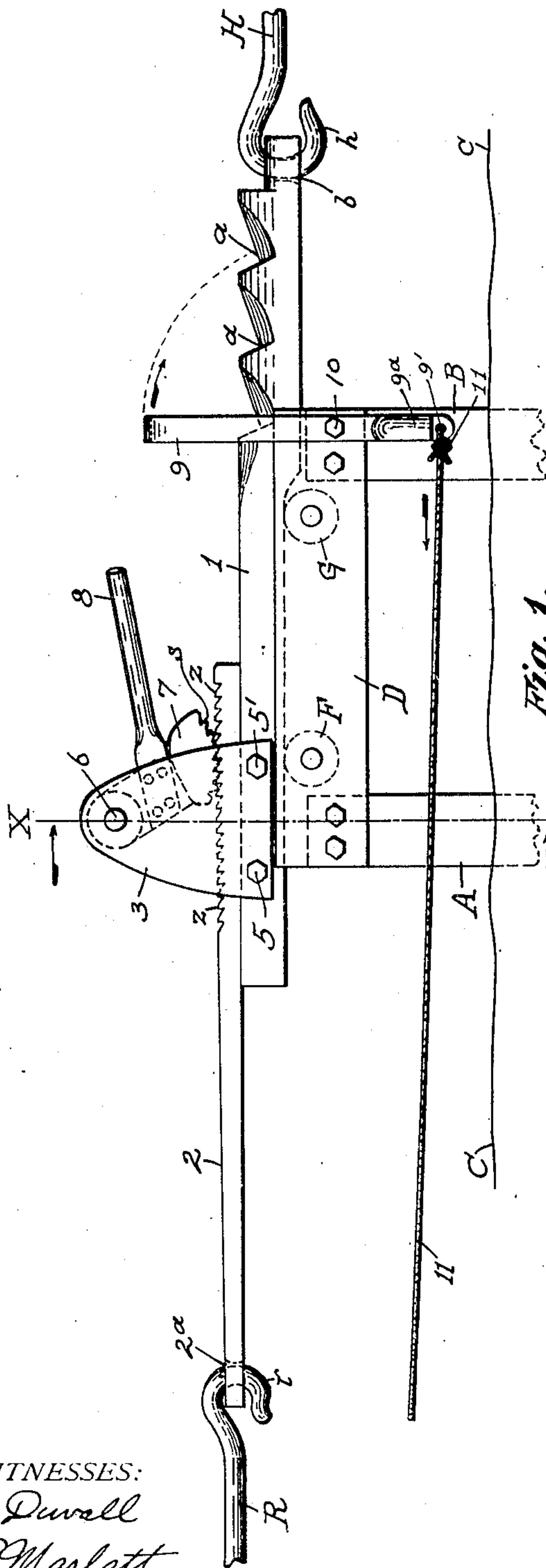


Fig. 1.

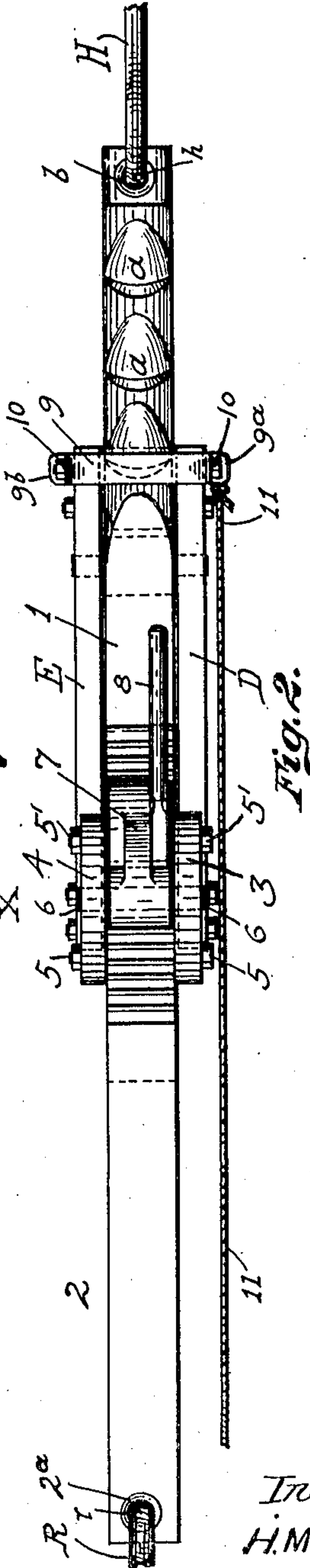


Fig. 2.

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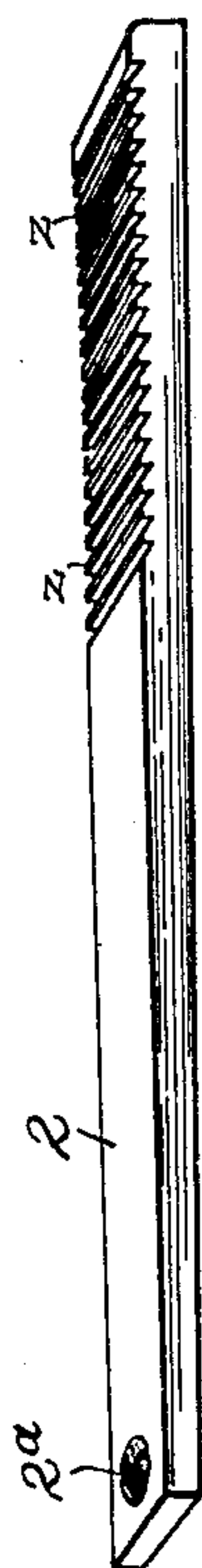


Fig. 3.

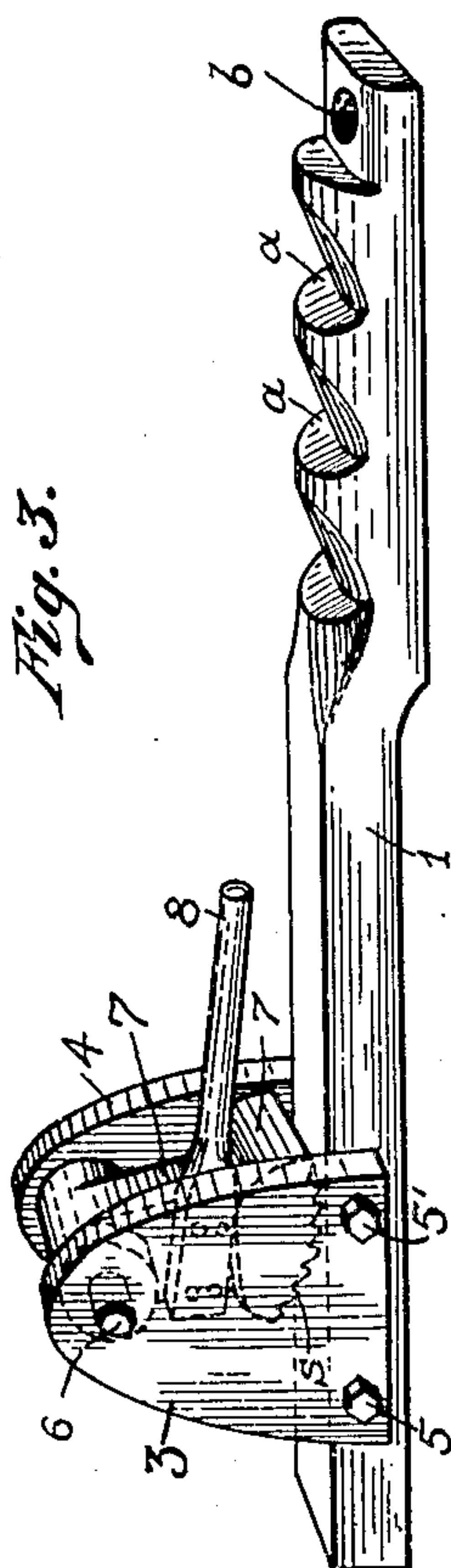


Fig. 4.

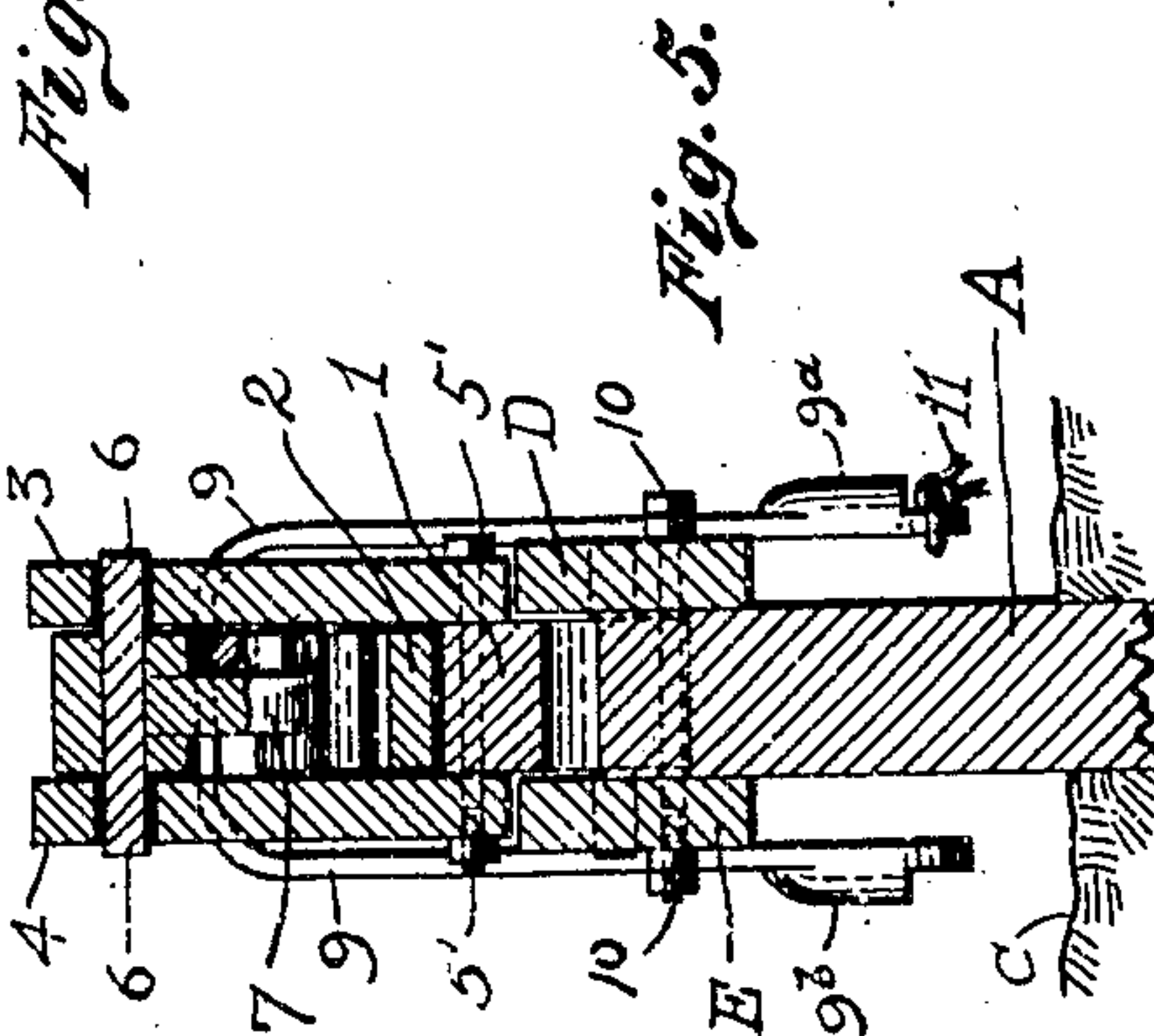


Fig. 5.

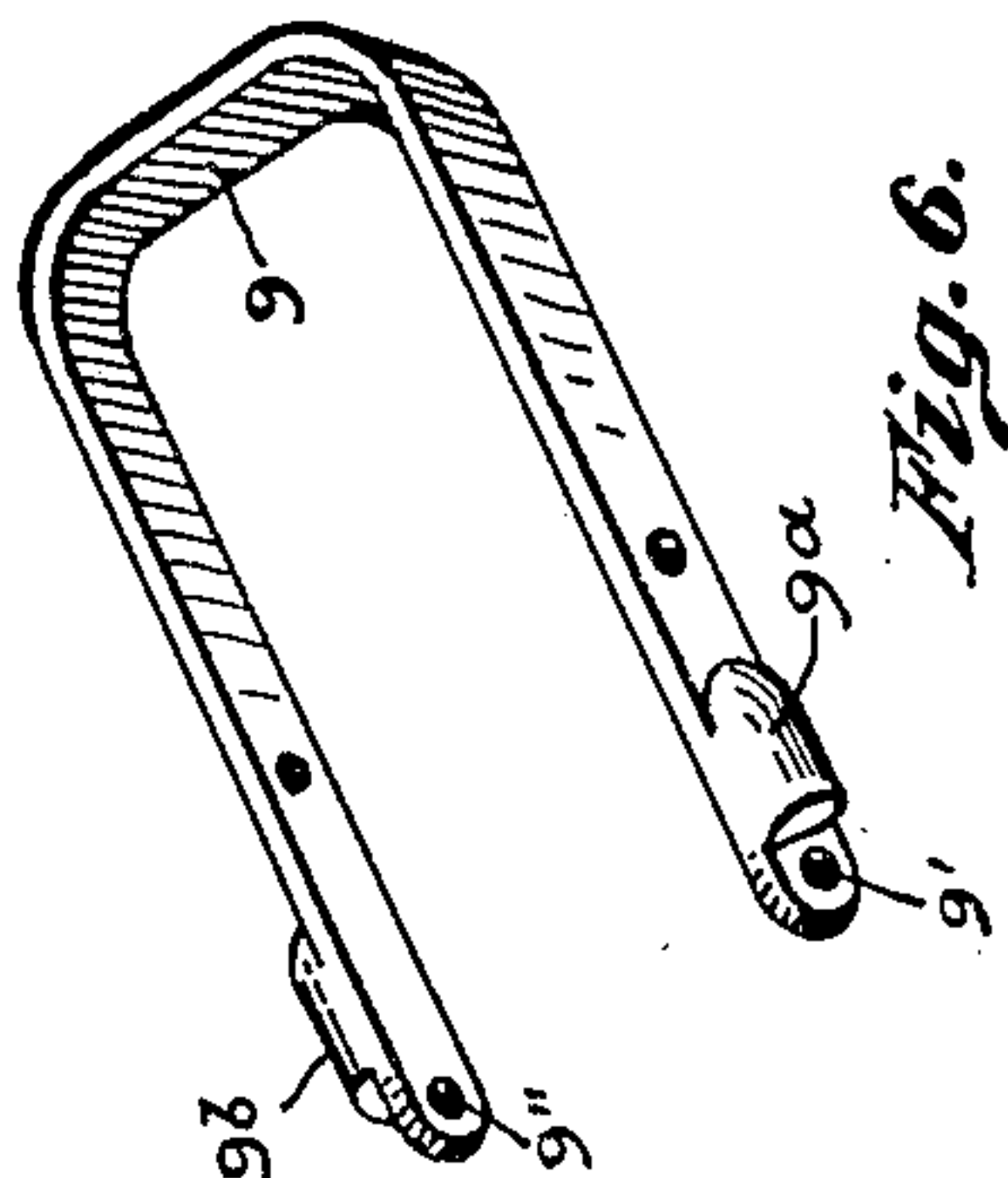


Fig. 6.

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HARRY MCBRIER AND JOHN MCGARVEY, OF ROLL, INDIANA.

ADJUSTABLE GRIP FOR SURFACE PUMP-RODS FOR OIL-WELLS.

No. 871,765.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed October 20, 1905. Serial No. 283,700.

To all whom it may concern:

Be it known that we, HARRY MCBRIER and JOHN MCGARVEY, citizens of the United States, and residents of Roll, in the county of Blackford and State of Indiana, have invented certain new and useful Improvements in an Adjustable Grip for Surface Pump-Rods for Oil-Wells; and we declare that the following is a full, clear, and comprehensive description of our invention, such as will enable others skilled in the art to which this invention appertains to make and use the same when taken in connection with the accompanying drawings, forming a part thereof, and in which the invention is illustrated by two sheets of drawings.

Our invention relates to a new construction to assist in the operating and pumping of oil wells or the like, which we denominate an "adjustable grip, for surface pump-rods, for oil wells", whereby many advantages are obtained, as will hereinafter appear in this specification.

The object of our invention, broadly speaking, is the provision of a mechanism of the class stated in which a maximum of mechanical efficiency will be developed with a minimum of mechanical parts, and which will be easily operated and controlled, and providing a new article of manufacture.

Further generic objects are, to provide a device of the character stated which will be strong and durable in construction, neat and attractive in appearance, capable of a wide scope of usefulness and efficiency, simple in character, compact in form and construction, and which can be manufactured and sold at a comparatively low price.

Our invention is shown most clearly in the accompanying drawings, in which—

Figure 1 is a side elevation of our entire invention; Fig. 2 is a top plan view of our entire invention; Fig. 3 is a detail isometrical view of the active member of the grip mechanism; Fig. 4 is a perspective view of the passive or engaging member of the grip mechanism; Fig. 5 is a vertical cross section of the invention, as taken on the line X—X of Fig. 1; and Fig. 6 is a detail isometrical view of the retaining clip.

Similar indices refer to and denote like parts throughout the several views of the drawings.

In order that our invention may be more

fully understood and its advantages and operations appreciated we will now take up a detail exposition thereof which we will set forth as briefly and compactly as we may.

Our invention is supported, horizontally, by a permanent stand consisting of, for instance, a pair of vertical posts A and B secured vertically in the ground, the line C denoting the ground line. Secured on the sides of, and connecting the upper ends of said posts, are the side members D and E bolted thereto as shown. Extending across between the members D and E, near the respective posts A and B, and pivotally mounted on suitable axles, are the rollers F and G which are indicated most clearly by dotted lines in Fig. 1.

The numeral 1 designates the passive member of the invention whose width is slightly less than the space between the members D and E between which its lower edge operates resting on the rollers F and G as shown.

In the upper surface of the member 1, and on the forward portion thereof, are formed a plurality of notches, as the notches *a* and *a'*; and through the extreme forward end of the member 1 is formed an eye *b* to receive the hook *h* formed on the end of the line-rod H, which rod extends to the well, connected thereto in any well known manner.

The numeral 2 denotes the active member of the invention, in the rear end of which is formed an eye *2^a* in which may be engaged the hook *r* as shown. Said member 2 is formed flat and of substantially the same width as the member 1, and across the upper forward portion of said member 2 is formed a plurality of small notches, as denoted by the letter Z.

Secured on the sides of the member 1, near the rear end of the latter, are the two hangers 3 and 4, right and left respectively, which are secured to the member 1 by the bolts 5 and 5'. The lower edges of the hangers 3 and 4 should be located high enough to clear the upper edges of the side members D and E as shown.

Extending across between the hangers 3 and 4, near their upper ends, is the shaft 6 on which is pivoted the upper extremity of the grip-cam 7 which is adapted to swing between the hangers 3 and 4 with its lower extremity formed in a segment and with teeth

s formed across its face of same size as the notches *z* with which they are adapted to engage. On the side of the cam 7, and extending outward therefrom, is the cam-lever 8 by which the cam may be operated.

The numeral 9 denotes a U-shaped link pivoted below its center by the bolt 10 and which extends over and contacts with the sides of the members D and E as shown. Said link has eyes 9' and 9'' formed in each of its ends into one of which a cord 11 may be attached, and integral with the end portions of the link 9 are the weights 9^a and 9^b whereby the said link is normally retained in a vertical position as shown in the drawings.

Operation: It is the common practice in oil fields for a number of wells, located at as many different places and at great distances apart, to be operated from a single power station, each pump being connected to the power mechanism by its own separate connection. Such connection is given a direct pull or impulse in one direction toward the power station by the power mechanism, and the weight of the pump elements, or equivalent means at the pump, is depended upon to positively draw the said connection in the other direction, or toward the pump. This invention contemplates that the members R and 2 shall be connected with the power mechanism and the members H and 1 with the pump elements, and that the mechanism constituting the invention shall be located at any desired or convenient point between the power and the pump. The cord 11 is of considerable length and leads to any desired point, as, for instance, the power station. Assuming that each pump connection is equipped with our improved device, in order to stop the operation of any pump, or throw it out of commission, and this without stopping the engine or interrupting the operation of any other pump, all that is necessary is for the engineer, or any other person, to draw upon the cord 11, causing the link 9 to be swung down into engagement with a tooth *a* of the member 1, the link at such time preventing the pump elements from descending. If this operation of the link be effected at the end of a draft upon the pump connections, there will be no further operation of the pump, the return or descending movement thereof being prevented by the link as aforesaid. If, however, the link be thrown down, while the connections are in any other position than that nearest the power station, the link though down will not prevent a succeeding stroke or pull of the power mechanism from making or completing such stroke, *i. e.*, toward the left in Fig. 1 of the drawings, and then by virtue of the link 9 and cord 11 the said pump connections will be held by said link and the pump will be thus held out of commission. While the pump and connected elements are thus held in inoperative

position, the power mechanism, though continuing to operate, will not affect in any way the devices constituting our invention, by reason of the distance therebetween and the lost motion incident to the several joints in the rod R. As above pointed out, the power mechanism has no tendency to push the member 2 and associated devices toward the pump, and the connections intermediate said member 2 and the power station have merely an alternate tight and loose condition corresponding to the positive and negative movements, respectively, of the power devices.

It will thus be seen that we have provided a simple and efficient means whereby any pump operated from a single station may be readily thrown out of commission from such station. The cord 11 pertinent to such pump may be held or snubbed in any suitable manner to retain the link 9 in operative contact with the notches of member 1, and when so held the pump will remain out of operation. Upon release of the cord, however, the link, due to the counterweights on the lower ends thereof, the form of the notches *a*, the location of the pivot 10 below the plane of the rollers, and the weight of the pump elements, will become released therefrom permitting the pump to resume its operation.

While the member 1 and the pump elements are being held in the manner hereinbefore set forth, and it is desired to change the relative positions of the members 2 and 1 in order to vary the effective length of the entire connection between the power plant and the pump, it is only necessary for the attendant to throw out the grip cam 7, move the member 2 in the direction desired, and then reset the said grip cam where it will remain until such time as it may be found necessary or advisable to again adjust the length of the connection. It will thus be appreciated that our improved mechanism is of marked utility during the operation of such adjustment by reason of the fact that without some such device to maintain the pump elements elevated and the connection H taut, the weight thereof being excessive for obvious reasons, a number of men would be required to manipulate the several parts, whereas with our device it is only required to manually operate the parts 2 and R, the weight whereof is comparatively small.

Our invention herein described although embodying several parts is simple and durable in construction and operation and accurate in the accomplishment of its objects, and while we have illustrated and described the best means now known to us for carrying out our invention in a practical manner, we desire to have it distinctly understood that we do not restrict ourselves to the exact details of construction shown and described, but hold that any changes or variations

therein as would suggest themselves to the ordinary mechanic would clearly fall within the limits and scope of our invention.

After clearly setting forth our invention and its operation what we claim and desire to secure by Letters Patent of the United States is—

1. The combination of a pump rod, a power rod, connecting means for said rods intermediate the pump and the power station, and means associated with said connecting means whereby the same may be held stationary at will to stop the operation of the pump or released to automatically restore the operation of the pump.

2. The combination of a line rod for an oil well pump, a power line rod, connecting devices therefor intermediate the pump and the power station, means associated with said connecting devices for stopping the operation thereof and the pump, and means connected with the aforesaid means whereby to operate the same from the power station.

3. In oil well surface rod connecting mechanism, the combination of a stationary support, rod members movably mounted thereon and one of said members being notched, a retaining member pivoted upon said support and provided with means to maintain it normally out of engagement with said notched member, and means connected with said pivoted member and operable from a distance whereby the same may be swung into engagement with and hold

said notched member from reciprocation at will.

4. The combination of a stationary support, antifriction devices mounted thereon, surface rod members supported for reciprocation on said anti-friction devices, and one of said members being notched, a cam grip whereby said members may be adjustably connected, a link pivoted to said support below the plane of the rollers, and means connected with said pivoted link whereby the link may be swung into and held in engagement with the aforesaid notched member to prevent the operation thereof at will.

5. In a pump rod mechanism, the combination of cooperating members, means for rigidly connecting said members for actuation of the pumping mechanism, means arranged for cooperation with one of said members and thereby holding both of said members stationary for preventing operation of the said pumping mechanism, and means normally holding the last mentioned means out of cooperation with the members controlled thereby.

In testimony whereof we have hereunto signed our names in the presence of two subscribing witnesses.

HARRY McBRIER.
JOHN McGARVEY.

Witnesses:

O. E. TEMPLETON,
JONAS A. PALMER.