

(No Model.)

3 Sheets—Sheet 1.

J. MONIGHAN.
HOISTING APPARATUS.

No. 370,078.

Patented Sept. 20, 1887.

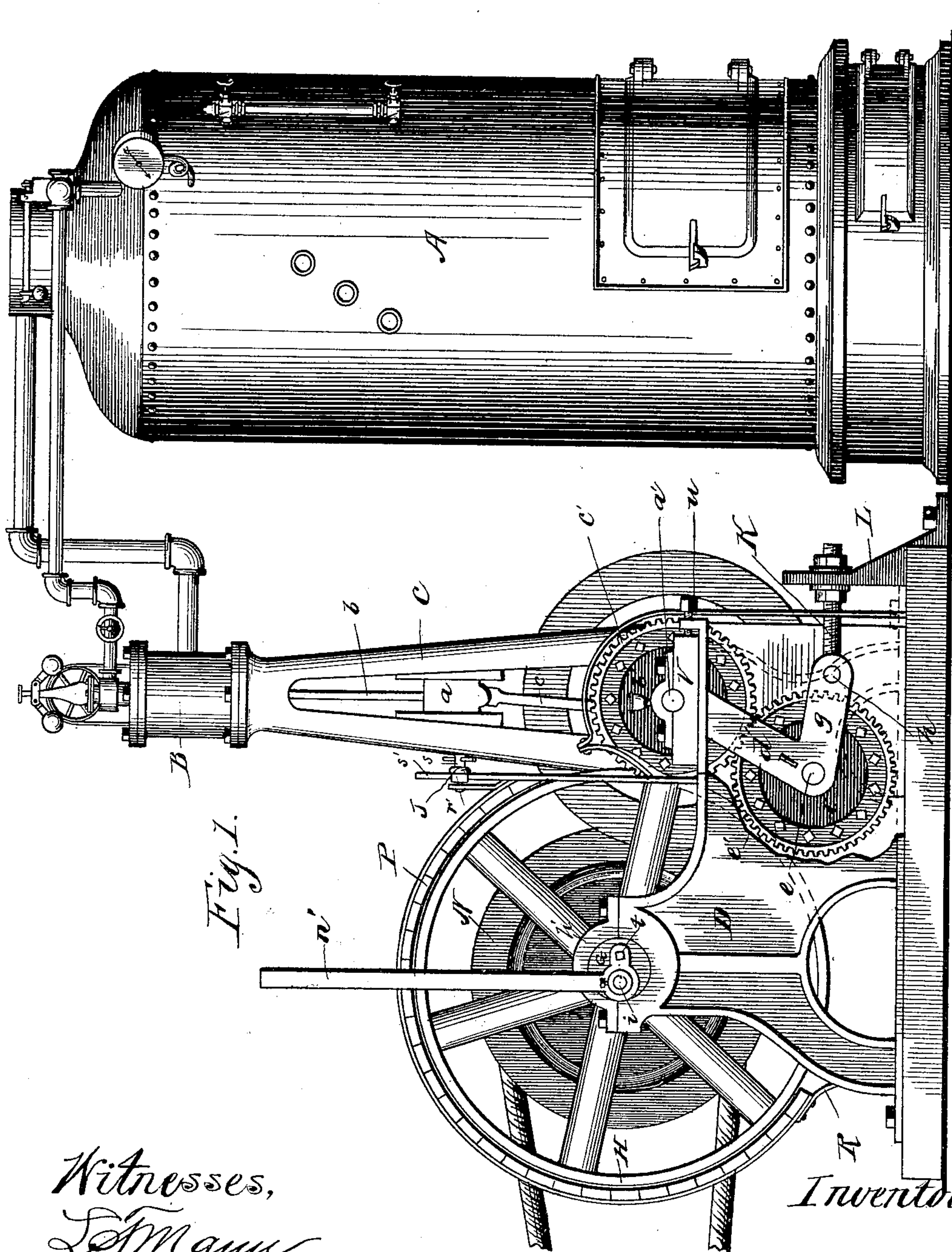


Fig. 1.

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By *Offield & Co., Attys.*

(No Model.)

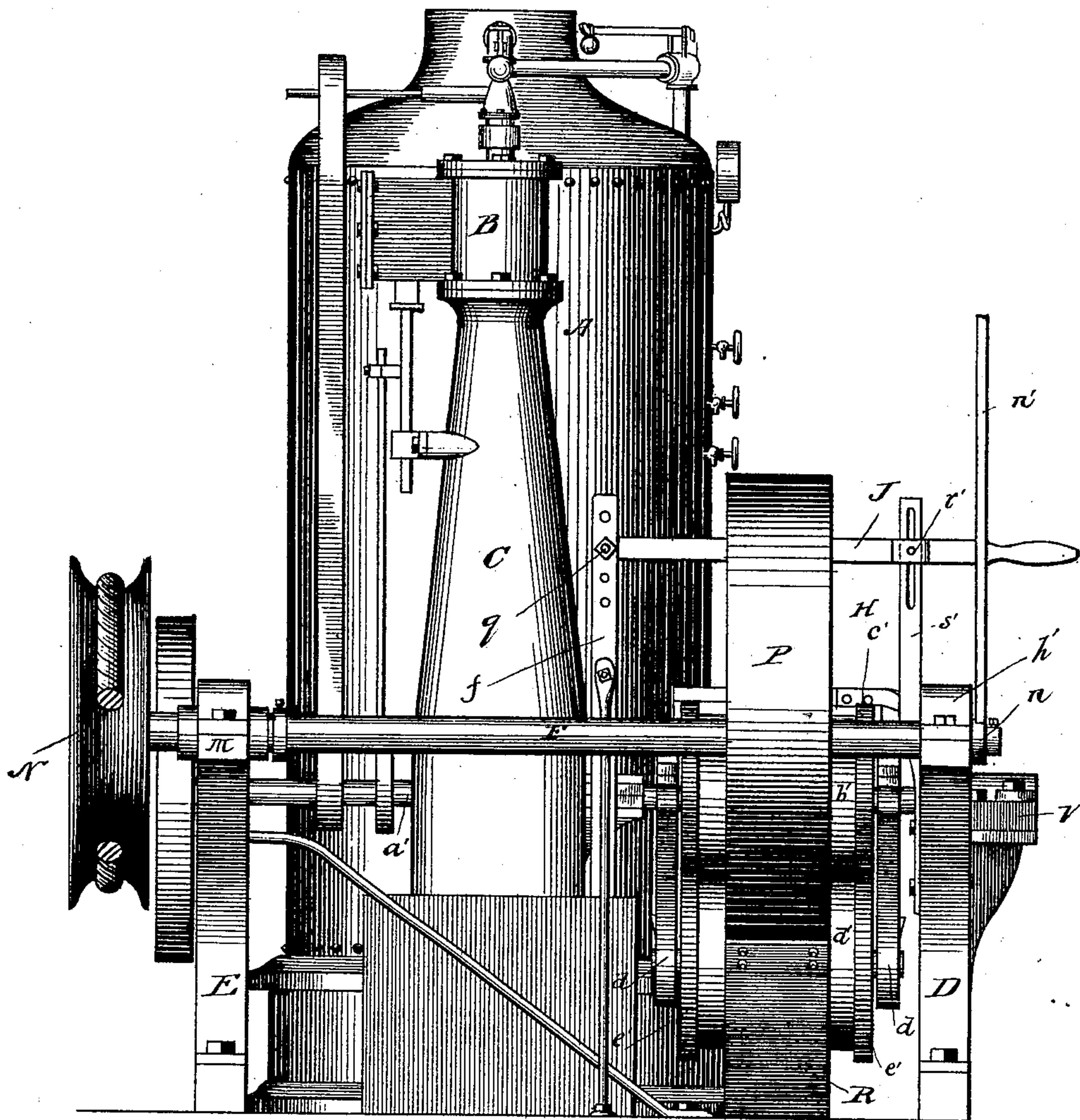
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Fig. 2.



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Fig. 3.

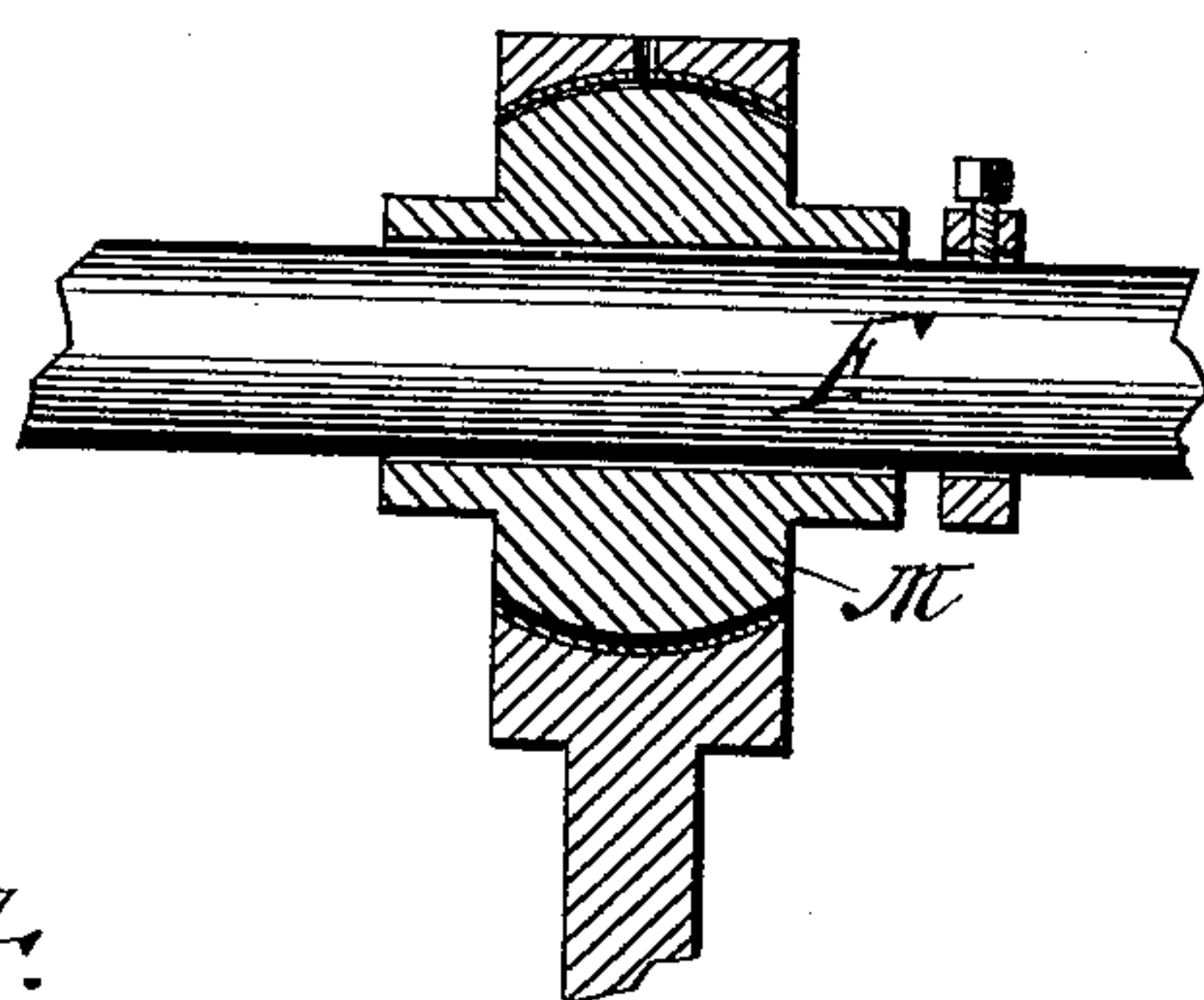


Fig. 4.

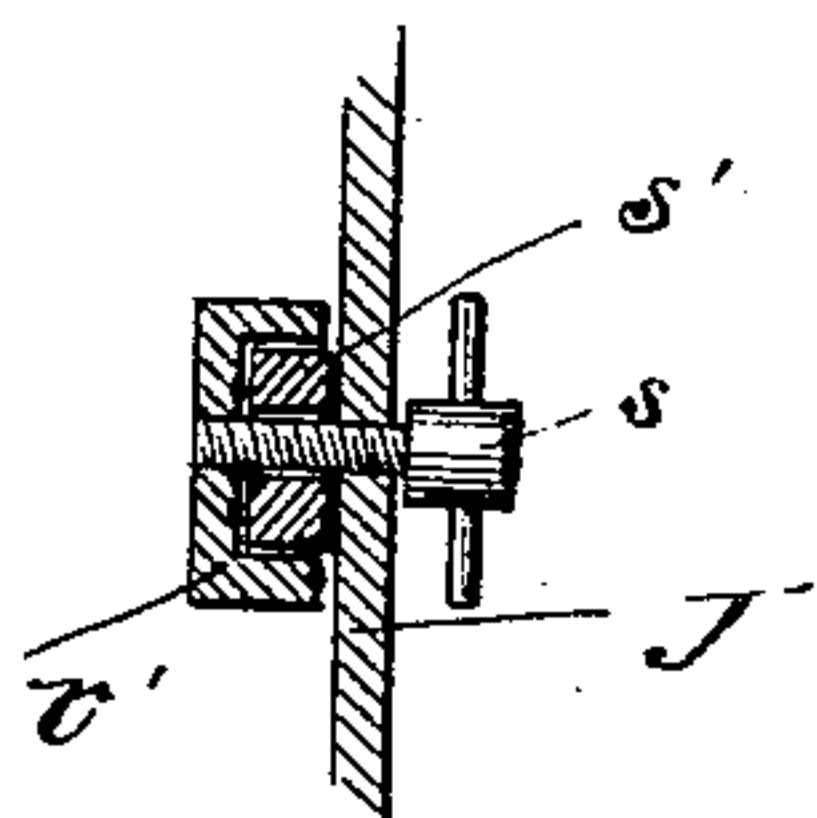


Fig. 5.

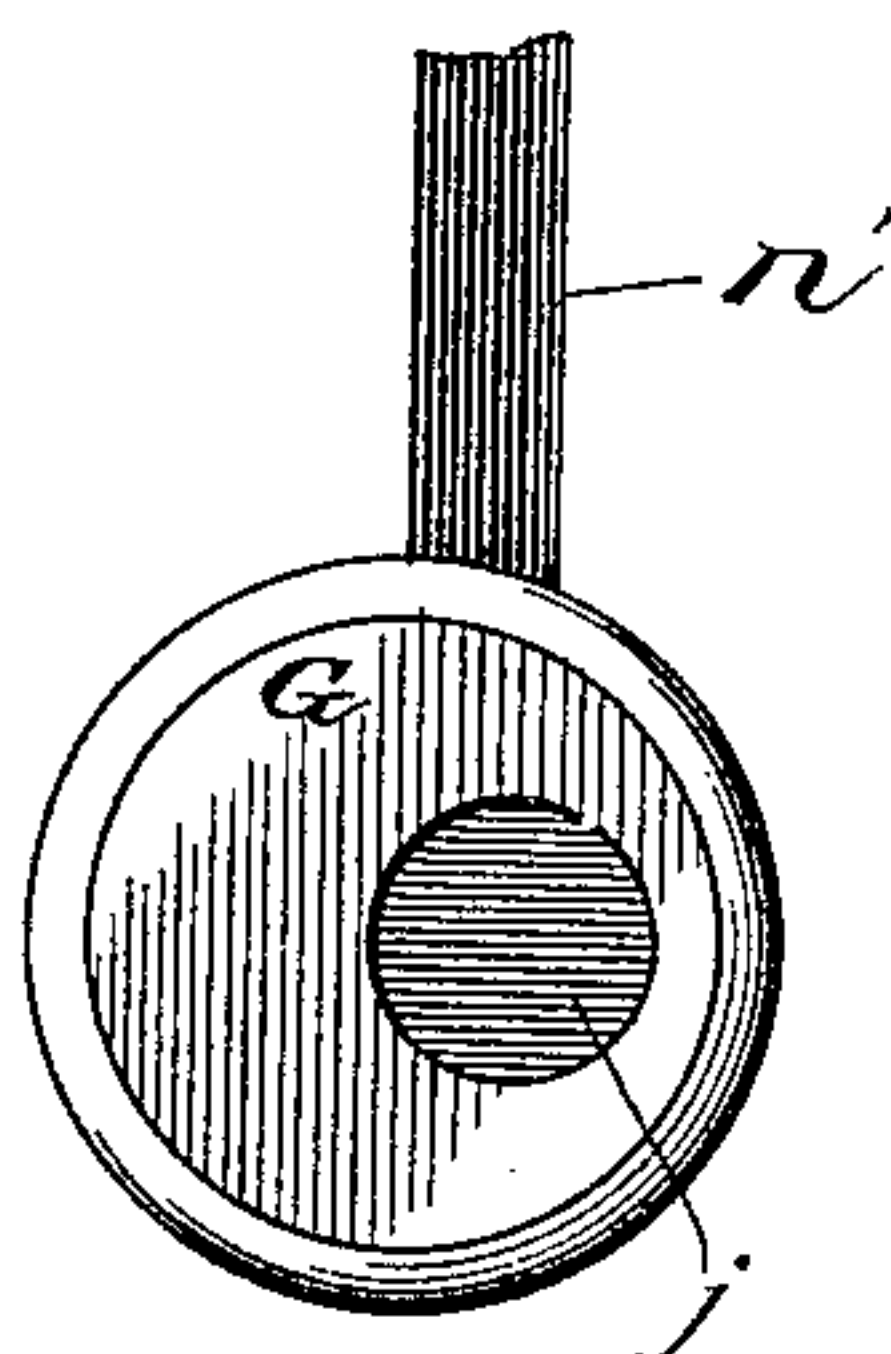


Fig. 6.

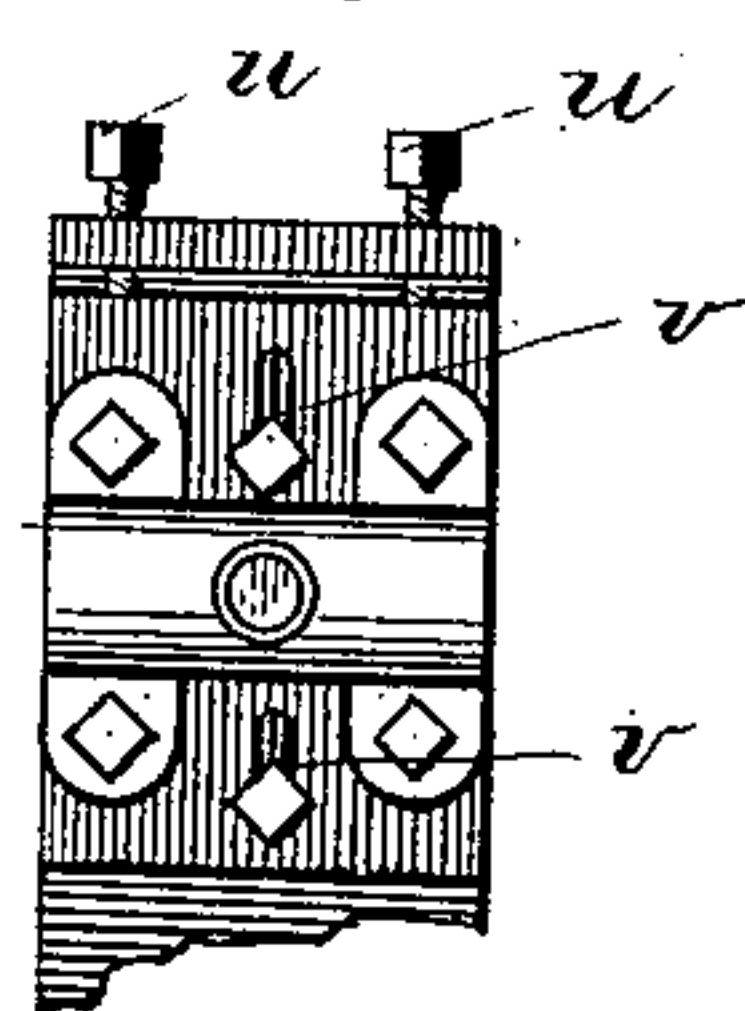


Fig. 7.

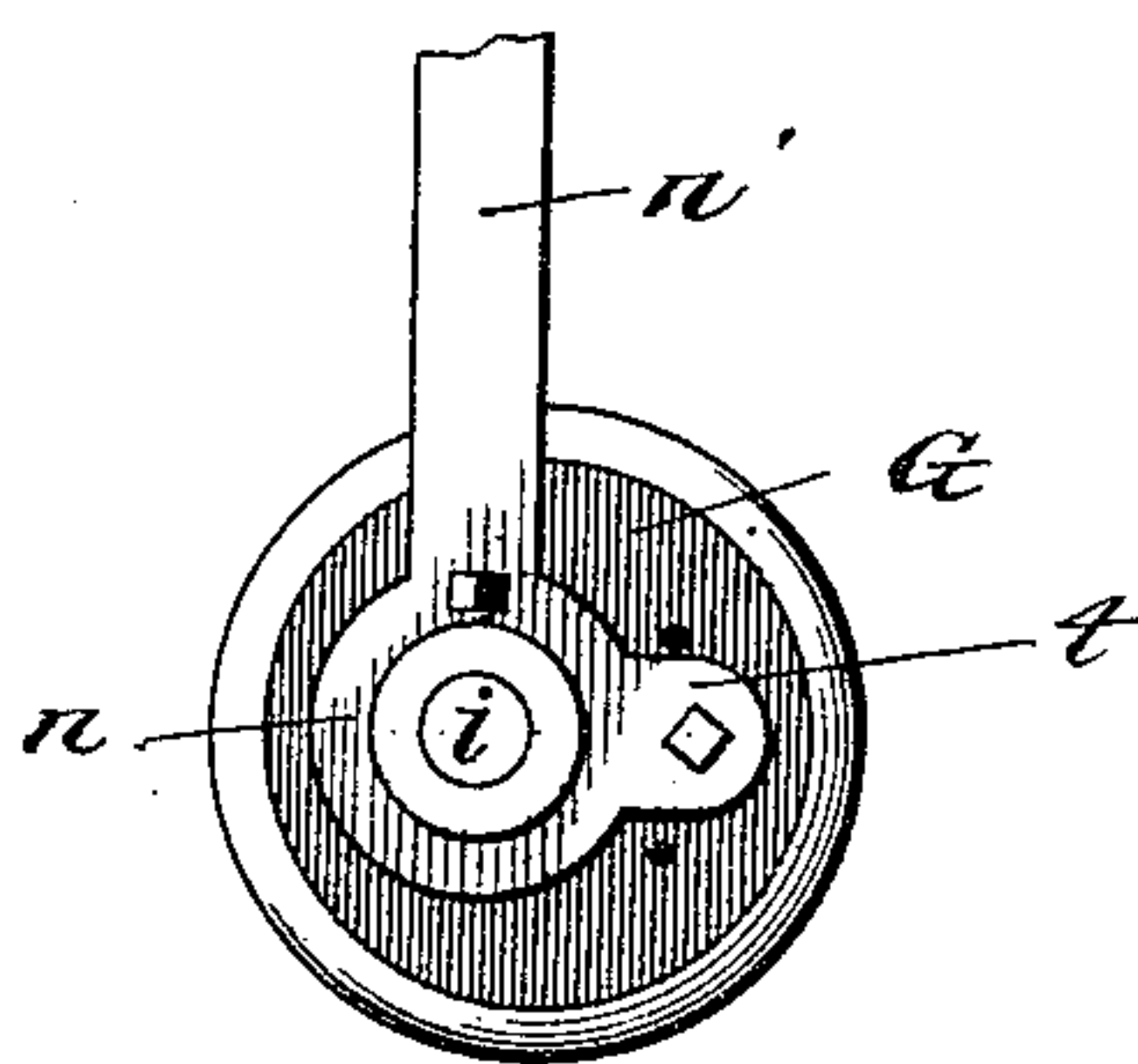
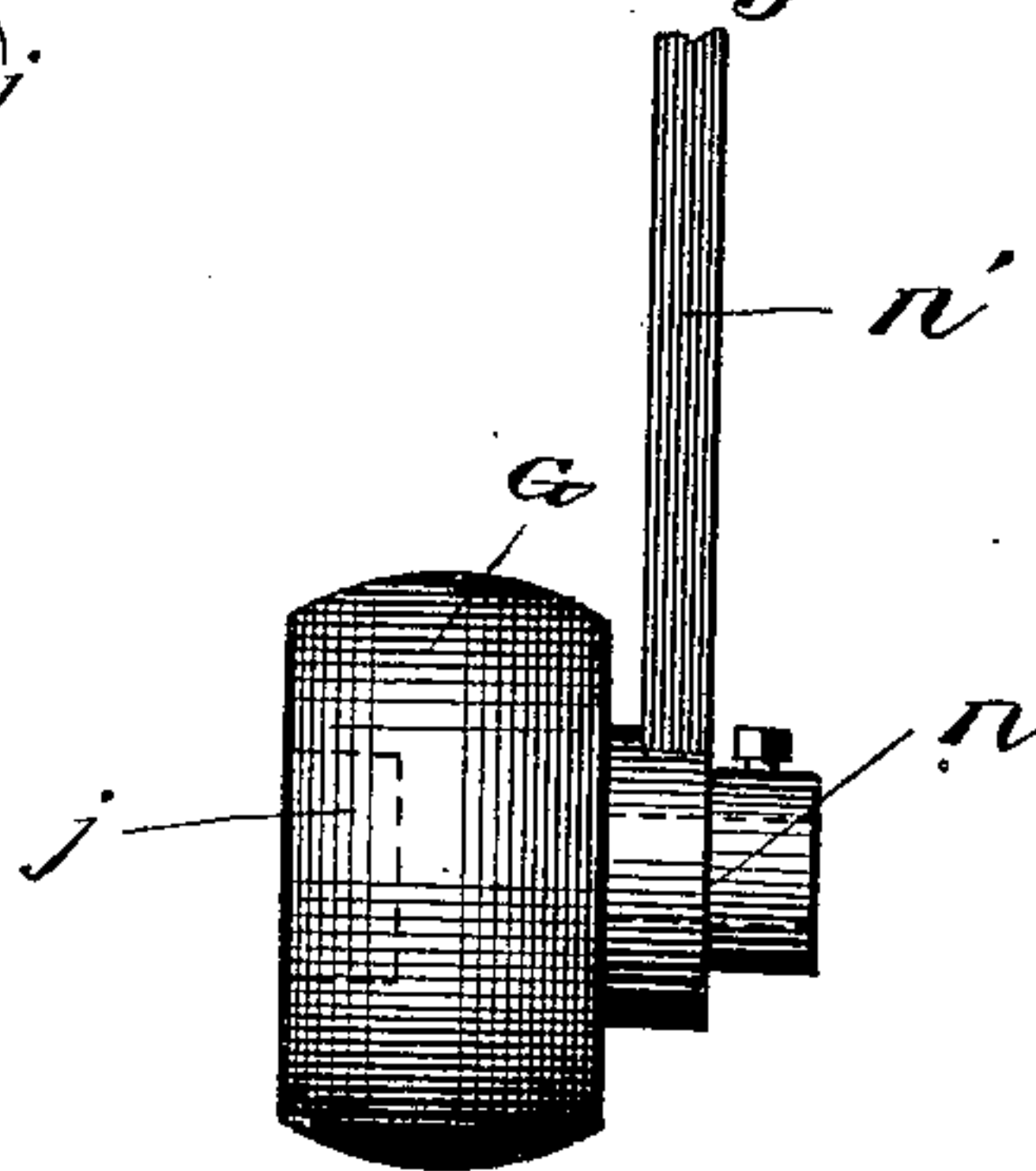


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN MONIGHAN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
EMMET A. THOMAS, OF SAME PLACE.

HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 370,078, dated September 20, 1887.

Application filed June 25, 1887. Serial No. 242,505. (No model.)

To all whom it may concern:

Be it known that I, JOHN MONIGHAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Hoisting Apparatus, which I desire to protect by Letters Patent of the United States, of which the following is a specification.

My invention relates to an apparatus for general hoisting purposes, and is more especially designed to be used for elevating building material, as I have shown it in the present example, in which the engine in connection therewith, and the character of the apparatus is such as to render it portable.

The more definite purpose aimed at in my improvement is to obviate the necessity of reversing the engine to change the direction of the hoisting-carriage from an upward to a downward movement, or the reverse, as is usually practiced, whereby the injury to the machinery by that method is prevented and a more satisfactory result is obtained.

In the accompanying drawings, making a part of this specification, Figure 1 is a side elevation. Fig. 2 is a front or transverse elevation. Fig. 3 is a detail of an adjustable journal-box. Fig. 4 is a detail section of a brake mechanism. Fig. 5 is a detail of an eccentric shaft-bearing. Fig. 6 is a detail of an adjustable bearing. Fig. 7 is a detail of a shaft-bearing eccentric the reverse of Fig. 5, and Fig. 8 is a detail of the same part as Figs. 5 and 7.

In Fig. 1 is shown a vertical steam-boiler, A, with suitable pipes leading to the cylinder B of a vertical engine of ordinary construction, of which C is the upright supporting structure, centrally open to afford guideways for the cross-head *a* and room for the operation of piston-rod *b* and pitman *c*. Secured on the base in common with the engine structure are side castings or supports, D and E, preferably sufficient in horizontal dimensions to serve as bearings for the entire driving mechanism of the hoisting device.

In Fig. 1 is shown a crank-shaft, *a'*, having its bearings on parts D and E extending through the structure C, within which its crank portion is connected with pitman *c*, by means

of which it is driven. Keyed or otherwise secured on shaft *a'* is a friction-drum, *b'*, having at each end thereof spur-gear *c'*. Suspended loosely on shaft *a'* are hangers *d*. (In Fig. 1 a portion of support D is broken away to show an end view of the parts last named.) A shaft, *e*, connects the hangers *d* at their lower portions, on which is supported a second drum, *d'*, preferably equal in dimensions to drum *b'*, and having spur-gears *e'* at its ends meshing with the gears *c'*. Horizontal extensions *g* of the hangers *d* are connected by a rod, *h*, thus making the hangers practically one part. Shaft F, also having bearings upon supports D and E, has mounted upon it and secured thereto a friction drum or wheel, H. Shaft F has its bearing on support D in an adjustable head, G. (Shown in Figs. 5, 7, and 8.) In head G is a journal-seat, *j*, in which the end of shaft F has its rotatable bearing. Seat *j* is placed eccentrically in said head.

A suitable seat is provided for head G on support D to permit partial rotation, and a cap, *h'*, properly grooved or channeled, is provided as a covering for the eccentric and to retain it in position. Fig. 3, showing a cross-section of the bearing for the opposite end of shaft F, also illustrates the bearing of the eccentric.

Head G is provided with a wrist, *i*, extending outwardly, on which is placed a shank, *n*, of a lever, *n'*. To permit of this adaptation, and also permit of adjustability, the shank is provided with a suitable aperture to slip on the wrist, where it is retained by means of a collar and set-screw, as apparent in Fig. 7. Shank *n* is provided with an extension, *t*, in which is an aperture to admit a bolt. In the face of the eccentric any desirable number of apertures may be provided that will receive the bolt. Shank *t* thus serves to fix the position of lever *n'* on the wrist, and a duplication of apertures in head G arranged in an arc permits changing the position of the lever, which may be desirable to meet the wishes of different operators. The position of the drum *b'* is comparatively a permanent one; but the lower drum, as obvious, is adjustable. Its position is controlled and fixed by an adjustable rod, K, held in a spur or upright, L. Rod K is connected with tie-rod *h* by being swiveled

thereto, unless the latter is journaled in its bearings, and, being threaded, it is by means of nuts at spur L longitudinally movable and fixable. Thus such relation between drum H
5 and the two drums b' and d' exists that while the two latter are in proximity to the first neither is in contact, except optionally.

It is apparent that by shifting lever n' the position of shaft F, and consequently the po-
10 sition of drum H will be changed, whereby a movement of the lever in one direction will throw drum H, into contact with drum b' only, and a movement in the opposite direction will throw it in contact with drum d' only, or an
15 intermediate position will leave it removed from either. The rotation of the drums b' and d' , as obvious, is in contrary directions. Therefore, by a frictional contact of the drum H with either, the direction of its rotation is de-
20 termined. To adapt the opposite end of shaft F to this eccentric movement at G, the adjustable or ball-and-socket bearing M, as shown in Fig. 3, is provided. On the end of shaft F is shown a pulley, N, by which the hoisting-ca-
25 ble is driven.

I have provided for the bearing of shaft a' an adjustable box, V, to permit of ready re-
30 moval for rebabbiting, and also to compensate for any wear that may require adjustment to a closer position. The box is illustrated in Fig. 6, wherein are shown slots v and bolts for tightening, and also set-screws u , the operation of which latter is apparent, as seen in Fig. 1.

As a means for holding the elevator-carriage
35 suspended in any position I have provided a brake, P, in connection with drum H. That the latter may afford ample friction-surface conformable to the periphery of the drum, it is in the present example composed of a metallic
40 strap, on the inner surface of which are secured wooden segments or blocks. The brake is secured at one end to the base of the hoisting structure, as indicated at R. The other end is attached to a brake-lever, J. The latter has
45 its fulcrum at q in an upright, f , provided for the purpose. A means of locking the lever is provided (shown in detail in Fig. 4) in which a set-screw, s , is entered through the lever J and extends through a slot in a vertical bar, s' .
50 A nut, r' , clamping the lever with which screw s engages, in conjunction with the latter, serves as a means of securing the said lever in position, by which the brake is forcibly applied to the drum and retained during a time desirable.

The details of construction as shown and de- 55 scribed may be differed from to a considerable extent and still remain within the general scope of my invention. For example, the drum d' may be located above the drum b' and serve in the same capacity. I therefore do
60 not design to limit myself to the particular method of constructing and arranging the parts as shown in the present illustration.

Having thus described my invention, what I claim, and desire to protect by Letters Pat- 65 ent, is—

1. In a hoisting apparatus, a driving-shaft, a' , having mounted and secured thereon a drum, b' , provided with one or more spur-
70 gears, a drum, d' , suspended beneath said drum b' , also provided with gear that engages with the former, and provided with mechanism for fixing its position, in combination with a drum, H, which latter is so provided with an eccentric
75 journal-bearing as to permit its being thrown in or out of frictional gear with either of the first-named drums, substantially as set forth.

2. In a hoisting apparatus, a series of drums to one of which is given a continuous ro-
80 tary movement in one direction, a second whereof by gearing with the first is rotated in the opposite direction, and a third that is adapted to be disconnected from the first and second or alternately geared with either there-
85 of, in combination with a brake suitably arranged to arrest the rotary movement of said third drum when not in contact with either of the two first named, substantially as described.

3. The combination of shaft a' , a drum, b' , mounted thereon, hanger d , adjustable by
90 means of screw-rod K, a drum, d' , secured in said hanger and gearing with drum b' , and a drum, H, mounted upon a shaft by which the hoisting-cable is driven, that is provided with an eccentric bearing, G, and operated by a le-
95 ver, n' , substantially as and for the purpose set forth.

4. In combination with the drums b' , d' , and H, the latter mounted upon a shaft having an eccentric journal-support at one end of
100 its bearings, the ball-and-socket box M at its other bearing, whereby a change of position of said shaft is permitted, substantially as and for the purpose set forth.

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Witnesses:

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