

No. 696,252.

Patented Mar. 25, 1902.

M. B. McMANUS.

LIFT FOR WELL DRILLING AND PUMPING RIGS.

(Application filed Apr. 13, 1901.)

(No Model.)

Fig. 8. Fig. 7.

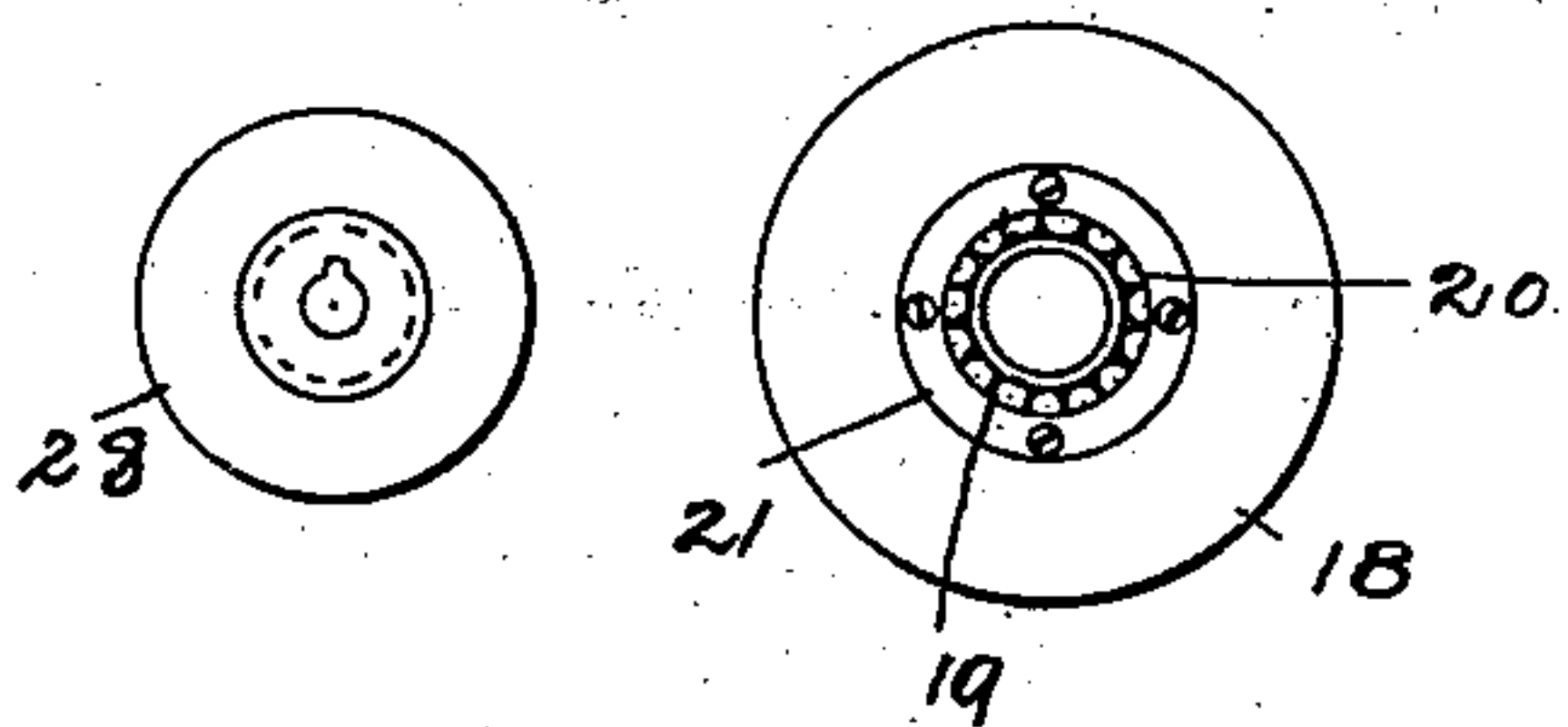


Fig 1.

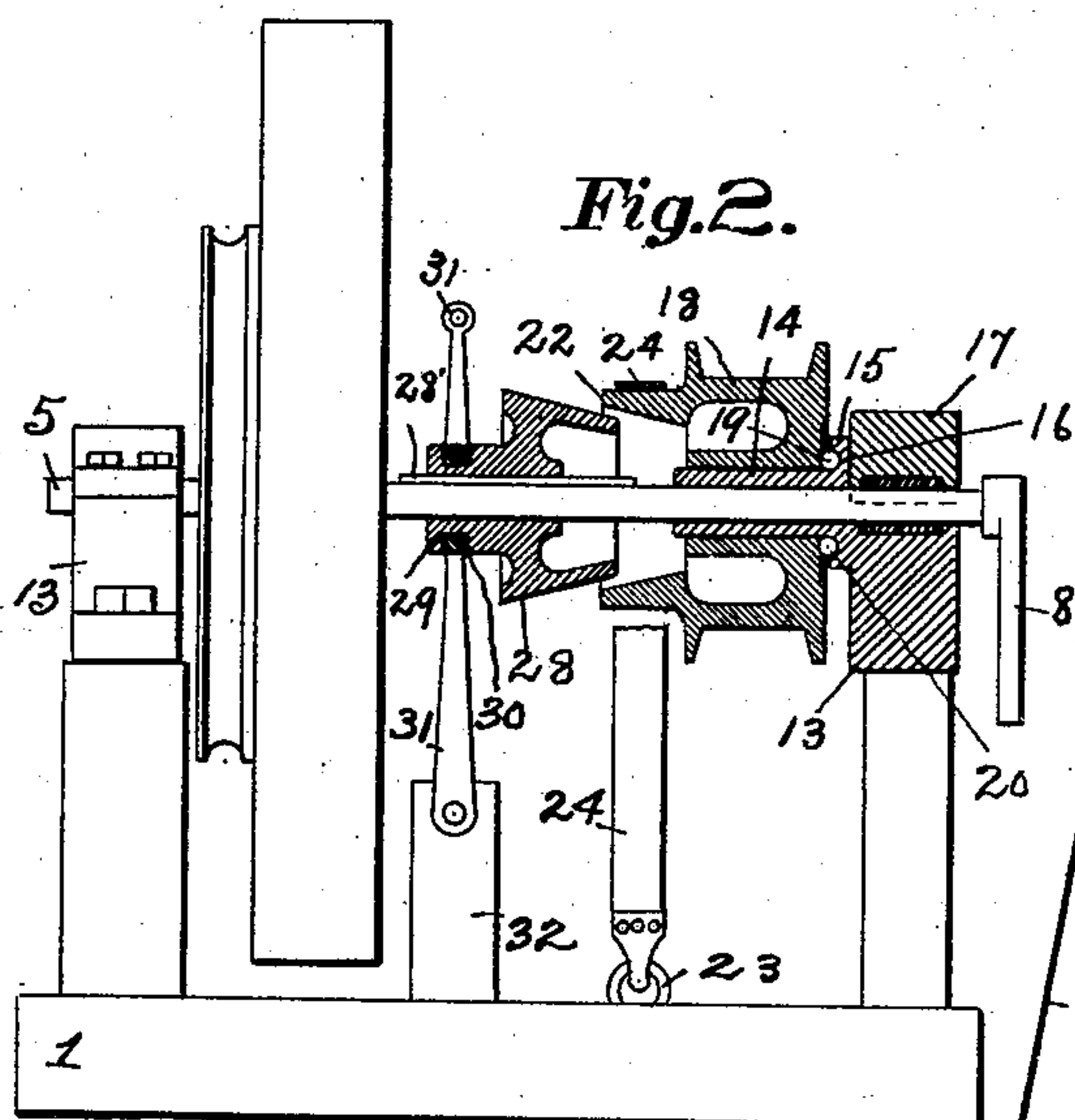


Fig. 2.

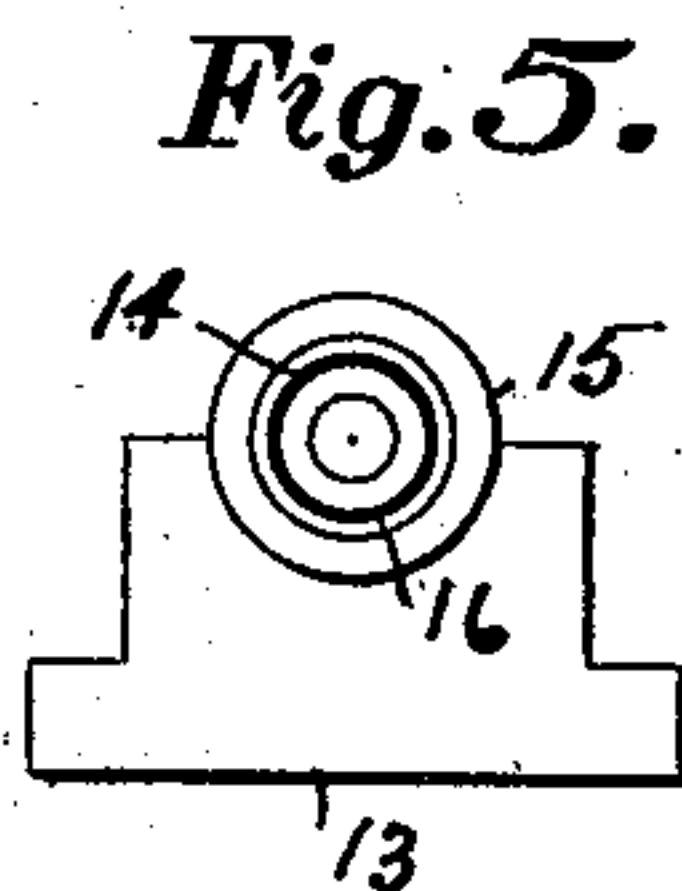


Fig. 5.

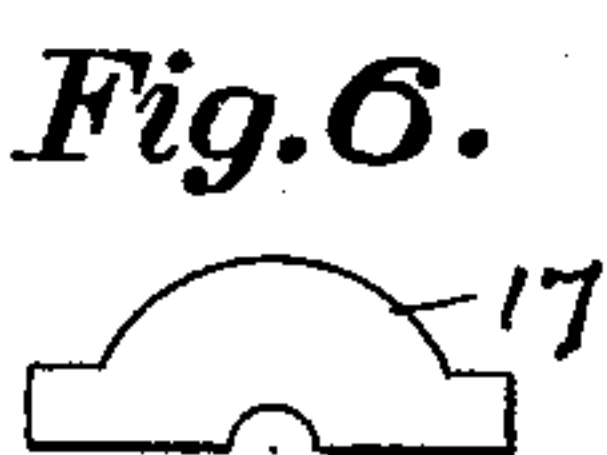
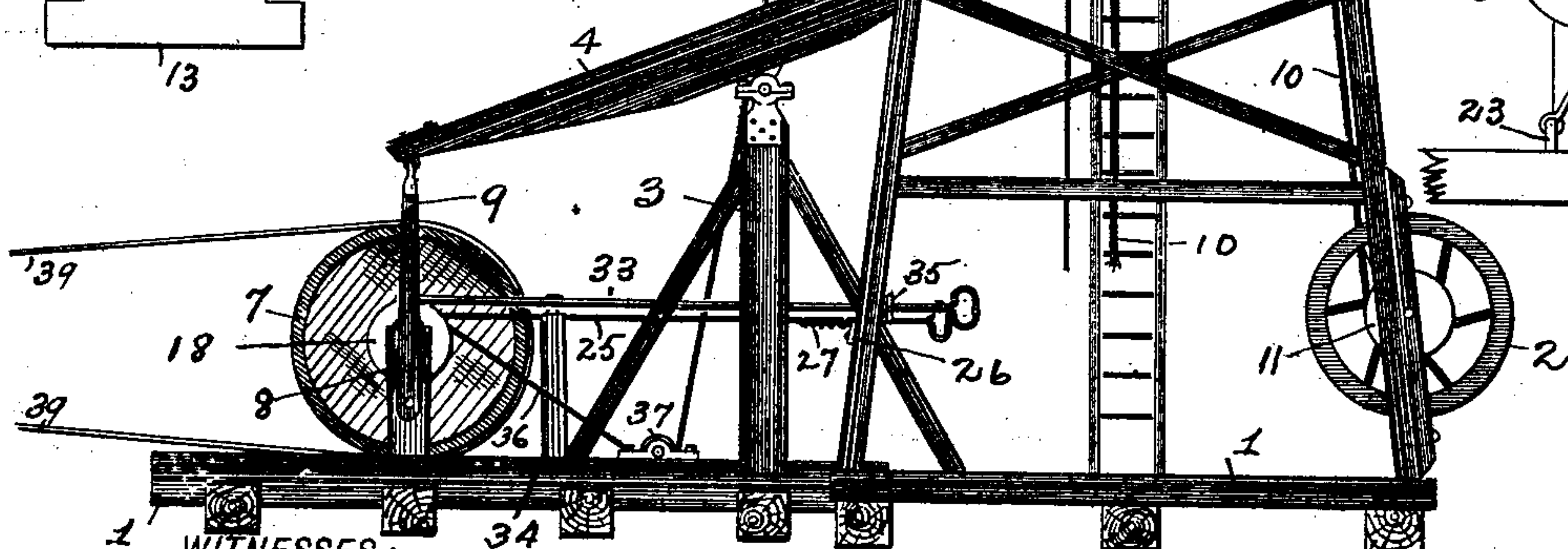


Fig. 6.



WITNESSES:

J. E. Krepps.  
H. J. Fawcett

INVENTOR

Michael B. McManus;

BY

Richard D. Harrison,  
his ATTORNEY



# UNITED STATES PATENT OFFICE.

MICHAEL B. McMANUS, OF TITUSVILLE, PENNSYLVANIA.

## LIFT FOR WELL-DRILLING AND PUMPING RIGS.

SPECIFICATION forming part of Letters Patent No. 696,252, dated March 25, 1902.

Application filed April 13, 1901. Serial No. 55,600. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL B. McMANUS, a citizen of the United States of America, residing at Titusville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Lifts for Well-Drilling and Pumping Rigs; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to new and useful improvements in a lift for well-drilling and pumping rigs.

The object is to provide a simple, practical, and convenient apparatus in connection with a rig for the purpose of raising and lowering bailers, sucker-rods, tubing, &c., into and out of wells.

I accomplish my objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a "rig" equipped with my improvements. Fig. 2 is a rear view of the lift mechanism, partly shown in section. Fig. 3 is a plan view of a portion of the same. Fig. 4 is an end elevation of a portion thereof. Fig. 5 is an inner side view of one of the pillow-blocks to receive one of the clutch members. Fig. 6 is a side view of the cap for said block. Fig. 7 is a side view of a windlass having upon one side a portion of a clutch. Fig. 8 is a side view of the other clutch member.

In all views similar detail parts are designated by numerals of like character.

In said drawings, 1 indicates the rig; 2, the bull-wheel; 3, the samson-post; 4, the walking-beam, mounted upon said post; 5, the main shaft, carrying band-wheel 7 and crank 8. 9 is the pitman-rod, connecting said walking-beam with said crank, and 10 is the main cable, extending from bull-wheel drum 11 to the top of rig and over pulley 12, all of such parts being old and well known in the art.

My improvements consist of providing one of the pillow-blocks 13 upon its inner side with an extended sleeve 14, having a shouldered portion 15, into which is formed a ball-race 16. This sleeve and block proper is preferably of one piece and is provided with a cap 17. Loosely mounted upon said block-

sleeve is the windlass 18, which is provided at one side with a ball race or groove 19, carrying balls 20, which engage or register with the race in the said sleeve. The balls are retained in the said windlass-groove by a ring 21. On the opposite side of said windlass is found or secured an annular flange or clutch member 22, which tapers inwardly.

A staple 23 is attached to the base of the rig, and to this staple is secured a band 24, which passes upwardly around the periphery of the clutch member 22. This strap is attached to a rod 25, which extends forward to or near the center of the rig to a convenient point. To the rig-post is attached a small plate or keeper 26 to engage the teeth 27 of said rod.

Rotatably mounted upon the main shaft between the band-wheel and windlass is the clutch member 28. This portion of the clutch is attached to the shaft by means of a key 28' to permit longitudinal adjustment thereof. A groove 29 is formed around the base of this clutch member, into which is fitted the strap 30 of the lever 31. This lever is pivoted at its lower end to a post 32 and is connected at its upper end to the long lever 33. This lever 33 is pivoted to a post 34 and extends forward to a convenient place near the center of the rig and engages with a toothed rack 35. Attached at one end to the said windlass is a rope or line 36, which passes downwardly under the pulley-wheel 37, upwardly and over the pulley 38 at the top of the rig, and thence downwardly in position for lifting. Power being transmitted to the band-wheel by means of a belt 39, the walking-beam is set in motion for drilling. Now when it is desired to elevate or lower bailers, tubing, sucker-rods, &c., attached to the line 36 the rod 25 is disengaged from rack 26 and pushed rearward to slacken the friction-band 24. The rod 33 is then operated to throw the clutch member 28 into engagement with the clutch portion 22. The clutch now being in engagement, the windlass 18 winds up the line 36 and elevates the bailer or other device attached thereto, and when sufficiently elevated the clutch is disengaged and the friction-band tightened up to stop the rotation of the windlass. In lowering bailers, tubing, &c., by means of the line 36 the weight of the same on the line is



sufficient to rotate the windlass, the speed of which may be regulated as desired by slack-  
ing the friction-band 24. The object of the  
antifriction-balls is to dispense with friction  
5 between the outer face of the windlass and  
bearing when the clutch member 28 is thrust  
into engagement with the other member.

This invention is a distinct apparatus from  
that used in drilling and, as before stated, is  
10 intended only for use with bailers, tubing,  
sucker-rods, &c.

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

15 1. The combination with the band-wheel  
shaft and a pillow-block of a well-drilling and  
pumping rig, and a clutch member keyed upon  
said shaft and having means for moving it slid-  
ably thereon, of a sleeve projecting from said  
20 pillow-block and inclosing said shaft, said  
sleeve having a head at one end, a windlass  
loosely mounted on said sleeve and formed  
relatively thereto to provide a ball-race be-  
tween it and said shoulder, balls confined in  
25 said race to take the side thrust of said wind-  
lass, a clutch member carried by said windlass,  
a brake acting upon said clutch member, and  
means for connecting the windlass with the  
device to be raised and lowered thereby.

2. A well-drilling and pumping rig, com- 30  
prising in combination with the band-wheel  
shaft thereof, a slidable clutch member keyed  
upon said shaft, a lever pivoted at one end  
at one side of said shaft and engaged between  
its ends with said clutch member, a lever piv- 35  
oted between its ends and having one extrem-  
ity pivoted to the first lever, a sleeve encir-  
cling said shaft and having a head at one end,  
a windlass loosely mounted on said sleeve and  
formed relatively thereto to provide a ball- 40  
race between it and said head, balls confined  
in said race to take the side thrust of said wind-  
lass, a clutch member projecting directly from  
said windlass, to be engaged by the first-men-  
tioned clutch member, a brake mechanism for 45  
the second-mentioned clutch member, said  
brake mechanism having a lever for control-  
ling the same, and means for connecting the  
windlass with the device to be raised and low-  
ered thereby, substantially as described and 50  
for the purposes set forth.

In testimony whereof I have hereunto af-  
fixed my signature in the presence of two sub-  
scribing witnesses.

MICHAEL B. McMANUS.

Witnesses:

J. E. KREPPS,

W. J. WHITE.