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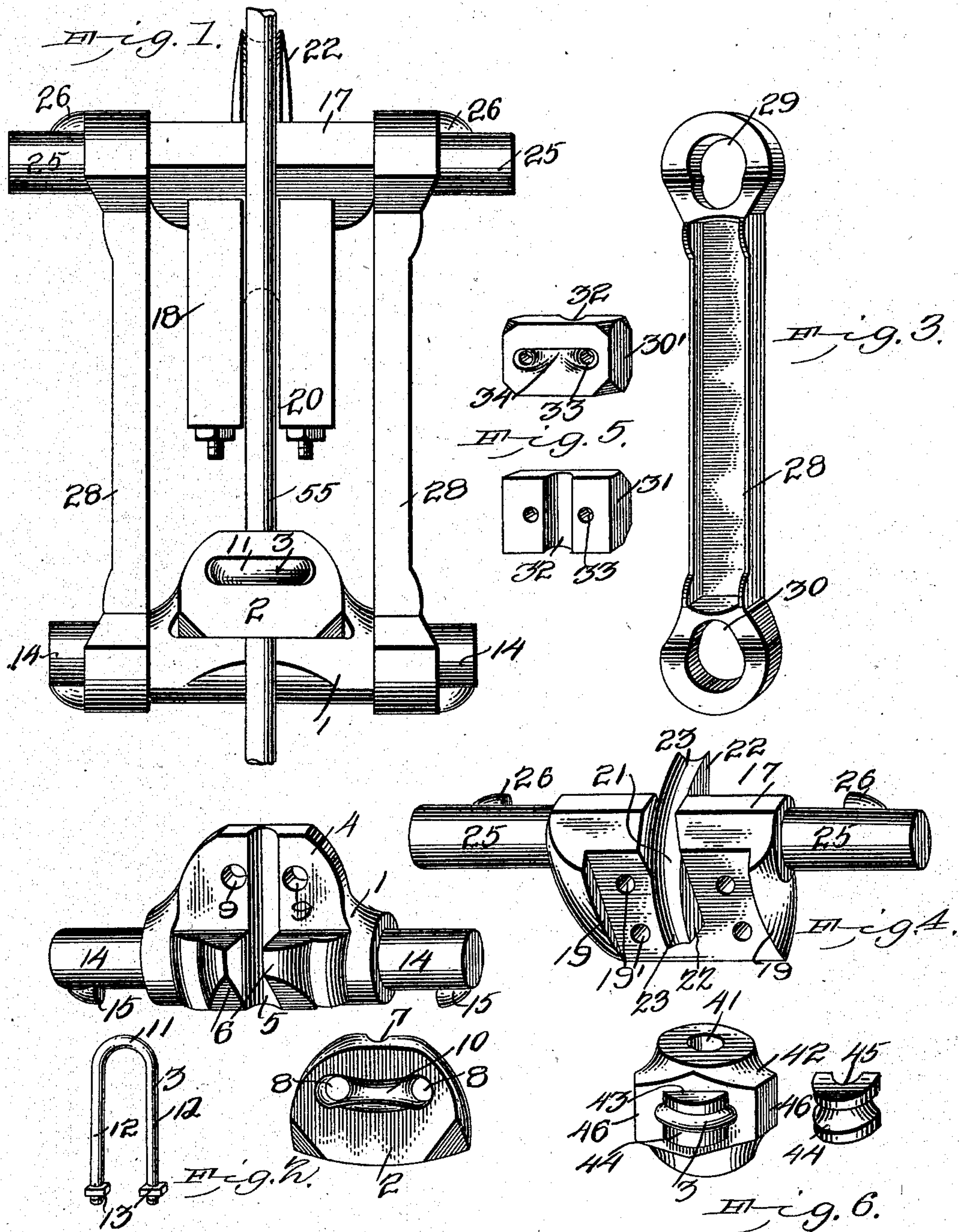
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APPLICATION FILED AUG. 27, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
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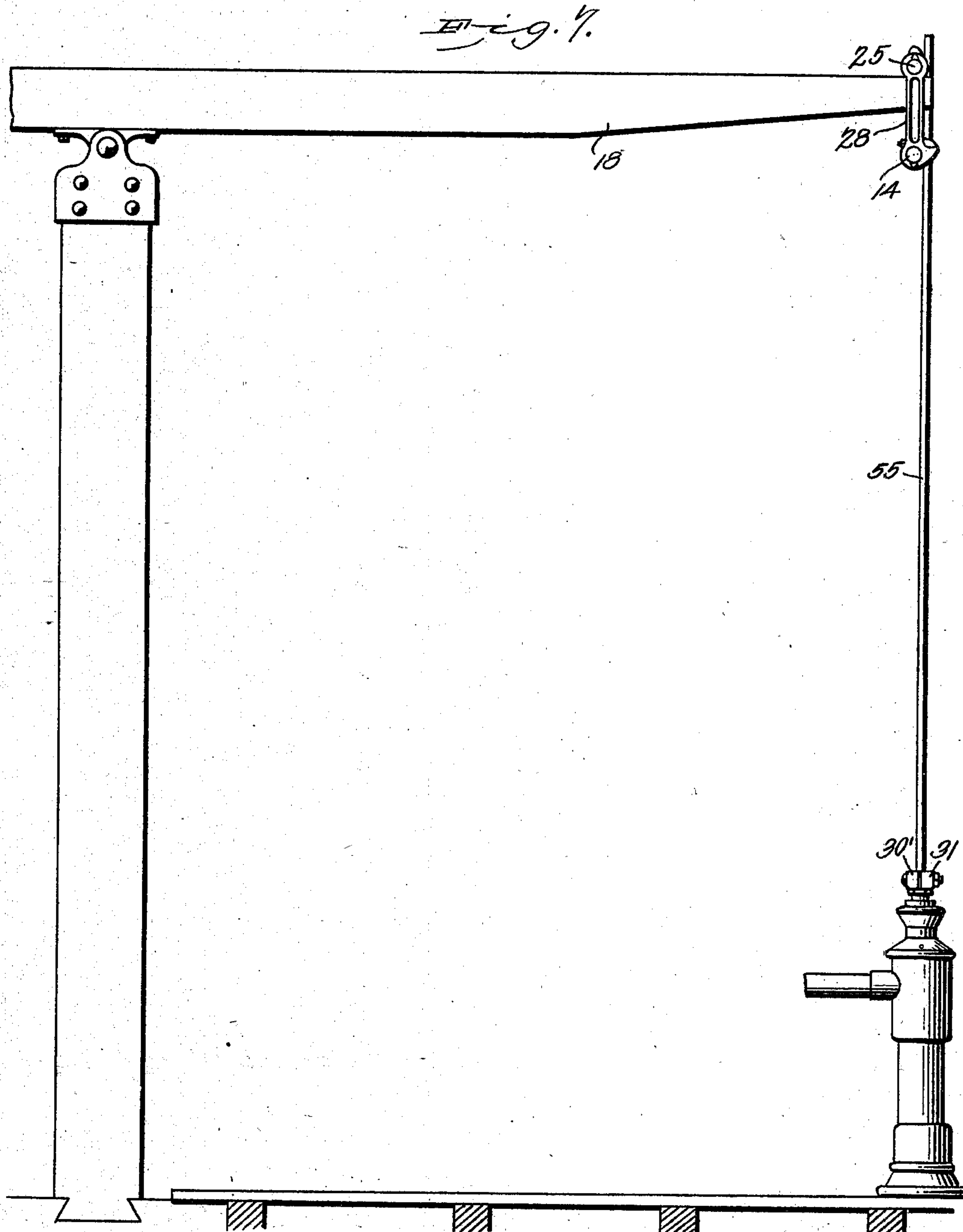
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UNITED STATES PATENT OFFICE.

JAMES WILLIAM RHOADES, OF FOSTORIA, OHIO.

GRIPPING ATTACHMENT FOR OIL-WELL PUMP-RODS.

SPECIFICATION forming part of Letters Patent No. 723,026, dated March 17, 1903.

Application filed August 27, 1902. Serial No. 121,253. (No model.)

To all whom it may concern:

Be it known that I, JAMES WILLIAM RHOADES, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented a new and useful Gripping Attachment for Oil-Well Pump-Rods, of which the following is a specification.

This invention relates to gripping attachments for oil-well pump-rods, usually known as "polish-rods," whereby the said polish or pump rod shall be held secure at any desired elevation and in such a manner that it may be readily detached and readjusted whenever it shall be found necessary or desirable to do so, the object of the invention being to provide a device of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation showing the front end of a walking-beam from which the polish-rod is suspended by means of the improved gripping device. Fig. 2 is a perspective view illustrating the main parts of the gripping device separated from each other. Fig. 3 is a perspective view of one of the suspension-links. Fig. 4 is a perspective view showing the saddle detached from the walking-beam. Figs. 5 and 6 are detail views illustrating different forms of an auxiliary device used in connection with this invention. Fig. 7 is a side elevation showing the invention in its entirety as applied in connection with a pump, walking-beam, and related parts.

Corresponding parts in the several figures are indicated by like characters of reference.

My improved gripping device embodies the three principal members shown in Fig. 2 of the drawings, the said members being, respectively, the cross-bar 1, the grip-block 2, and the U-shaped link or bolt 3. The cross-bar may be provided with a central enlargement 4, having a vertically-disposed approximately semicircular groove or cavity 5 and provided on its front side adjacent to said groove with shoulders or abutments 6. The

grip-block 2 is provided in its rear side with an approximately semicircular vertically-disposed groove or cavity 7, adjacent to which are the bolt-holes 8 8, registering with corresponding bolt-holes 9 9 in the central enlargement 4 of the cross-bar. The grip-block 2 is provided in its front side with a concavity or recess 10, adapted to receive and accommodate the bent portion of the U-shaped link 11, the arms of which, 12 12, when extended through the alining perforations 8 8 and 9 9 and provided with nuts 13, will serve to connect the cross-bar and the grip-block very securely together. When thus connected, the grip-block 2 is supported upon the shoulders or abutments 6 of the cross-bar, and excessive strain upon the U-shaped connecting-bolt is thereby avoided. The cross-bar 1 is extended at its ends, so as to form trunnions 14, provided at their ends with downwardly-extending lugs 15, the object of which will presently appear.

16 designates the part of my device which I designate the "saddle" and which serves to support my improved grip attachment in its proper position with relation to the walking-beam. The said saddle is composed of a solid central block 17, adapted to rest upon the front end of the walking-beam 18 and provided with flanges 19, adjacent to the edges of the walking-beam, so as to prevent lateral displacement of the latter. The saddle is preferably secured to the walking-beam by means of bolts extending through vertical perforations 19' in the saddle and through corresponding perforations in the walking-beam. The latter is provided at its front end with a vertical slot or recess 20 to accommodate the polish-rod, as will be presently described. The central portion 17 of the saddle is provided in its front side with a vertical concavity or recess 21 for the reception of the polish-rod 55. The central portion of the saddle likewise has on its upper and under sides rearwardly-extending lugs 22, the front sides of which are rearwardly curved and likewise concaved upon their front sides, as shown at 23, so as to form guides and supports for the polish-rod when the pump is in operation. The saddle is provided with trunnions 25, having upwardly-extending lugs 26. When in operative position, the cross-bar 1

is suspended from the saddle by means of a pair of links 28 28, the ends of which are provided with perforations 29, adapted to engage the trunnions of the said saddle and cross-bar.

5 The perforations 29 are provided with oppositely-extending recesses 30, extending inwardly in the direction of each other and of sufficient size to admit of the passage of the lugs 15 and 26 of the cross-bar and saddle, respectively. It will be seen, however, that in order to assemble the parts as soon as the saddle is in position upon the walking-beam it becomes necessary to reverse the position of the links in order to enable them to be engaged

15 with the trunnions of the saddle. When past the lugs 26, the links are permitted to drop to the position shown in Fig. 1, when the said lugs will prevent the displacement of the links from the trunnions of the saddle. When

20 next it is desired to connect the cross-bar 1 with the lower ends of the links, this may only be accomplished by first reversing the position of the cross-bar, turning its under side having the lugs uppermost, when by slightly

25 spreading the lower ends of the links (sufficient play being allowed for the purpose) the ends or trunnions of the cross-bar 1 may be inserted through the openings at the lower ends of the links. The cross-bar 1 is then

30 once more reversed to its operative position, as shown in Fig. 1 of the drawings, when the lugs upon the ends of the trunnions will prevent their being disengaged from the links.

When the parts of the device have thus far

35 been assembled, the polish-rod is placed in engagement with the concavities 5 and 21 in the cross-bar 1 and saddle 16, respectively. The grip-block 2 is then placed in engagement with the cross-bar 1, the cavity 1 of said

40 grip-block engaging the front side of the polish-rod. The U-shaped bolt is then inserted and the nuts therein tightened against the rear side of the cross-bar, thus causing the latter and the grip-block to take a firm grip

45 upon the polish-rod, which is thus positively and firmly secured against vertical movement. It should be observed that the concavities in the meeting faces of the grip-block and the cross-bar should be slightly less than semi-

50 circular, their radius being the same as that of the polish-rod. When thus constructed, a grip of absolute firmness upon the polish-rod will be had without the slightest possibility of injuring the said rod. When the polish-

55 rod has thus been adjusted, the operation of the device will be readily understood. As the front end of the walking-beam rises or falls it carries with it the saddle and the gripping device and polish-rod supported there-

60 by. The curvature of the concaved lugs upon the upper and under sides of the saddle enables the pump-rod to have a constant rest and support laterally with relation to the saddle at any point or elevation occupied by the

65 front end of the walking-beam when the latter works upon its fulcrum.

By the construction illustrated in Figs. 5

and 6 of the drawings the central upwardly-extended portion 4 of the cross-bar 1 may be dispensed with. In Fig. 5 I have shown two

70 blocks 30' and 31, provided at their meeting faces with concavities 32 for the accommodation of the polish-rod and both of them having transverse perforations 33 for the reception of the arms of the U-shaped connect-

75 ing-link 3. One of the blocks 30' is also provided in its front side with a concavity 34, connecting the bolt-holes and serving to accommodate the bent portion of the U-shaped

80 bolt, its construction being in all respects similar to that of the grip-block 2, all the distinguishing features of which it retains.

By the construction shown in Fig. 6 a block is shown having a vertical perforation 41 extending entirely through said block for the

85 passage of the polish-rod. The block 42 is provided in its front sides with a recess or opening 43, communicating with the central perforation 41 and adapted for the reception of a slidable block 44, the inner end of which

90 has a vertical concavity 45, adapted to engage the polish-rod and to be held securely in contact therewith by means of the U-shaped bolt 3, perforations for the passage of the

95 arms of which (indicated by 46) have been formed transversely through the block 42 adjacent to the sides of the sliding block 45. The outer side of the latter is curved and concaved, as shown at 48, to adapt it to receive

100 the bent portion of the U-shaped bolt. It is obvious that by tightening the nuts upon the arms of the latter the polish-rod will be held and retained in the desired position with a great degree of tenacity.

Either of the devices illustrated in Figs. 5

105 and 6 may be used advantageously in connection with the device illustrated in the remaining figures of the drawings when for any reason it shall be desired to disconnect the polish-rod from the cross-bar 1 without dislodging

110 or dislocating the said polish-rod vertically. Either of the clamping devices illustrated in Figs. 5 and 6 may then be clamped upon the polish-rod directly above the stuffing-box of the pump-head, and the grip-block may then

115 be detached from the latter without causing the displacement of the polish-rod, thus permitting the latter to be pulled from the well. If, on the other hand, it shall be desired to raise or lower the polish-rod, the clamping

120 devices illustrated in Figs. 5 and 6 will again come advantageously into play, inasmuch as they or either of them may be mounted upon the polish-rod at any desired point of adjustment, so as to prevent the said rod from

125 being displaced beyond a certain predetermined point.

Circumstances may arise under which it may be found desirable to modify the construction of the cross-bar 1 so that it shall

130 form nothing more than a support upon which either of the gripping devices illustrated specifically in Figs. 5 and 6 may be supported for the purpose of clamping the polish-rod,

the weight of which, with its related parts, is sufficient to insure its downward movement when the pump is in operation. It will thus be seen that I rely for the gripping and holding of the polish-rod upon the grip-block 2 (shown in Fig. 2 of the drawings) or upon its equivalents, (shown at 30' and 45 in Figs. 5 and 6, respectively, in connection with the U-shaped clamping member.) The nature, shape, and disposition of the back portion of the gripping device may be altered or modified to suit various conditions and circumstances.

I have in the foregoing endeavored to describe what I consider the preferred form of the invention; but those skilled in the art to which it appertains will readily understand that various changes and modifications of the details of the invention might be made without affecting the utility of the device or departing from the spirit and scope thereof. I therefore reserve to myself the right to all such structural changes as may be made without departing from the spirit and scope of my invention.

Having thus described the invention, I claim and desire to secure by Letters Patent of the United States—

1. In a device of the class described, a grip comprising a back member vertically grooved and transversely perforated and a grip-block vertically grooved to cooperate with the vertical groove of the back member to inclose the polish-rod and having in its front side a segmental groove curved in cross-section, in combination with a U-shaped bolt engaging the segmental groove in the front side of the grip-block and extending through the perforation of, and having nuts engaging the rear member of the grip.

2. In a device of the class described, a grip comprising a back member vertically grooved and transversely perforated and a grip-block having a vertical groove in its rear side cooperating with the vertical groove of the back member to inclose the polish-rod, said grip-block being provided in its front side with a horizontally-disposed segmental groove curved in cross-section and perforations ad-

jacent to the same, and a U-shaped connecting-bolt engaging the segmental groove in the grip-block, extending through the transverse perforations in the latter and in the back member and provided with fastening-nuts.

3. In a device of the class described, a cross-bar having in its front side a vertically-disposed groove and provided upon the lower part thereof with forwardly-projecting shoulders or abutments disposed adjacent to said groove and with laterally-extending trunnions, in combination with a grip-block provided in the rear face thereof with a vertical groove, said grip-block being mounted upon the shoulders or abutments of the cross-bar and provided in its front face with a horizontally-disposed segmental groove, curved in cross-section, and a U-shaped bolt connecting said grip-block and cross-bar and clamping said members upon a polish-rod.

4. A device of the class described comprising a saddle supported upon the walking-beam and having trunnions provided with upwardly-extending lugs, a cross-bar having trunnions provided with downwardly-extending lugs, connecting-links having openings to engage the trunnions of the saddle and the cross-bar and provided with recesses for the passage of the lugs in said trunnions, said recesses being reversely disposed to said lugs, and gripping means for supporting the polish-rod with relation to the cross-bar.

5. In a device of the class described, the herein-described saddle supported upon the walking-beam, said saddle being provided with downwardly-extending flanges to prevent lateral displacement, with an upwardly and rearwardly curved extension, and with an approximately semicircular groove extending vertically across the front side of the said saddle and curved extension.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES WILLIAM RHOADES.

Witnesses:

WM. F. BOLEY,
NELLIE C. BECKWITH.