

No. 721,294.

PATENTED FEB. 24, 1903.

C. H. FULLER.
MECHANICAL MOVEMENT.

APPLICATION FILED APR. 9, 1902.

NO MODEL.

Fig. 1. ←

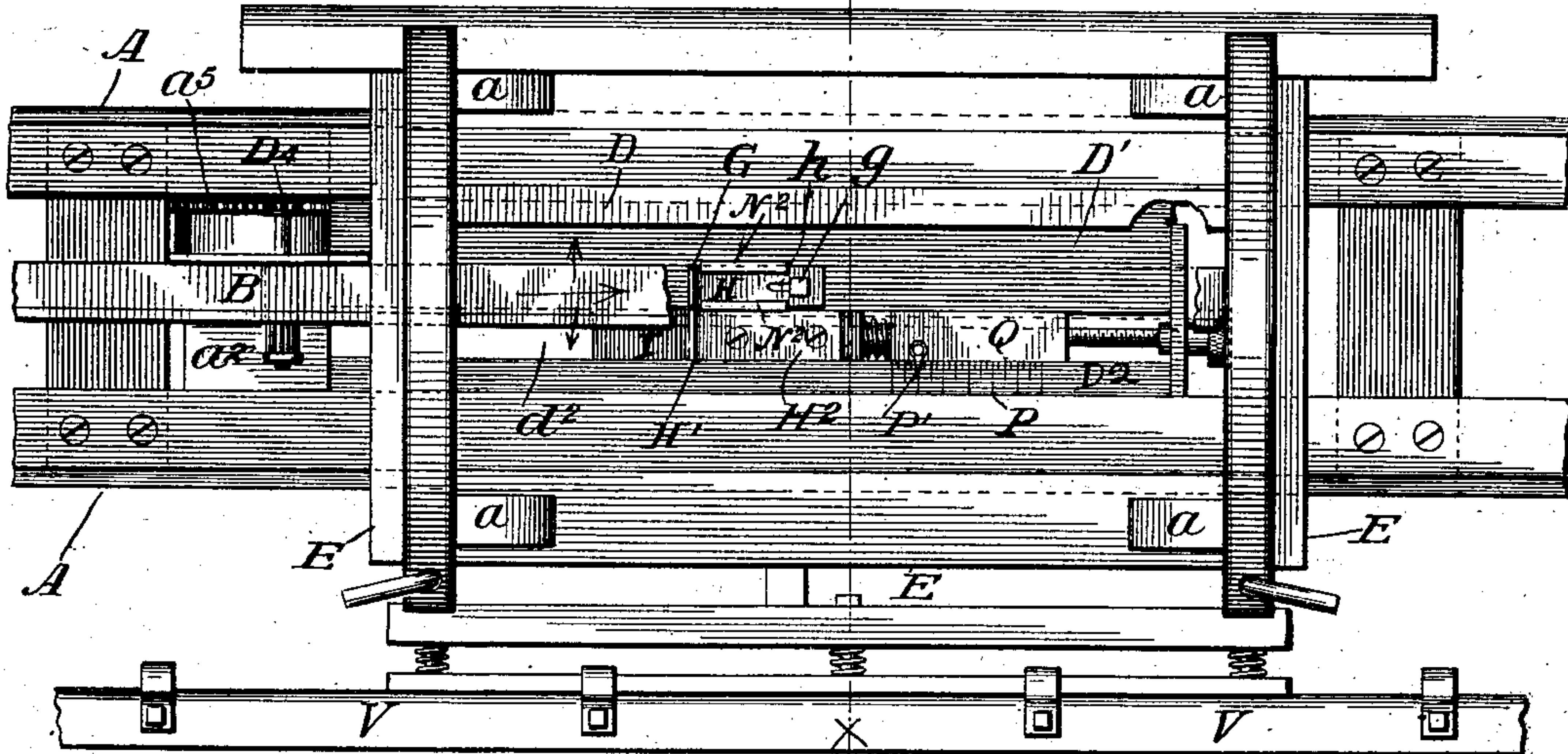


Fig. 2.

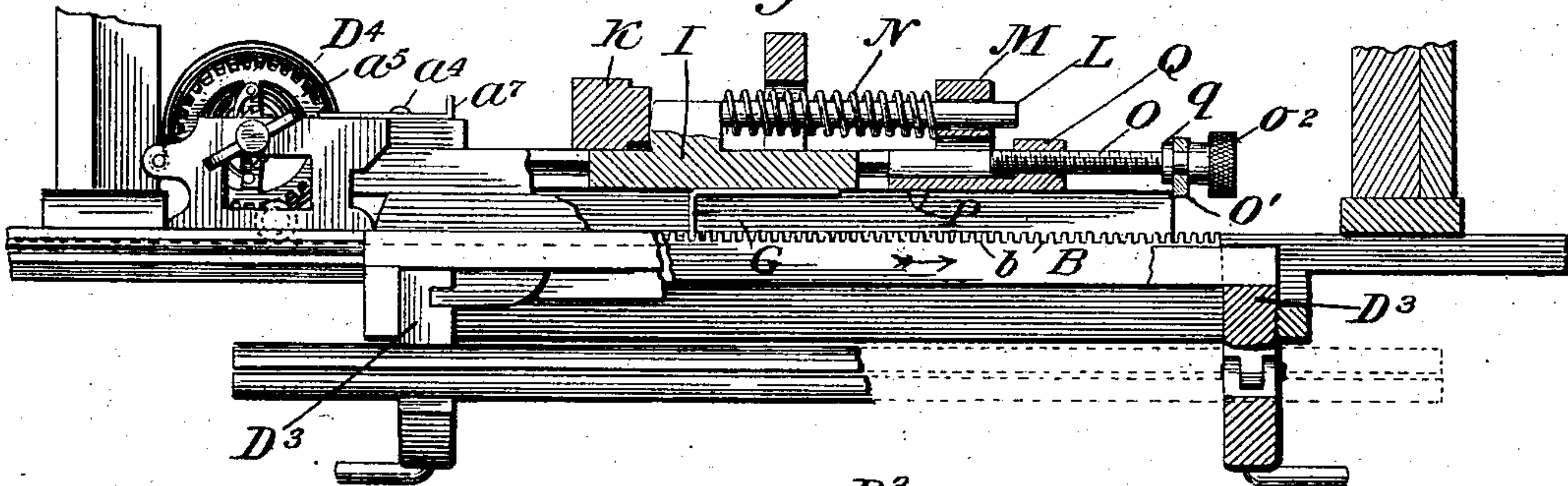
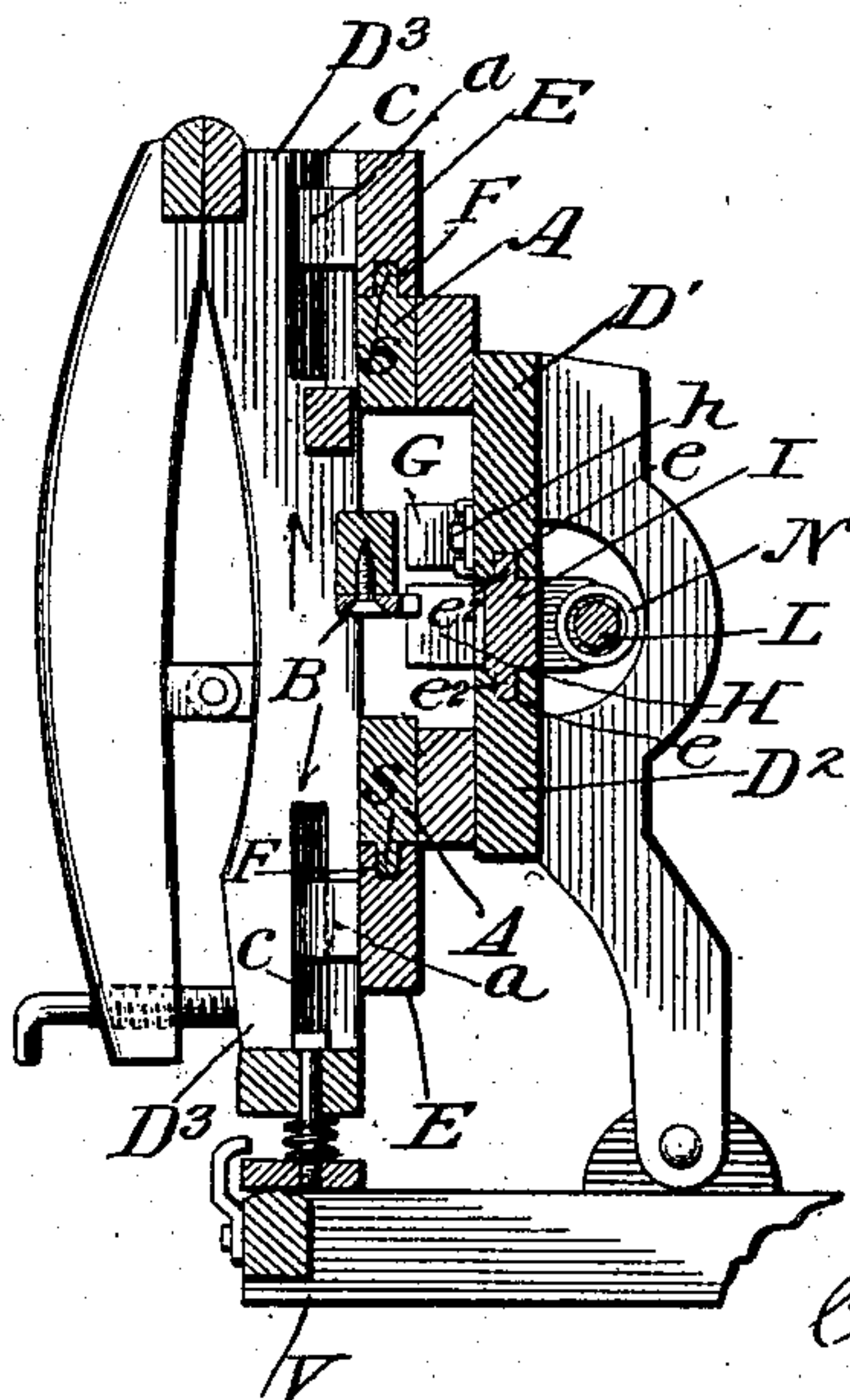


Fig. 3.



Witnesses:
S. L. Fuller
L. C. Fentress

Inventor:

Chas. H. Fuller

UNITED STATES PATENT OFFICE.

CHARLES H. FULLER, OF TELLURIDE, COLORADO.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 721,294, dated February 24, 1903.

Application filed April 9, 1902. Serial No. 102,111. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. FULLER, a citizen of the United States, residing at Telluride, in the county of San Miguel and State of Colorado, have invented certain new and useful Improvements in Mechanical Movements, of which the following is a specification.

My invention relates to mechanical movements, and has for its object the provision of means for producing a progressive movement in intermittent successive impulses variable at will from minimum to maximum divisions of the travel of a moving part.

In carrying my invention into effect I impart to a movable body, which may be a carriage adapted to feed material to a tool adapted to operate on such material, movement in a straight or curved line, and I so govern and control such movement as to divide it into a succession of steps by means of a toothed feed-bar and a stationary and a movable detent, alternately engaging with said toothed feed-bar, and I determine and regulate the length of each step or onward movement by regulating the amount of movement of the movable detent by means of the novel mechanism hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a front elevation. Fig. 2 is a view partly in plan and partly in horizontal section, and Fig. 3 is a transverse sectional view of the mechanism on the line $x x$ of Fig. 1.

B designates a feed-bar which is intended to travel in the direction of the arrows, which has teeth b formed on one edge. The bar B is suitably supported on one-half of the vertical members of a saw-clamp $D^3 D^3$, which is mounted on a suitably-supported carriage E E with its horizontal members having grooves $f f$ on their inner edges.

A A designate a frame, its horizontal members having tongues $s s$. The carriage is mounted on the frame A A, its grooved members fitting on the tongues $s s$ of the frame A A, which serve to hold the carriage on the frame and guide it in its travel.

$a a$ designate guide-lugs secured to the horizontal members of the carriage, which work in slots $c c$ of the vertical members of one-half of the saw-clamp $D^3 D^3$, which serve

to hold the clamp in the frame of the carriage and permitting the clamp to move up and down while the carriage moves longitudinally on the frame A A.

Secured to the frame A A is a spring-motor D^4 , which has a horizontal gear-wheel a^5 , which meshes with a vertically-arranged gear a^3 , which engages with the teeth on the feed-bar B.

a^7 is a detent adapted to engage with the toothed wheel a^5 to control the power of the motor to throw it in and out of gear.

Attached to the frame A A are the plates D' and D^2 , which have grooves $e e$ formed on their inner edges and placed sufficiently apart to form a space d^2 , permitting the sliding block I and a stop-block Q, formed with tenons $e^2 e^2$ on both edges, to slide in the grooves $e e$.

Mounted upon the sliding block I is secured a plate H^2 , which has an outwardly-protruding tooth H' . Secured to the back of the block I is a guide-rod L, which works in a bracket M and is surrounded by a spiral spring N, which tends to force the sliding block I back in alinement with the stationary detent G after it has disengaged its travel with the feed-bar B.

The sliding block I is limited to its forward movement by the stop-block Q, which has a screw O, that is journaled in a cross-piece O' , which is attached to the plates $D' D^2$ and is provided with a collar q and a thumb-nut O^2 , by which the screw is turned. The block Q being provided with a screw-hole to receive the screw O, the screw being turned to the right causes the stop-block Q to travel to the right to any predetermined distance which is desired, such divisions being marked off by a pointer P' on a graduated scale P, such predetermined distance being a limitation of the travel of the block I and the feed-bar B, the divisions marked off by the pointer P' on the scale P being equal divisions to the number of teeth on the feed-bar B. The reverse movement of the block I is forced back by the spring N and is stopped by the block K, the end of the guide-rod L contacting with the block K, which serves to hold the plates $D' D^2$ together.

In a vertical alinement above the tooth H' is secured to the plate D' a plate H, which

has an outwardly-protruding tooth G. The plate H is provided with guide-lugs $n^2 n^2$ and a slot h and a screw g to pass through the slot, which serves to hold the plate in position and allow it to be moved longitudinally, so it may be adjusted and kept in vertical alinement with the tooth H' by any wear of either.

Operation: When the outer bar V of the vibrating frame is lowered, it pulls the clamp down, which causes the feed-bar B to disengage from the stationary detent G and engage with the movable detent H'. The motor D⁴, which is continuously exerting its power by the gear connection with the feed-bar, causes the carriage and clamp to move a distance equal to the predetermined distance marked off on the scale P and is stopped at such distance by the stop-block Q. When the outer bar V is raised again, it engages the feed-bar B with the stationary detent G and releases the movable detent, which is forced back to its normal position in vertical alinement with the stationary detent G by the spring N ready to repeat its operation again, these operations being repeated until the propelled body has reached the limit of its travel.

My invention is intended and adapted for use on any machine in which it is desired to produce the intermittent movements—as, for instance, a saw-filing machine—and to better illustrate the principles and mode of operation I have shown the mechanism of my present invention in connection with parts of a saw-filing machine, for which I have made application for Letters Patent, dated April 9, 1902, Serial No. 102,112; but I do not wish to be understood as limiting my invention to saw-filing machines or any other special machinery.

While I have shown the feed-bar as a propelled body, I desire it to be understood that the feed-bar can be placed stationary and the plates D' and D², carrying the detents and sliding blocks, may be mounted on the propelled body.

While I have shown the rack-bar B as a straight bar, I desire to have it understood that the bar may be curved and fed in a curved direction or that in place of the bar B, I may

employ a toothed wheel which will engage with the detents G and H' and by means of which rotary motion may be converted into intermittent rotary motion.

Having described my invention, I claim—

1. A mechanical movement for effecting a progressive intermittent feed comprising a propelled part having teeth, means for moving said propelled part longitudinally, means for moving said propelled part transversely a stationary detent and a movable detent alternately engaging said teeth, a stop-block for limiting the movement of the movable detent, and means for adjusting the position of said stop-block.

2. A mechanical movement for the purpose of effecting a progressive feed, comprising a suitably-propelled body having teeth, means for intermitting the motion of said propelled body, consisting of a stationary detent and a movable detent adapted to alternately engage with the teeth on said propelled body, an adjustable stop to limit the movement of said movable detent, and means for adjusting the stop.

3. A mechanical movement for effecting a progressive feed, comprising a suitably-propelled body, means for intermitting the motion of said propelled body, consisting of a stationary detent and a movable detent, means to adjust the stationary detent, a stop to limit the movement of the movable detent, and means for adjusting the stop.

4. A mechanical movement for effecting a progressive feed, comprising a suitably-propelled body, means for moving said propelled body longitudinally, means for moving said propelled body transversely, means for intermitting the motion of said propelled body, consisting of a stationary detent, a sliding detent adapted to be moved forward by the longitudinal movement of the propelled body, means to limit the movement of the sliding detent and means to automatically impart a retrograde movement thereto.

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

CHARLES H. FULLER.

Witnesses:

THOS. A. CONNOLLY,
W. E. WRIGHT.