

F. M. LEE.  
PUMPING POWER.  
APPLICATION FILED DEC. 19, 1907.

912,475.

Patented Feb. 16, 1909.

2 SHEETS—SHEET 1.

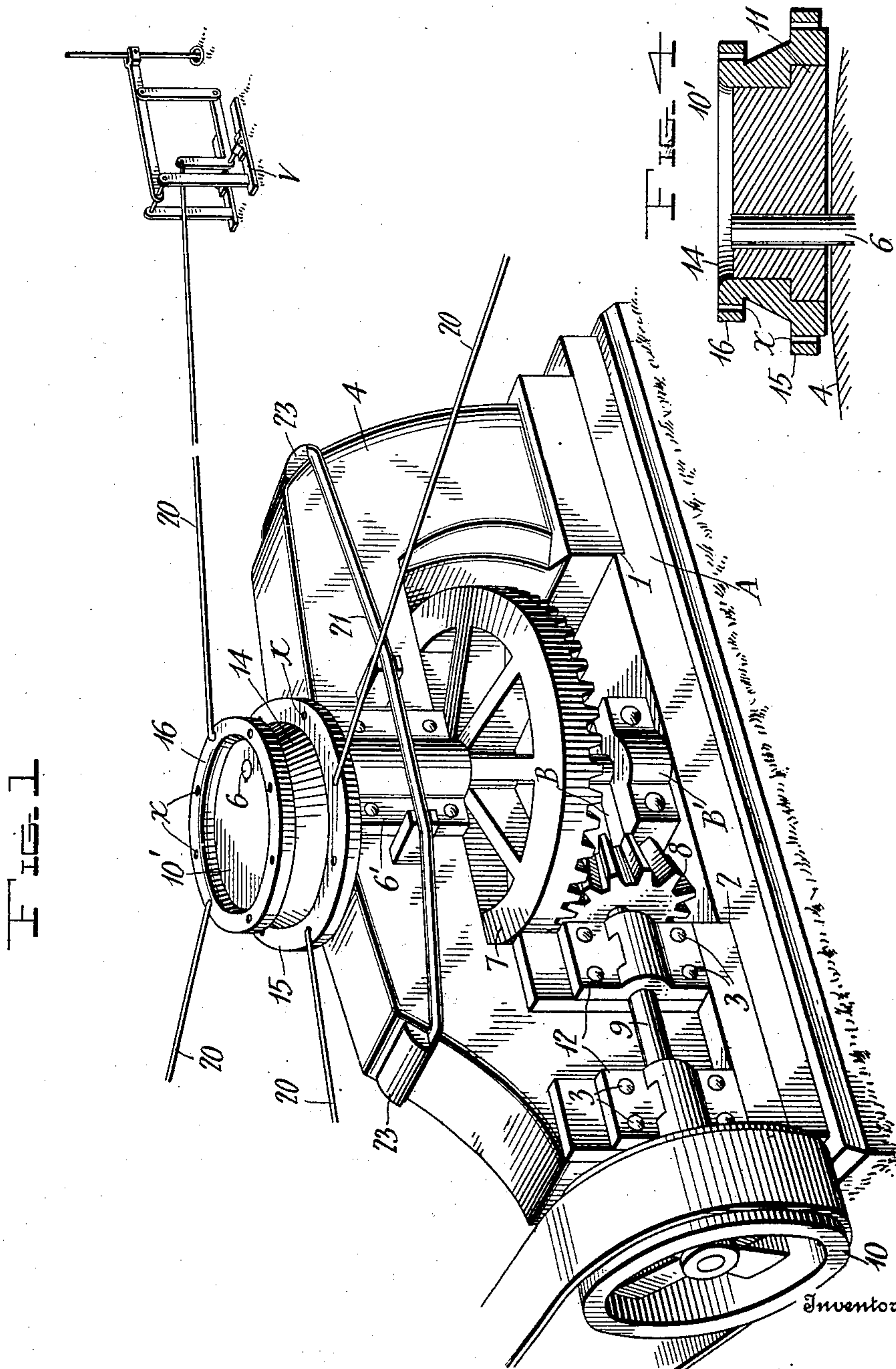


FIG. 1

Witnesses  
*J. H. Jones*  
*W. H. Sues*

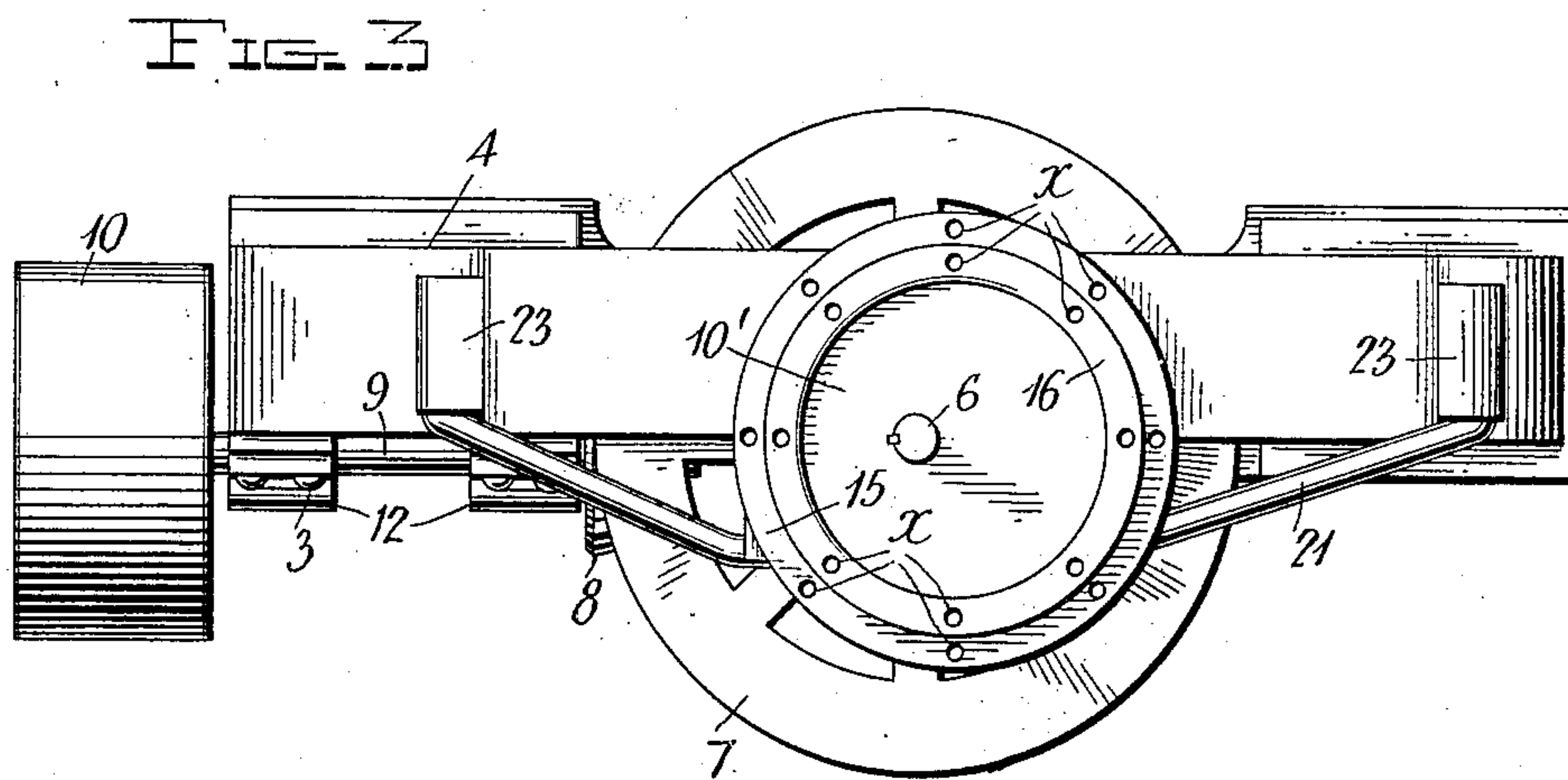
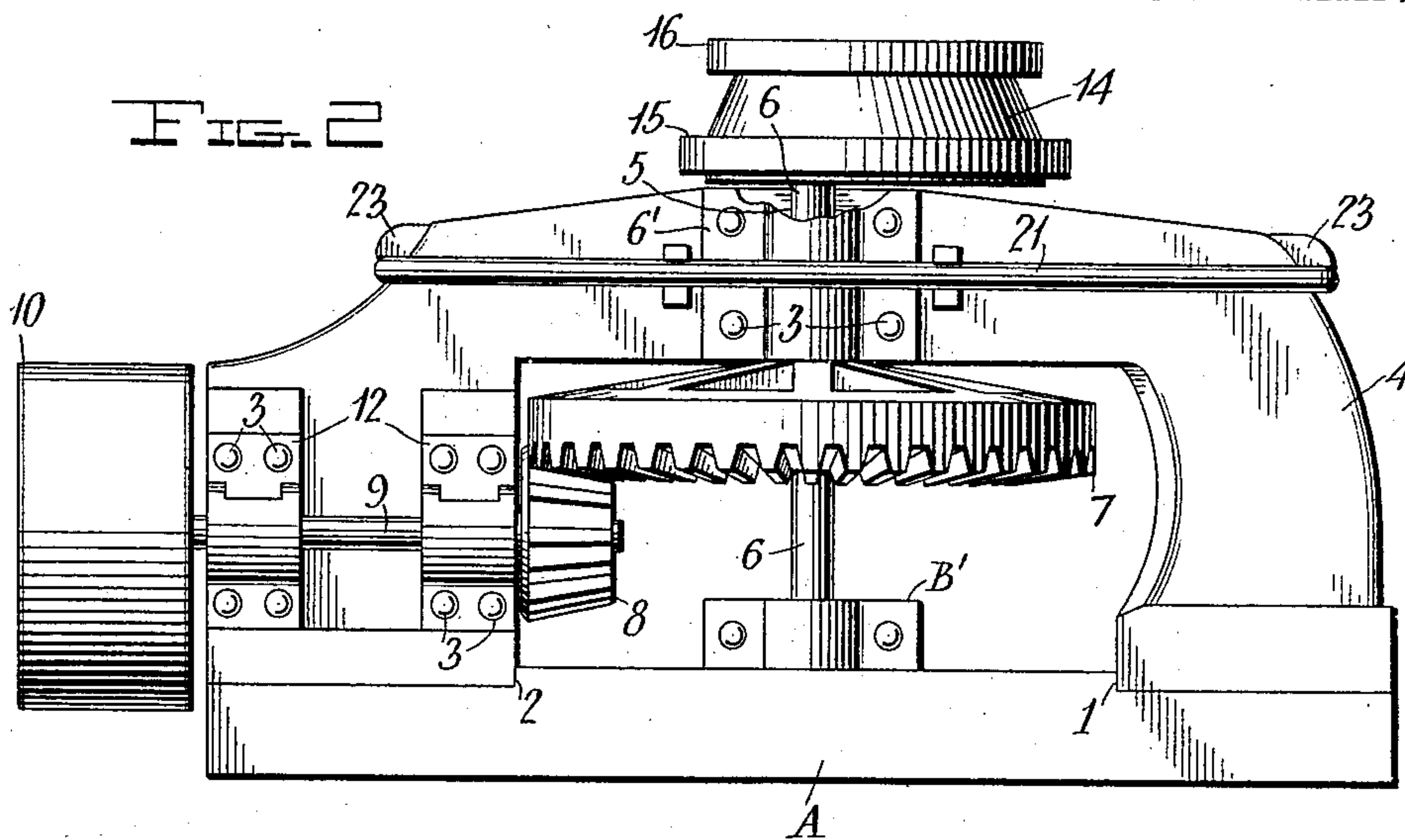
Inventor  
Forrest M. Lee,  
By *Charles Chandler*  
Attorneys

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Witnesses

*J. J. Bonning*  
*Geo. W. Lues*

Inventor

*Forrest M. Lee,*

By

*Charles Charles*

Attorneys



# UNITED STATES PATENT OFFICE.

FORIEST M. LEE, OF GENEVA, INDIANA.

## PUMPING POWER.

No. 912,475.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed December 19, 1907. Serial No. 407,159.

*To all whom it may concern:*

Be it known that I, FORIEST M. LEE, a citizen of the United States, residing at Geneva, in the county of Adams, State of Indiana, have invented certain new and useful Improvements in Pumping Powers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a new and improved pumping power for pumping oil wells.

The object of my invention is to provide a positive powerful mechanism so constructed that a plurality of surface rods leading from a plurality of pumps may be adjustably secured to the power and the pumps thereby actuated as will be described more fully hereinafter.

In the accompanying drawings I have shown in Figure 1 a perspective view of a power mechanism embodying my invention. Fig. 2 is a side view thereof. Fig. 3 discloses a top view, and, Fig. 4, a sectional view disclosing the eccentric hub and collar.

In the operation of oil pumps in oil fields, in order to economize power and fuel and reduce the operating expenses, it is usual to provide a central station equipped with a suitable power such as a gas or steam engine adapted to operate a power mechanism to which the surface rods of the various pumps are connected so that a number of pumps may be simultaneously operated even though they be a mile or so from the central operating station.

In carrying out the aim of my invention I provide a base plate A which is provided with a suitable bearing B, one half of which is cast integral with the base plate, a removable boxing B' being used in connection with this bearing as shown in Fig. 1. This base plate is provided at the ends with reduced portions forming offsets as shown at 1 and 2 and fitting into these offsets which form shoulders and securely fastened to the base plate by means of bolts, is a yoke 4 cast of metal which has an upper vertical bearing as is shown at 5 in Fig. 2, which bearing is covered by the usual journal plate 6' secured by suitable bolts 3 as shown.

Held within the lower boxing B and the upper bearing 5 is a vertical shaft 6 which is provided with a master wheel 7 which meshes with a pinion 8 upon the driving shaft 9 provided with a suitable pulley 10 over which

the drive belt operates. The drive shaft 9 is held within the side boxings 12, 12 secured by means of the bolts 3.

Secured to the shaft 6 is an eccentric hub 10' provided with a lower flange 11 the major portion 10' and the flange 11 both being cylindrical. Mounted for rotation upon the eccentric 10' is an annular member 14 having an internal shoulder bearing upon the shoulder 11, the annular member thus entirely inclosing the eccentric 10' and its flange 11 and extending at the upper edge above the surface of the eccentric, whereby a circular receptacle is produced above the eccentric, the projecting portion of the annular member forming the margin or rim to the receptacle, so that a supply of lubricating material may be disposed above the eccentric and retained in place by the upwardly projecting rim of the annular member until it has entered the space between the eccentric and the annular member. By this means the eccentric will be constantly lubricated, and all danger of its running dry obviated. The annular member is provided with an upper lateral flange 16, and a lower flange 15, the lower flange being considerably greater in diameter than the upper flange, and each flange provided with a plurality of spaced apertures  $\alpha$ . Held within these perforations are the ends of the surface rods 20 which are carried to the oil pumps and so actuate these pumps. In Fig. 1 a pump is shown at V.

The rods which are coupled to the upper flange 16, it will be obvious, have a shorter movement or stroke than those connected to the lower flange 15, so that the device can be readily applied to pumps having different strokes, which is a very convenient arrangement, and enables the device to be applied to various forms and makes of pumps, as will be obvious. Then again it enables the operator to adapt the device to slow or rapid pumping, or adapt the device to pump rapidly or at a slower speed by changing the length of the stroke. For instance, if it is found that the pump is being operated too rapidly and the supply exceeds the ability to properly dispose of it, the stroke of that particular pump may be quickly altered by simply transferring the rod from the larger to the smaller flange. Then again, if it is found that the pump is operating too slowly its stroke can be increased by simply transferring the rod 20 with which it is operated



to one of the apertures of the larger flange, thus it will be obvious that the strokes of the pumps may be readily controlled.

The yoke frame is provided with longitudinally projecting lugs 23 at its ends, and extending longitudinally of the frame at the side in which the half bearing for the vertical shaft 6 is formed is a brace rod 21 with its ends extending laterally and beneath the lugs 23, while "chucks" or spacer blocks are arranged with their inner ends bearing against the yoke frame at opposite sides of the half bearing and with their outer ends engaging the brace rod, the brace rod thus forming a "truss" to strengthen the yoke frame and prevent the weakening produced by the half bearing from decreasing the strength of the yoke frame. By this means it will be obvious that the yoke frame is reinforced and braced, and its strength maintained in spite of the fact that a portion of the center of the yoke frame has been removed to form the half bearing, thus the full strength of the yoke frame is maintained without increasing its size.

Now in its operation the power is applied to the shaft 9 which in turn rotates the master wheel 7 to rotate the eccentric hub 10'. As has been stated this hub revolubly carries the collar 14 provided with an upper and a lower flange 15 and 16 into which the surface rods 20 are hooked. Now while this collar 14 is prevented from rotating by means of the surface bars 20, it is, however, carried in the path of a circle so as to impart a rock-

ing movement to all of the connected surface rods which, as has been stated, are connected to the various oil pumps.

The device is simple, strong and positive of action, and

Having thus described my said invention what I claim as new is—

A device of the class described comprising a supporting frame, a vertical shaft mounted for rotation in said frame, an eccentric mounted upon said shaft and partaking of its motion and formed with a lateral flange at the lower end, an annular member having an internal shoulder and mounted for rotation upon said eccentric with its shoulder bearing upon the flange thereof, the annular member extending at its upper end above the upper face of the eccentric to provide a receptacle for lubricating material, spaced flanges extending laterally from said annular member and of different diameters, each flange provided with a plurality of spaced apertures, and rods detachably engaging said apertures and adapted to be connected with pump operating appliances, whereby the strokes of said rods may be increased or decreased by changing them from one of said flanges to the other.

In testimony whereof, I affix my signature, in presence of two witnesses.

FORIEST M. LEE.

Witnesses:

LOUIS L. MASON,  
CLEM MICHAEL.