

No. 614,518.

Patented Nov. 22, 1898.

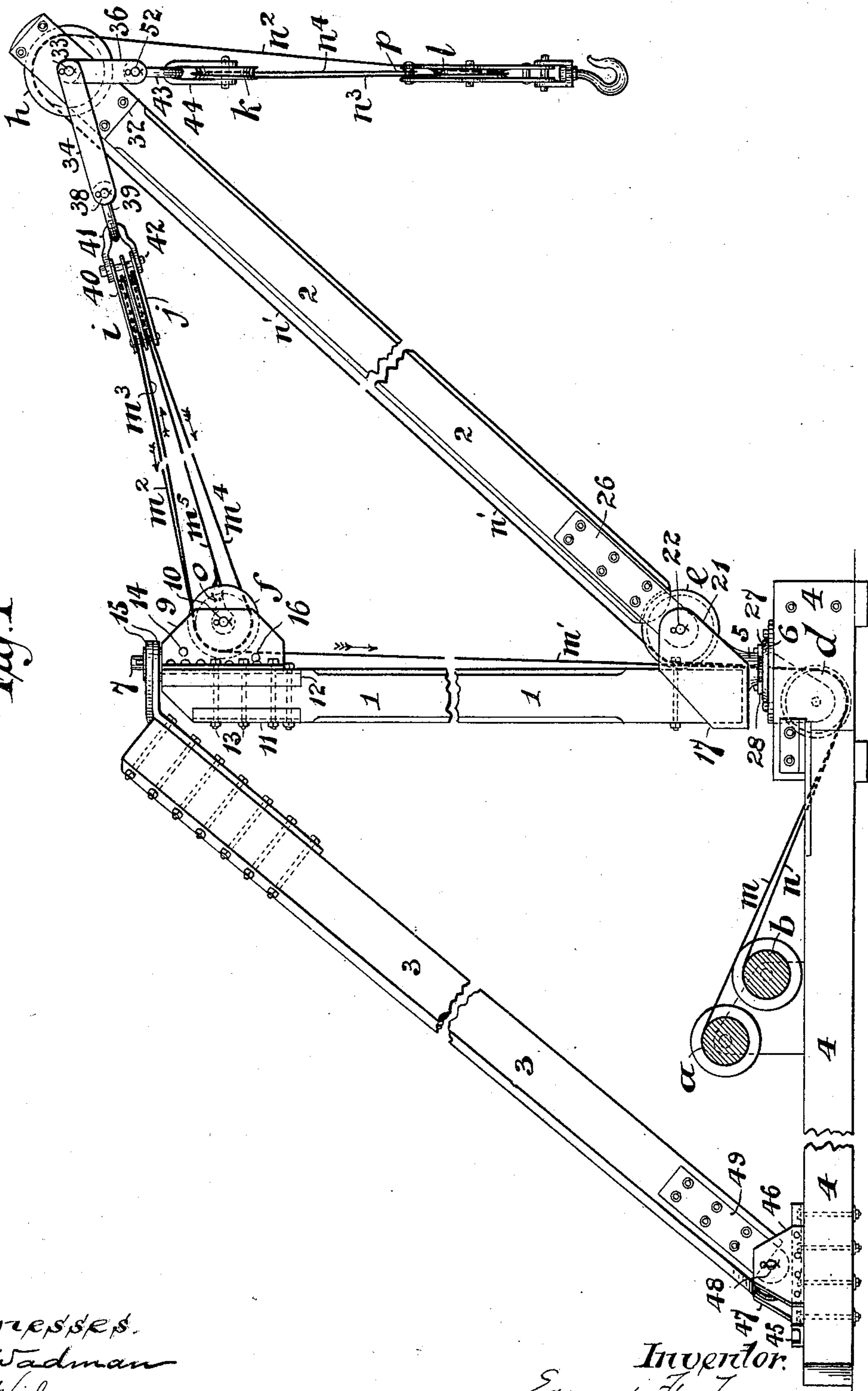
E. F. TERRY.
STIFF LEG OR GUY DERRICK.

(Application filed Apr. 9, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1



Witnesses.
Geo. Wadman
Th. Wilson.

Inventor.
Edward F. Terry
by Clifford & Bull
Attys

No. 614,518.

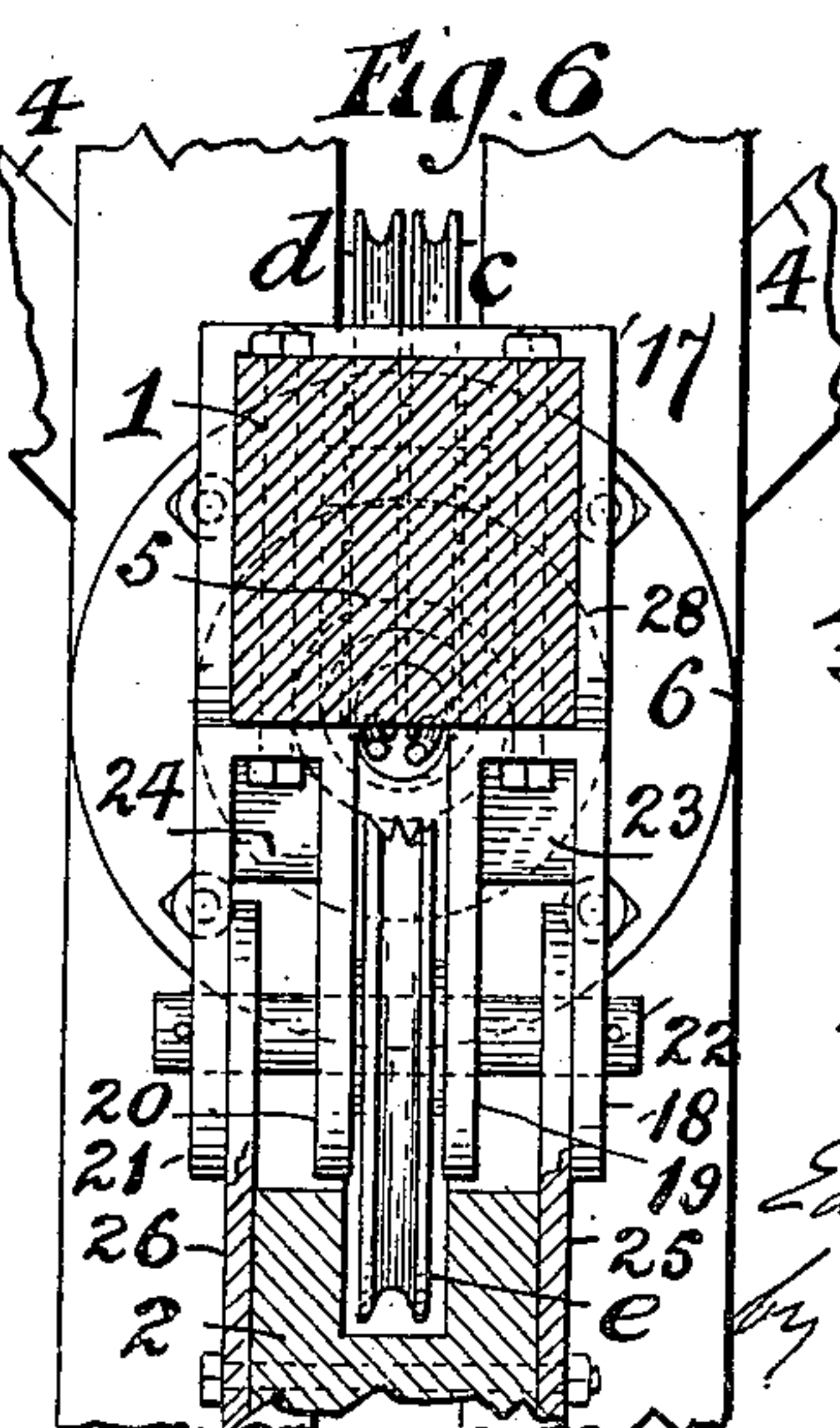
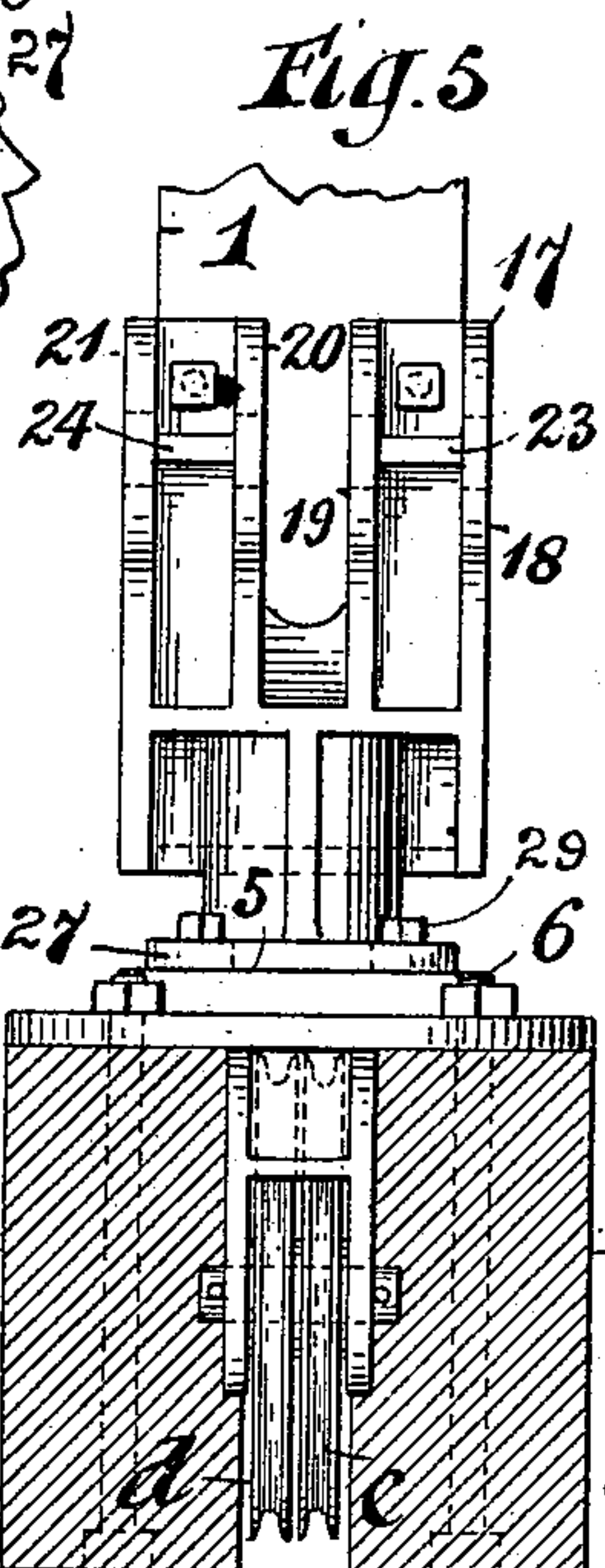
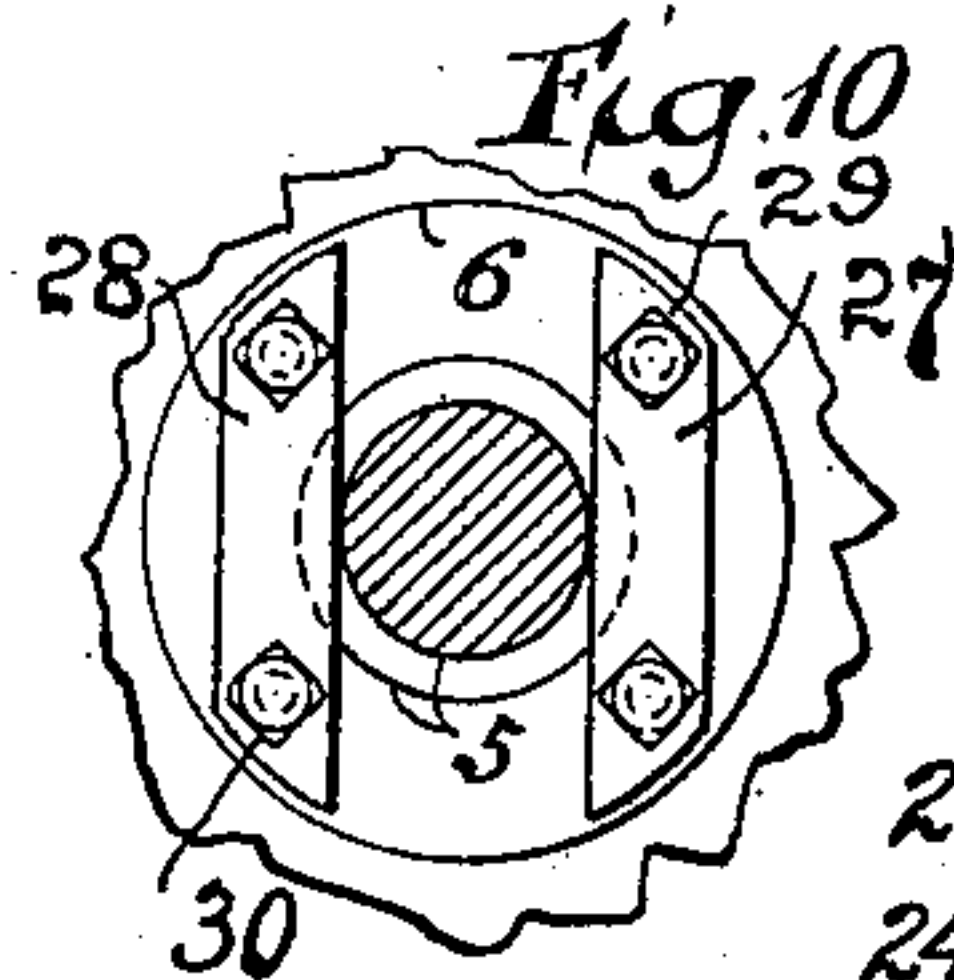
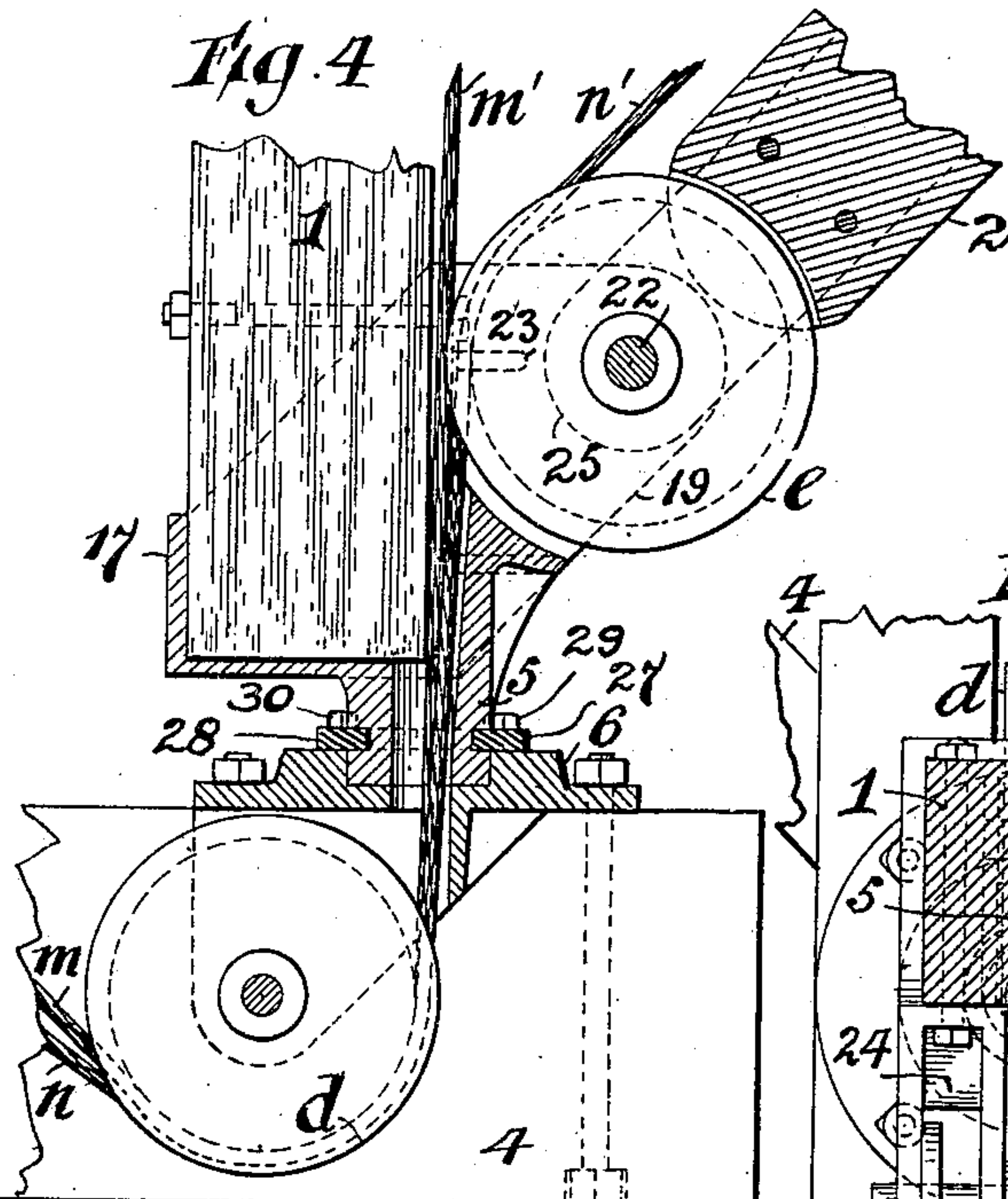
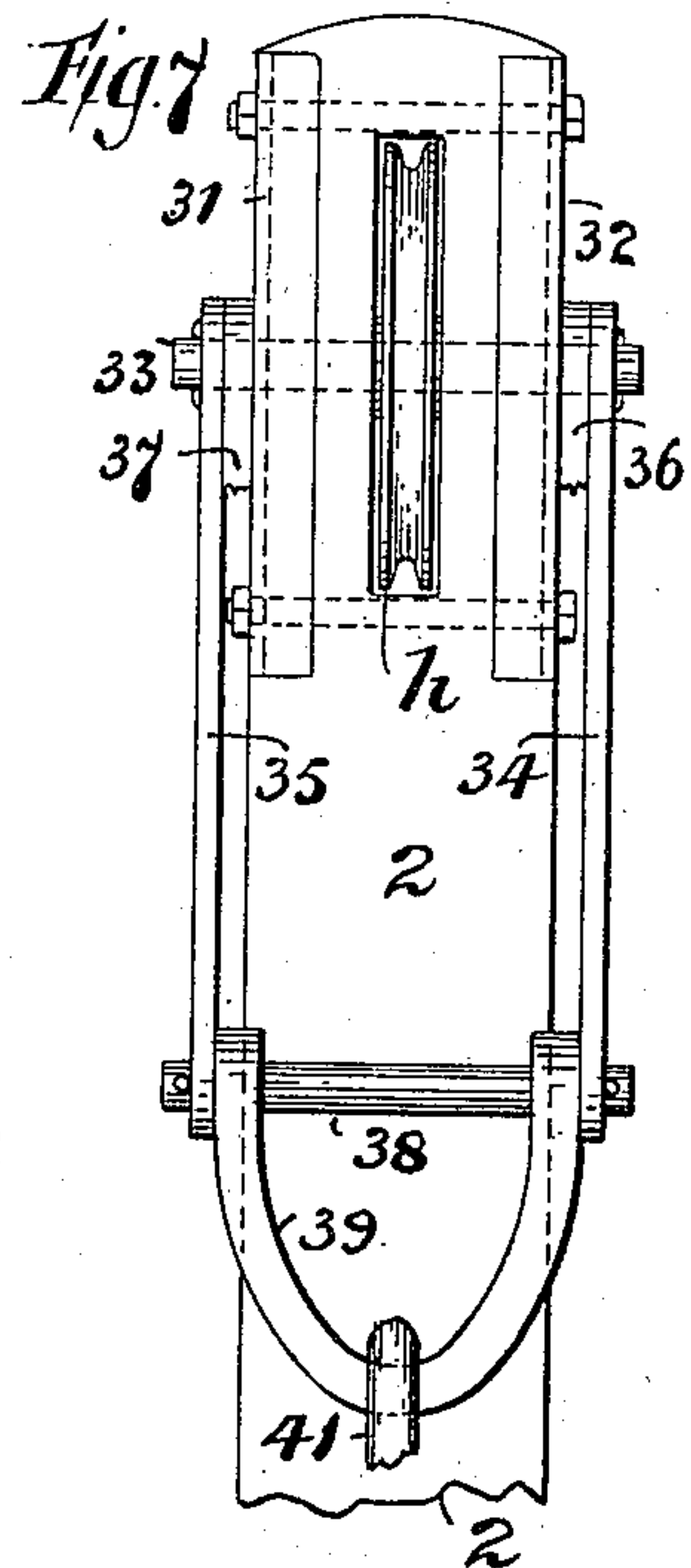
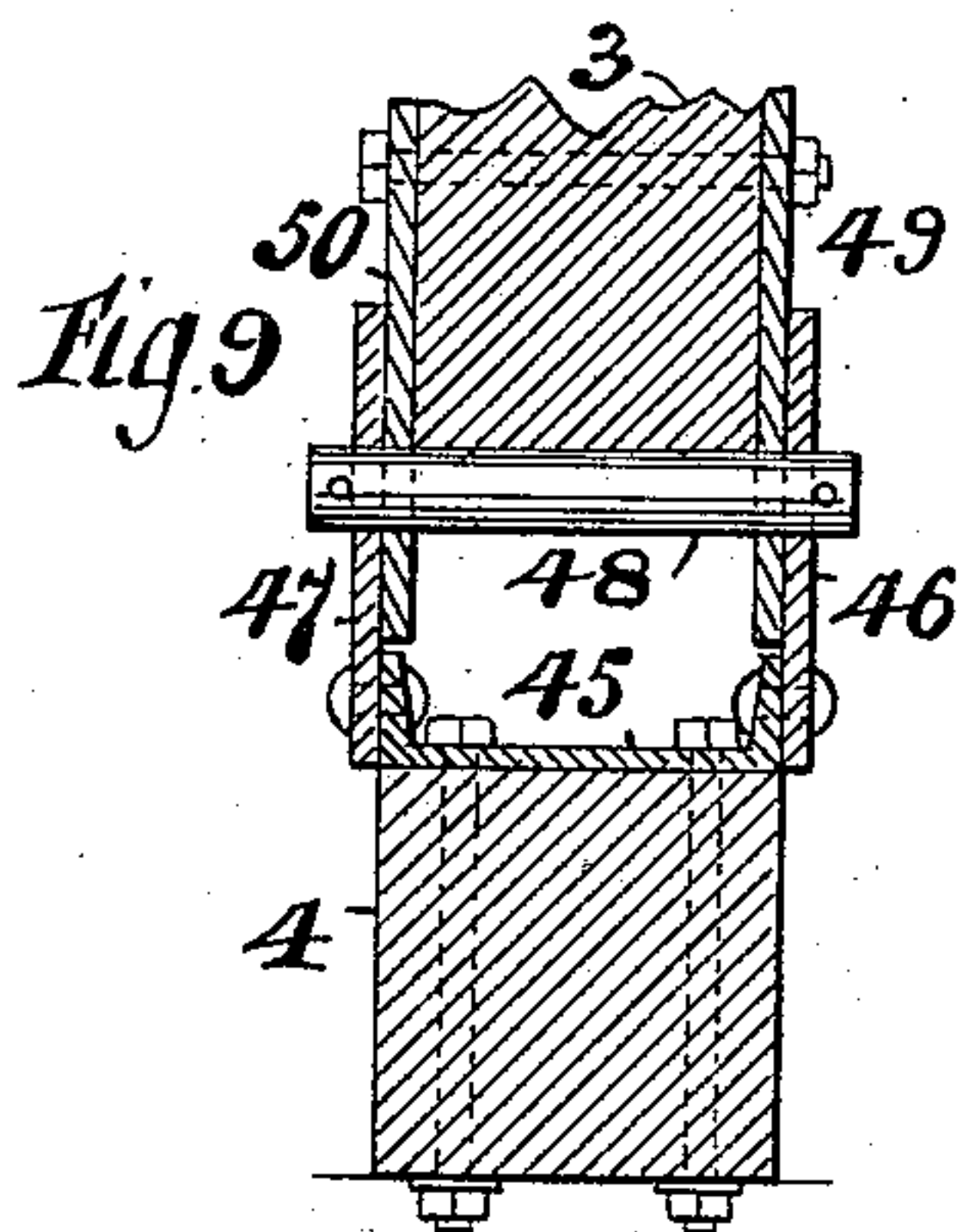
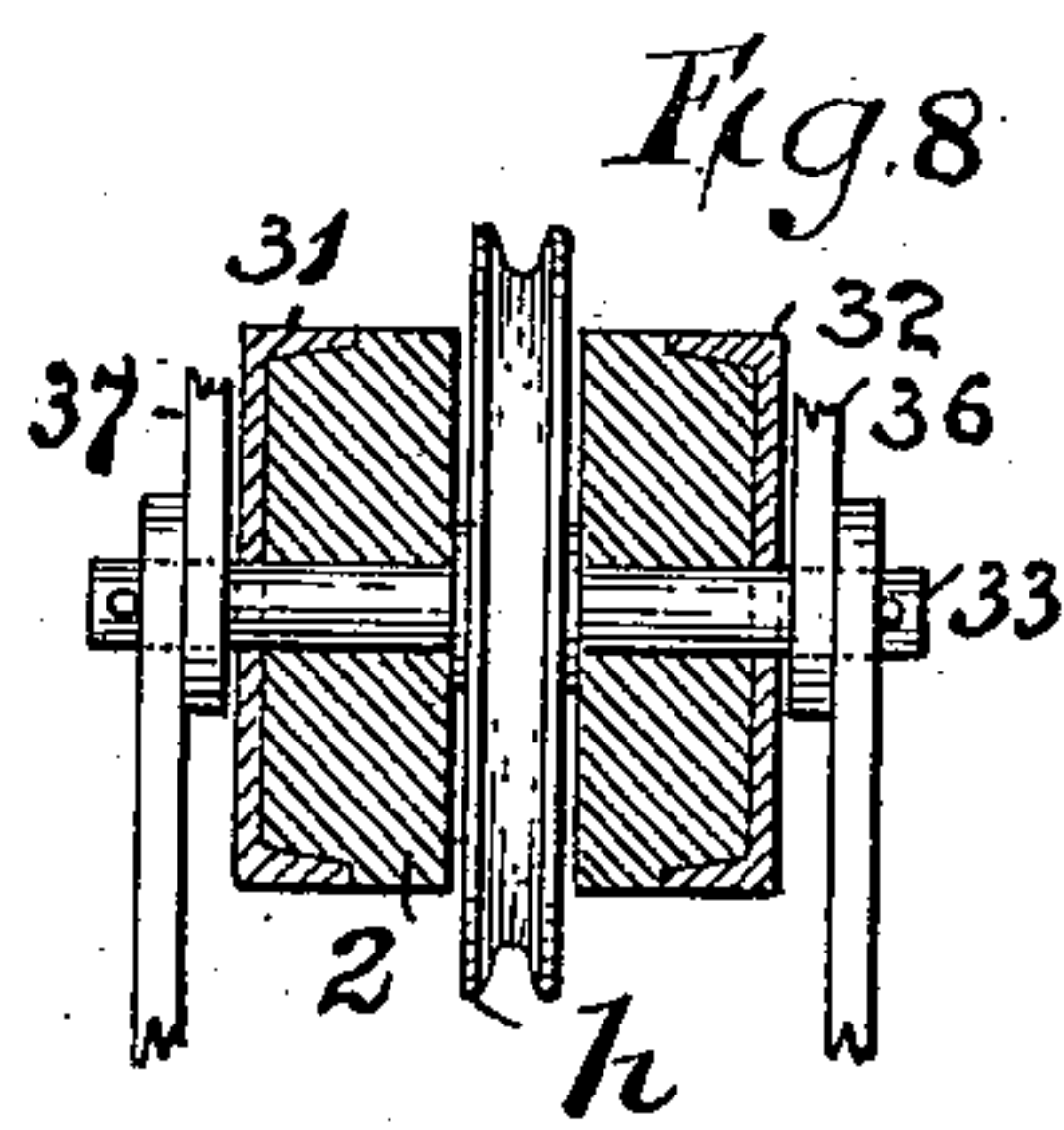
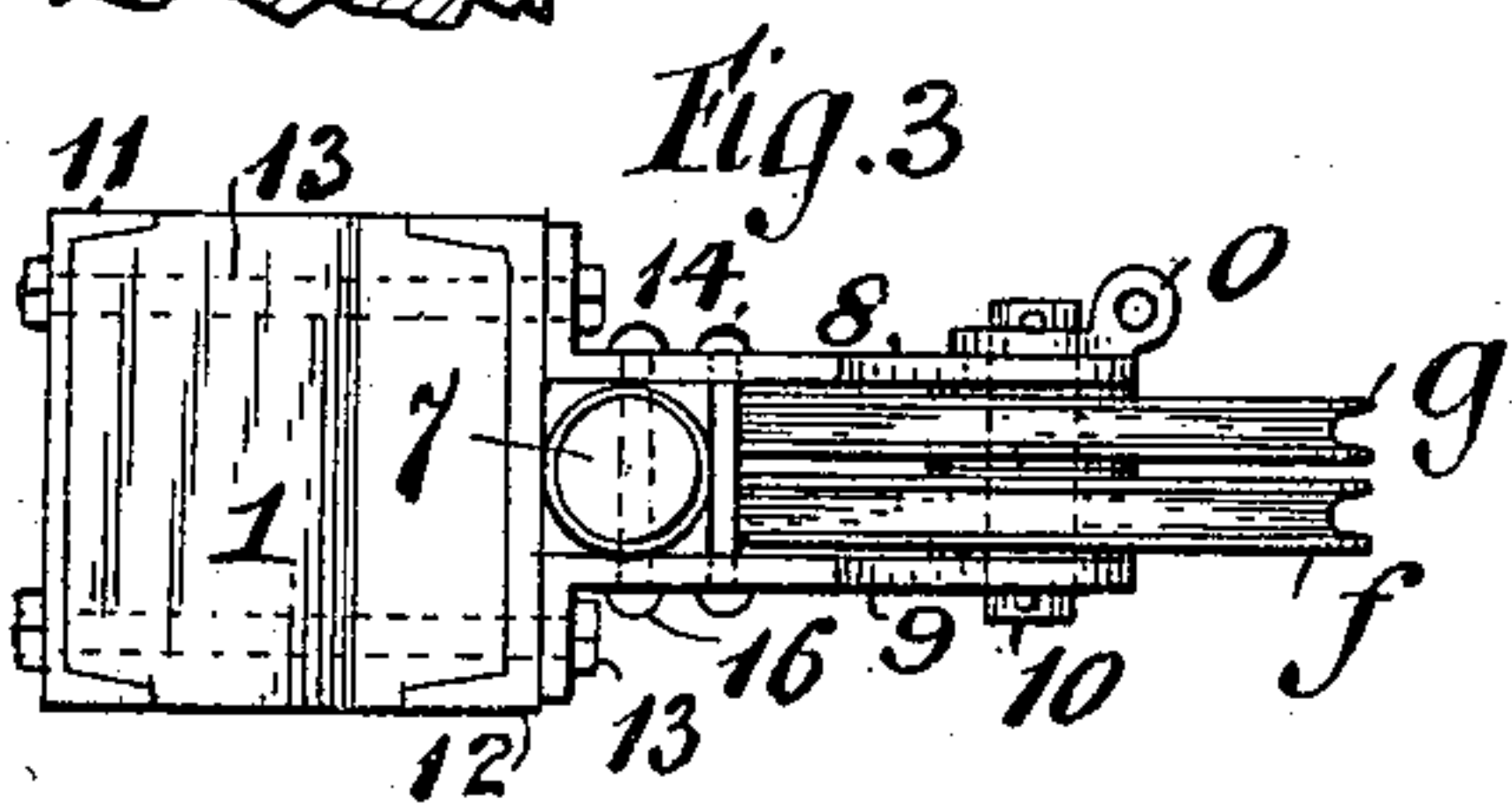
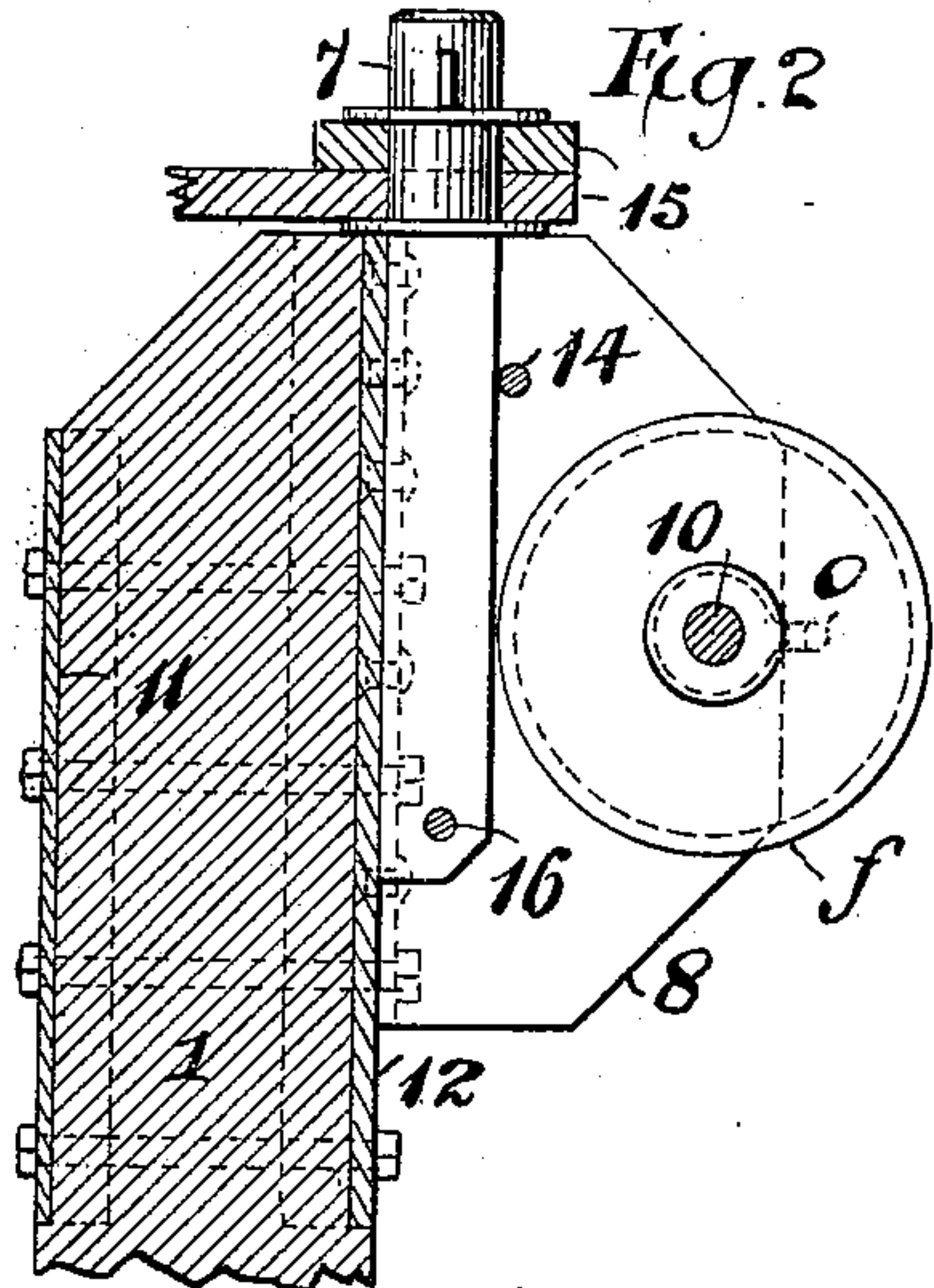
Patented Nov. 22, 1898.

E. F. TERRY.
STIFF LEG OR GUY DERRICK.

(Application filed Apr. 9, 1898.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.
Geo. Wadman
M. Wilson

Inventor.
Edward F. Terry
by Efford & Bull
Atty.

UNITED STATES PATENT OFFICE.

EDWARD F. TERRY, OF NEW YORK, N. Y.

STIFF-LEG OR GUY DERRICK.

SPECIFICATION forming part of Letters Patent No. 614,518, dated November 22, 1898.

Application filed April 9, 1898. Serial No. 677,034. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. TERRY, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Improvement Applicable to either Stiff-Leg or Guy Derricks, of which the following is a specification.

In the accompanying drawings, Figure 1 is a side view of a stiff-leg derrick embodying my invention. Figs. 2 and 3 are details of the mast top mechanism. Figs. 4, 5, 6, and 10 are details of the mast and boom bottom mechanisms. Figs. 7 and 8 are details of the boom-point mechanism. Fig. 9 is a detail of the mechanism connecting the stiff leg with the base-frame.

1 is the mast.

2 is the boom.

3 is the stiff leg.

4 is the base-frame.

a and *b* are two rope-drums. From *a* the boom-operating rope *m*, *m'*, *m*², *m*³, *m*⁴, and *m*⁵ extends under the sheave *c*, over the sheave *f*, around the sheave *i*, around the sheave *g*, around the sheave *j*, and its end is secured at *o*. From the drum *b* the fall-rope *n*, *n'*, *n*², *n*³, and *n*⁴ extends under sheave *d*, over sheave *e*, over sheave *h*, around sheave *l*, around sheave *k*, and its end is made fast at *p* to the fall-block.

5 is the mast bottom gudgeon, seated in the step 6.

7 is the mast top gudgeon, which is in substantial alinement with the mast bottom gudgeon 5.

The mast 1 is placed eccentric to the vertical line in which the centers of the two gudgeons lie. The sheaves *c* and *f* are located, as shown, so that the rope *m'* passes through the interior of the gudgeon 5 and thence upward in front of the mast. By having the mast eccentric, in the manner just described, no boring or mortising of it is necessary to provide for the gudgeon-pin 7 or the sheaves of the rope, while at the same time the mast may be always plumb.

8 and 9 are angle-irons forming together a bracket to support the bearing-pin 10 of the sheaves *f* and *g* and also the gudgeon-pin 7.

11 and 12 are channel-irons. The channel-iron 12 and the brackets 8 9 on the front of

the mast are secured to the mast and to the channel-iron 11 on the back of the mast by the bolts 13. The gudgeon-pin 7 is held against the face of channel-iron 12 by the pin 14, so that the center of the gudgeon-pin is close to the face of the mast and between the mast and the sheave-pin 10. The gudgeon-pin 7 is made of a square piece of iron rounded near the top to fit the stiff-leg iron or spider-plate 15. A cross-pin 16 may be employed to hold it down.

The mast foot-block is so designed that the mast is off center to correspond with the head-block above described and the mast stands plumb. In this position the rope *m'*, leading from the sheave *c* to the sheave *f*, runs directly in front of the mast, thereby doing away with any mortises or framing at the bottom of the mast. The mast foot-block consists of the socket portion 17 to receive the bottom of the mast, the gudgeon portion 5, and the bracket portion 18, 19, 20, and 21, which receives the pin 22, constituting the bearing-pin for the boom and the sheave *e*.

23 and 24 are reinforcing-webs cast between the bracket members 18 19 and 20 21 to prevent the casting from breaking between the boom-bearing pin 22 and the mast at the point of greatest strain. This casting when designed as shown causes the downstrain on the boom to be directed substantially to the center of the derrick-step. The sheave *e* is mounted between the bracket members 19 and 20, and outside of these bracket members, but inside, respectively, of the bracket members 18 and 21 are pivoted on the pin 22 the irons 25 and 26, bolted to the bottom of the boom. The use of the two inside bracket members 19 and 20 in this manner in connection with the two outside bracket members 18 and 21 prevents the danger of breaking the casting by a twisting strain.

As a safety-lock to prevent the mast from kicking out of its step I provide the two plates 27 and 28, which project from opposite sides into a peripheral groove in the mast bottom gudgeon 5. These plates are secured to the step-block 6 by the bolts 29 and 30.

The channel-irons 31 and 32 are bolted onto opposite sides of the boom near its point. They carry the pin 33, which constitutes the bearing of the sheave *h*, mortised in the boom.

The pin 33 projects outside of the channel-irons 31 and 32 and carries also the pair of shackle-bars 34 and 35 and the pair of shackle-bars 36 and 37. The pin 38 pivotally couples the shackle-bars 34 35 with the shackle 39, which is in turn coupled with the sheave-block 40 by the shackle 41 and shackle-pin 42. The sheave-block 40 is thus held, with the sheaves *i* and *j*, in such position that their sides are presented to the boom 2, and therefore that boom may be dropped to any desired position without causing the edges of said sheaves to strike it. The pin 52 couples the shackle-bars 36 37 with the shackle 43, which carries the sheave-block 44 in such position that the side of the sheave *k* is presented toward the bottom of the boom, so that the boom may be raised to any extent desired without causing the edge of the sheave *k* to strike it.

In Fig. 9, 45 is a channel-iron bolted to the base-frame 4, to which are bolted the side irons 46 and 47, which carry the pin 48, which serves as a bearing for the side irons 49 and 50, bolted to the sides of the stiff leg 3.

Among the advantages derivable from my invention the following may be mentioned: A close shearing strain is obtained on the gudgeon-pin 7. A bending strain near the masthead is avoided, and the mast is substantially only subjected to compression strain. Boring or mortising the masthead to receive the gudgeon-pin 7 or the sheave is avoided. Tackle-blocks at the masthead are dispensed with, which heretofore were liable to foul with the stiff leg when swinging close. The mast is always plumb. The parts can very readily be fitted to the mast, and the strength of the combination is great.

I claim—

1. In a derrick, in combination, the mast, the sheave *f*, the gudgeon-pin 7, the bracket 8, 9, and means for securing said bracket so that the same projects from one side of the mast; said bracket having the bearing for said sheave and having a socket for said gudgeon-pin intermediate said sheave-bearing and the side of the mast, substantially as described.

2. In a derrick, in combination, the mast, the side irons 11, 12, the cheek-pieces 8, 9,

projecting from said side iron 12, the sheave *f* between said cheek-pieces and the gudgeon-pin 7 between said sheave and said side iron 12, substantially as described.

3. In a derrick, in combination, the mast top gudgeon and the mast bottom gudgeon substantially in alinement with each other, the mast set eccentrically thereto, and the sheaves *c* and *f* located substantially as described; whereby the boom-operating rope extends in front of the mast, substantially as described.

4. In a derrick, in combination, the mast bottom gudgeon having a groove in its periphery, the step for the same and a locking member projecting into said groove in the periphery of said gudgeon, substantially as described.

5. In a derrick, in combination, the boom, the mast and a casting containing a socket for the mast with four projecting webs 18, 19, 20 and 21, the pin 22, the sheave *e* mounted upon said pin between said webs 19 and 20 and the boom-irons 25 and 26 mounted upon said pin respectively between the webs 18 and 19 and the webs 20 and 21, substantially as described.

6. In a derrick, in combination, a mast, the boom, a casting containing a socket for the mast and four webs 18, 19, 20 and 21 projecting therefrom, the interposed reinforcing-webs 23 and 24 and the boom and boom-sheave pin mounted on said webs, 18, 19, 20, 21, substantially as described.

7. In a derrick, in combination, the boom, the mast, the channel-irons 31 and 32 on opposite sides of the boom near its point, the pin 33 carrying the sheave *h*, a pair of shackle-bars 34, 35 pivoted on said sheave-pin, a sheave *i* and means whereby the same is coupled to said shackle-bars consisting of the sheave-block 40, the shackles 39 and 41 and the shackle-pins 38 and 42, substantially as described.

EDWARD F. TERRY.

Witnesses:

F. A. SPERRY,
J. E. GREER.