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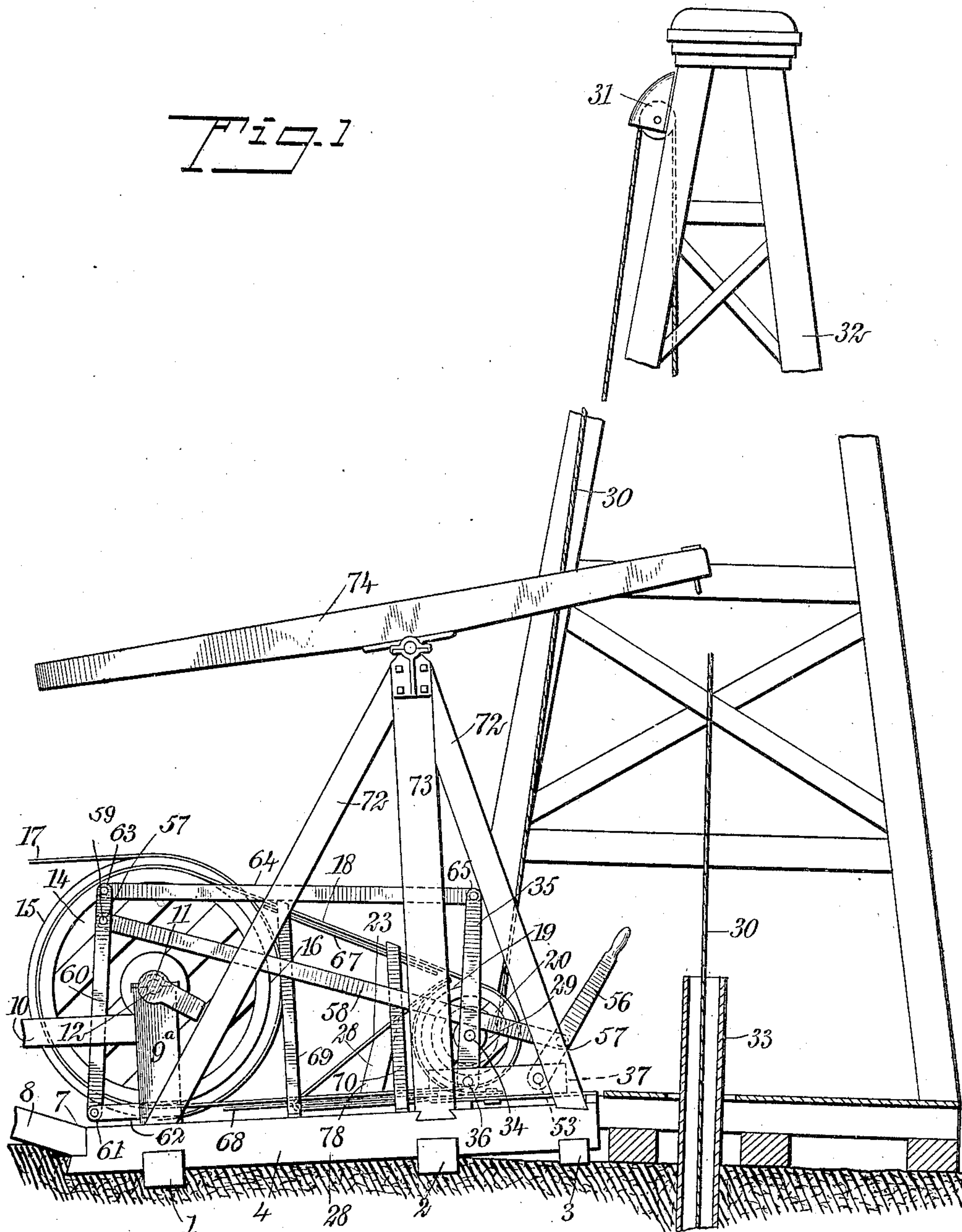
PATENTED AUG. 14, 1906.

S. S. STROTMAN.

WELL RIG.

APPLICATION FILED JULY 12, 1905.

3 SHEETS—SHEET 1.



WITNESSES:

J. A. Propoy  
E. E. Ellis

INVENTOR

Samuel S. Strotman

BY

M. M. M. M.  
ATTORNEYS

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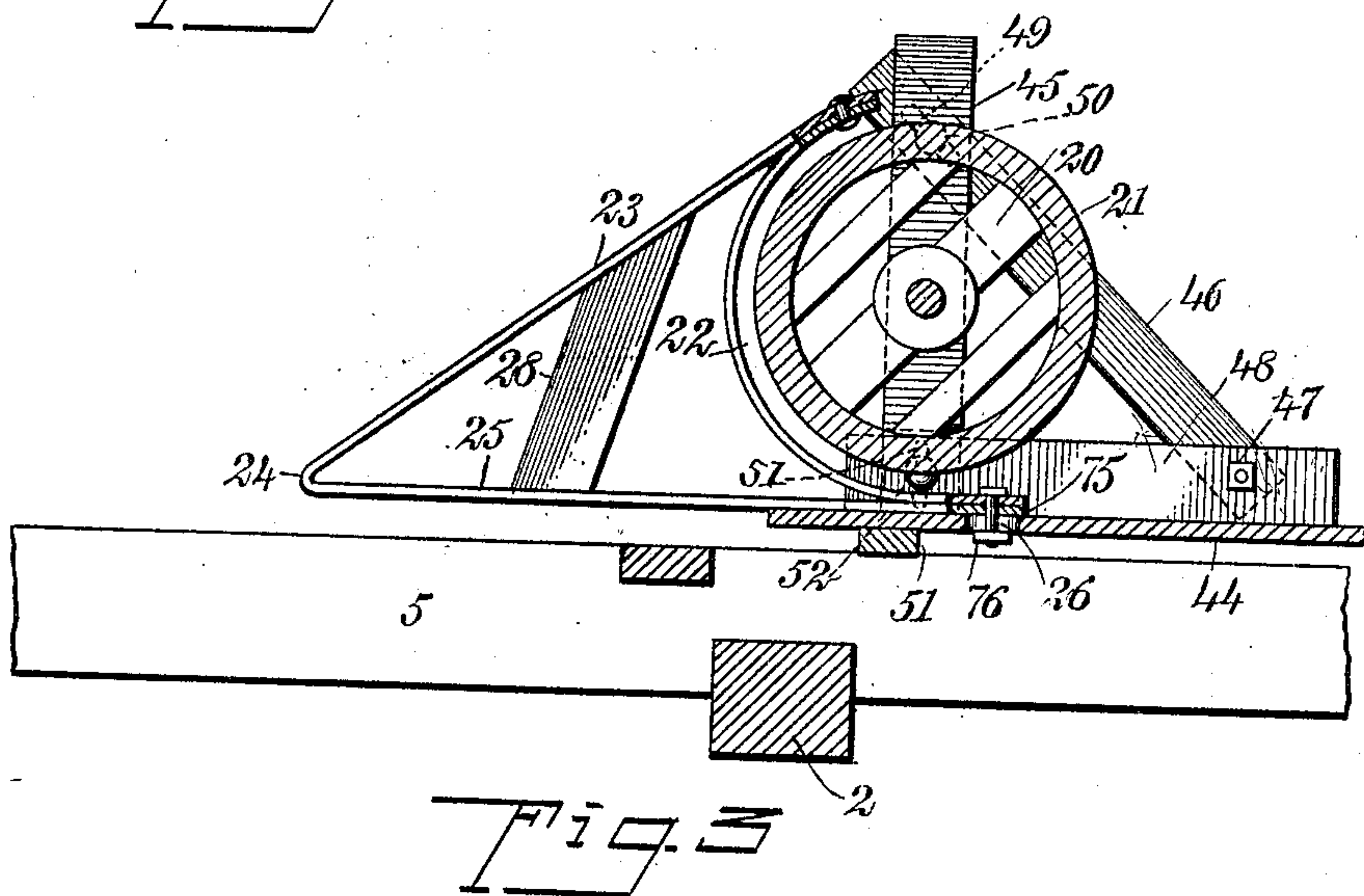
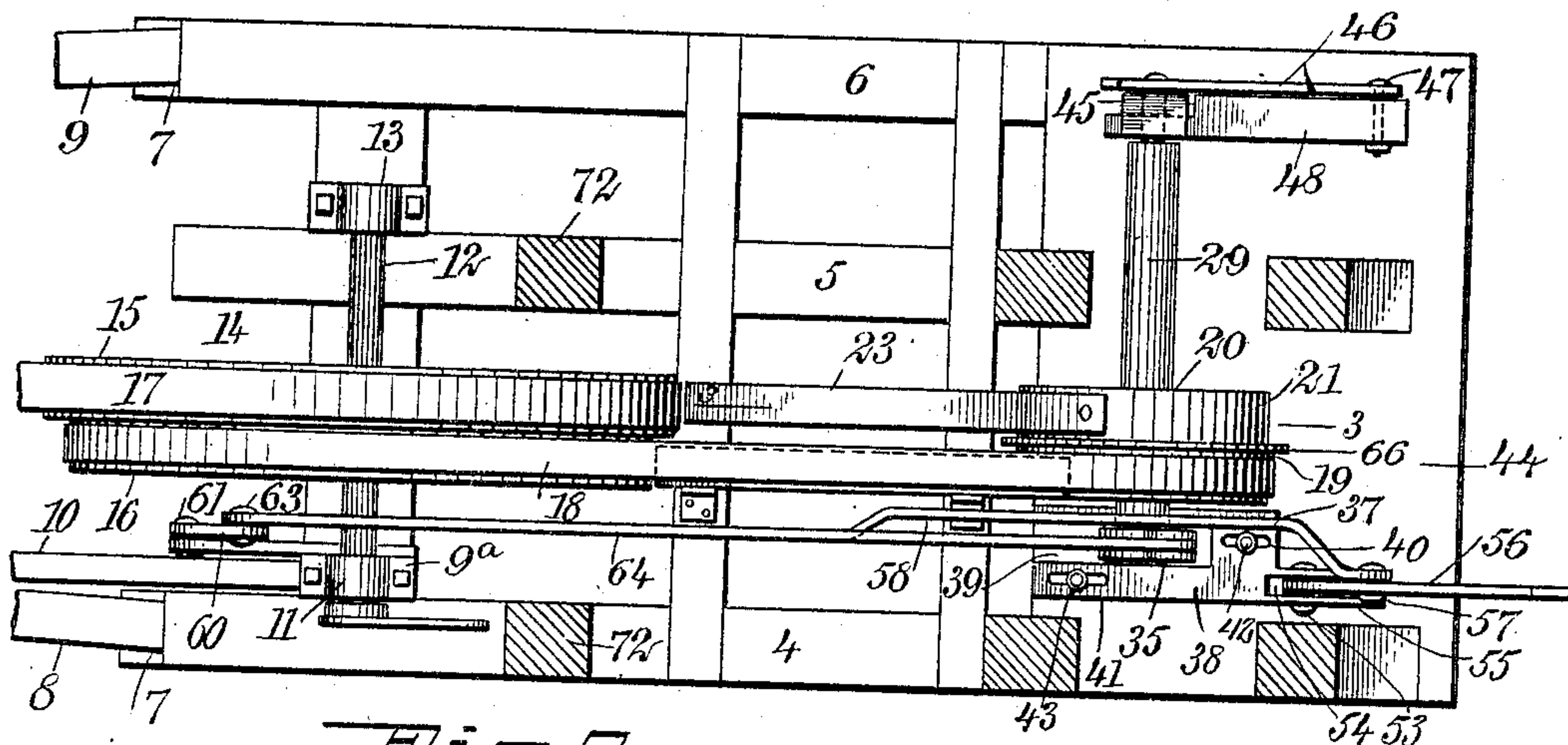
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3 SHEETS—SHEET 2.



WITNESSES:

*J. A. Proply*  
*E. E. Ellis*

INVENTOR

*Samuel S. Strotman*

BY

*Mumford*  
ATTORNEYS



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3 SHEETS—SHEET 3.

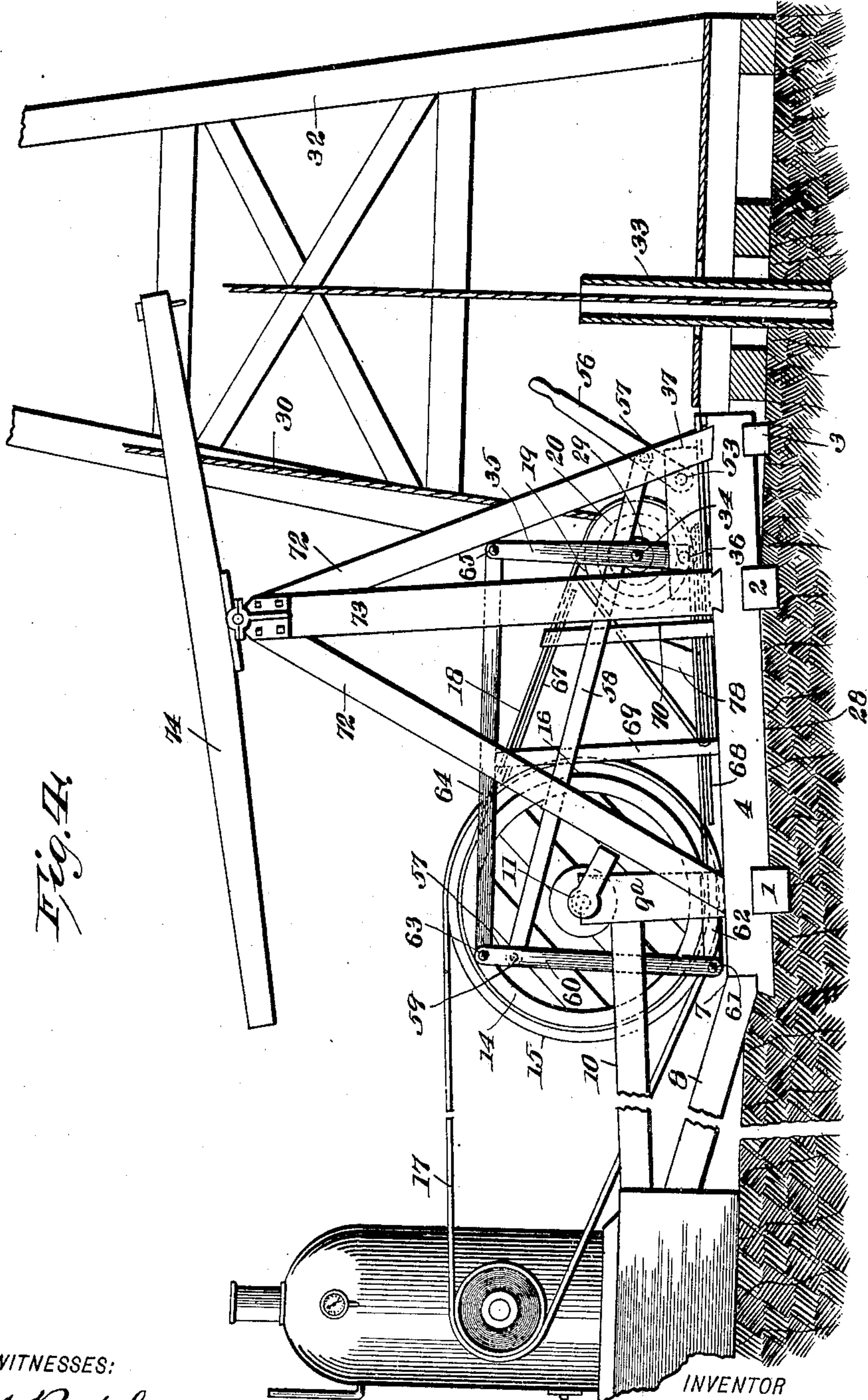


Fig. 4.

WITNESSES:

J. A. Brophy  
E. E. Ellis

INVENTOR  
S. S. STROTMAN

BY

Munn & Co.  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

SAMUEL STEPHEN STROTMAN, OF HAYNIE, PENNSYLVANIA.

## WELL-RIG.

No. 828,830.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed July 12, 1905. Serial No. 269,288.

*To all whom it may concern:*

Be it known that I, SAMUEL STEPHEN STROTMAN, a citizen of the United States, and a resident of Haynie, in the county of Clarion and State of Pennsylvania, have invented a new and Improved Well-Rig, of which the following is a full, clear, and exact description.

This invention relates to well-rigs; and it consists, substantially, in the details of construction and combinations of parts hereinafter more particularly described, and pointed out in the claims.

The invention has reference more especially to oil or gas well rigs; and one of the principal objects thereof is to overcome numerous disadvantages common to many other structures hitherto devised for similar purposes.

A further object is to provide a structure of this kind which is simple in its embodiment and comparatively inexpensive to install, besides being thoroughly effective and reliable in operation, strong and durable, highly resistive to working strains from all directions, and possessing the capacity for long and repeated service.

The above and additional objects are attained by means substantially such as are illustrated in 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 side view, partly in section, of a well-rig embodying my improvements. Fig 2 is a sectional top plan view thereof, and Fig. 3 is an enlarged sectional view taken on the line 3 3 of Fig. 2. Fig 4 is a side elevation of a well-rig, showing my special means of bracing the same.

Before proceeding with a more detailed description it may be stated that in the form of my improvements herein shown I employ a well-rig of special construction, comprising special means for bracing the structure in the direction from whence proceeds the driving force for the movable operative parts of the structure, special means being also employed for controlling the reel upon and from which is caused to be wound and unwound the line or cable for the bail or other well-tool. The several parts of the structure are easy of access, adjustable, and smooth-running in operation, and while I have herein represented my improvements in a certain preferred embodiment it will be understood, of course, that I am not limited thereto in precise detail, since immaterial changes therein may be

resorted to coming within the scope of my invention.

Reference being had to the drawings by the designating characters thereon, 1, 2, and 3 represent cross-sills of a suitable base or platform for the framework of the structure, connecting with which are the longitudinal sills 4, 5, and 6, the said cross-sills 1 and 2 being sunken or embedded within the ground for successively decreasing depths or extents, while the said cross-sill 3 rests practically upon the surface of the ground, thus giving to the longitudinal sills 4, 5, and 6 a downward inclination in the direction of the outer ends thereof, connection being had at 7 in any suitable way between the outer ends of the longitudinal sills 4 and 6 with the inner ends of longitudinal brace-rods 8 and 9, the outer ends of which may be connected in any suitable way with the platform, (not shown,) upon which is mounted in the usual way the engine or other motor (not shown) for imparting driving motion to the movable operative parts of the structure. Mounted upon the base or platform near one side of the structure and preferably directly above the cross-sill 1 is a jack-post 9<sup>a</sup>, connected with which is the inner end of another longitudinal brace-rod 10, the outer end of which may also be connected in any suitable way with the platform of the engine or motor, and in virtue of the employment of these brace-rods 8 9 and the said brace-rod 10 it will be seen that a very firm bracing for the structure is derived in the direction from whence proceeds the driving force for operating the movable parts of the structure.

Supported in suitable bearings 11 therefor at the upper part of the jack-post 9<sup>a</sup> is one end portion of a transverse shaft 12, the other end portion of which is supported in a corresponding bearing 13 therefor, mounted in suitable position on the said cross-sill 1, said shaft having rigid therewith a differential drive-wheel 14, having circumferential band-faces 15 and 16 of different diameters, the band-face 15 having applied thereto a driving band or belt 17 from the engine or other source of power and the band-face 16 having applied thereto in like manner but in the opposite direction another driving connection or belt 18, which extends to and about the circumferential band-face 19 of a reel-turning pulley 20, the remaining circumferential face 21 of which is left free to be engaged by the inner curved face of a brake-shoe 22, in-



5 intersected at the upper end thereof by the end  
 of the inclined member 23 of a bracket 24,  
 having a base member 25, the end of which is  
 secured to the lower end of the said shoe 22  
 10 by means of a bolt or rivet 26 or in any other  
 suitable way, the said bracket or members  
 being longitudinally movable, so as to permit  
 adjustment forwardly or rearwardly of the  
 said shoe with respect to the band-face 21 of  
 15 the reel-turning pulley 20. The members of  
 the said bracket may be strengthened, if de-  
 sired, by means of a suitable brace 28 or in  
 any other way, and it should be stated that  
 the reel-turning pulley 20 is rigid with the reel  
 20 or shaft 29, upon and from which is caused to  
 be wound and unwound an ordinary line or  
 cable 30, passing upwardly over a guide-pul-  
 ley 31 therefor, suitably mounted in bearings  
 at the side of one of the members of an ordi-  
 25 nary derrick 32, such as is commonly em-  
 ployed in structures of this kind, said line or  
 cable 30 extending downwardly within a  
 well-tube 33 and to the lower end of which  
 may be fastened the bailer or other well-tool.  
 30 (Not shown.) One journal or end portion of  
 the said reel or shaft 29 has its bearings at  
 34 in a lever 35, the lower end of which is  
 loosely mounted on a rod 36, extending  
 transversely of the structure and supported  
 35 by the vertical member 37 of a shoe 38, hav-  
 ing therein a longitudinal slot 39, permitting  
 of the necessary forward and rearward work-  
 ing movement of the said lever 35. Said  
 shoe is provided with longitudinal slots 40  
 40 and 41 to enable the same to be adjusted in  
 one direction or the other upon fastening-  
 screws 42 and 43, passing through said slots  
 and secured to a table 44, upon which the shoe  
 is mounted or supported. The other journal or  
 45 end portion of the said reel or shaft 29 has its  
 bearing in an upright member 45, mounted  
 in any suitable manner on the table 44 in  
 alinement with the said lever 35, and connect-  
 ing with the upper part of this upright mem-  
 50 ber is an outwardly and downwardly in-  
 clined brace 46, the lower end of which is  
 pivoted at 47 to a supporting-beam 48 there-  
 for, located on the table 44, and the upper  
 end portion of which brace is formed with a  
 55 diagonal slot 49, through which extends a pin  
 50, entering the side of the said upright mem-  
 ber 45. (See Fig. 3.) The upright member 45  
 is also provided near its lower extremity with  
 a vertical slot 51, through which extends a pin  
 55 52, which enters the side of the hereinbefore-  
 mentioned beam 48, and it will thus be seen  
 that by loosening the pins 50 and 52 the up-  
 right member 45 may be adjusted both ver-  
 60 tically and horizontally with respect to the  
 table 44 and brace 46, the latter, it being un-  
 derstood, being normally capable of being  
 shifted on its pivot 47 into conformity with  
 any shifting of the lever 35.

65 Movably supported on a pivot 53, extend-  
 ing between the sides of a longitudinal slot

54, formed in an extension 55 of the shoe 38,  
 is the lower end of a hand-lever 56, connected  
 with which at 57 is one end of a connecting-  
 rod 58, the other end of which is in movable  
 connection at 59 with a swinging rod 60, the  
 10 lower end of which is in movable connection  
 at 61 with a suitable support 62 therefor ex-  
 tending from the jack-post 9<sup>a</sup> or any other  
 stationary part of the structure, the upper  
 end of said swinging rod 60 being in movable  
 15 connection at 63 with one end of a reversely-  
 extending connection-rod 64, the other end  
 of which is in movable connection at 65 with  
 the upper end of the aforesaid lever 35. It  
 will thus be seen that when the hand-lever  
 20 56 is in the position shown in Fig. 1 the driv-  
 ing connection 18 between the differential  
 drive-wheel 14 and the reel-turning pulley 20  
 will be taut, and therefore the desired motion  
 will be communicated to the shaft or reel 29,  
 25 by which to cause the line or cable 30 to be  
 wound thereon to raise or elevate the bailer  
 or other tool within the well-tube 33. By  
 moving said lever slightly in the direction of  
 the reel-turning pulley 20 the shaft or reel 29  
 30 will be free to rotate in either direction, and  
 consequently the line or cable will be caused  
 to unwind from the reel or shaft 29 by the  
 weight of the bailer or other well-tool, which  
 descends within the well-tube in an obvious  
 35 manner, the speed of descent thereof being  
 controlled or regulated by the amount of fric-  
 tion taking place between the brake-shoe 22  
 and the face 21 of the reel-turning pulley 20.  
 This pulley 20 is provided with an annular  
 40 flange 66 for preventing the driving connec-  
 tion 18 therefor from slipping onto the face  
 21 thereof, and it is apparent that by moving  
 the lever 56 to a sufficient extent farther in  
 the direction of the pulley 20 the desired  
 45 braking relation of the brake-shoe 22 with  
 the said face 21 thereof may be effected. In  
 other words, by proper adjustment or swing-  
 ing of the said lever 56 the brake-shoe 22  
 may be made to so engage with the face 21 of  
 the reel-turning pulley 20 as to maintain the  
 reel or shaft 29 stationary with sufficient  
 50 slack in the driving connection 18 to permit  
 of the continuous operation of the drive-  
 wheel 14 without in any manner affecting  
 for the time being the said reel or shaft 29.

In order to prevent sagging of the driving  
 connection or belt 18, I preferably provide  
 beneath portions thereof suitable supports  
 55 67 and 68, which also cause said driving con-  
 nection or belt to remain inactive or loose (by  
 slight pressure thereon) at such times as the  
 reel or shaft 29 may not be in motion, said  
 supports being held in the desired position  
 by means of upright members, (indicated at  
 60 69 and 70.)

From the foregoing it is thought that the  
 construction and operation of my improved  
 well-rig structure will be thoroughly under-  
 65 stood, and it will be seen that the same pos-



sesses many advantages in point of economy, as well as in other respects hereinbefore mentioned.

Supported on the base or platform are the usual upright frames 72 and standard 73, carrying at its upper end the pivoted beam 74, a further description of which parts is deemed unnecessary herein.

To enable the described adjustments of the bracket 24 and brake-shoe 22 to be effected, a slot 75 is formed in the table 44, through which extends the bolt 26, having thereon the tightening-nut 76.

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

1. A well-rig comprising a base inclined downwardly at one end and having braces connected to such end and inclined upwardly therefrom.

2. A well-rig comprising a base inclined downwardly at one end and partially embedded in the ground, and having braces connected to such end and inclined upwardly therefrom.

3. A well-rig comprising a base inclined downwardly at one end and supporting a jack-post, and braces connected to such end and inclined upwardly therefrom and braces connected to the jack-post and extending horizontally therefrom.

4. A well-rig comprising a base inclined downwardly at one end and partially embedded within the ground, braces connected to such end and inclined upwardly therefrom, said base supporting a jack-post and braces connected to the jack-post and extending horizontally therefrom.

5. A well-rig comprising a base inclined downwardly at one end and partially embedded within the ground having braces connected to such end and inclined upwardly therefrom, said first-named base embodying cross-beams and longitudinal beams.

6. A well-rig comprising a drive-wheel, a pulley and a driving connection therefor from the drive-wheel, a reel, and means for shift-

ing the pulley and wheel to slacken said driving connection, embodying a forwardly and rearwardly movable hand-lever, a second forwardly and rearwardly movable lever in alinement therewith, a forwardly and rearwardly swinging member disposed oppositely to said second lever, for supporting between them, the said pulley and reel, and movable connections between said levers.

7. A well-rig comprising a drive-wheel, a pulley and a driving connection therefor from the drive-wheel, a reel, and means for shifting the pulley and wheel to slacken said driving connection, embodying a forwardly and rearwardly movable hand-lever, a second forwardly and rearwardly movable lever in alinement therewith, a forwardly and rearwardly swinging member disposed oppositely to said second lever, for supporting between them the said pulley and reel, movable connections between said levers, said member having a supporting-beam, and provided with a movable brace, and also having at the ends thereof, adjustable movable relation with said beam and brace, respectively.

8. A well-rig comprising a drive-wheel, a pulley and a driving connection therefor from the drive-wheel, a reel, means for shifting the pulley and reel to slacken said driving connection, a brake device for the pulley, means for controlling the engagement of the brake device with the pulley, said first-named means embodying a forwardly and rearwardly movable hand-lever, a second forwardly and rearwardly movable lever in alinement therewith, and a forwardly and rearwardly swinging member disposed opposite to the second lever, the two supporting between them said pulley and reel, and movable connections between said levers.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL STEPHEN STROTMAN.

Witnesses.

D. S. DIEHL,

D. A. BRYNER