

No. 629,583.

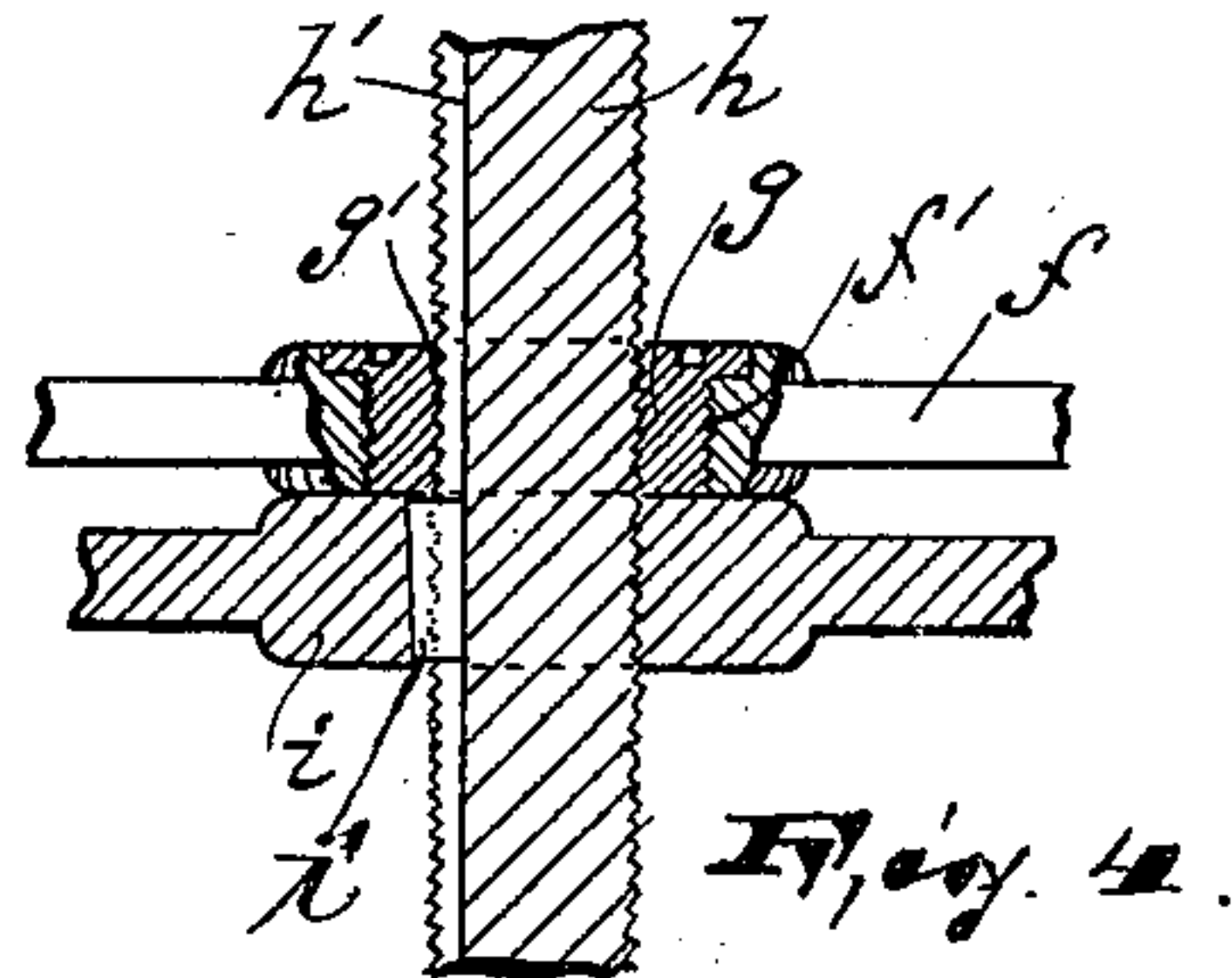
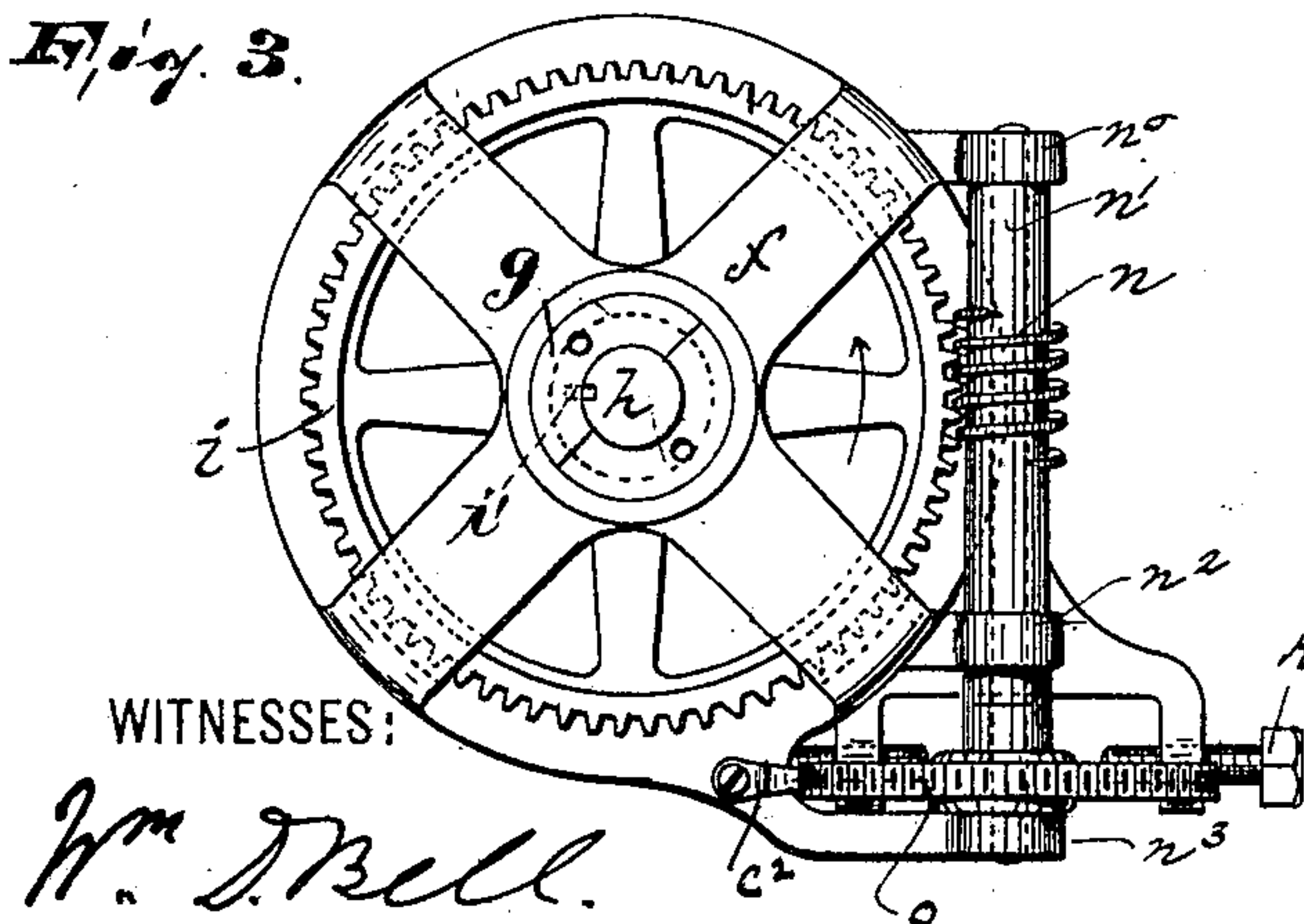
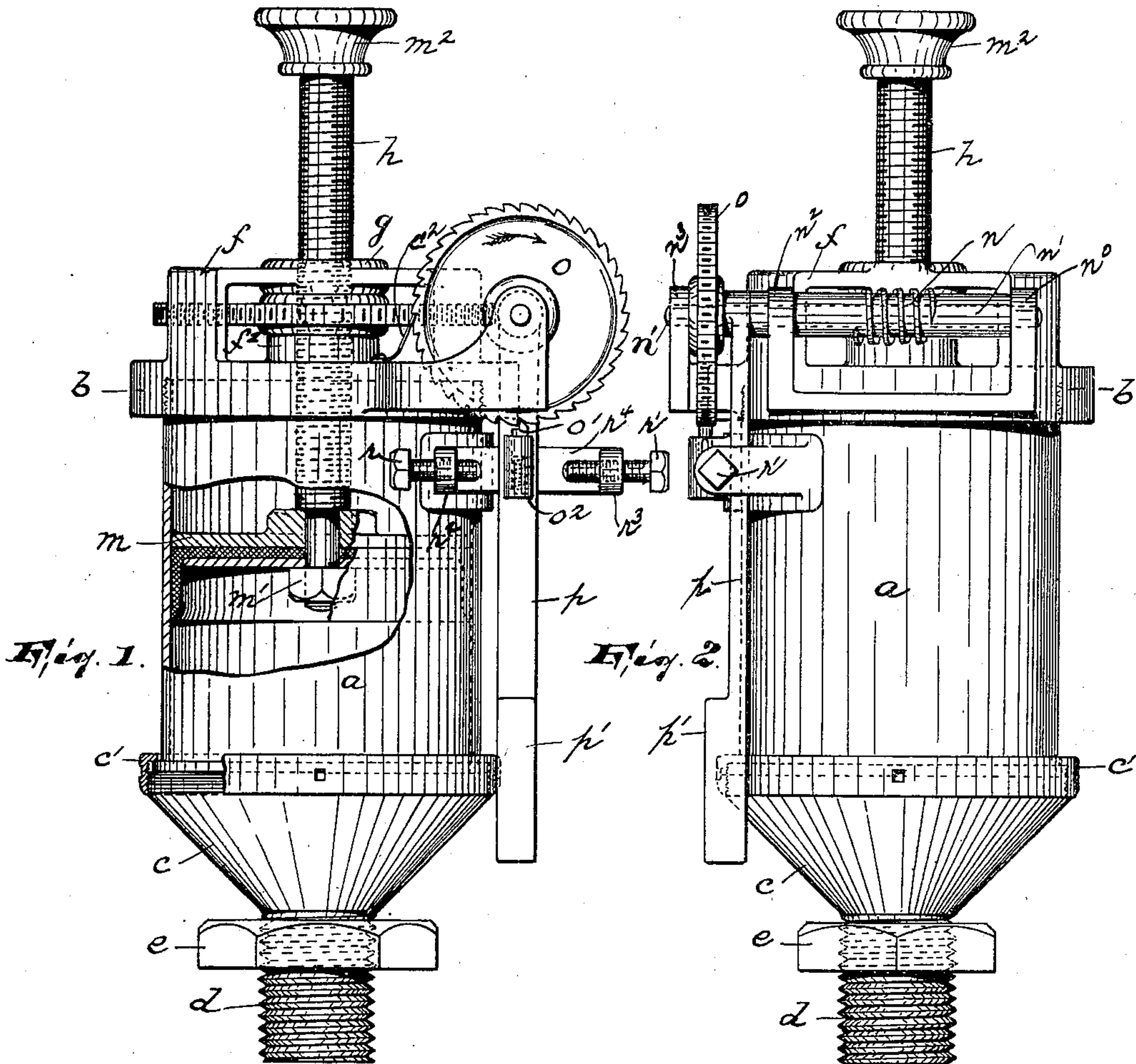
Patented July 25, 1899.

G. U. MERRILL.
LUBRICATOR.

(Application filed Apr. 8, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

Wm. D. Bell.
Robert J. Pollitz.

INVENTOR

Grant W. Merrill

BY

Gartner & Co.
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2 Sheets—Sheet 2.

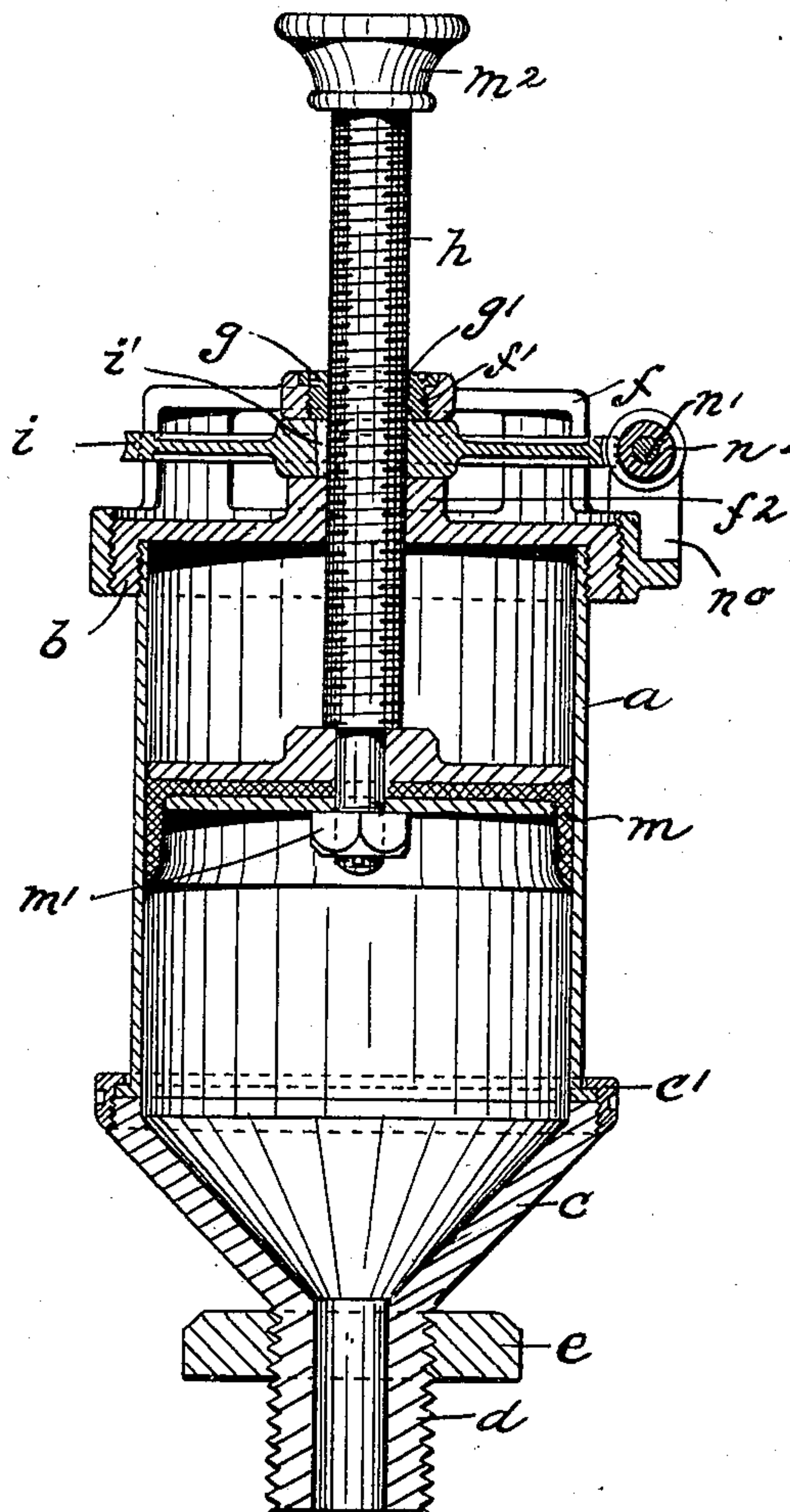


Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GRANT U. MERRILL, OF PATERSON, NEW JERSEY.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 629,583, dated July 25, 1899.

Application filed April 8, 1898. Serial No. 676,860. (No model.)

To all whom it may concern:

Be it known that I, GRANT U. MERRILL, a citizen of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Lubricators; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention consists in an improved lubricator and in the combination and arrangement of the various parts thereof, substantially as will be hereinafter more fully described and finally embodied in the clauses of the claim.

In the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a front elevation of my improved lubricator, certain portions being broken away and others shown in section to clearly illustrate the nature of my said invention. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a top plan view of Fig. 1, a certain knob or handle being removed. Fig. 4 is an enlarged detail sectional view through the piston-lifting or feed screw and its operating mechanism, and Fig. 5 is a vertical sectional view through said lubricator.

In said drawings, *a* represents a cylindrical receptacle provided with heads *b* and *c*, the former being preferably screwed upon the upper end and the latter secured by a flanged and threaded union *c'* to the lower end of said receptacle *a*. The lower head *c*, which is conical shaped, terminates in and communicates through a screw-threaded hollow nipple *d* with the bearings to be lubricated, to which bearings said lubricator is adapted to be secured by means of said nipple *d* and the nut *e* in the usual and well-known manner. The upper head *b* is surmounted by a yoke *f*, provided in its central upper portion with an internally-screw-threaded hole or opening *f'*, in which is removably arranged an externally-screw-threaded sectional bushing or split nut *g*, said yoke being screwed upon the head. Said nut or bushing *g* is also pro-

vided with an internally-threaded hole or opening *g'*, penetrated by the feed-screw *h*, which latter has an elongated vertical groove or feather-slot *h'*, engaged by a key *i'*, projecting from the central bore of a gear-wheel *i*.

The lower portion of the feed-screw *h* penetrates a piston or plunger *m*, in which it is loosely mounted, and is secured thereto by a nut *m'*, while the top portion of said screw is provided with a suitable knob or handle *m²*, as clearly illustrated in Fig. 1 of the drawings.

The gear-wheel *i*, which bears with the opposite ends of its hub against the under side of the top portion of the yoke *f* and against an annular central projection *f²* on the upper head *b*, respectively, is in engagement with a worm *n*, arranged on a shaft *n'*, which latter has suitable bearings in lugs *n⁰*, *n²*, and *n³*, projecting from and preferably integral with the head *b*. Between the lug *n²* and the lug *n³* is arranged a ratchet-wheel *o*, securely mounted on the shaft *n'* and adapted to be operated by a spring-controlled pawl *o'*, slidingly arranged in a sleeve *o²*, carried by and projecting from a downwardly-extending arm or lever *p*, which latter by its upper portion is loosely mounted on the shaft *n'*, while its lower free end is weighted, as at *p'*. A spring-pawl *c²* is secured to the upper side of the bracket *n³* and engages the teeth on the ratchet-wheel to thus prevent the latter from being rotated in a direction opposite to that of the arrow R, Fig. 1.

The weighted arm *p* is limited in its swinging motion by set-screws *r r'*, adjustably arranged in lugs *r² r³*, projecting from a bracket *r⁴*, arranged on and preferably integral with the receptacle *a*.

As above stated, the lubricator is secured to the bearing to be lubricated by means of the screw-threaded nipple *d* and the lock-nut *e*. If said bearing is a movable one—that is to say, is, for instance, the connecting-bearing between a pitman and its crank—the lubricator must be set in such a manner that the shaft *n'*, carrying the weighted arm *p*, is at right angles to the plane of movement of the pitman and crank. Through the reciprocation of said pitman the weighted arm *p* is oscillated, as will be manifest—that is to say,

it swings on its fulcrum and, through the spring-controlled pawl *o'*, intermittently rotates the ratchet-wheel *o*. The latter, through the shaft *n'* and worm *n* and gear-wheel *i*, operates the feed-screw *h*—that is to say, the latter is rotated and gradually moved downward, together with the plunger *m*, thereby depressing the grease or other viscous lubricant contained in the lower portion of the receptacle *a* and discharging the same uniformly and constantly through the hollow nipple *d*.

It must be stated that whenever the motion of the movable bearing is arrested the weighted arm *p* ceases to operate, and accordingly the lubricator stops discharging its lubricant.

To return the screw *h* and piston *m* to their uppermost position, the split nut or sectional bushing *g* is screwed out of the internally-threaded hole *f'* in the top portion of the yoke *f*, when said screw and piston can be freely lifted up or raised, as will be manifest.

For regulating the amount of lubricant to be discharged the set-screws *r r'* are operated, whereby the swinging motion of the weighted arm *p* is controlled, and accordingly the movement of the gear-wheel *i* and of the feed-screw *h* is adjusted.

It must be remarked that my improved lubricator can also be used for lubricating stationary bearings, in which case the weighted arm *p* is operated by means connected to movable parts of the engine.

I do not intend to limit myself to the precise construction as shown and described, as various alterations can be made without changing the scope of my invention; but

What I claim as new, and desire to secure by Letters Patent, is—

1. In a lubricating device, the combination of a receptacle having a suitable outlet, a piston in said receptacle, a removable cover for said receptacle, a screw penetrating said cover and connected to the piston, sustaining means for said screw operatively and disconnectively engaging the same, a gear arranged

above and supported by said cover and also penetrated by and keyed to said screw, and a yoke spanning the cover and the gear, in approximate contact with the upper surface of the latter and carrying said sustaining means, substantially as described.

2. In a lubricating device, the combination of a receptacle having a suitable outlet, a piston in said receptacle, a removable cover for said receptacle, a screw penetrating said cover and connected to the piston, a flanged split nut for said screw operatively and disconnectively engaging the same, a gear arranged above and supported by said cover and also penetrated by and keyed to said screw, and a yoke spanning the cover and the gear, in approximate contact with the upper surface of the latter and carrying said split nut, said split nut being screwed into the yoke, substantially as described.

3. In a lubricating device, the combination of a receptacle having a suitable outlet, a piston in said receptacle, a removable cover for said receptacle, a screw penetrating said cover and connected to the piston, sustaining means for said screw operatively and disconnectively engaging the same, a gear arranged above and supported by said cover and also penetrated by and keyed to said screw, a yoke spanning the cover and the gear, in approximate contact with the upper surface of the latter, and carrying said sustaining means, a worm engaging said gear and journaled on the cover, a ratchet-wheel rigidly connected to said worm, and a weighted lever pivotally connected to the cover and provided with a spring-actuated pawl engaging said ratchet-wheel, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of April, 1898.

GRANT U. MERRILL.

Witnesses:

ALFRED GARTNER,
LOUISE SNYDER.