

No. 660,905.

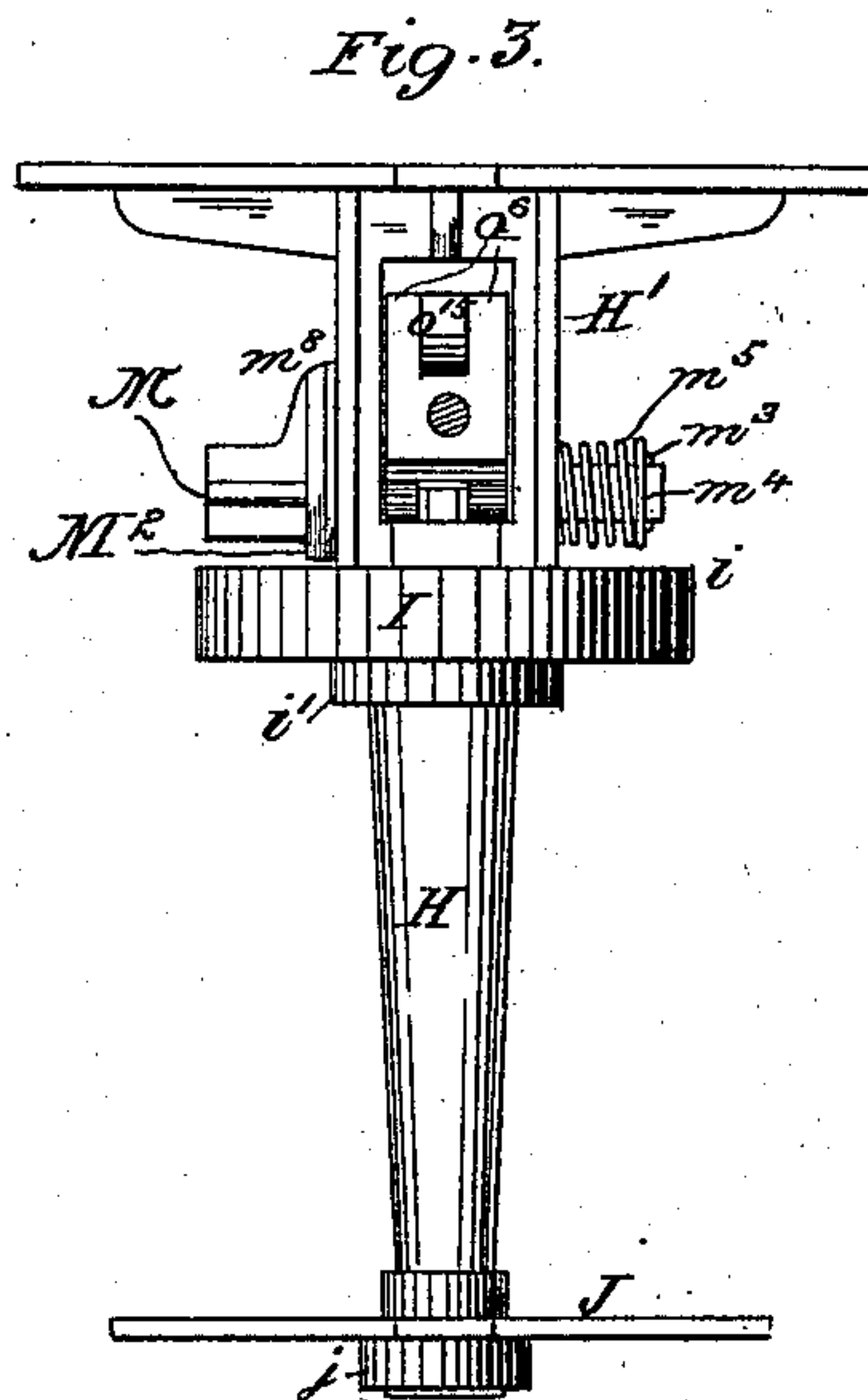
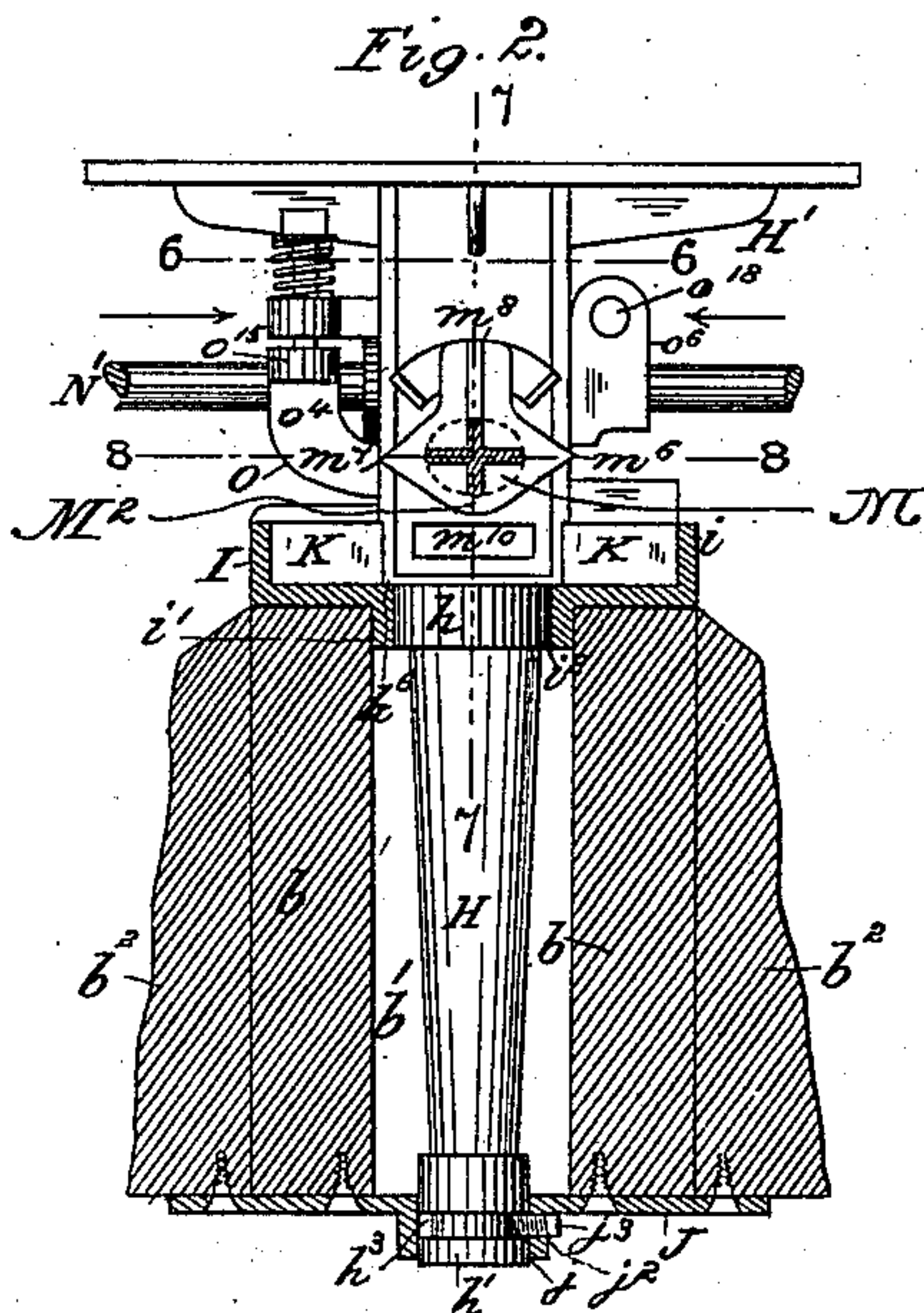
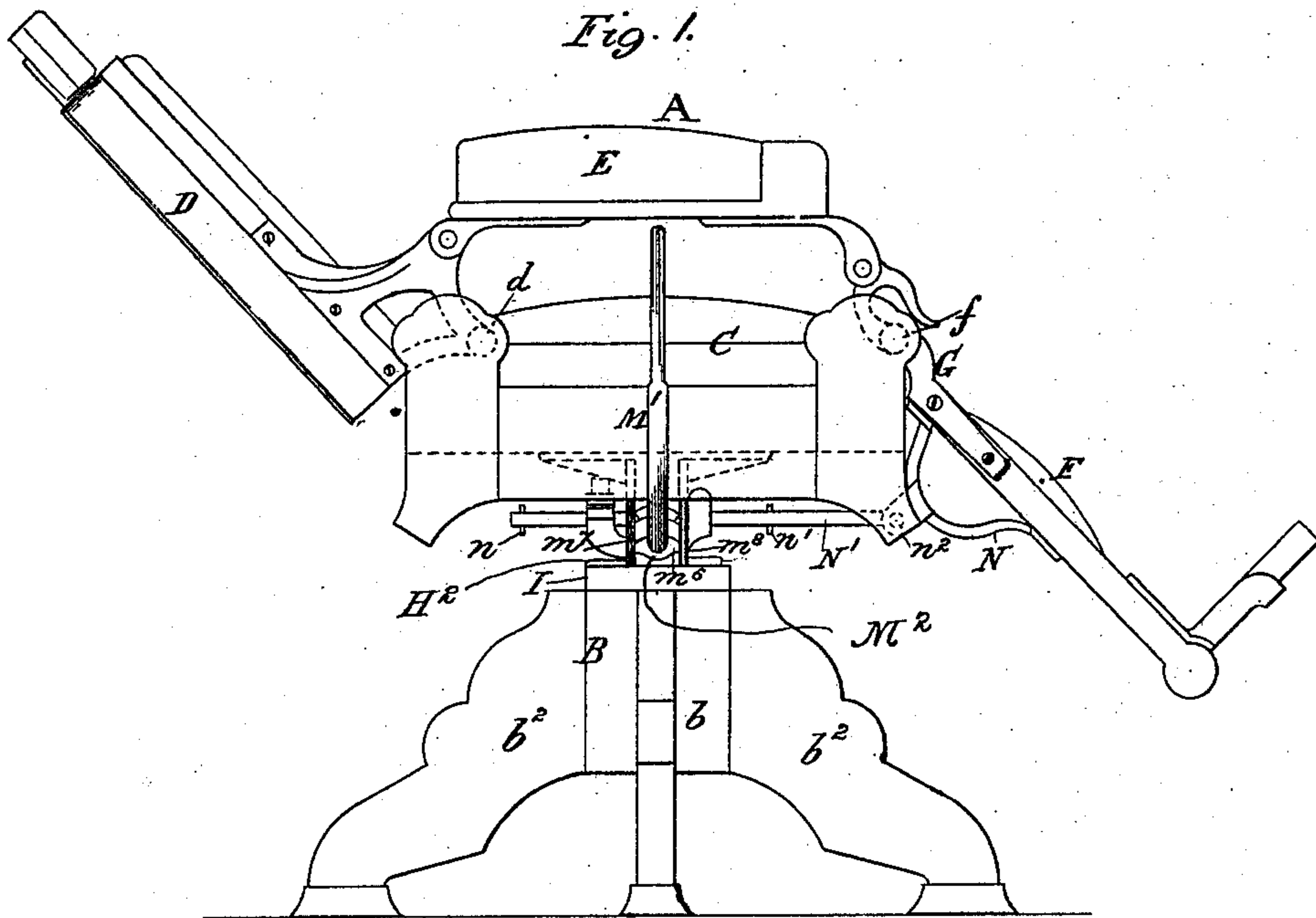
Patented Oct. 30, 1900.

E. E. KOKEN.  
CHAIR.

(Application filed Oct. 26, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES  
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INVENTOR:  
Ernest E. Koken,  
by Wagner, Babbitt & Bryson,  
his Attorneys.

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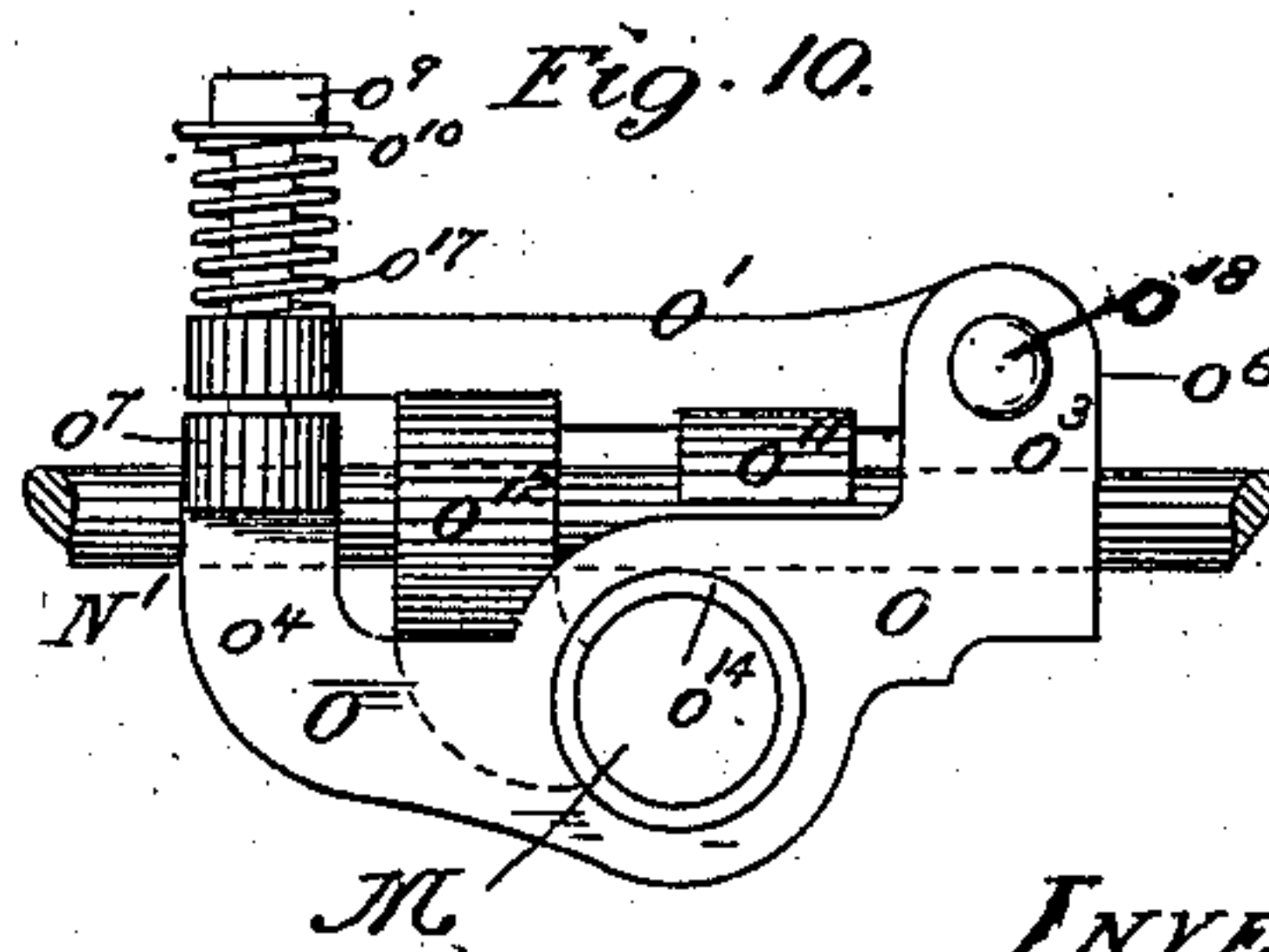
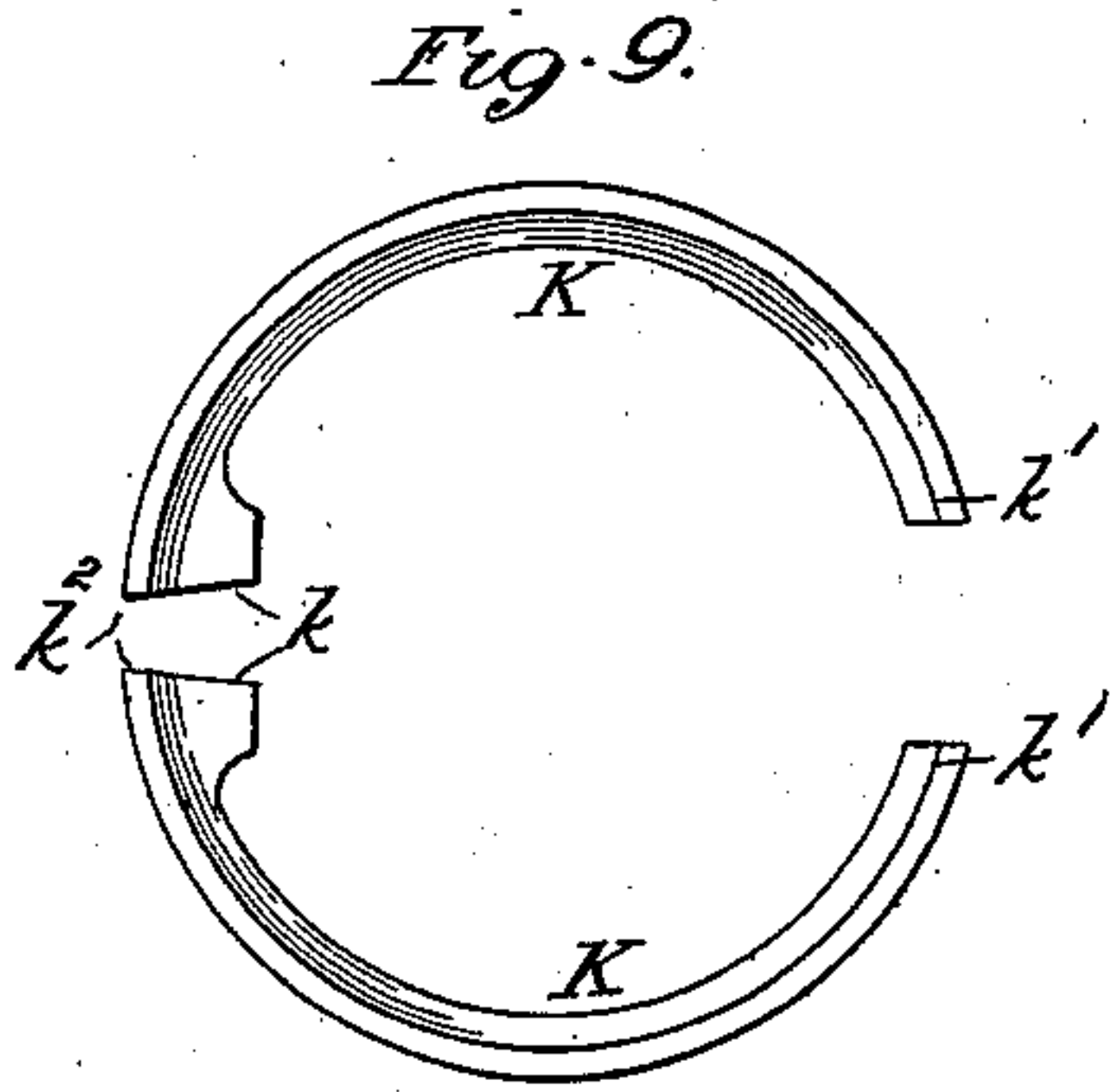
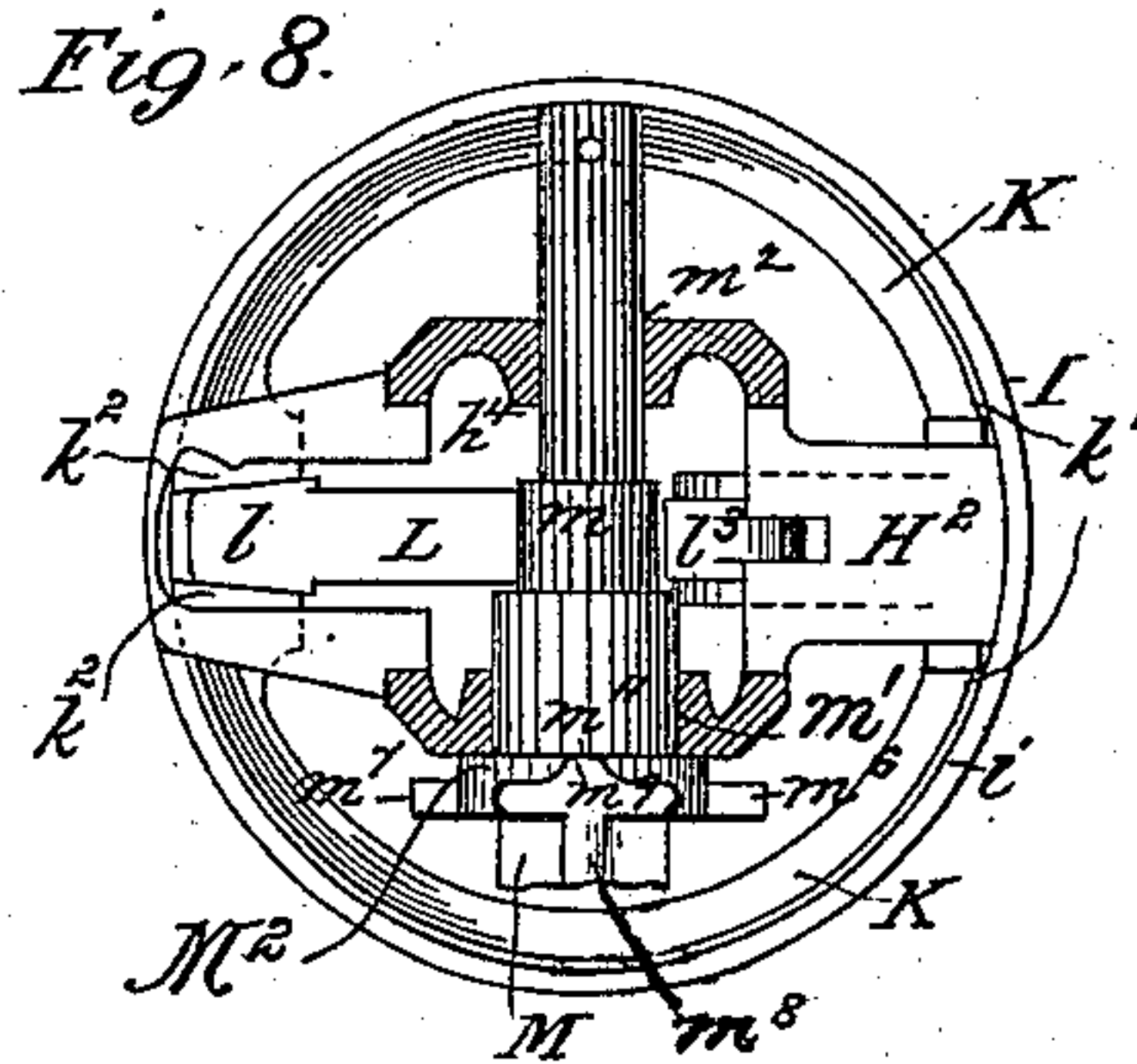
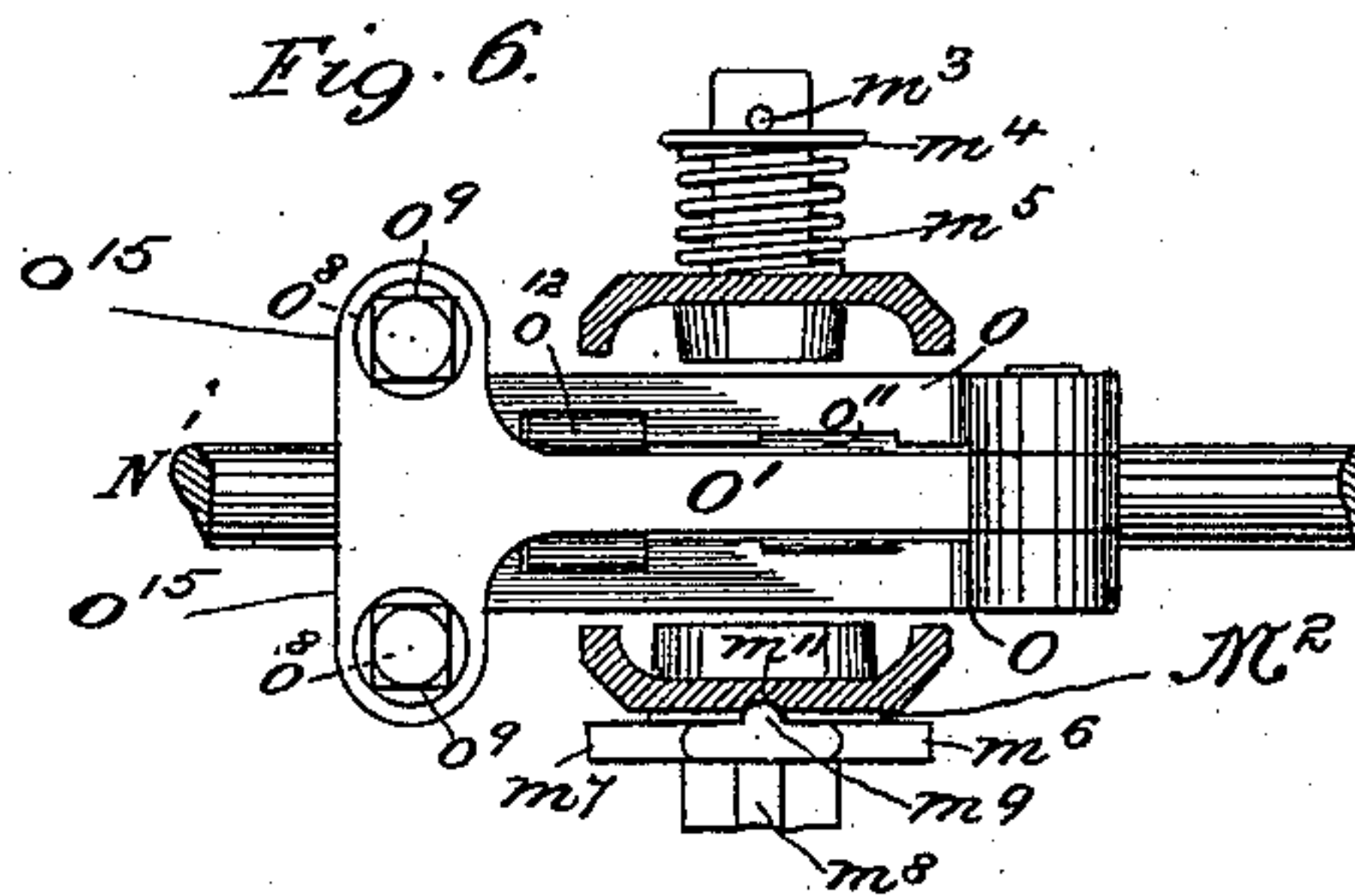
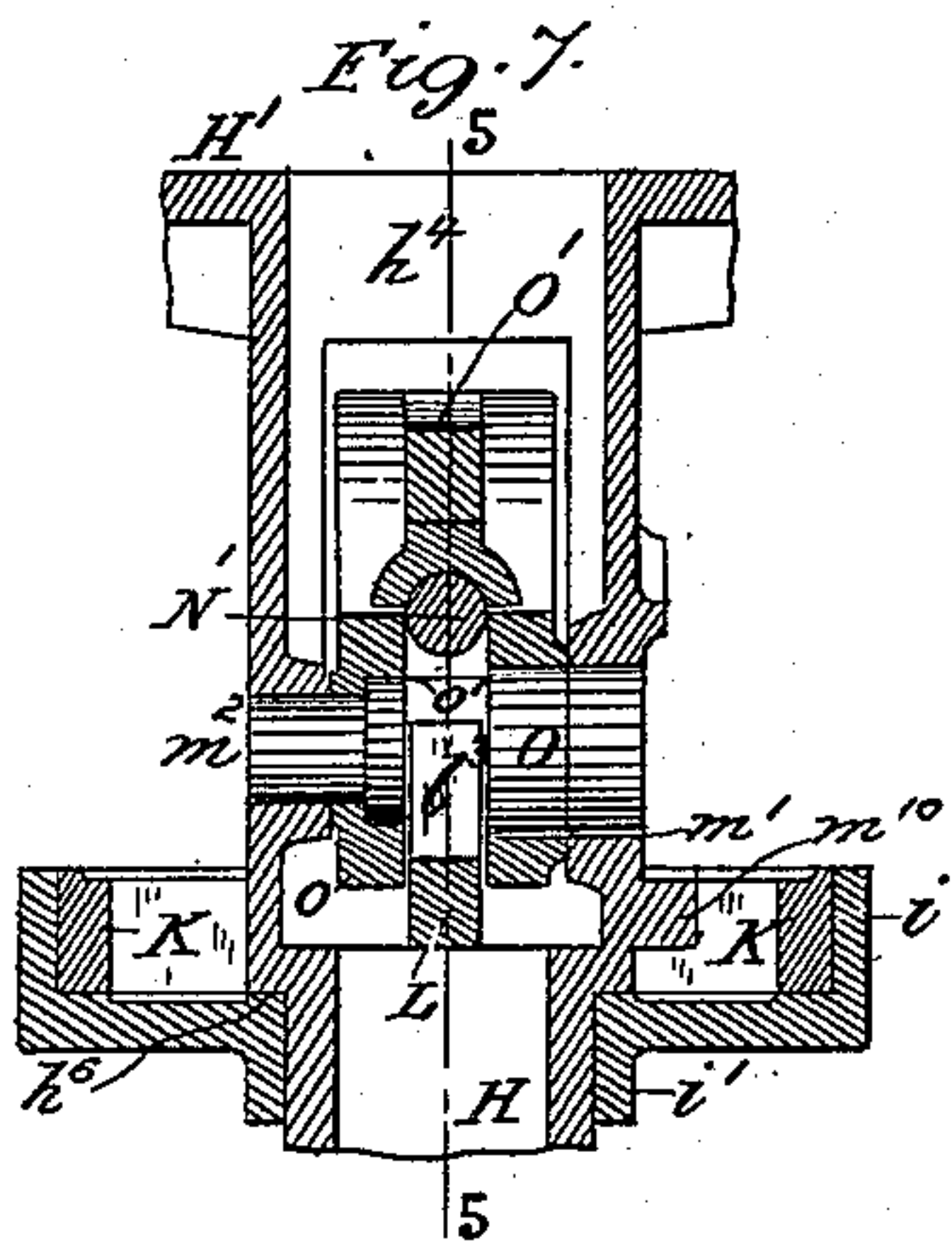
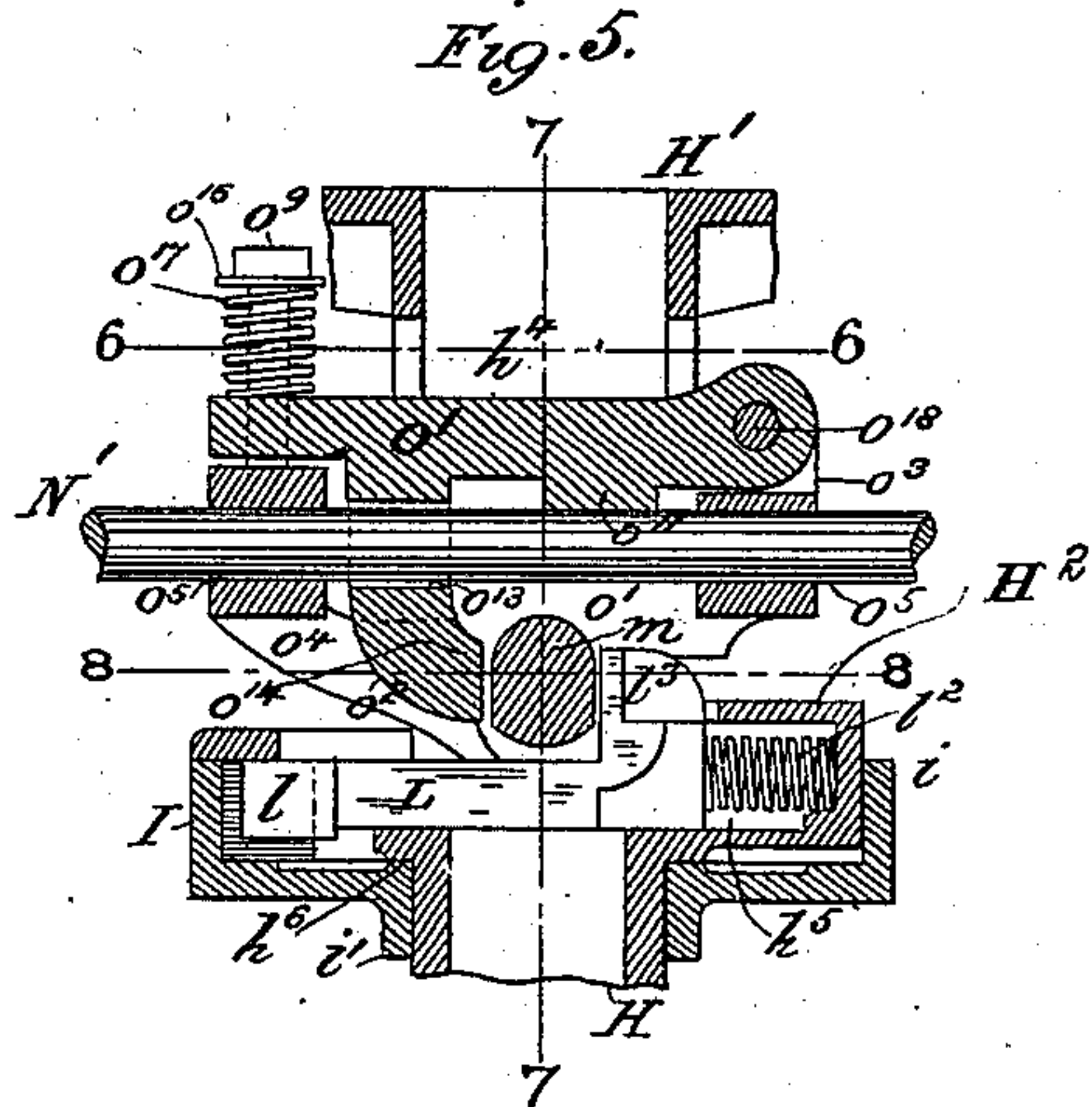
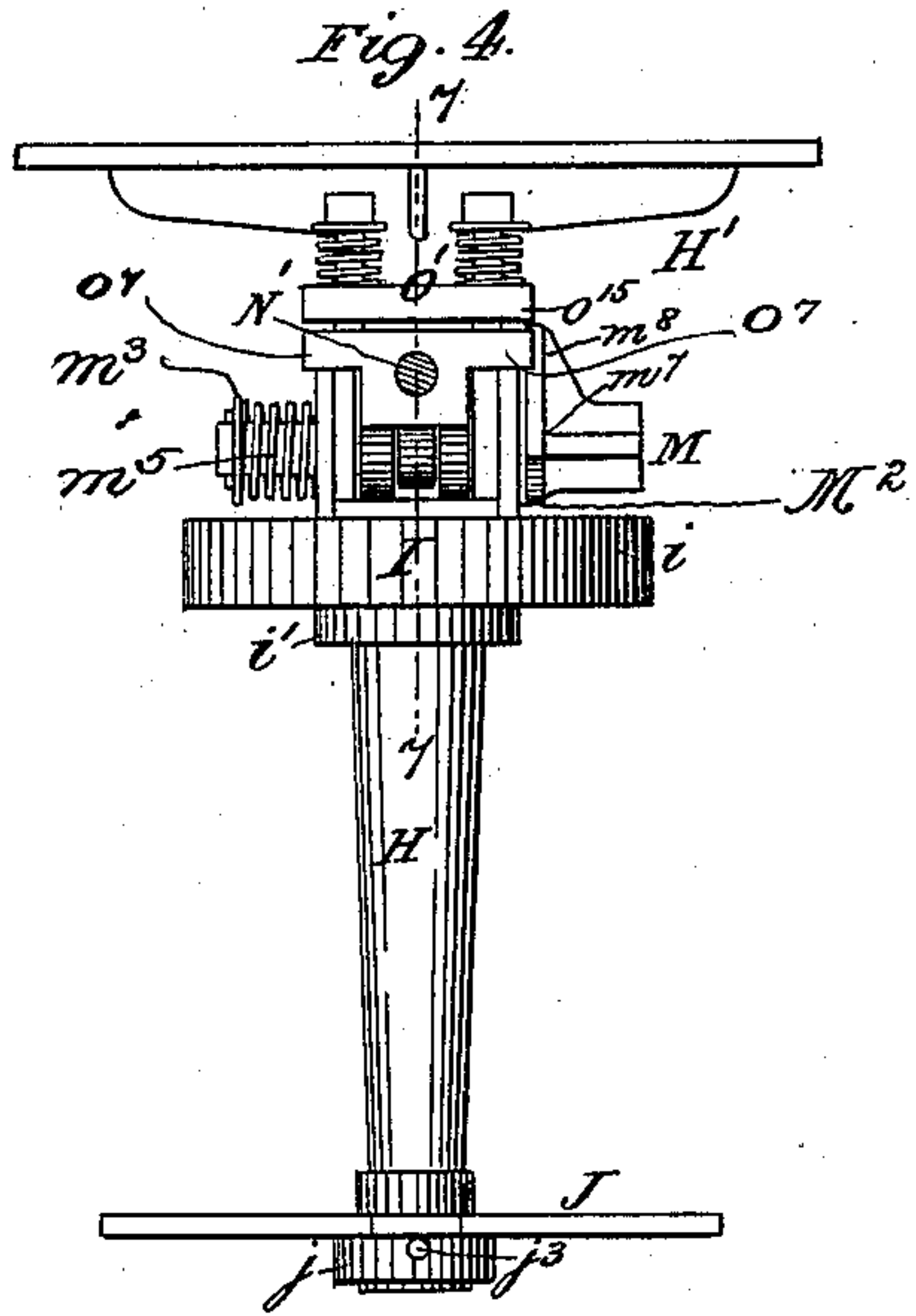
Patented Oct. 30, 1900.

E. E. KOKEN.  
CHAIR.

(Application filed Oct. 26, 1899.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ERNEST E. KOKEN, OF ST. LOUIS, MISSOURI.

## CHAIR.

SPECIFICATION forming part of Letters Patent No. 660,905, dated October 30, 1900.

Original application filed March 10, 1898, Serial No. 673,310. Divided and this application filed October 26, 1899. Serial No. 734,796. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST E. KOKEN, a citizen of the United States, residing in the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Chairs, of which the following is a full, clear, and exact specification.

My invention relates chiefly to revolving and reclining chairs having adjustable foot-rests, and is particularly useful in connection with what are known as "barbers'" chairs, this application being a continuation of one filed by me on March 10, 1898, Serial No. 673,310, for the same invention.

The chief objects of my improvements are, first, to provide an improved chair-seat lock; second, to provide an improved foot-rest lock, and, third, to so combine said locks with a single lever as to enable an operator to control both locks by means of such lever. I attain these and other minor objects by means of mechanism whose preferred form is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, on a reduced scale, of a chair embodying my improvements. Fig. 2 is a side elevation of the portions of the mechanism to which my invention more particularly relates with parts thereof broken away. Fig. 3 is a front elevation of the parts illustrated in Fig. 2. Fig. 4 is a rear elevation of the same parts. Fig. 5 is a detailed view, on an enlarged scale, of a vertical transverse section on line 5 5, Figs. 3 and 7. Fig. 6 is a horizontal section on the same scale on line 6 6, Figs. 2 and 5. Fig. 7 is a vertical section on line 7 7, Figs. 2 and 5, with the cam-shaft shown in the other views removed. Fig. 8 is a horizontal section on line 8 8, Figs. 2 and 5, with the foot-rest lock and the spring and washer shown on the cam-shaft in other views removed. Fig. 9 is a detailed plan view of a pair of segments forming parts of the chair's seat-lock, and Fig. 10 is a detailed side elevation of the foot-rest lock.

Similar letters refer to similar parts throughout the several views.

The chair A, Fig. 1, used to illustrate my improvement is a barber's chair of common form. Its base B, seat C, back D, arms E,

and foot-rest F are old and well known. The back is shown pivoted at its lower end *d* to the seat-frame. The foot-rest is pivoted at *f* to the same frame by means of the arms G, and the arms E connect the back D and foot-rest arms G, so that when the back is lowered the foot-rest is elevated and when the back is raised the foot-rest is lowered.

To the bottom of the seat-frame a spindle H is attached, which in the form shown has an enlarged upper end H' and journals *h* and *h'*, the latter containing an annular groove *h*<sup>3</sup>. The chair-seat and all parts attached thereto are supported upon said base B, Figs. 1 and 2, which preferably has a hub *b*, with a vertical opening *b'* extending through it and legs *b*<sup>2</sup> attached to and supporting the hub. To the top of said hub a cap-piece I, Figs. 1, 2, 3, 4, 5, 7, and 8, is attached, having an annular flange or collar *i* projecting upward therefrom along its outer edge and a central boss *i'* projecting down into the opening *b'* in said hub *b* and containing a bearing *i*<sup>2</sup> for the journal *h* of said spindle H, and to the lower end of said hub I preferably attach a plate J, Figs. 2, 3, and 4, provided with a central downwardly-extending boss *j*, containing a bearing *j'* for the journal *h'* of said spindle and preferably pierced by a screw-hole *j*<sup>2</sup>, containing a set-screw *j*<sup>3</sup>, whose inner end enters the annular groove *h*<sup>3</sup> in said bearing *h'* when the parts of the chair are all in place and prevents said spindle from rising. The spindle H rotates in said bearings *i*<sup>2</sup> and *j'*, and its weight and that of the chair-seat and attached mechanism are preferably supported by the cap-piece I, upon which the base *h*<sup>6</sup> of the enlarged portion H' of the spindle H rests.

The lower portion of the enlarged upper end of the spindle H rotates in the space inclosed by the flange *i* of the cap-piece I, and between it and the said flange a pair of segments K are arranged, Figs. 5, 7, 8, and 9, each preferably provided with an enlargement *k* at one end, said enlarged ends extending toward each other. Between the small ends *k'* of said segments there is space for a boss H<sup>2</sup>, projecting out horizontally from said upper end of the spindle H, Figs. 2, 3, 5, and 8, and entering said space. There is also preferably a space between said enlarged ends of



said segments K, and the tips  $k^2$  of said enlarged ends are preferably beveled, as shown in Figs. 8 and 9, so as to leave a space between them, enlarging toward said spindle and adapted to receive the wedge-shaped head  $l$  of a bolt L, Figs. 5, 8, and 9. The inner end of said bolt L reciprocates in a recess  $h^4$  in the upper end of said spindle and is normally forced outward, so as to cause the end of its wedge-shaped head  $l$  to enter the space between said enlarged ends  $k$  of the segments K and force them apart and lock the chair-seat in position by a partially-compressed coiled spring  $l^2$ , arranged in a recess  $h^5$  in the boss  $H^2$  of said spindle, Fig. 5. Said bolt is shown provided with an upwardly-projecting lug  $l^3$  and is preferably retracted by means of a downwardly-projecting cam  $m$  on a shaft M, Figs. 2, 3, 4, 8, and 10. Said shaft is journaled in bearings  $m^1$  and  $m^2$  in the upper end  $H^1$  of said spindle, through which it passes and is operated by means of a lever  $M'$ , Fig. 1. Said shaft is shown provided at its inner end with a pin  $m^3$  and washer  $m^4$  and has arranged thereon between said washer and the spindle H a partially-extended coiled spring  $m^5$ , which normally tends to draw said shaft inward. The inward passage of the shaft is preferably limited by an enlargement  $M^2$ , Figs. 1, 2, 3, 4, 6, and 8, which is shown provided with horizontal arms  $m^6$  and  $m^7$  and an upwardly-projecting arm  $m^8$ , having an inwardly-projecting tooth  $m^9$ . When said shaft is rocked, its rotary movement is limited by a stop  $m^{10}$ , (see Fig. 7,) projecting out from the spindle H and extending beneath the arms  $m^6$  and  $m^7$ . When the lever  $M'$  of said shaft is in an upright vertical position, the working face of cam  $m$  of said shaft M is disengaged, and when said position is reached by said lever said tooth  $m^9$  on the arm  $m^8$  comes opposite a recess  $m^{11}$ , Figs. 6 and 8, in the side of the spindle H and is drawn into it by the spring  $M^5$  and retained until forcibly removed by pressure upon said lever.

To the underside of the foot-rest F a bracket N, Fig. 1, is secured, to which a lock-bar  $N'$ , provided with stops  $n$  and  $n'$ , is pivotally attached at  $n^2$ , and the foot-rest F is secured in position by mechanism for gripping said lock-bar  $N'$ . The foot-rest lock is preferably arranged in an opening or passage  $h^4$ , Figs. 5, 6, 7, and 8, extending through the spindle H from front to rear, and said lock is preferably supported by and rocks upon the cam-shaft M and preferably consists of a frame O, a jaw  $O'$ , and means for forcing the jaw into contact with the bar  $N'$ , Figs. 1, 2, 3, 4, 5, 6, 7, and 10.

The frame O preferably has a base  $o$ , containing a slot  $o'$  and a transverse opening  $o^{14}$ , through which last the cam-shaft M extends, and which opening is large enough on one side to permit the cam  $m$  to enter said slot  $o'$ . It is also provided with a pair of arms  $o^3$  and  $o^4$ , extending up from opposite ends of said frame. Both arms are pierced by a longitu-

dinal opening  $o^5$ , through which the bar  $N'$  passes and in which it reciprocates. The arm  $o^3$  is provided at its upper end with a pair of vertical lugs  $o^6$ , between which the rear end of the jaw  $O'$  is secured to said frame by a pivot  $o^{18}$ , and the arm  $o^4$  is shown provided with a pair of opposite laterally-extending lugs  $o^7$ , from each of which a bolt  $o^8$ , having a head  $o^9$ , extends upward. The jaw  $O'$  has a base  $o^{10}$ , which is preferably provided on its under side with a tooth  $o^{11}$ , adapted to grip the top of the lock-bar  $N'$ , and a lug  $O^2$ . The lug  $O^2$  preferably has an enlargement  $o^{12}$ , pierced by an opening  $o^{13}$ , through which said bar  $N'$  extends and which is preferably large enough to allow said bar some play therein, and a rearwardly-projecting tip  $o^{14}$ , adapted to be engaged by the cam  $m$  on the shaft M. The outer end of said base is shown provided with a pair of opposite laterally-extending lugs  $o^{15}$ , through which the bolts  $o^8$  extend and which are preferably large enough to allow said bolts some play. Between the tops of said lugs  $o^{15}$  and the heads  $o^9$  thereof washers  $o^{16}$  and coiled springs  $o^{17}$  are arranged on said bolts, and said springs are partially compressed and normally force the tooth  $o^{11}$  of the jaw  $O'$  down against said bar  $N'$  with sufficient force to prevent said bar from reciprocating, and in that way they keep said foot-rest F locked in position, as will be seen most clearly in Fig. 5. The shaft M passes between the tip  $o^{14}$  of the lug  $O^2$  and the lug  $l^3$  of the bolt L.

When the enlarged ends  $k$  of the segments K are forced apart by the action of the spring  $l^2$  in pressing the head  $l'$  in between them, said segments are not only forced against the inner side of the annular flange  $i$  of the cap I, Fig. 8, but their opposite ends are caused to grip the boss  $H^2$  of the spindle H, and in that way the chair-seat is held very rigidly in position. By moving the lever  $M'$  back from its vertical position the cam  $m$  of the shaft M may be brought into contact with the lug  $l^3$  of said bolt L, and said bolt may thereby be pressed back against the pressure of the spring  $l^2$  until the segments K are loosened. The chair-seat may then be revolved freely. By moving said lever  $M'$  forward from its vertical position the cam  $m$  may be forced into contact with the tip  $o^{14}$  of the lug  $O^2$  and the jaw  $O'$  opened far enough to remove the pressure of the tooth  $o^{11}$  from the bar  $N'$ , so as to loosen said bar and enable the foot-rest to be adjusted. After either the chair-seat or the foot-rest has been adjusted the lever  $M'$  is preferably returned to its vertical position, and the fact that it has reached that position is called to the operator's attention by the tooth  $m^9$  entering its recess  $m^{11}$ , due to the force exerted by the spring  $m^5$  or other elastic means. When the lever  $M'$  is brought back to its vertical position, the lock which has been opened thereby closes automatically, due to the force exerted by the spring  $l^2$  or other elastic means, and as long as said tooth



is engaged by said recess the lever M' is retained in its vertical position and is kept out of engagement with the locking mechanism.

I have described the special form of my device, but do not desire to have my claims limited thereto.

What I claim is—

1. In a foot-rest lock, the combination with a reciprocating bar, of two coacting locking members having unopposing portions engaging the bar, one of said members being movable with relation to the other, said bar being disposed between said members, and means for operating said movable member to release the bar, substantially as described.

2. In a foot-rest lock, the combination with a reciprocating bar, of two locking members, between which said bar extends, one of said members formed with projections engaging said bar, and the other member with a projection engaging said bar at a point between the engaging projections of the first-mentioned member, and one of said members being movable with relation to the other and spring-held, and means for operating said movable member to release said bar, substantially as described.

3. In a foot-rest lock, the combination with a reciprocating bar, of a relatively-fixed locking member supporting said bar, a pivoted spring-held locking member, said members having unopposing engaging portions engaging and clamping the bar, and means for operating the pivoted member to release the bar, substantially as described.

4. In a foot-rest lock, the combination with a movable and a relatively-fixed locking member, of a reciprocating bar disposed therebetween and clamped thereby, elastic means for holding the movable member normally in contact with said bar, said movable member formed with a laterally-extending projection, and a rock-shaft mounted adjacent to said projection and having a cam engaging the same and operating the movable member to release the bar when the shaft is rocked, substantially as described.

5. The combination in a revolving chair of a base; a chair-seat; a spindle attached to said seat and rotating in and supported by said base; a recess in said spindle; a bolt whose rear end extends into said recess and whose other end projects therefrom; a spring in said recess tending to force said bolt into its outermost position; a collar, and a part within said collar which said bolt, when in its normal position, wedges against said collar, thereby locking the chair-seat; and means for operating the bolt to release the parts from their locking position.

6. The combination in a revolving chair of a seat; a spindle supporting the seat and having a laterally-projecting boss; a base in which said spindle rotates and by which it is supported; a collar attached to said base; a segment arranged within said collar; and means within said segment for locking said chair-

seat by forcing one end of the segment against said boss and its outer side against the inside of said collar.

7. The combination in a revolving chair of a base having a collar attached thereto; a pair of segments within said collar placed opposite each other; a chair-seat; a spindle attached to said seat and rotating in and supported by the base and having a laterally-extending boss projecting between the ends of said segments; a bolt within said collar; means for forcing the head of said bolt between the ends of said segments opposite those next said boss and holding it there, and mechanism for retracting said bolt.

8. The combination in a revolving and reclining chair of a seat; a foot-rest; means pivotally connecting the rest and seat; a locking-bar; means connecting the bar and foot-rest; a spindle having in its upper end an opening through it from front to rear; a recess for a bolt and transverse bearings for a shaft; a cam-shaft rocking in said bearings; a bolt whose rear end reciprocates in said recess and which is provided with a lug projecting into the path of the cam on said shaft; a spring tending to force said bolt into its outermost position; a foot-rest lock having a frame with openings through which said locking-bar and said cam-shaft pass; a jaw having a lug projecting into the path of the cam on said shaft opposite the lug on said bolt; a part for gripping said bar; means pivotally connecting said jaw and frame; and means elastically pressing said gripping portion of said jaw into contact with said bar, substantially as described.

9. The combination in a revolving and reclining chair of a seat; a foot-rest; means pivotally connecting the foot-rest and seat; a locking-bar; means connecting the bar and foot-rest; a base; a spindle turning in the base and supporting the chair; bearings in the spindle for a shaft; a cam-shaft journaled in said bearings; a lever attached to said shaft; an arm projecting from said shaft having an inwardly-projecting tooth; a recess in the spindle for said tooth; elastic means for forcing said tooth into said recess when the cam on said shaft reaches an inoperative position; a lock for said foot-rest bar opened by turning said lever in one direction from the position in which it stands when said tooth is in its recess, and a chair-seat lock released by turning said lever in the opposite direction, means by which the movement of said lever in one direction from its inoperative position releases the chair-seat lock, and means whereby its movement in the opposite direction releases the foot-rest lock, substantially as described.

10. The combination in a foot-rest lock; a frame O having a base o containing a vertical slot o' and a transverse opening o<sup>14</sup>, and having also arms o<sup>3</sup> and o<sup>4</sup> pierced by a longitudinal opening o<sup>5</sup>; a jaw O' having a base o<sup>10</sup> provided with a tooth o<sup>11</sup> and a lug O<sup>2</sup>;



means pivotally connecting the end of the base of said jaw next said tooth  $o^{11}$  to said frame; a locking-bar projecting through the opening  $o^5$  in position to be engaged by said  
5 tooth; means elastically pressing said tooth into engagement, and a cam-shaft extending through said opening  $o^{14}$  and with its cam in position to open said jaw by pressing against said lug, substantially as described.

10 11. The combination in a revolving and reclining chair of a spindle supporting the chair-seat; a base supporting the chair-seat; a base supporting the spindle; mechanism for lock-

ing the chair-seat; mechanism for locking the foot-rest; a bearing in said spindle; a cam- 15 shaft journaled in the bearing for opening said locks; a pair of arms  $m^6$  and  $m^7$  projecting from opposite sides of the shaft and a stop  $m^{10}$  projecting from the spindle.

In testimony whereof I have signed my 20 name to this specification in the presence of two subscribing witnesses.

ERNEST E. KOKEN.

Witnesses:

HUGH K. WAGNER,  
JAMES H. BRYSON.