(No Model.) 2 Sheets—Sheet 1.

G. W. GRIMES.

PUMPING POWER.

No. 563,167. Patented June 30, 1896.

Fig. 1.

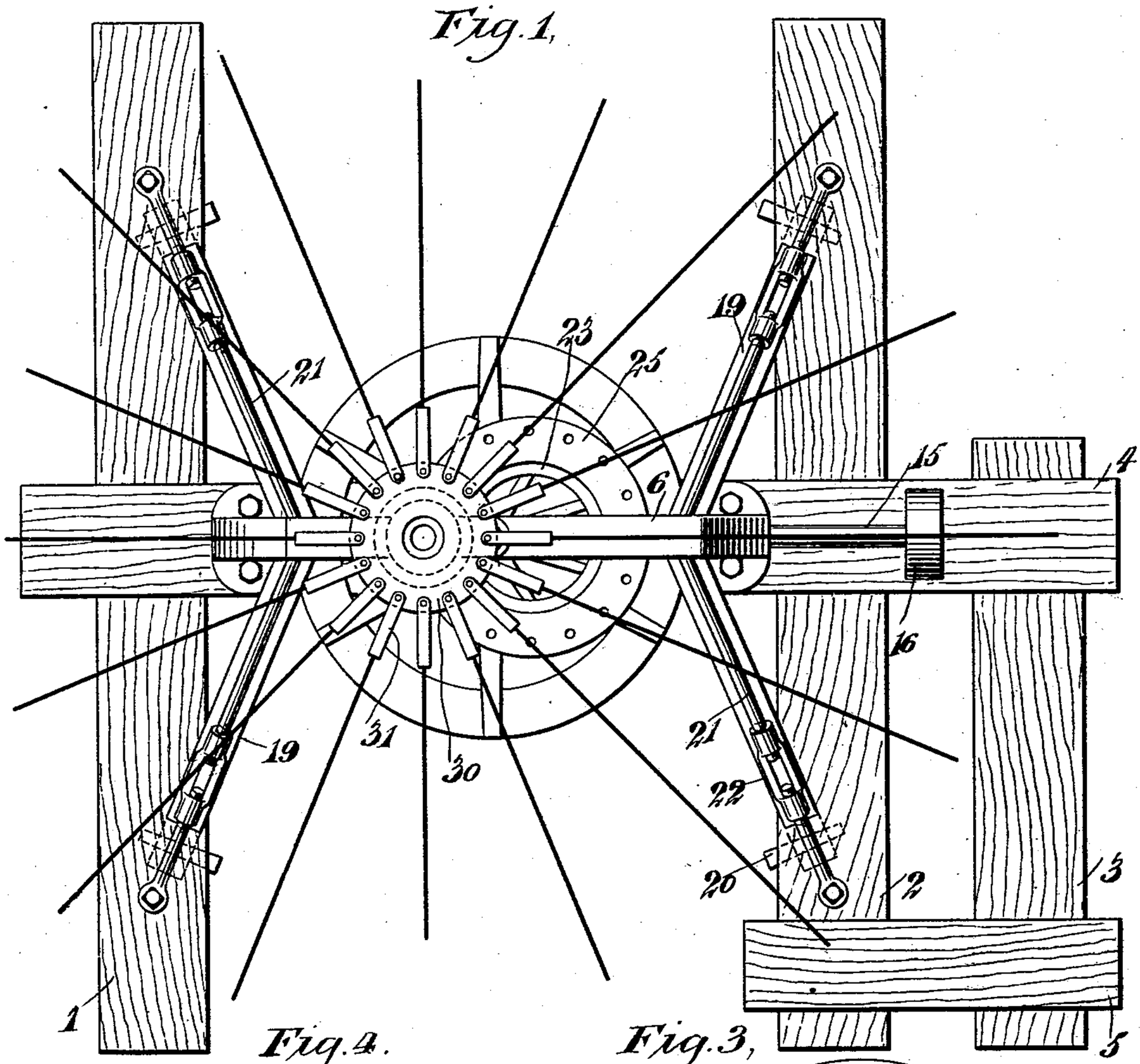
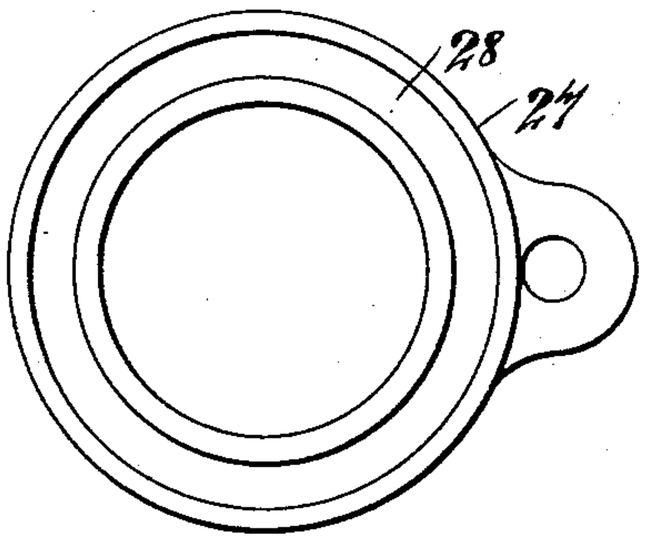
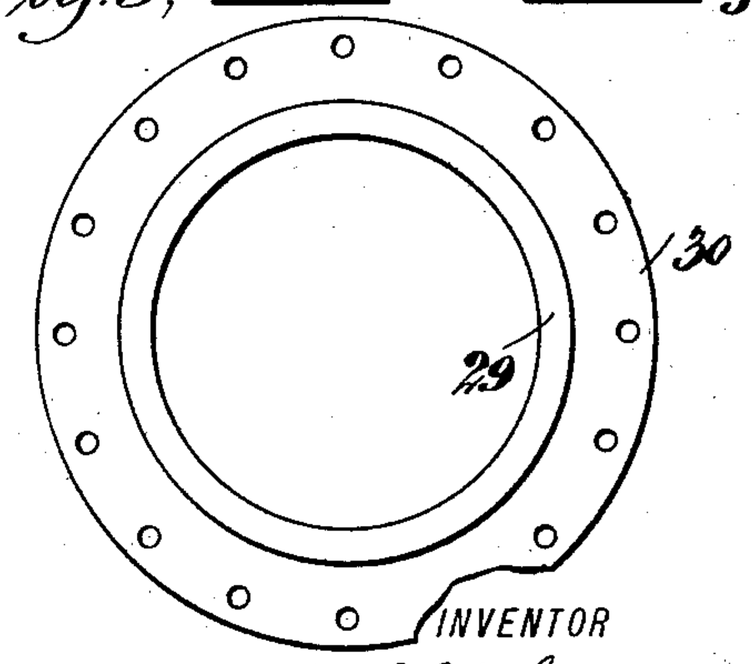


Fig. 4. *Fig. 3.*





WITNESSES:

Edward Thorpe.
C. R. Ferguson

INVENTOR

G. W. Grimes

BY

Munn & Co

ATTORNEYS

(No Model.) 2 Sheets—Sheet 2

G. W. GRIMES.

PUMPING POWER.

No. 563,167. Patented June 30, 1896.

Fig. 2.

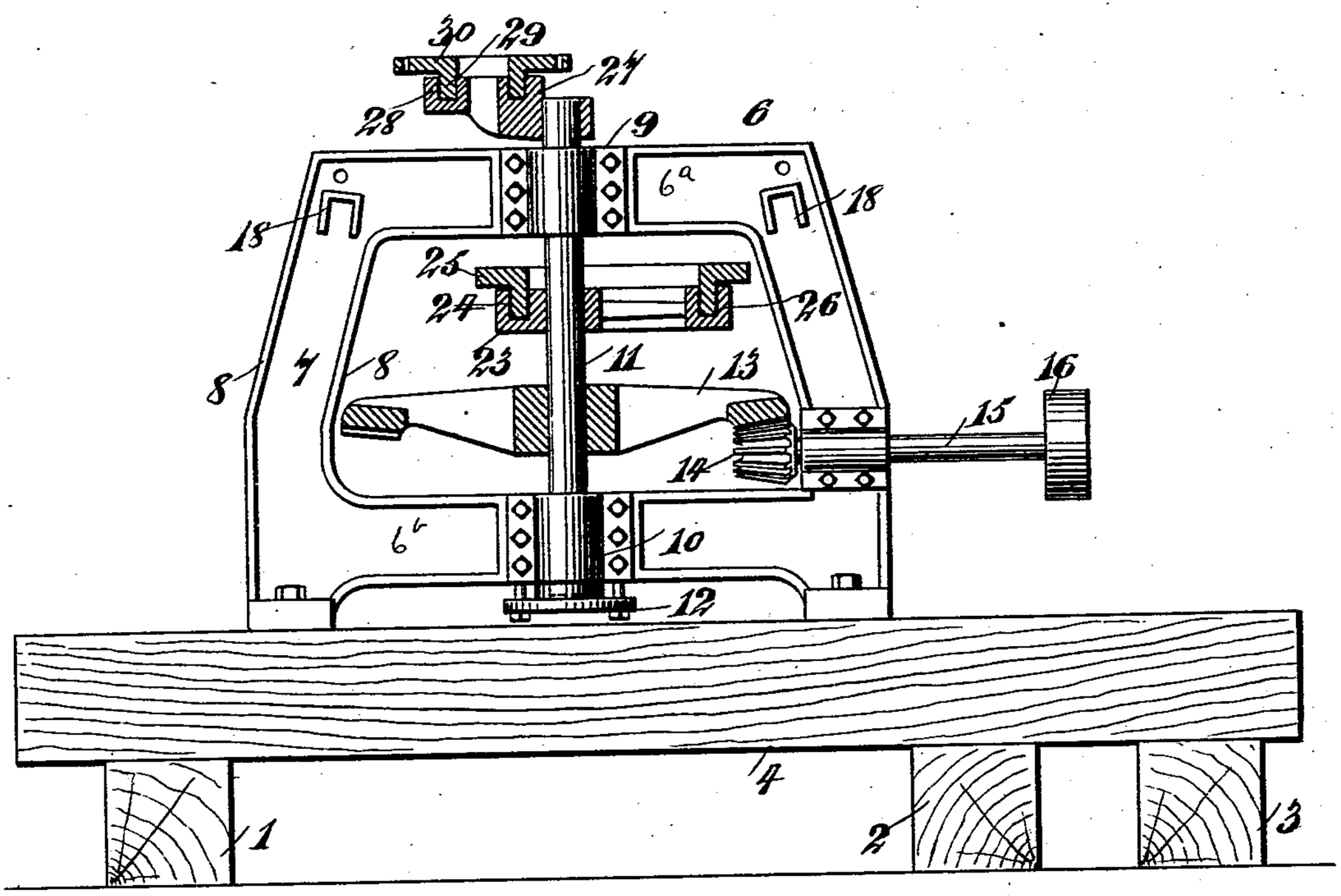


Fig. 5.

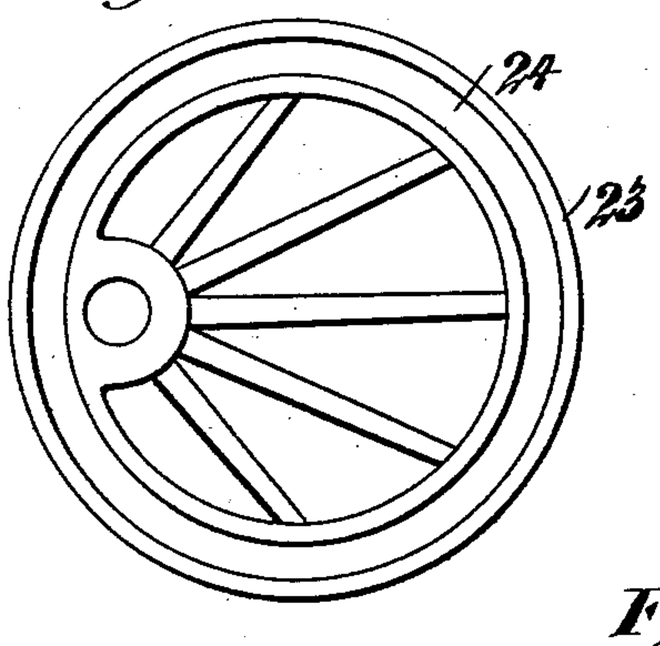


Fig. 6.

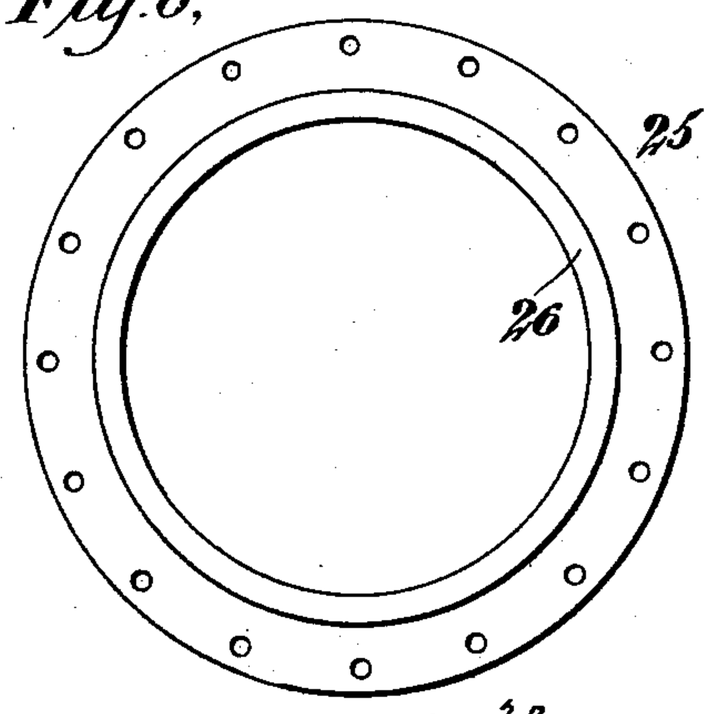
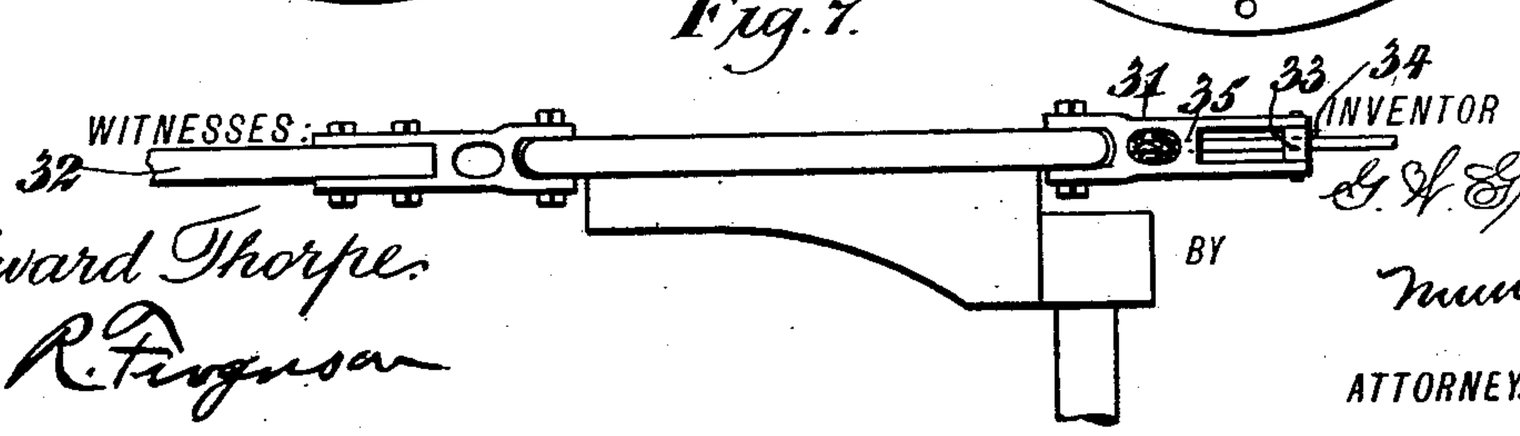


Fig. 7.



WITNESSES:

Edward Thorpe.

C. R. Ferguson

INVENTOR

G. W. Grimes

BY

Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE W. GRIMES, OF BLUFFTON, INDIANA.

PUMPING POWER.

SPECIFICATION forming part of Letters Patent No. 563,167, dated June 30, 1896.

Application filed January 9, 1896. Serial No. 574,822. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. GRIMES, of Bluffton, in the county of Wells and State of Indiana, have invented a new and Improved Pumping Power, of which the following is a full, clear, and exact description.

This invention relates to mechanism for pumping oil and water wells, the object being to provide a simple and compact form of the construction, bringing all wearing-points within the limits of easy access, and, further, to provide a frame of strong and novel construction in which may be supported one or more devices of different sizes for connection with pump rods or lines, whereby a greater length of throw in said pump rods or lines may be secured than has heretofore been done.

I will describe the device embodying my invention, and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of an oil or water pumping mechanism embodying my invention. Fig. 2 is a partial side elevation and partial section thereof. Fig. 3 is a bottom plan view of a pump-rod plate. Fig. 4 is a top plan view of a crank for carrying the plate shown in Fig. 3. Fig. 5 is a top plan view of a crank employed. Fig. 6 is a bottom plan view of a pump-rod plate supported by the crank shown in Fig. 5, and Fig. 7 is a side elevation particularly showing clips for pump rods or wires.

Referring to the drawings, 1 2 3 designate the mud-sills of the frame arranged parallel one with the other.

4 is a bed-sill arranged transversely thereon, and 5 is a supporting-block for an engine or driving power, supported on the mud-sills 2 3.

6 is a vertically-disposed frame for supporting the working parts of the pumping mechanism. This frame 6 is secured rigidly to the bed-sill 4 by means of bolts, and for the sake of lightness with the necessary strength I form it of metal, with a web portion 7 and outwardly-extended edge flanges 8. The frame 6 comprises side uprights and the upper and lower cross-bars 6^a 6^b. To the upper cross-bar is secured a boxing 9, and to the lower cross-bar is secured a boxing 10. These boxings form bearings for the vertical shaft 11, the lower end of which has a step-bearing in a plate 12, secured to the lower cross-bar of the frame 6. On the shaft 11 is mounted a beveled gear-wheel 13, meshing with a beveled pinion 14, secured to a horizontal shaft 15, having a bearing through a boxing on one of the side uprights of the frame, and on the outer end of this horizontal shaft 15 a suitable coupling is attached to connect the engine or motor with the power. At the opposite sides and at the upper portion of frame 6 are sockets 18, adapted to receive the upper end of wooden brace-bars 19, the lower ends of which are extended into mortises formed in the mud-sills 1 2 and secured by means of keys 20. As a further means to brace the frame 6 I employ metal tie-rods 21, the upper ends of which are bolted to the frame 6 and the lower ends bolted to the mud-sills, and a turnbuckle 22 is located in each iron tie-rod 21.

Secured to the vertical shaft 11, below the top bar of the frame 6, is a crank 23, having in its upper side an annular channel 24, extending around the shaft 11, but eccentric thereto. Mounted on the crank 23 is a pump-rod plate 25, having on its underside a downwardly-extended flange 26, designed to engage in the channel 24. On the upper end of the shaft 11 and above the top cross-bar is secured another crank 27, which has an annular channel 28 formed in it lateral of the axis of the vertical shaft, and loosely engaged in this channel 28 is an annular flange 29 on a pump-rod plate 30.

The pump-rod plate and crank just described are smaller than the crank and pump-rod plate first described, or, in other words, the two devices provide means in one apparatus for imparting a long or short throw to a pump rod or wire.

The parts 25 and 30 are each provided near their periphery with an annular row of holes for the passage of bolts for securing the pump rod or wire clips to said parts. I construct the clips so that either a rod or wire may be attached thereto.

Referring to Fig. 7, it will be seen that the clip 31 comprises longitudinally-extended arms between which the end of the pump-

rod 32 may be bolted, or between which a block 33 may be bolted. Said block is provided with a central perforation for the passage of a pump-wire 34, the inner end of which is passed through a perforation in a bridge-piece 35, and rearward of which the pump-wire is provided with a knot. The opening is then filled with lead or Babbitt metal to prevent the detachment of the pump-wire from the clip. The clip is also provided with perforated arms to engage the upper and lower sides of the pump-rod plate.

I am aware that cranks having wrist-pins with a disk or wheel mounted thereon have heretofore been used for pumping devices, but owing to the severe strain on the wrist-pin in operating a large number of wells, they have not proven altogether satisfactory. In my construction I have entirely done away with the wrist-pin, and the flange-and-channel engagement of the parts insures great strength, and, moreover, the channel provides a container for a lubricant. When the wrist-pin is used, there is no means for retaining oil used for lubricating purposes, and this is a continual source of annoyance.

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

1. In a well-pumping power, a frame, a vertical shaft having bearings in said frame, a bevel-gear on said vertical shaft, a horizontal shaft having a bearing in a boxing on the frame, a pinion on said horizontal shaft engaging with the gear on the vertical shaft, a series of cranks arranged on the vertical shaft one above another, and pump-rod plates mounted on the cranks, the connected cranks and plates of one set being arranged to move in a smaller circle than those of an adjacent crank and plate, substantially as specified.

2. In an oil and water well pumping mechanism, a vertical shaft, means for rotating the same, a crank mounted on said shaft and having an annular channel, and a pump-rod plate having a flange to engage movably in said channel, substantially as specified.

3. A clip comprising forwardly-extended arms, a perforated bridge-piece, a perforated block, and a transverse opening rearward of the bridge-piece, in combination with a wire adapted to be inserted through said perforations and having an end secured in said transverse opening, substantially as specified.

GEORGE W. GRIMES.

Witnesses:
FRANCIS M. MCFADDEN,
AUGUSTUS N. MARTIN.