

T. O'DONNELL & E. K. WALKER.
 STOP-MOTION FOR COTTON-SPINNING MACHINERY.
 No. 178,946. Patented June 20, 1876.

Fig. 1.

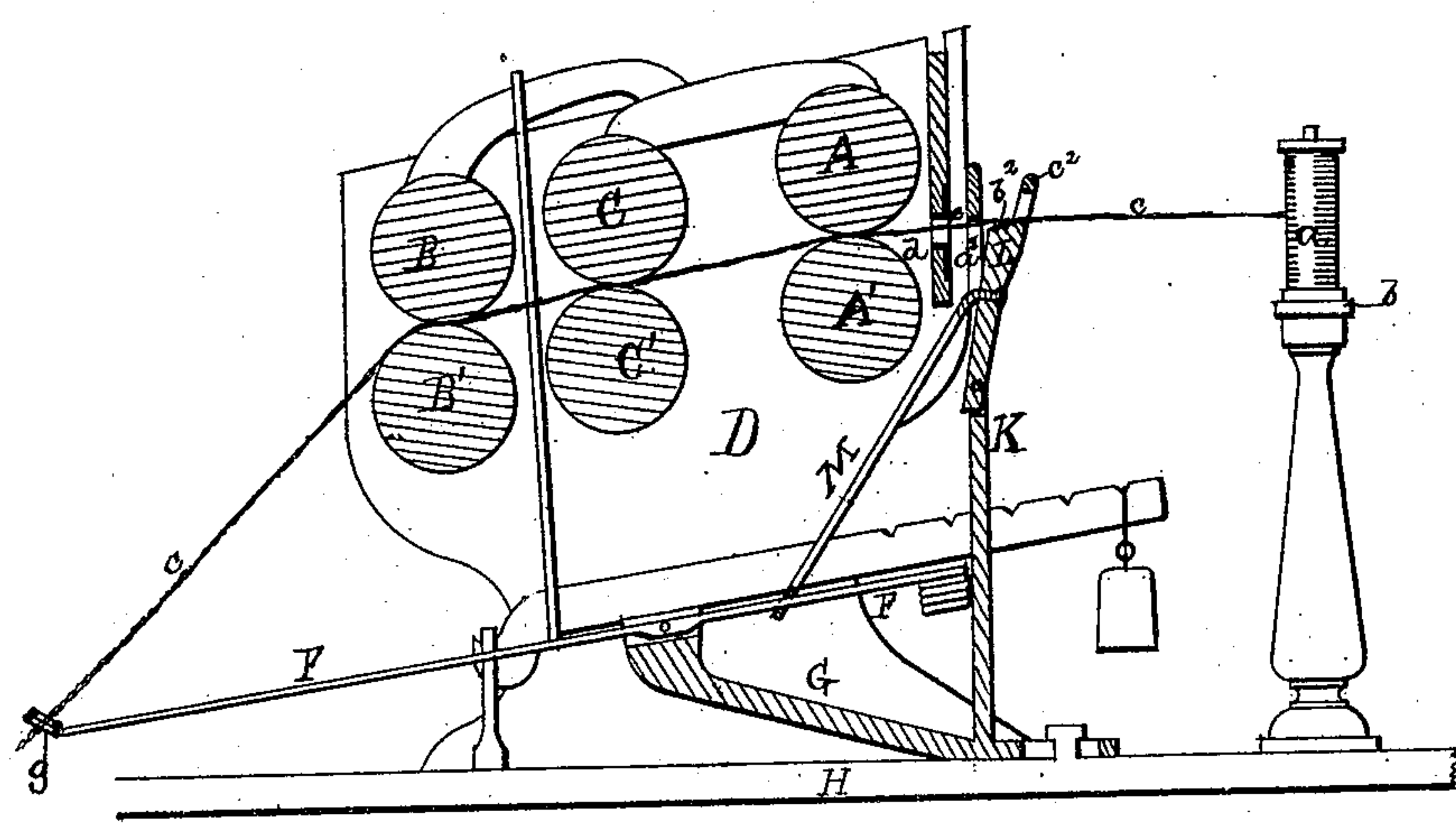


Fig. 2.

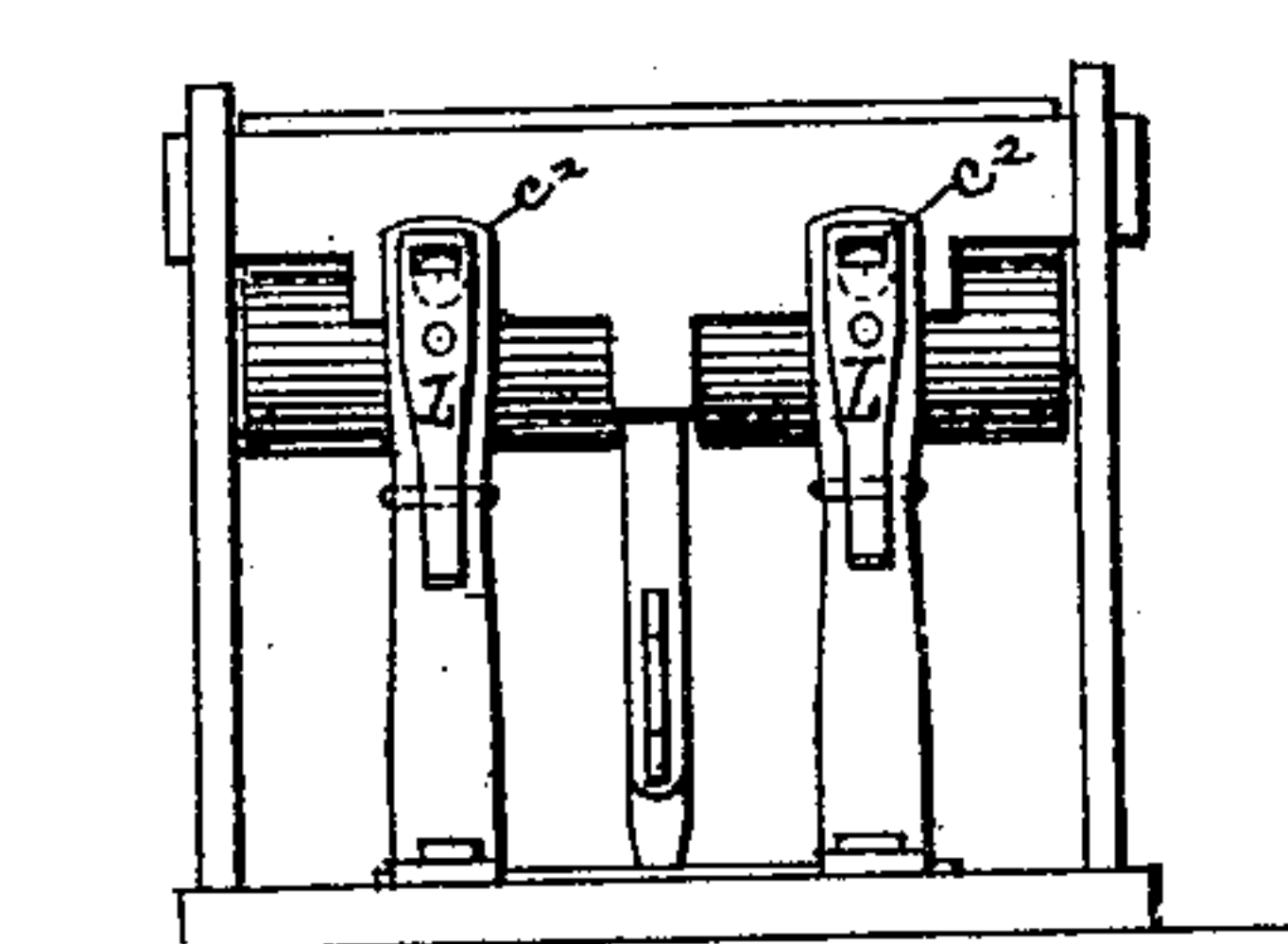


Fig. 4.

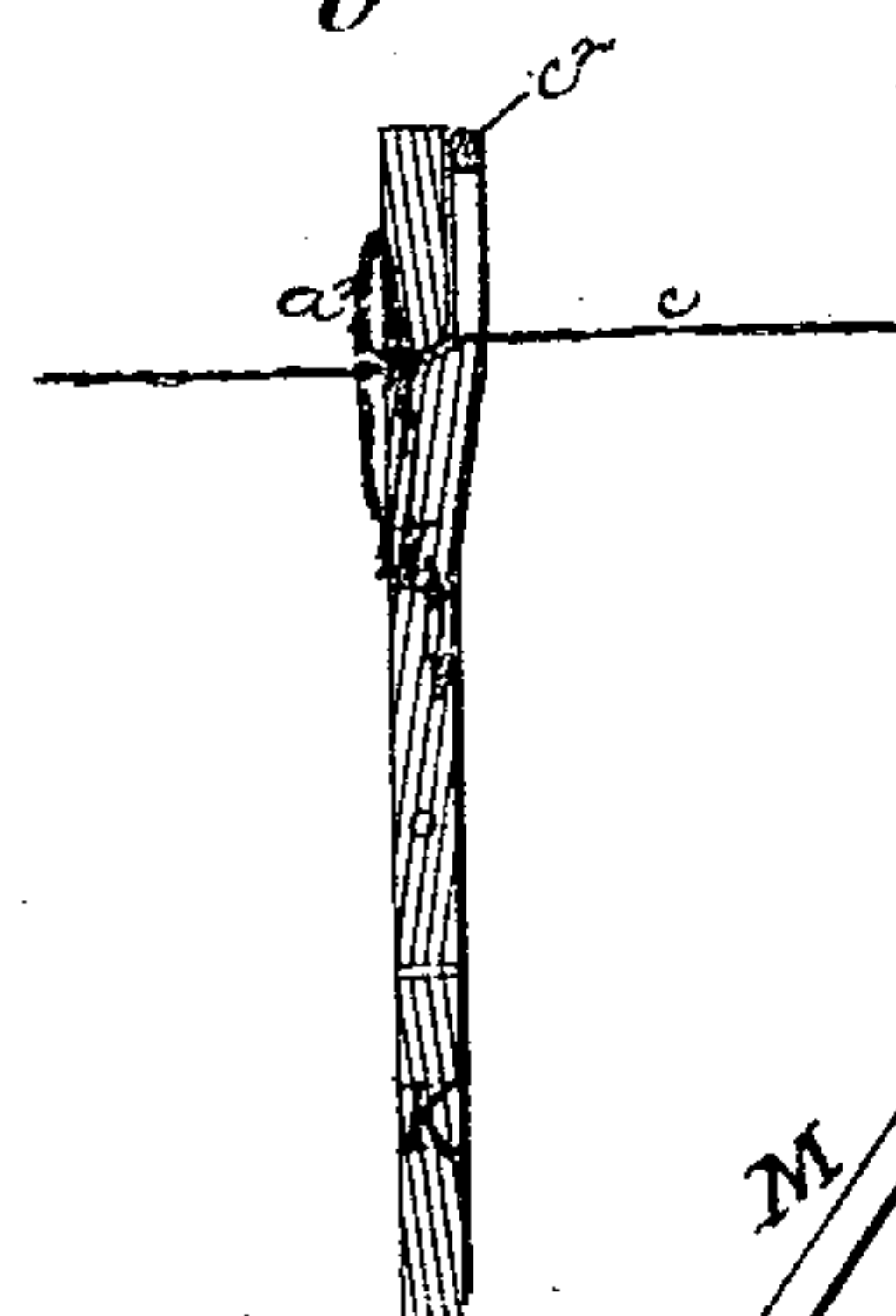
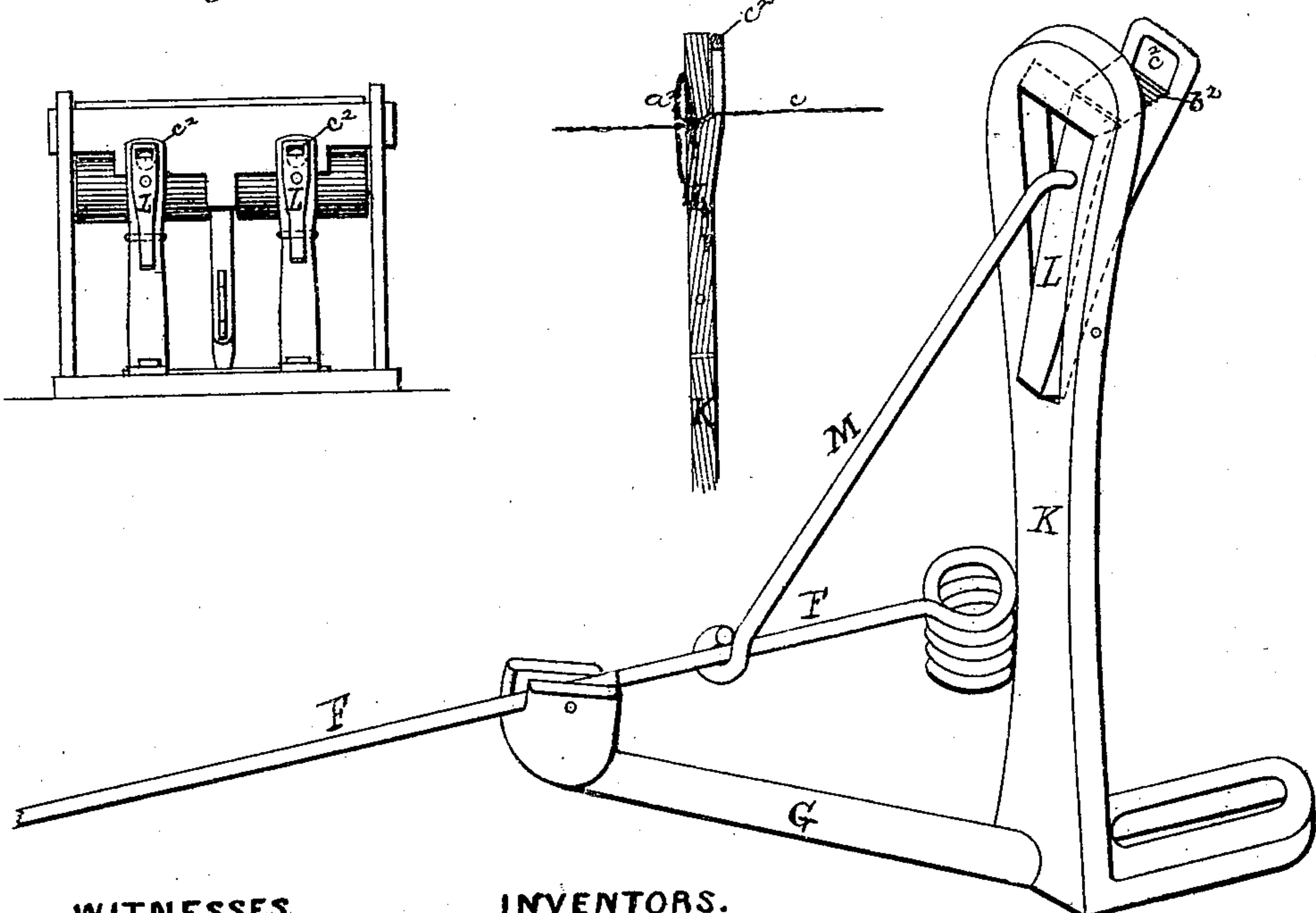


Fig. 3.



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IMPROVEMENT IN STOP-MOTIONS FOR COTTON-SPINNING MACHINERY.

Specification forming part of Letters Patent No. 178,946, dated June 20, 1876; application filed January 25, 1876.

To all whom it may concern:

Be it known that we, TIMOTHY O'DONNELL and EDWARD K. WALKER, of Exeter, Rockingham county, New Hampshire, have invented certain Improvements in Stop-Motions for Cotton-Spinning Machinery, of which the following is a specification:

These improvements relate to stop-motions applicable to that portion of cotton-spinning mechanism in which the rovings are reduced to yarn, and are based upon a class of mechanism shown and described in Letters Patent of the United States issued to us on the 31st day of August, 1875, the purpose of both this patented invention and our present improvements being to instantly stop the passage of a roving from the bobbin at a suitable point in advance of the first pair of draft-rolls, the results arrived at by such a stoppage of the roving being as hereinafter explained.

The drawings accompanying this specification represent, in Fig. 1, a vertical and longitudinal section of so much of the spinning machinery as is requisite to illustrate the nature and operation of our invention. Fig. 2 is an elevation of the same, taken in rear of the back draft-rollers, and the laterally-reciprocating guide-plate. Fig. 3 is a perspective view of the roving-breaking device. Fig. 4 is a section, on an enlarged scale, of the guide-plate and the roving-breaking device, which latter constitutes a feature of our invention, this figure showing the position of parts in which the roving is broken.

In these drawings, A represents one of a series of pairs of rolls, constituting the draft-rolls of a spinning-frame, the purpose of these rolls, which revolve at differential speeds, being, as usual, to reduce or draw out the rovings to the requisite diameter to produce yarn. The back or first pair of rolls are shown at A A', the front pair at B B', and the intermediate pair at C C', while the standards which support them are shown at D D. One of a pair of bobbins, upon which rovings are wound, is shown at *a*, and the horizontal rail or "creel," upon which it is mounted, at *b*, while the laterally-reciprocating bar, through which the rovings *c* pass prior to entering the back rolls A A', is shown at *d*, and the eyes or guides of

the same at *e e*. This mechanism being put in motion, the bobbins deliver the rovings to the rollers, and the rollers, after extending or diminishing the rovings by drawing, pass them down to the fliers and spindles, (not shown,) by which they are twisted into yarn. F F represent two twin levers, one of which is shown in the accompanying drawings, disposed centrally one below each half or side of the three lower rollers A' B' C', such levers being pivoted upon posts G erected upon the beam H, which supports the standards D, and being formed with eyes *g* at their front extremities, through which the rovings *c* pass on their way to the spindles, the rear ends of said levers F F being overbalanced in order to drop when the tension of the yarn or thread upon their front ends is relaxed. In rear of each lever F I dispose an upright post, K, within a slot, *a*², in the upper part of which I pivot, at or near its lower end, a latch, L, the upper edge *b*² of such latch being preferably roughened, and operating, in connection with the upper boundary of the slot *a*², in such manner that, as such latch moves forward, the two parts meet and gripe the roving *c* between them. The roving *c* passes through an eye, *c*², in the extreme upper part of the latch, thence over the edge *b*² of the latch and through the slot *a*², whence it is carried between the rolls A A'; C C', and B B', and through the eye *g* of each lever F to the flier. Each lever F is connected suitably to each adjacent latch L by a bar or rod, M, in order that a depression of the rear end of such lever shall effect a forward movement of the upper part of the latch.

The operation of the above-described mechanism when in action is as follows: So long as the rovings are perfect, or up to the required standard, the tension upon them exerts sufficient power upon the levers F to depress the outer or front ends of the latter, and, consequently, force the upper edge of the latch L away from the post K, in which case no action is exerted upon the rovings entering the first pair of rolls A A'. Should a yarn or thread, into which the rovings are twisted by the fliers, become detached from the latter by breaking, or become attenuated, or weak and slack to such an extent as to produce inferior

or worthless yarn, the tension upon the yarn or thread is relaxed, and its power over the levers F is weakened to such a degree that the rear end of such lever is depressed, and as a consequence the upper end of the latch L moves forward, and the roving is gripped between the latch and the post K, and broken or arrested. Under these circumstances a breaking or undue relaxation of the tension upon a yarn or thread entails no stoppage of the drawing or spinning machinery, but only of the individual roving, from which such inferior or broken yarn was twisted, as the effect of this broken yarn is not transmitted to the neighboring yarns—a fact of great importance. Another fact of importance, in severing the roving at some suitable point before entering the first pair of draft-rolls, is that we avoid “roll-ups,” or the winding and accumulating of the rovings about the rolls, which would result were a roving stopped at some point after passing through said first pair of rolls.

One prominent gain in the use of our improvements is apparent in the saving of waste at a point in cotton-spinning machinery where much is ordinarily made, as the undue relaxation of the tension upon the yarn or thread, between the fliers and draft-rolls, is in our improvement instantly transmitted to the latch

L, and the roving at once broken, before entering the first pair of rolls.

We do not confine ourselves to the precise location of the device for breaking or stopping the roving, as herein shown, as such device is in its operation independent of the transverse slide-bar *d*. The only condition to which we confine ourselves, in this respect, is that the stopping or breaking mechanism shall be situated at some suitable point in advance of the first pair of draft-rolls, in order to intercept an imperfect roving before it enters the latter.

We claim—

1. The combination, with lever F and slotted post K, of the latch L, pivoted to the slotted post and connected with the lever, for operation in connection with the fliers and draft-rolls of cotton-spinning machinery, substantially as herein shown and set forth.

2. As a means of gripping and arresting the roving *c*, the latch L operating in connection with the upper boundary of the slot *a*², substantially as and for the purpose stated.

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