

No. 844,784.

PATENTED FEB. 19, 1907.

L. J. DUNN.
LIFTING JACK.

APPLICATION FILED JUNE 23, 1906.

Fig. 1.

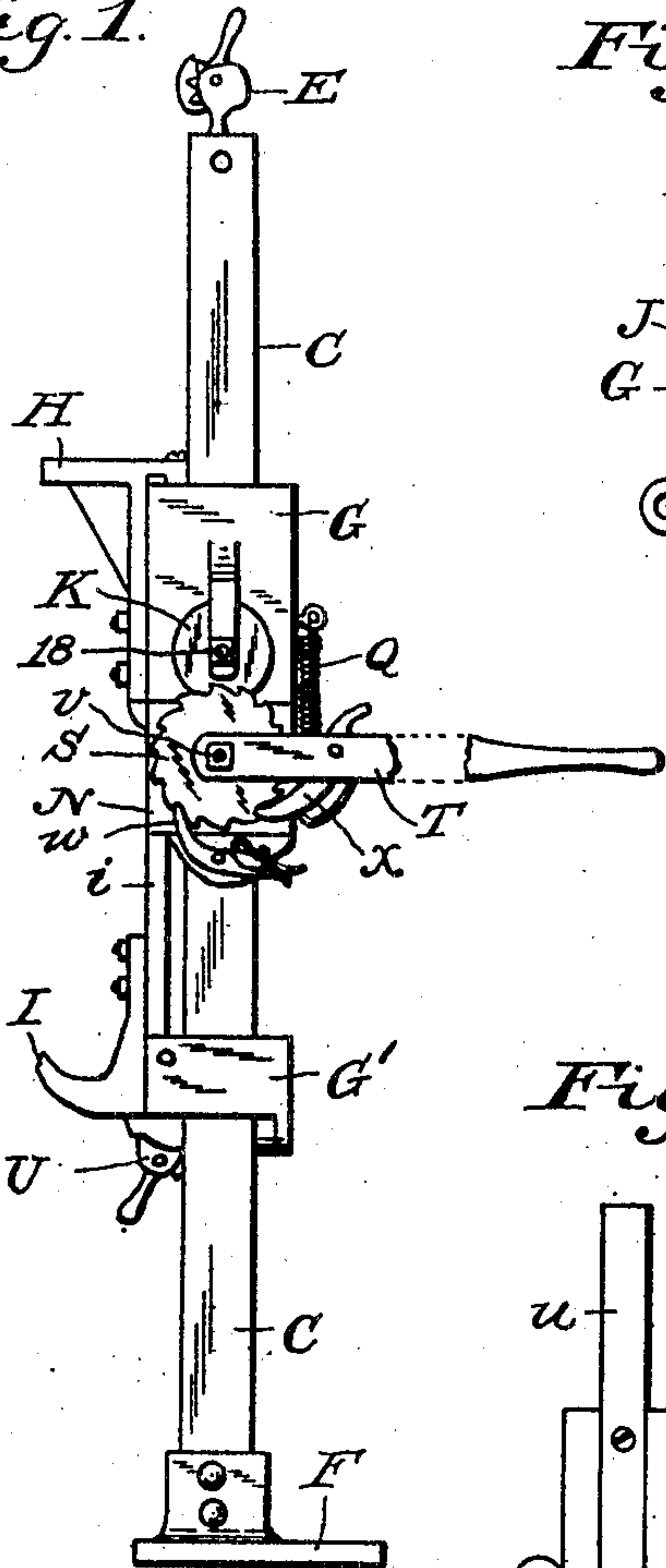


Fig. 2.

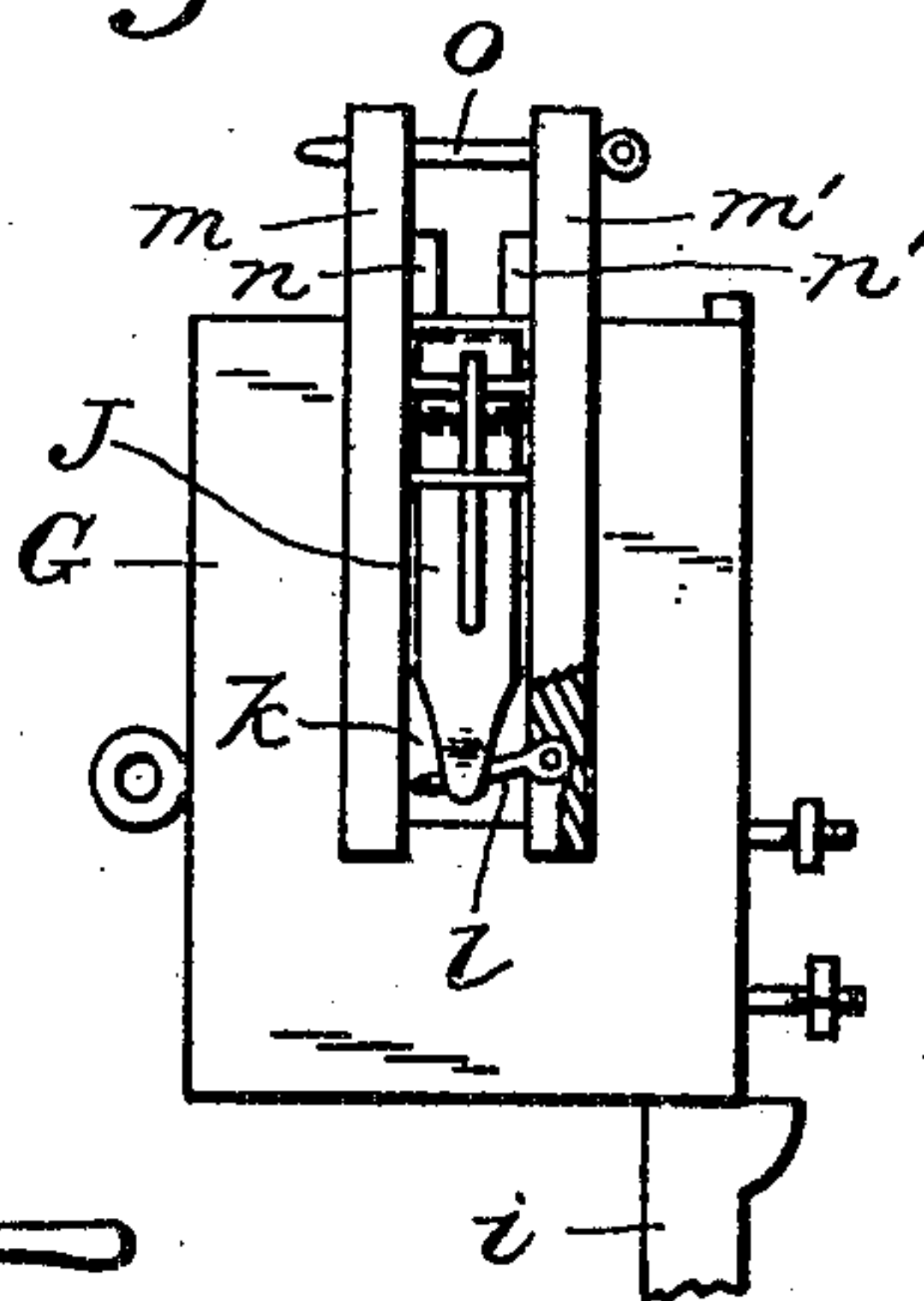


Fig. 3.

2 SHEETS—SHEET 1.

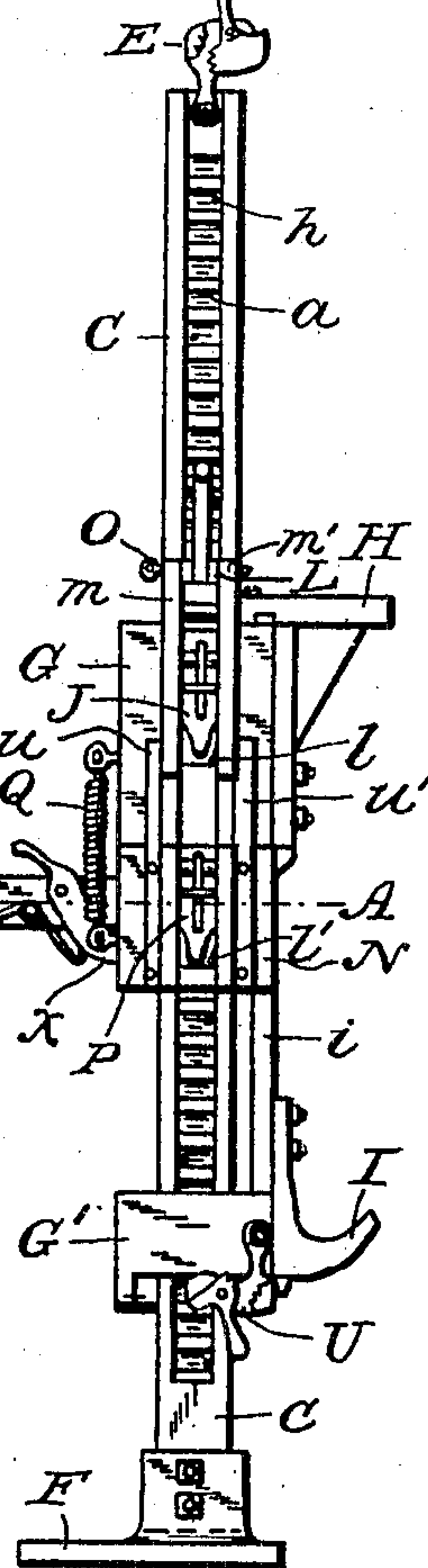


Fig. 4.

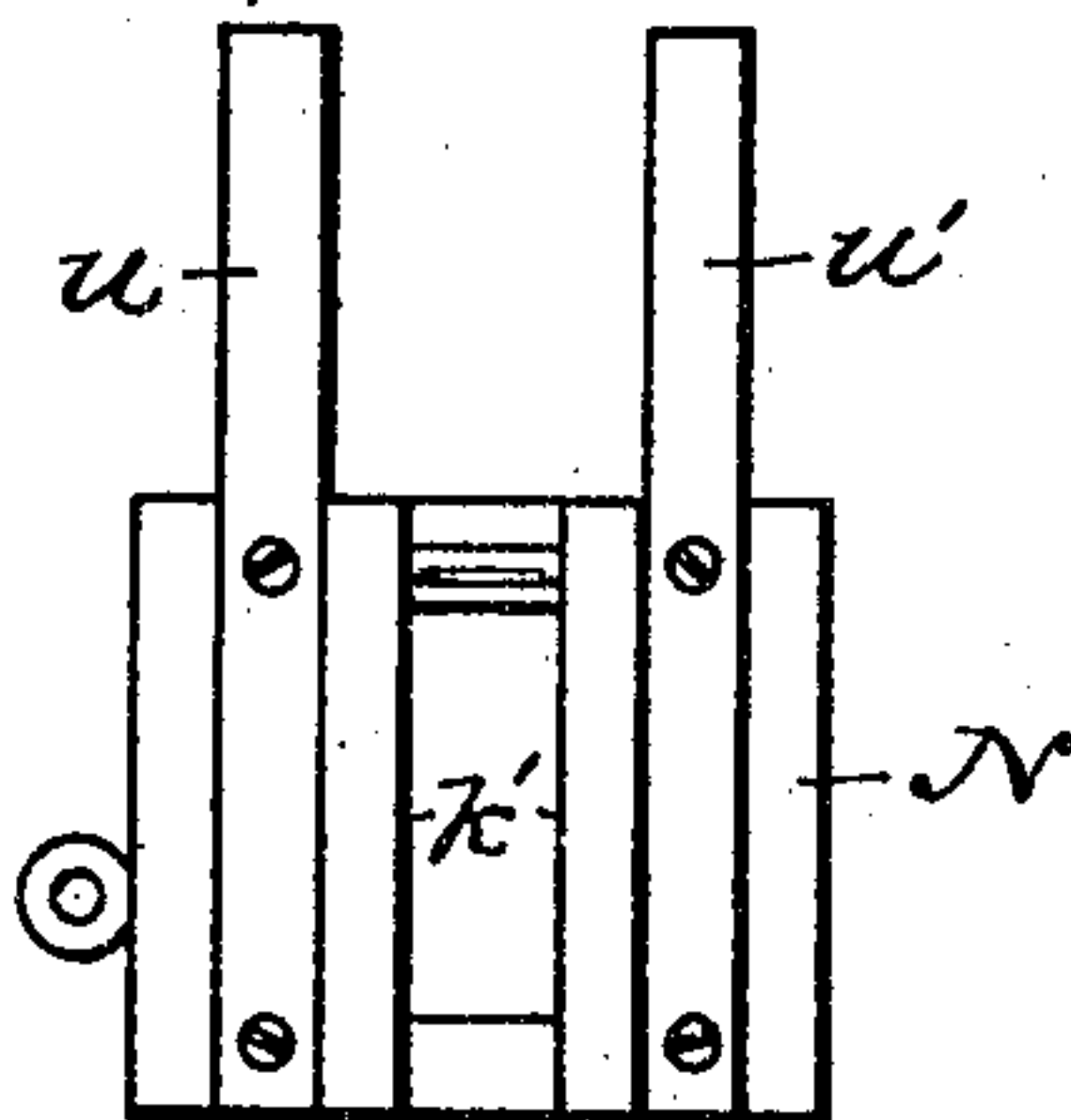


Fig. 5.

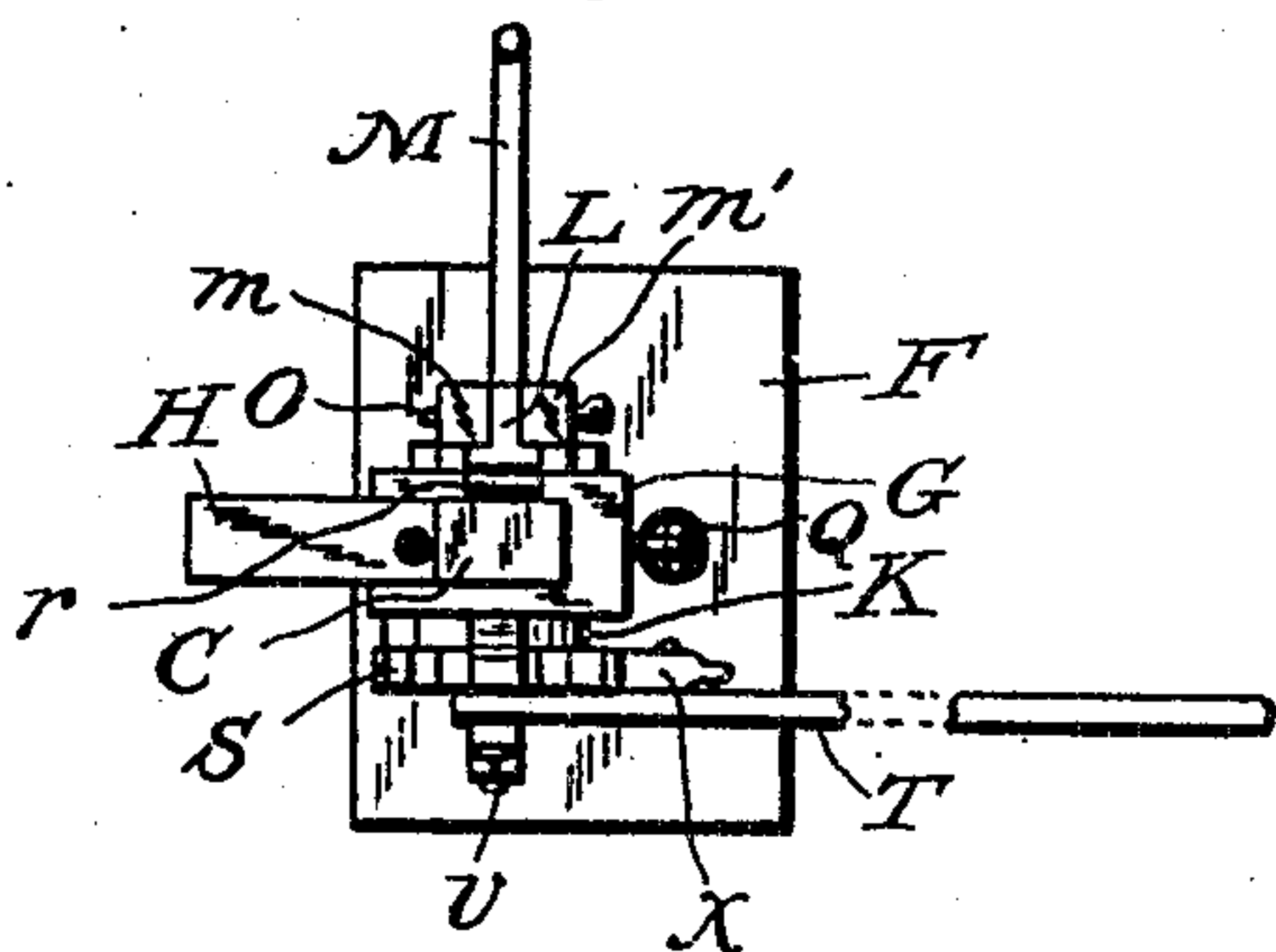
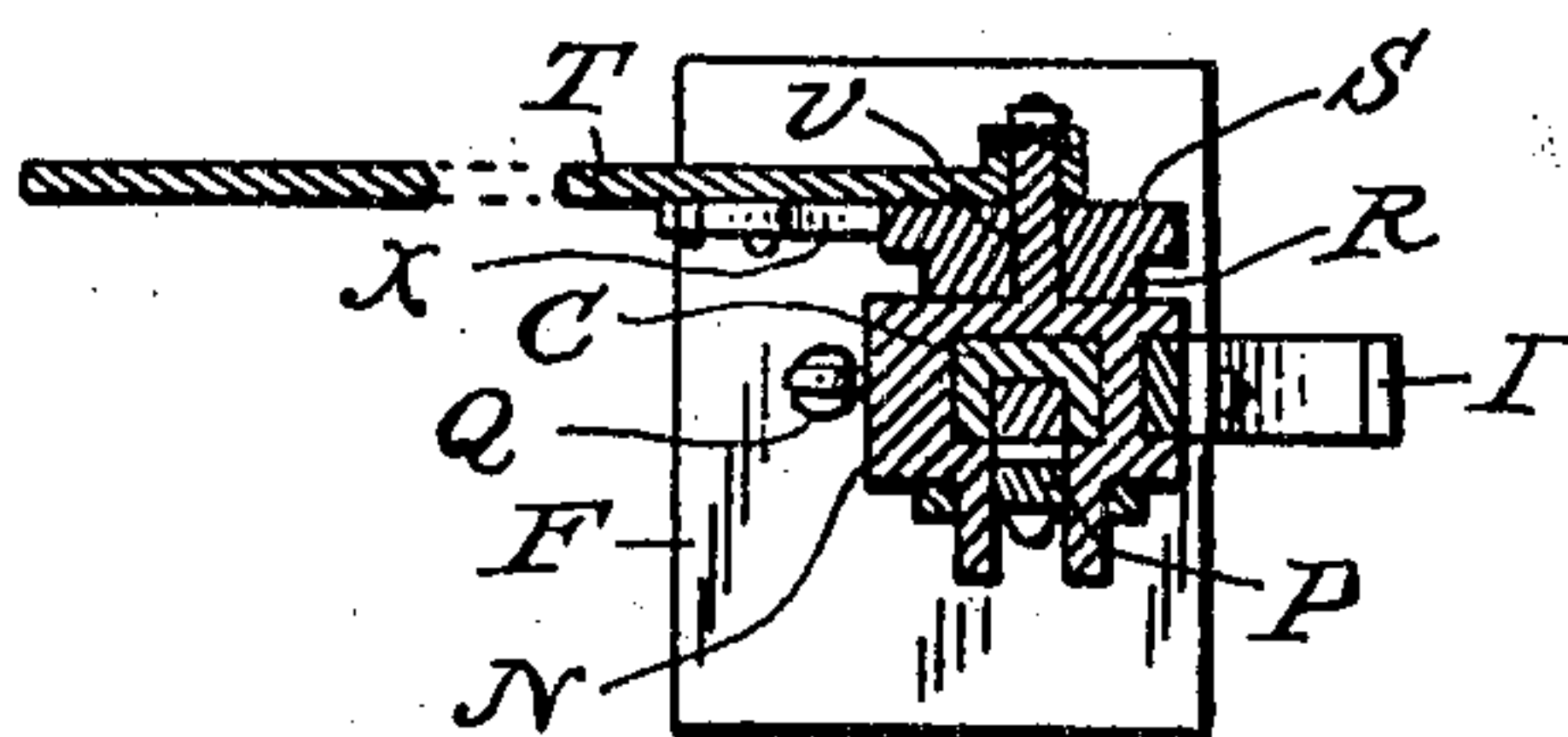


Fig. 6.



WITNESSES:

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INVENTOR:

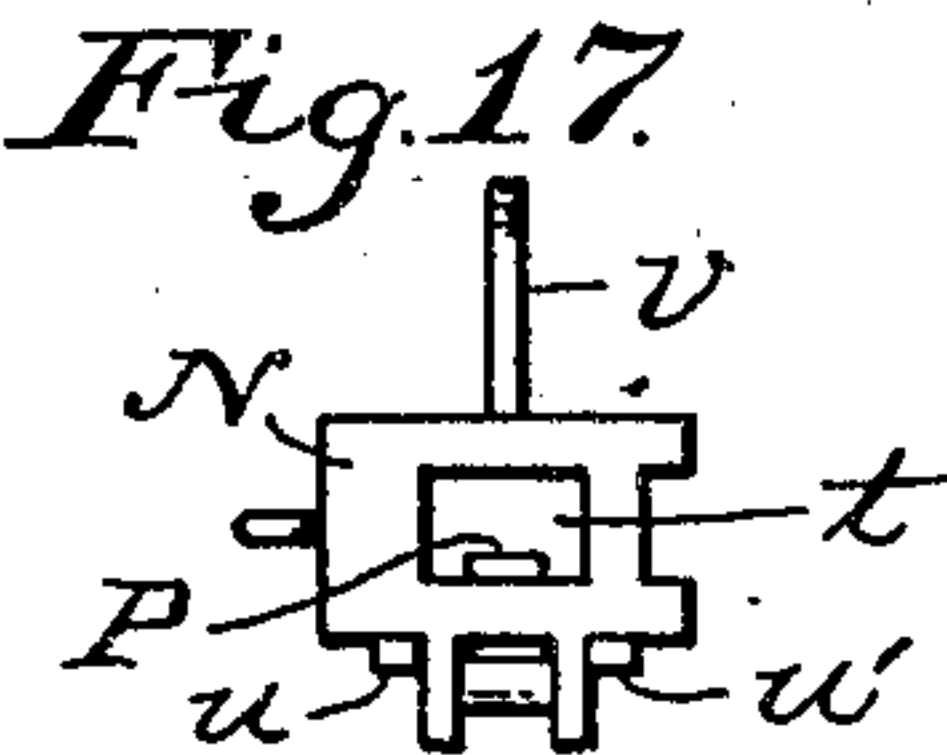
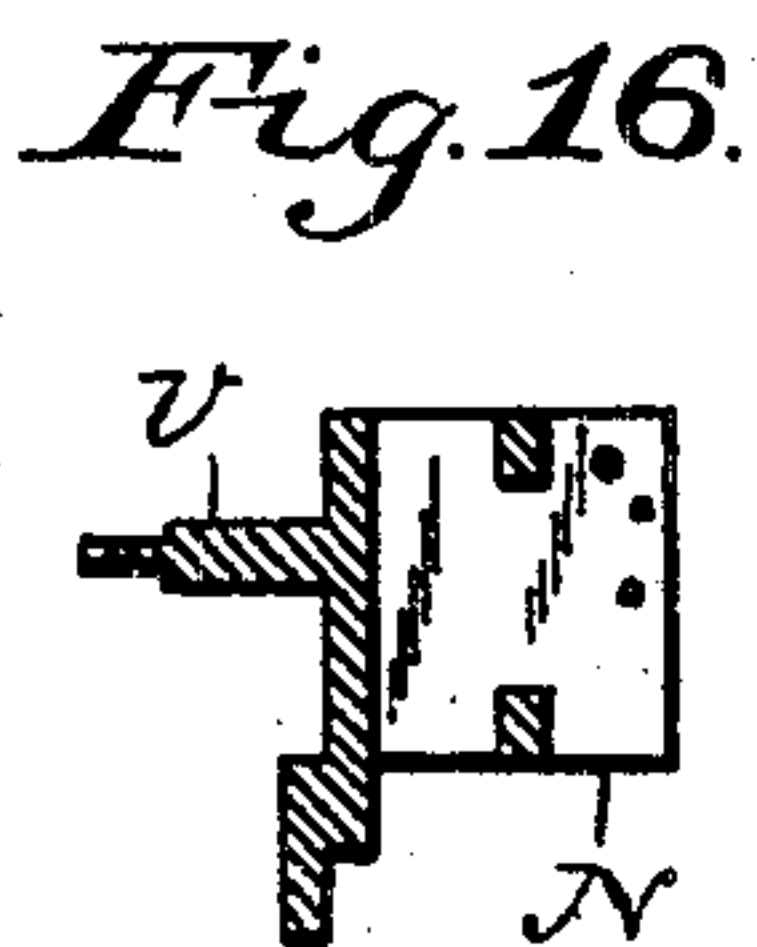
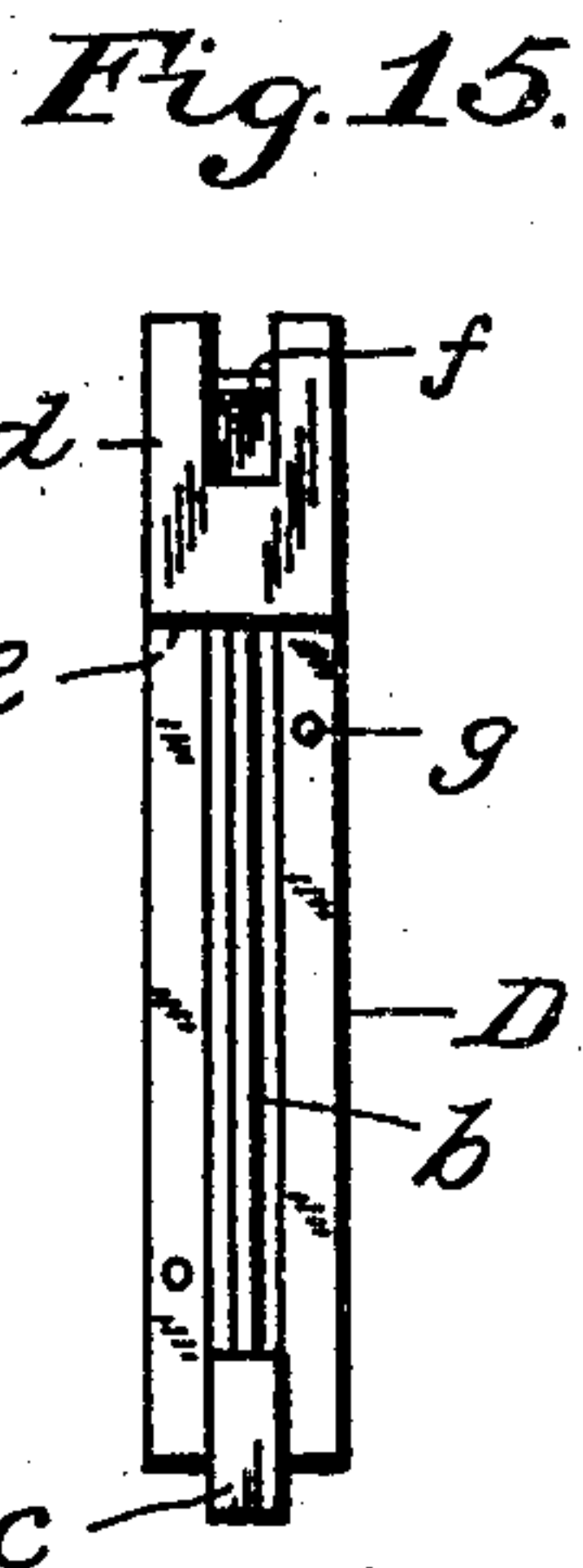
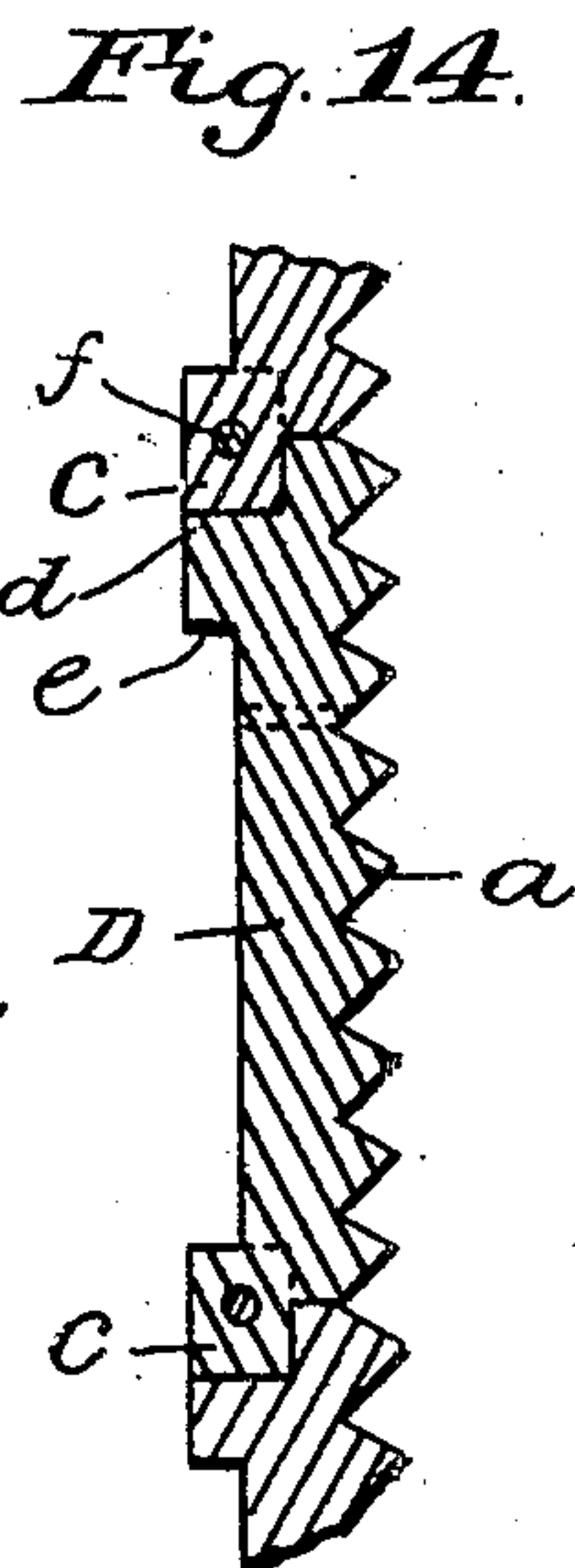
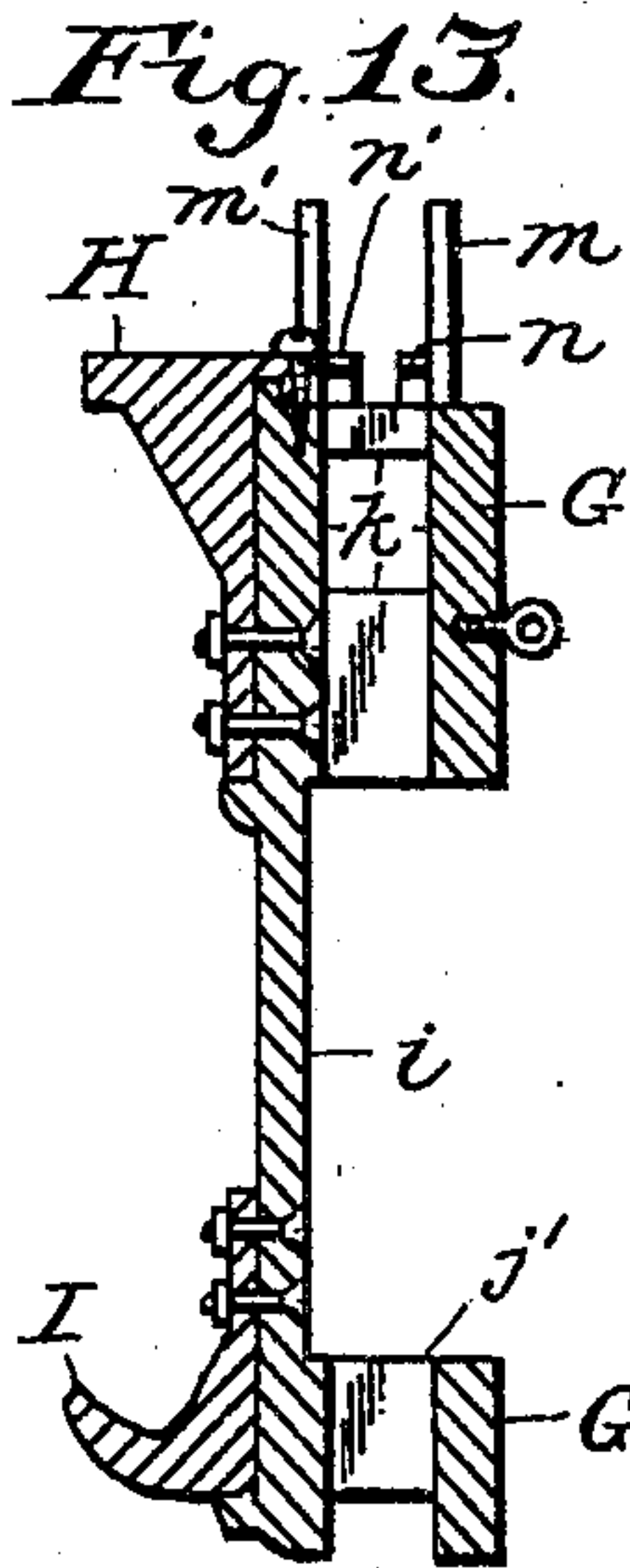
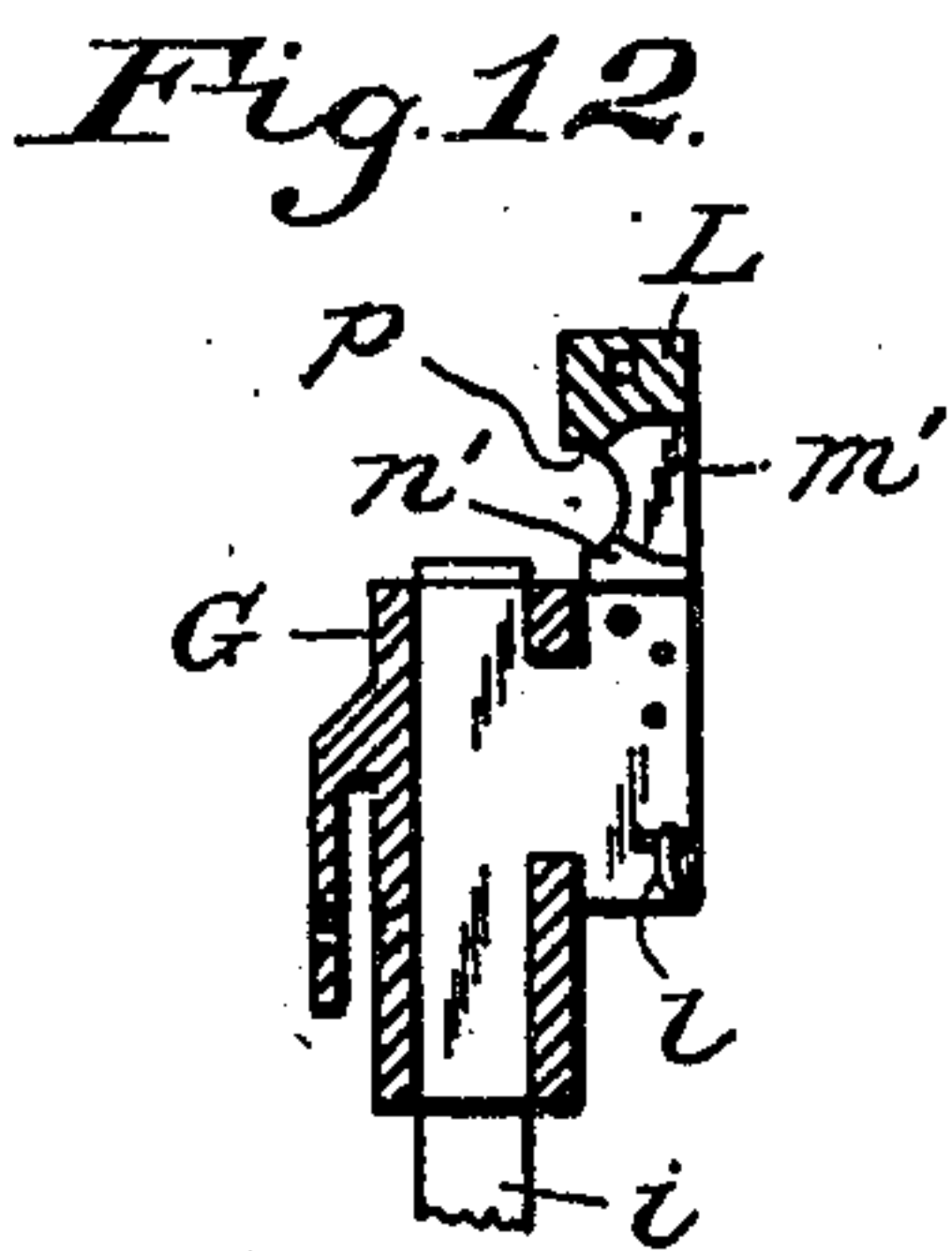
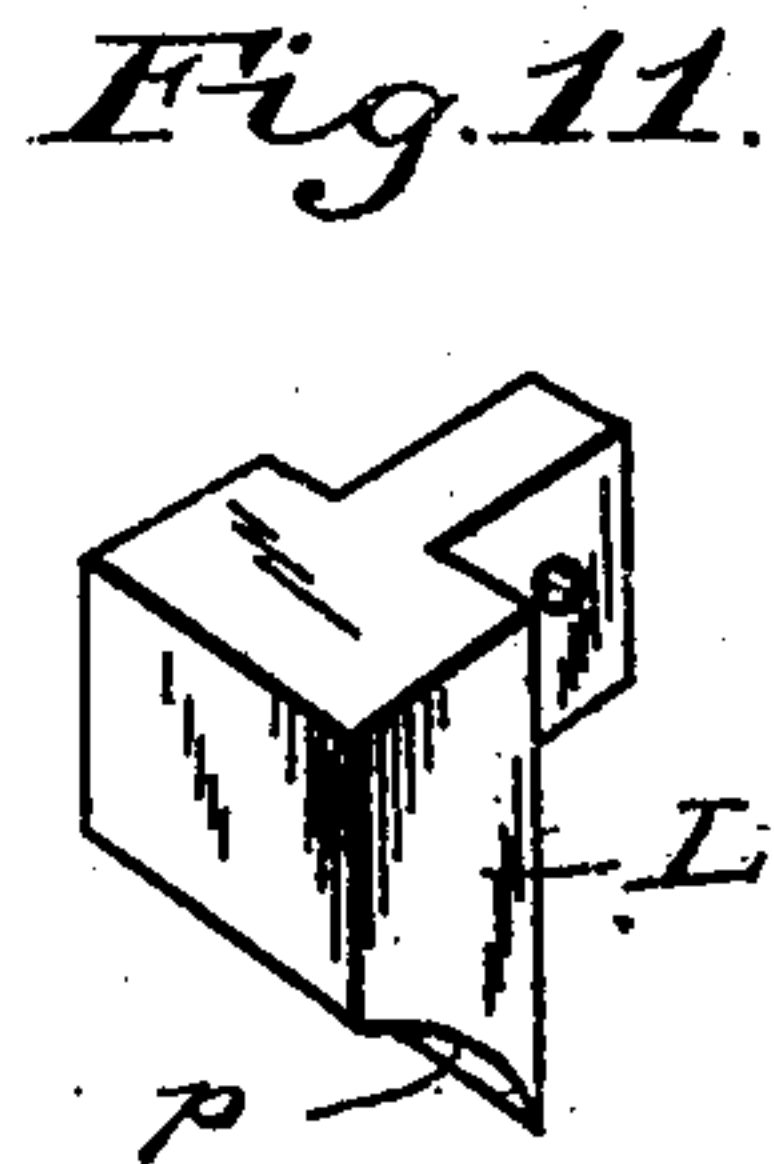
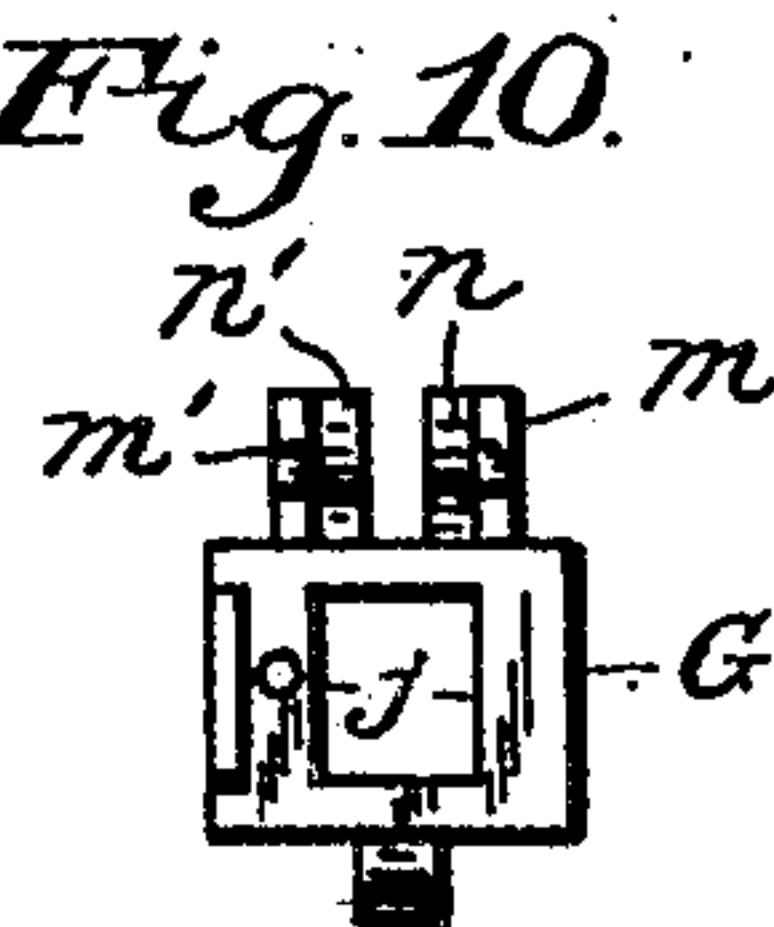
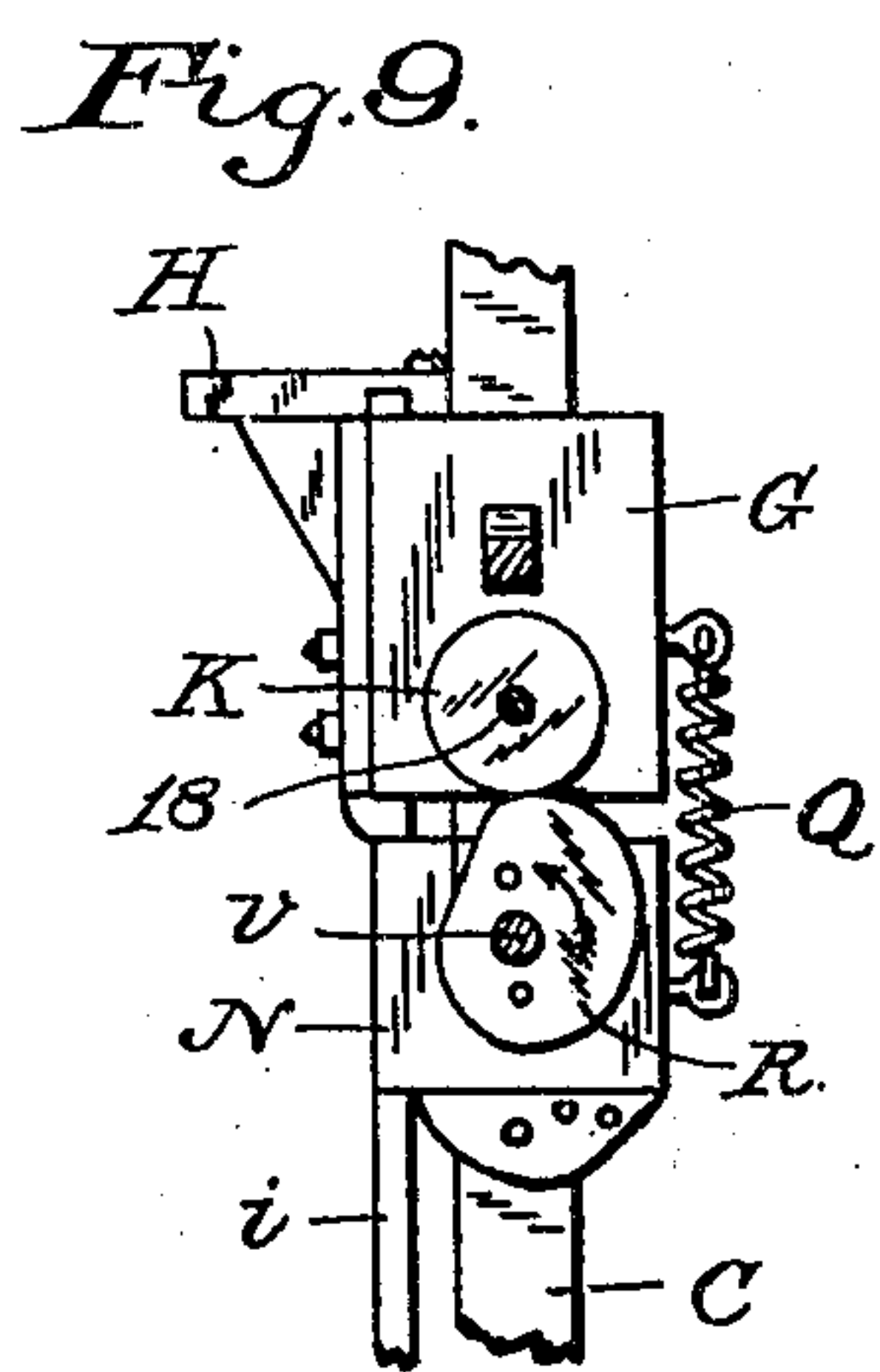
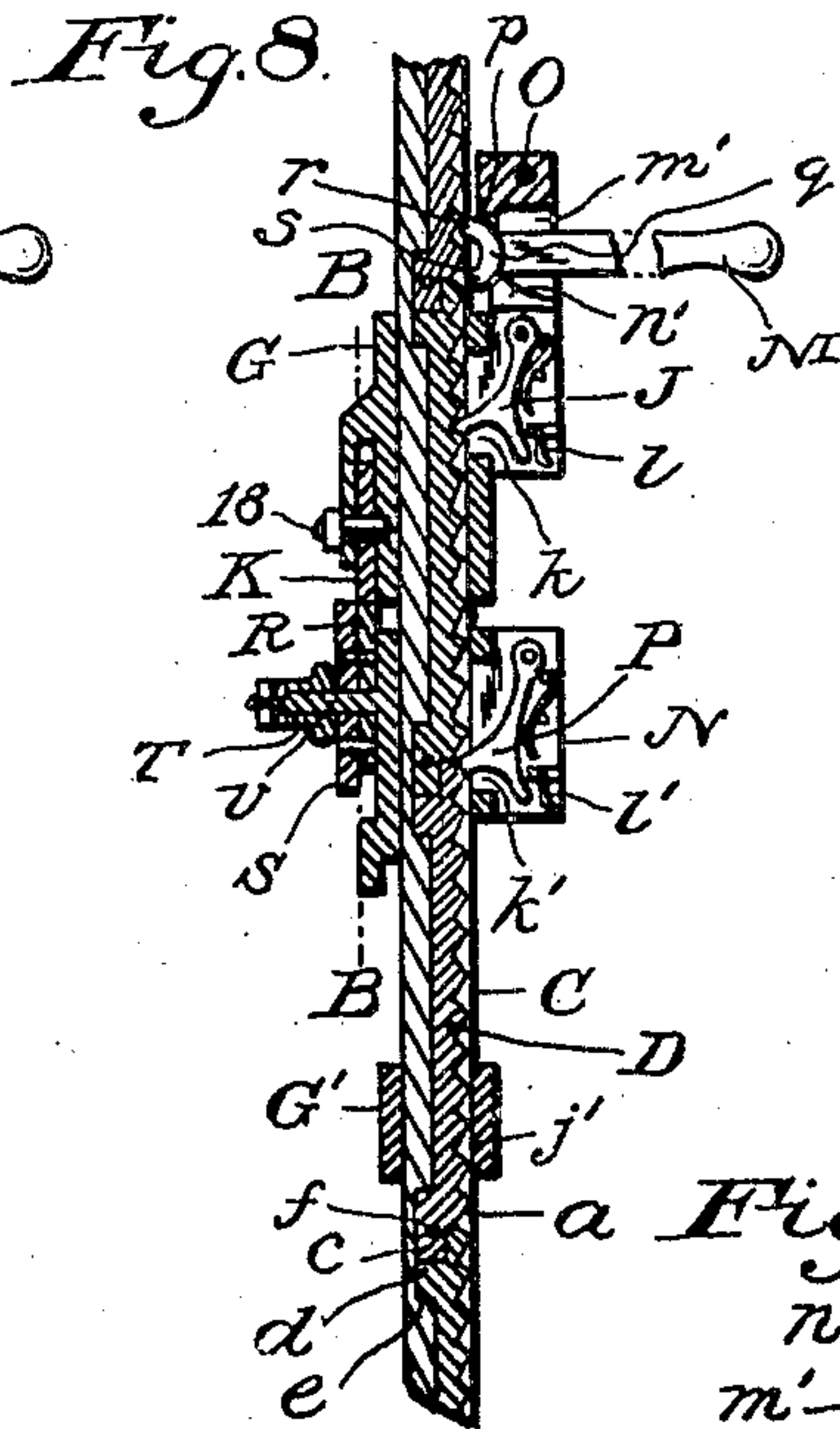
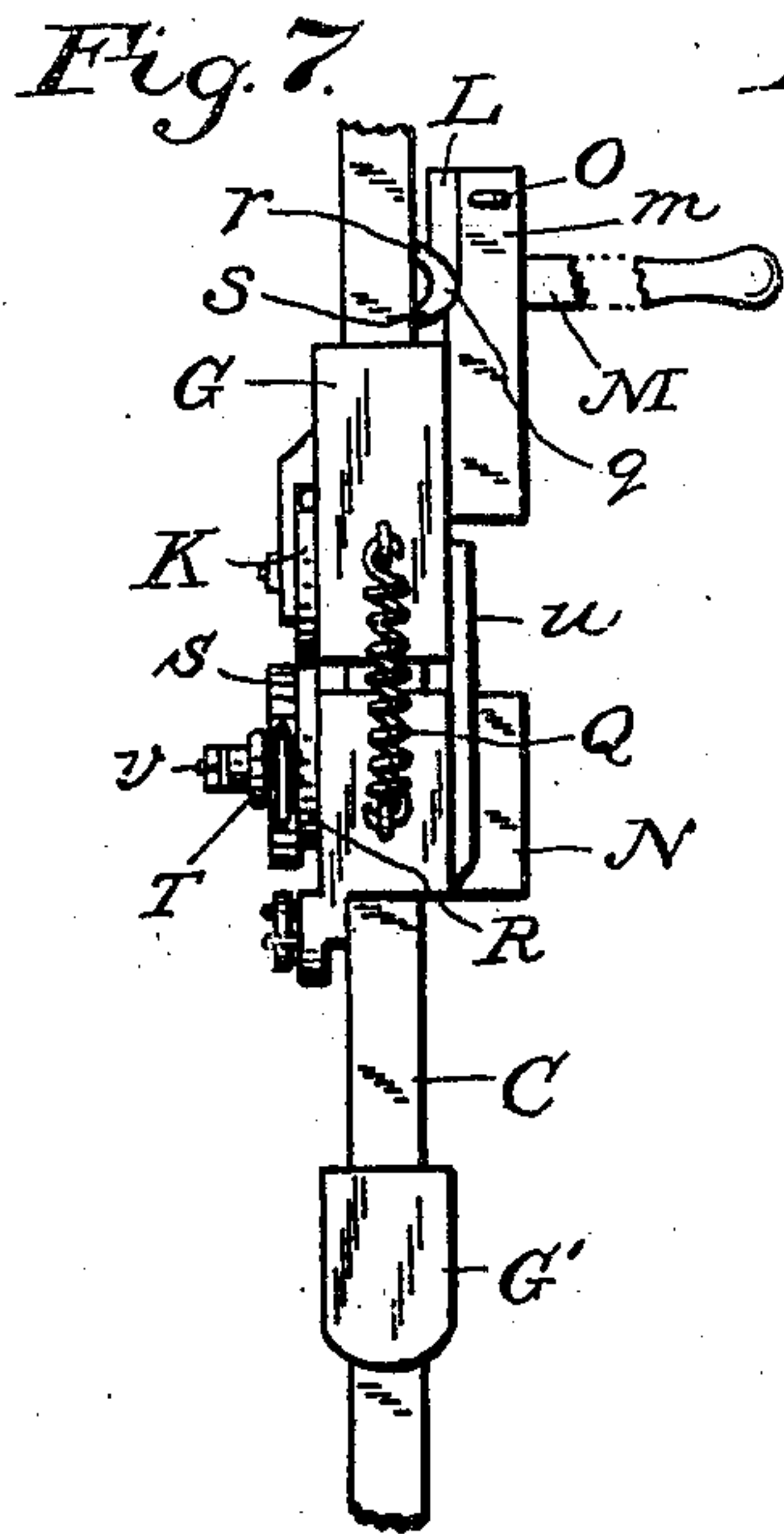
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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LEMUEL JAMES DUNN, OF SPENCER, INDIANA.

LIFTING-JACK.

No. 844,784.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed June 23, 1906. Serial No. 323,026.

To all whom it may concern:

Be it known that I, LEMUEL JAMES DUNN, a citizen of the United States, residing at Spencer, in the county of Owen and State of Indiana, have invented new and useful Improvements in Lifting-Jacks; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to jacks that are adapted for either lifting, hoisting, or pulling; and the invention has reference particularly to jacks of this character which may be operated with deliberate precision and close graduation, so that loads may be moved either rapidly or slowly and any desired distance within the range of the implements under perfect control.

Objects of the invention are to provide an improved lifting or hoisting jack that may be of general utility and particularly adapted for stretching wire fencing, also for lifting articles that may be either near the ground or somewhat elevated therefrom, and to provide a jack of this character which may be constructed at reasonable cost and be reliable, durable, and economical in use.

With the above-mentioned and other objects in view the invention consists in a lifting-jack comprising a pedestal on which is a movable and adjustable head-lift and foot-lift connected together, power mechanism adjustable on the pedestal for operating and controlling the lifts, and a lowering device detachably connected to one of the lifts co-operating with the pedestal; and the invention consists, further, in the novel parts and the combinations and arrangements of parts, as hereinafter particularly described and claimed.

Referring to the drawings, Figure 1 is a side elevation of the complete jack; Fig. 2, an elevation of the main part of the head-lift with parts broken away; Fig. 3, an elevation of the jack, showing the side opposite to that seen in Fig. 1; Fig. 4, an elevation of the housing of the power mechanism; Fig. 5, a top plan of the jack; Fig. 6, a horizontal sectional view on the line A A in Fig. 3; Fig. 7, a fragmentary elevation showing the main parts of the jack; Fig. 8, a fragmentary vertical central sectional view showing the details of construction of the main parts of the

jack; Fig. 9, a fragmentary elevation showing parts obscured in Fig. 1; Fig. 10, a top plan of the main part of the head-lift; Fig. 11, a perspective view of one of the parts of the detachable lowering device; Fig. 12, a vertical central sectional view of the main part of the head-lift; Fig. 13, a vertical central sectional view of the main parts of the head-lift and foot-lift; Fig. 14, a vertical sectional view showing parts of the rack-bar of the pedestal; Fig. 15, a rear elevation of a section of the rack-bar; Fig. 16, a vertical central sectional view of the housing; and Fig. 17 is a top plan of the housing of the power mechanism.

Practically embodied, the jack comprises a pedestal C, the body of which may be composed either of wood or of metal, and it is provided in one side thereof with rack-teeth *a*, the ends of which are flush with the plane of the face of the pedestal, the faces of the pedestal being otherwise straight and serving as guides for parts that operate on the pedestal. The rack-teeth *a* are preferably cast on short sections of bars D, having each a rear r.b *b*, a tongue *c* at one end, and a jaw *d* at the other end thereof and provided with a shoulder *e*, the tongue of either section fitting into the jaw of another section and secured thereto by a rivet *f*, the sections having holes *g* to receive screws or like fasteners *h*, by which the sections are held fast to the pedestal, the latter being suitably recessed to receive the sections and also the tongues and jaws thereof, so that the shoulders *e*, and not the screws *h*, receive the strains put on the rack-teeth.

A wire-grip E is bolted detachably to one end of the pedestal, being the upper end thereof when used in vertical positions, and a base F is bolted detachably to the other end of the pedestal, the base being adapted to be reversed on the pedestal, if desired.

The head-lift comprises a main part G, and the foot-lift comprises a main part G', a stiff link *i* being attached to the two lifts and connecting them together, both lifts being mounted movably on the pedestal, which extends through openings *j* in the head part and *j'* in the foot part. A shoulder-piece H is detachably secured to the part G, and a foot-piece I is detachably secured to the part G' for engaging the articles or loads to be lifted, the foot-piece I being preferably hook shape, so that it may engage a fence-post or support a sling to which a load may be hung.

When either the member H or the member I proves to be an obstruction, it may be detached while the other member is used. The part G is provided with a spring-pressed catch J, that is pivoted thereto and operating through an opening *k* therein, in connection with the rack-teeth *a*, for normally holding the lifts against movement in one direction along the pedestal. The part G is also provided with an axle 18, on which is mounted a bearing-roller K to reduce friction when moving the lifts with a load. A catch-holder *l* is arranged so that it may be moved under the end of the catch, as in Fig. 2, when the catch is drawn away from the rack-teeth. The part G has a pair of ears *m* and *m'*, at the inner sides of which are a pair of bearings *n* and *n'*, and a bearing-block L, having a bearing *p*, is detachably connected to the ears by a pin *o*. A lowering-lever M has a head *q*, provided with detents *r* and *s* for engagement with the rack-teeth, the head working in contact with the bearings *n* and *n'* and the bearing *p*, so that the detents operate (like pallets on the teeth of a scape-wheel) alternately on the teeth *a* when the lever M is operated and a load forces down the lifts.

A housing N, having an opening *t* therein to receive the pedestal is guided thereon between the lifts G and G' and is provided with a pivoted spring-pressed catch P, operating through an opening *k'* in connection with the rack-teeth *a*, the catch being provided with a holder *l'*. A pair of guides *u* and *u'* are secured to the housing and engage the head-lift G; but the guides may be dispensed with, if desired. A spring Q is connected to both the housing and the main part G and operates to draw either part to the other. The housing supports an axle *v*, on which a cam R is rotatively mounted, and a ratchet-wheel S is mounted rotatively also on the axle *v*, and the cam and the wheel are secured together, either integrally, as indicated in Fig. 6, or as separate parts pinned together, as in Fig. 8, the cam in Fig. 9 being separated from the wheel. The cam engages the bearing-roller K, and thereby may force the part G and housing N apart when not prevented by the catches J and P. A detent *w* is pivoted on the housing N and is spring-pressed into engagement with the wheel S. An operating-lever T is pivoted on the axle *v* adjacent to the wheel S and supports a pivoted pawl *x*, that is spring-pressed into engagement with the wheel. A wire-grip U is connected to the foot-lift G', and may be used conveniently in hoisting or in stretching wire fencing.

In practical use when lifting or hoisting or in moving the lifts away from the base F the lever M must be first removed. The lever T is to be operated so as to turn the cam R in the proper direction, the catch P preventing the housing N from moving toward the bars F,

and the result being that the head-lift will be forced with its load away from the housing until the catch J engages a tooth *a*, after which the cam will have traveled sufficiently to allow the catch J to support the load, when with further movement of the cam it will permit the spring Q to draw the housing to the part G and become latched to the pedestal by the catch P. Then by further operation of the lever T the load may be elevated as before and held while the housing advances as before, and so on until the desired height may be reached. If the load be secured against descent, then the head-lift or the foot-lift, as the case may be, may be released, lifting the load from the catch J, then withdrawing the catch and operating the lever T as before, and after the full point of the cam passes the roller K the lifts will descend by gravity the distance of one tooth's space, and, if desired, the housing may then be moved one notch and the operation be repeated. Also the load may be slowly lowered in the same manner. During elevation of the load, in case that it be desired at any time to raise it but slightly, the cam may be stopped at any point of its throw, and it will be held against return by the detent *w*, and so the load may be stopped and held at any exact point desired. When it is desired to permit the lifts to approach the base end of the pedestal, as when lowering a load, the lever M should be applied, and while the load is held by either one of the detents *r* or *s* the catches J and P may be withdrawn from contact with the teeth *a* and held out of engagement therewith by their holders. Then if the lever M be operated the lifts will be forced by the load toward the base F the distance of a tooth-space at a time, the housing N moving freely along the pedestal. The jack may, as will be seen, operate in various situations and be utilized for various purposes.

Having thus described the invention, what is claimed as new is—

1. A jack including a pedestal or guide, a lift movable on the pedestal or guide, a catch for holding the lift, a housing movable on the pedestal or guide, a rotative cam for forcing the lift and the housing apart, a catch for holding the housing against movement away from the lift, means for rotating the cam, and a spring normally drawing the housing toward the lift.

2. A jack including a pedestal with teeth thereon, a lift having a catch cooperating with the teeth, a housing movable on the pedestal and having a catch cooperating with the teeth, a spring normally drawing the lift and the housing either one toward the other, and a mechanism mounted on the housing for forcing the lift and the housing apart.

3. A jack including a pedestal or guide with teeth thereon, a head-lift and a foot-lift coupled together and movable on the pedes-

tal or guide, a catch mounted on the head-lift for engagement with the teeth, a shoulder-piece mounted on the head-lift, a foot-piece mounted on the foot-lift, a housing 5 movable adjustably on the pedestal or guide and provided with a rotative cam for forcing the head-lift away from the housing, means for operating the cam, a spring for normally drawing the housing toward the head-lift, 10 and a catch mounted on the housing for engagement with the teeth.

4. A jack including a pedestal or guide with teeth thereon and having a detachable base at one end and a wire grip at the other 15 end thereof, a head-lift and a foot-lift coupled together and movable on the pedestal or guide, a wire grip mounted on the foot-lift, a housing movable on the pedestal or guide between the head-lift and the foot-lift, a catch 20 mounted on the head-lift for engagement with the teeth, a catch mounted on the housing for engagement with the teeth, a cam mounted rotatively on the housing for forcing the head-lift away from the housing, a 25 ratchet-wheel attached to the cam, and a lever carrying a pawl in engagement with the ratchet-wheel.

5. A jack including a pedestal or guide having a sectional rack-bar attached thereto 30 provided with connecting tongues and jaws, a head-lift movable on the pedestal or guide and provided with a catch for engagement with the rack-bar, a housing movable on the pedestal or guide and provided with a catch 35 for engagement with the rack-bar, a cam mounted on the housing for forcing the head-lift away from the housing and having a ratchet-wheel secured thereto, a lever for operating the ratchet-wheel, a detent mounted 40 on the housing in engagement with the ratchet-wheel, and a spring connected to the head-lift and also to the housing.

6. A jack including a pedestal or guide with teeth thereon, a head-lift movable on 45 the pedestal or guide and having a lowering-

lever mounted thereon provided with detents engageable alternately with the teeth, a catch mounted on the head-lift for engagement with the teeth, a holder for withholding the catch from the teeth, a housing movable 50 on the pedestal or guide and having a catch for engagement with the teeth, a spring connected to the head-lift and also to the housing, and mechanism for forcing the head-lift away from the housing.

7. In a jack, the combination with a pedestal or guide having rack-teeth, of a head-lift movable on the pedestal or guide and provided with a pair of ears having a pair of bearings attached thereto, a bearing-block 60 attached to the ears removably and having a bearing thereon, a lever between the ears and having a head in cooperation with the bearings and provided with a pair of detents for alternate engagement with the teeth, a catch 65 mounted on the head-lift for engagement with the teeth, a holder mounted on the head-lift for holding the catch away from the teeth, and means for moving the head-lift in one direction on the pedestal or guide. 70

8. In a jack, the combination with a pedestal or guide having rack-teeth, of a head-lift movable on the pedestal or guide and provided with a bearing, a catch mounted on the head-lift and engageable with the rack- 75 teeth, a housing movable on the pedestal or guide and provided with an axle, a cam rotative on the axle and cooperating with the bearing of the head-lift, a ratchet-wheel rotative on the axle and secured to the cam, a 80 detent mounted on the housing and engaging the ratchet-wheel, a lever pivoted on the axle, and a pawl mounted on the lever in engagement with the ratchet-wheel.

In testimony whereof I affix my signature 85 in presence of two witnesses.

LEMUEL JAMES DUNN.

Witnesses:

WM. C. THOMPSON,
E. T. SILVIUS.