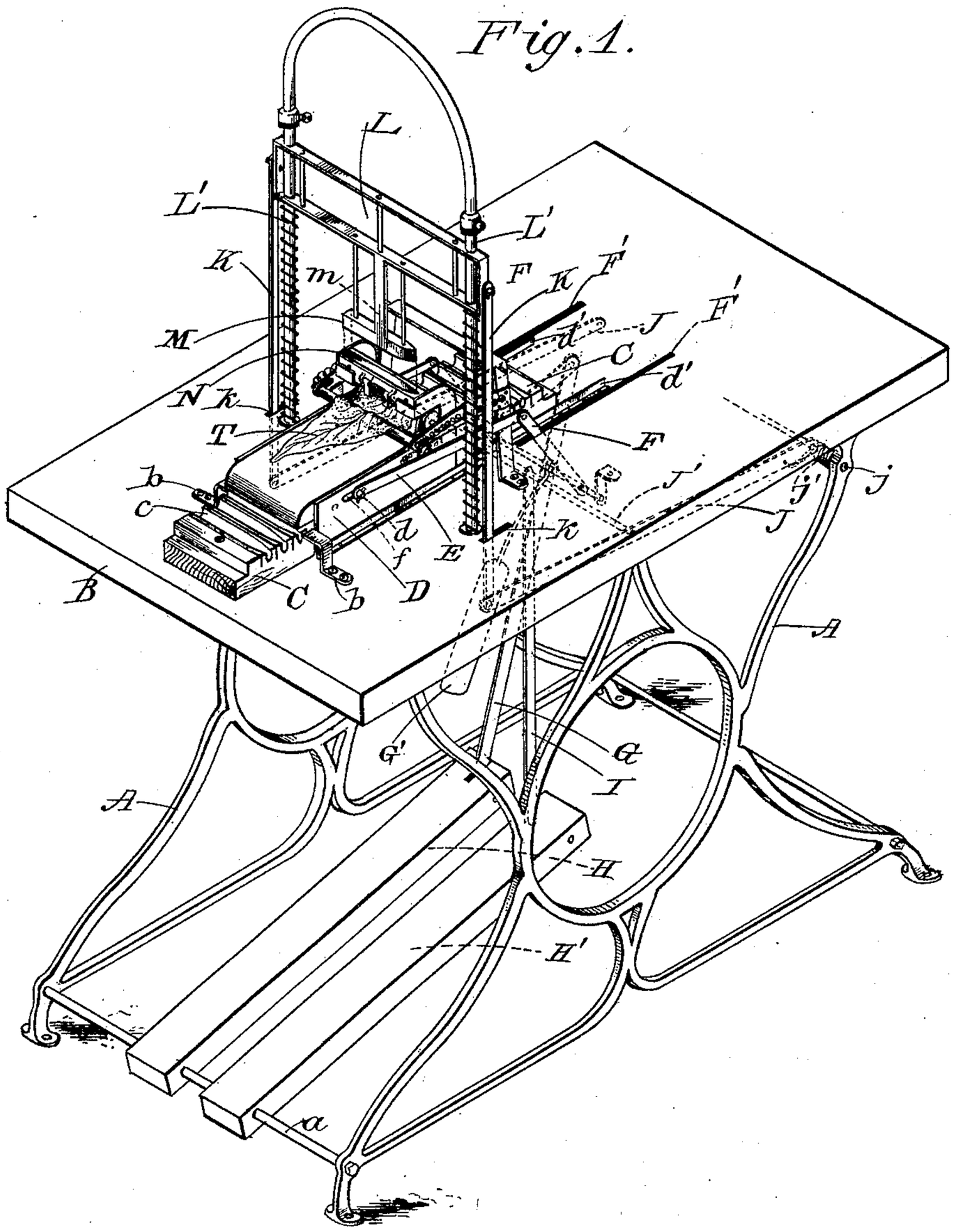
(No Model.) 6 Sheets—Sheet 1.

J. DE LA MAR.

CIGAR BUNCHING MACHINE.

No. 410,959. Patented Sept. 10, 1889.

Fig. 1.



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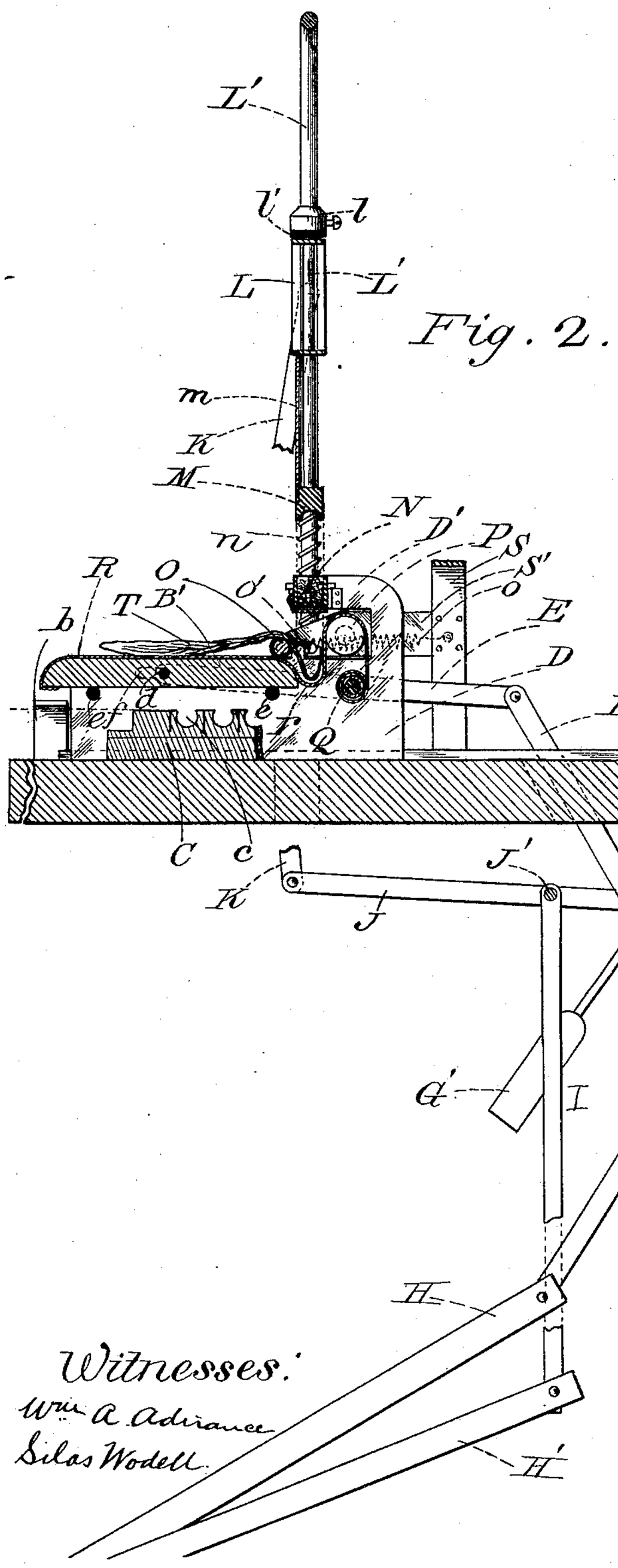

Fig. 2.

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CIGAR BUNCHING MACHINE.

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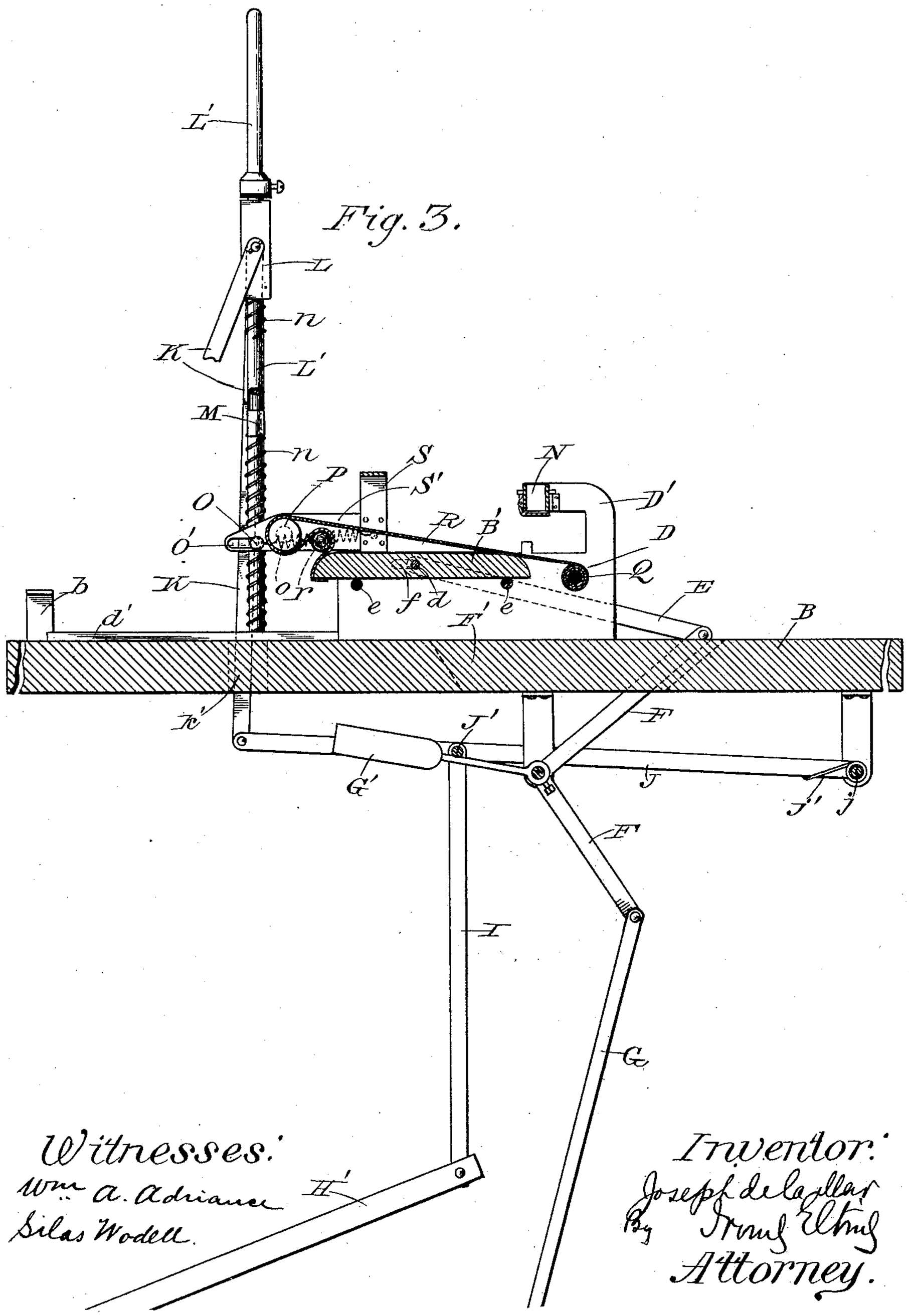
Fig. 3.



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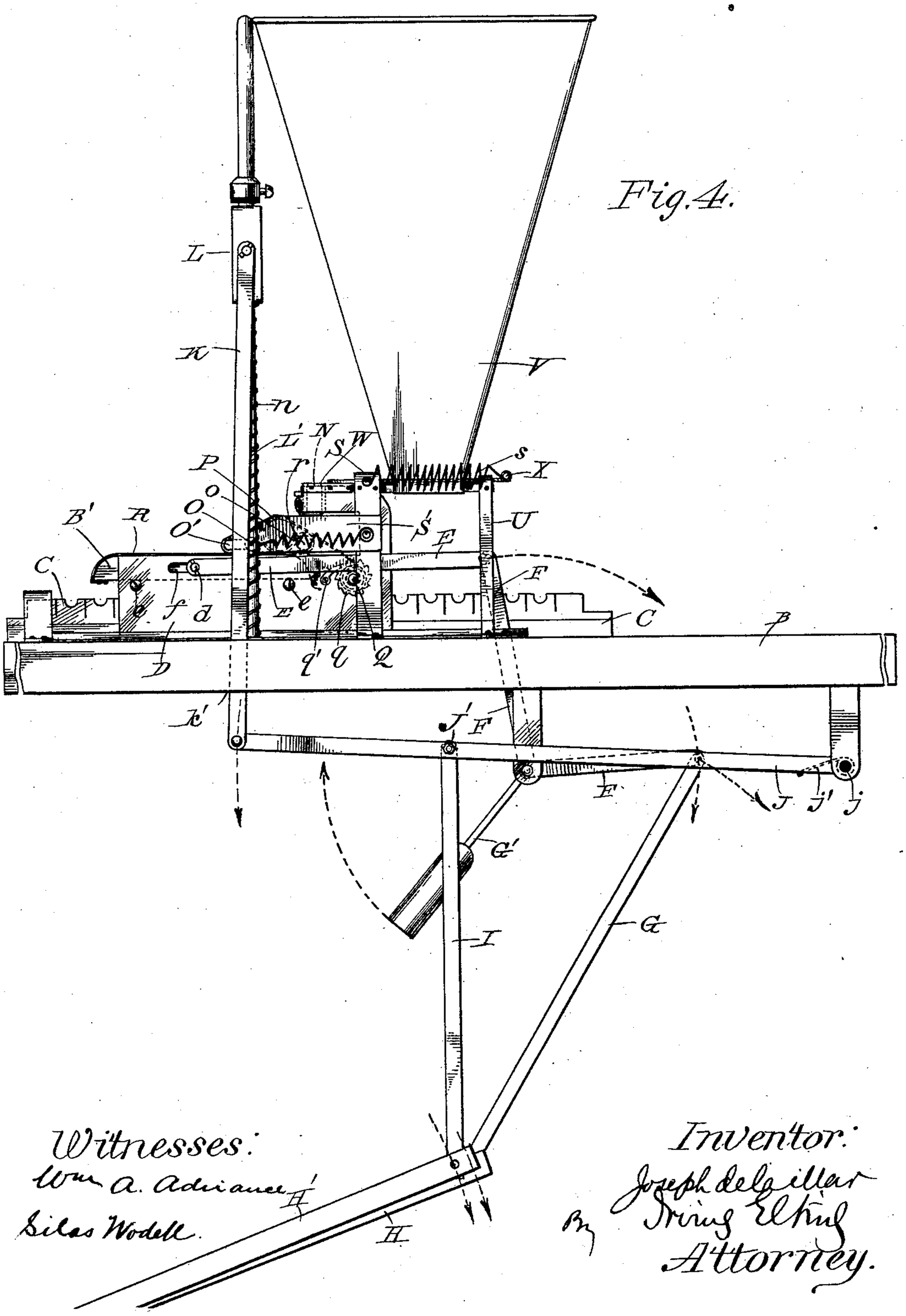
CIGAR BUNCHING MACHINE.

No. 410,959. Patented Sept. 10, 1889.

Fig. 4.



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CIGAR BUNCHING MACHINE.

No. 410,959. Patented Sept. 10, 1889.

Fig. 5.

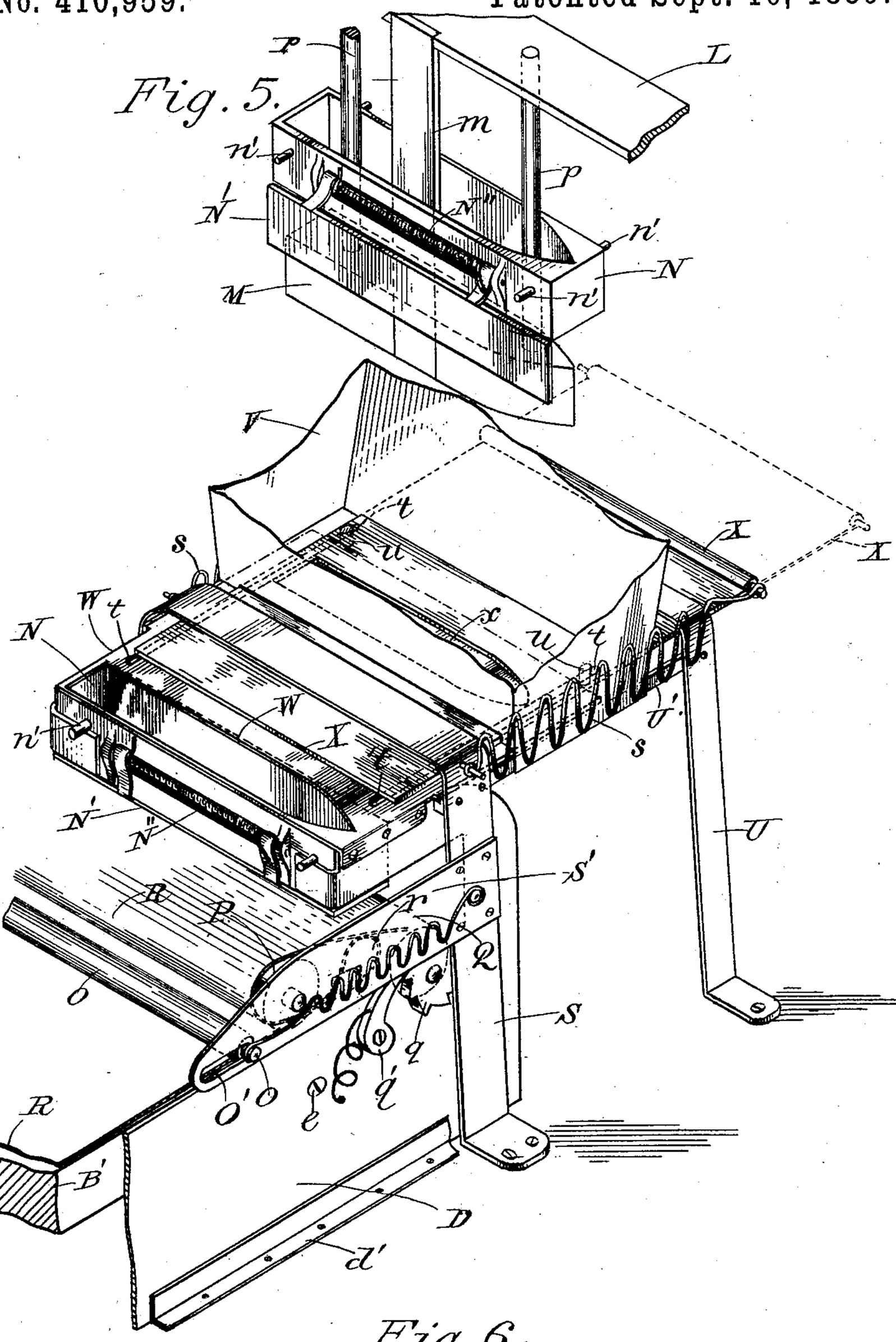

Fig. 6.

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(No Model.) 6 Sheets—Sheet 6.

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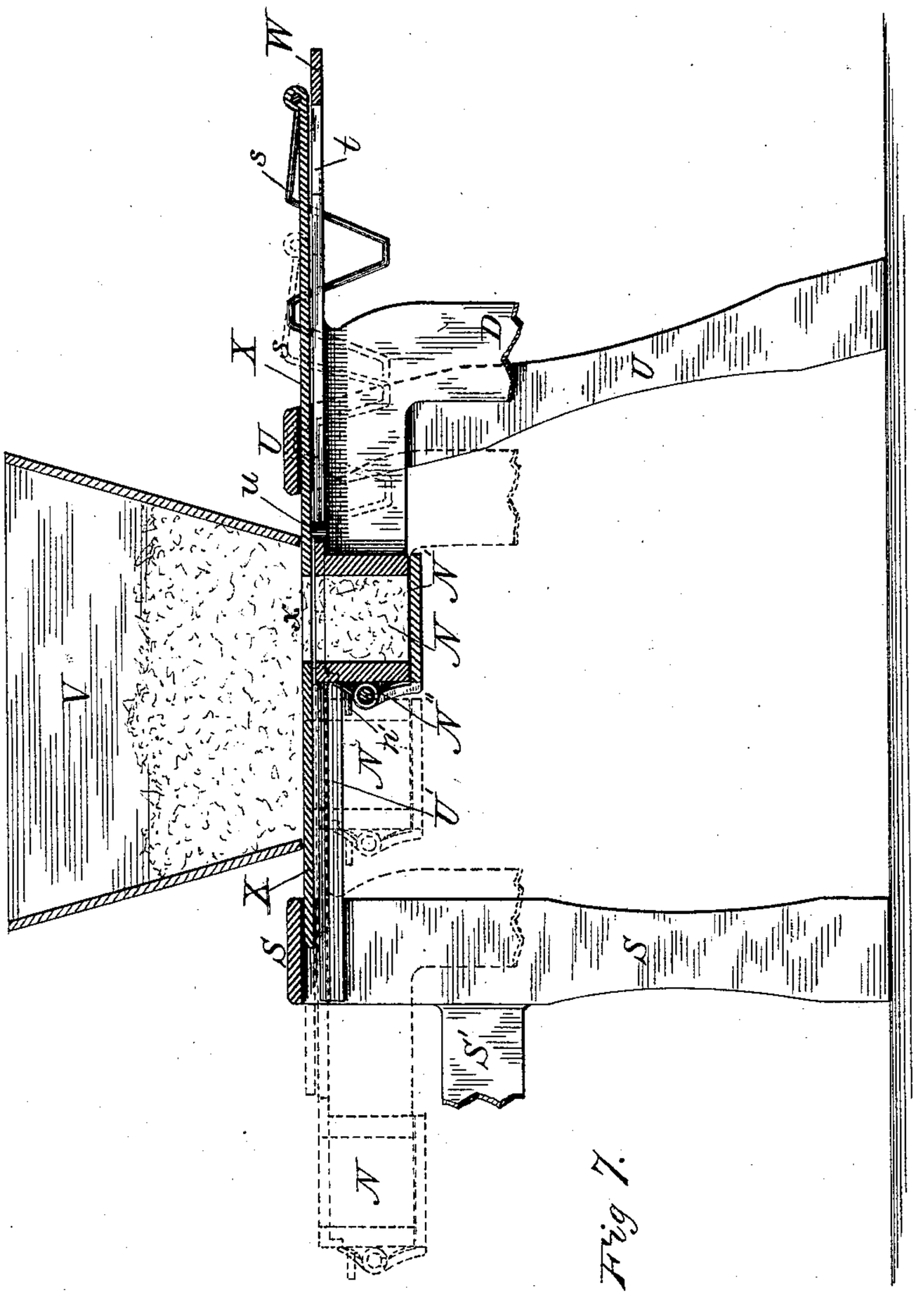

Fig 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

JOSEPH DE LA MAR, OF POUGHKEEPSIE, ASSIGNOR OF ONE-HALF TO FREDERICK BOSTWICK, OF PINE PLAINS, NEW YORK.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 410,959, dated September 10, 1889.

Application filed September 21, 1888. Serial No. 285,963. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH DE LA MAR, a citizen of the United States, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Cigar-Bunching Machines; 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.

My invention relates to improvements in cigar-bunching machines in which properly-shaped bunches are formed from fillers and binders, and automatically discharged into a press-mold ready for the final wrapping of the bunches; and the objects of my improvement are, first, to provide filler-molds of such shape and construction as to properly measure and deposit the filler upon the binder in a roller-belt which is simpler and more efficient than any now in use, and which discharges the formed bunch directly into the press-mold, thus avoiding loss of time in re-handling; second, to provide an easily-operated cigar-shaped plunger which not only serves to discharge the filler from the similarly-shaped molds, but also to press it firmly in place upon the binder in the roller-belt, and afterward to press it in the press-mold; third, to afford the means of adapting the length of the roller-belt to the size of the bunch required by means of a ratchet and pawl; fourth, to unite in one machine the means of doing both long and short filler bunching, and, fifth, to feed the short filler from a hopper to the molds automatically more simply and quickly than has been done heretofore. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my machine, shown without the hopper attachment, which is used only for short-filler work. Fig. 2 is a longitudinal section through the center of the machine, showing it as ready to roll up a long-filler bunch, the cigar-shaped mold being filled with the required quantity of tobacco about to be deposited by the plunger through the hinged bottom of the mold upon the leaf or binder placed upon the roller-belt. Fig. 3 is a longitudinal view, in section, showing the machine as it appears after it has rolled up a bunch and is about to throw it from the roller-belt into the press-mold, shown in Figs. 1, 2, and 4, beneath it. Fig. 4 shows the machine with the hopper attached ready for automatically filling the cigar-shaped mold with scraps or short filler before the operation of the plunger deposits the filler from the mold upon the roller-belt, the carriage being shown at part of its stroke backward under the hopper. Fig. 5 is a perspective view of the plunger, showing it after it has forced open the spring-hinged bottom of the mold in the process of depositing the filler. Fig. 6 is a perspective view showing the hopper broken away for the purpose of indicating the mode of operation of the sliding plates, which form the bottom of the hopper and contribute to the automatic filling of the mold; and Fig. 7 is a longitudinal vertical section of a portion of my machine, showing the hopper broken away, as in Fig. 6, but showing the carriage and the sliding plates W and X in their extreme rearward position farthest from the operator, and showing also the lugs *u u* on X acting against the plate W at the rear end of the slots *t t* to carry the plate X along in registering position with plate W to the farther side of the hopper-bottom.

Similar letters refer to similar parts throughout the views.

A represents the frame on which is set the table or bed-plate B for supporting the various parts of the machine.

B′ is a sliding platform or rolling board, over which the roller-belt R is drawn, as will be hereinafter more fully described, and under which is placed an ordinary wooden press-mold C to receive the rolled bunches (in the forms *e*) as they are automatically discharged upon it from the roller-belt.

D is the side frame of the carriage, with which the rolling-board moves freely back and forth on bearing-rods *d′ d′* when the lever-arms E (attached to rolling-board by pivot *d*, working in the slot *f*) are operated by means of the bell-crank lever F, the connecting-rod G, and the treadle H, the latter

being pivoted on the shaft *a* for convenient foot-pressure.

G′ is a counterpoise weighted lever for the purpose of throwing the carriage back to the normal position after the foot-pressure is removed.

b b are stops fixed upon the table B to limit the movement of the carriage toward the operator, and to serve to bring the cigar-shaped mold N, when set in place in the curved arms D′ of the carriage, directly underneath the cigar-shaped plunger M, which is attached to a sliding frame or cross-head L. This cross-head L works freely up and down on the guide-rods L′, which are fixed in an upright position upon the table B. The spiral springs *n*, which surround the guide-rods L′, serve to force up and keep the cross-head L in a raised position near the stop-nuts *l* with their rubber cushions *l′* until it is desired to use the plunger for depositing the tobacco from the filler-mold upon the roller-belt. Then, in order to force the plunger down, the operator has only to press upon the right foot-treadle H′, which through the vertical rod I, by pivot J′, connects with the lever-rod J. Rod J in turn is pivoted on a stationary rod *j*, which is fastened at either end to the frame-support A, and J is also pivoted at the other end to the vertical rods K, passing through slots *k′* in the table and attached by pivots on either side of the cross-head L.

j′ is a spiral spring, which is adjusted at *j* so as to co-operate with the guide-rod springs *n* to raise the plunger to its highest position when pressure is removed from the treadle H′. When, therefore, the machine is at rest or in normal position, the cigar-shaped plunger M is directly above the correspondingly cigar-shaped mold N, which rests in the frame-arms D′ on the small pins *n′*. This filler-mold N is provided with a spring-hinged bottom N′, held in place firmly by the spiral hinge-spring N″. The strip *m*, running vertically from the outside of the plunger M to the cross-head L, is designed, as shown more specifically in Fig. 5, to keep the hinged spring-bottom N′ pressed far enough back to prevent its engaging with the plunger in such a way as to hinder its withdrawal through the mold in its upward course.

The filler-mold N, when the machine is in its normal position, is directly over the depression in the rolling-belt R, formed between the end of the sliding platform B′ and the bunching-roller P. The size of this depression or loop in the roller-belt may be conveniently adapted to the rolling of any size of bunch desired by the construction of the roller Q, to which one end of the belt is fastened, Q being a spring-roller, which enables the operator to lengthen or shorten the belt, and then to hold it firmly at any point by means of the ratchet *q* and pawl *q′*, as shown in Fig. 4.

O is a small roller placed on the top of the belt, as shown in Fig. 2, having a sliding motion forward in slots O′ for the purpose of pushing and keeping the fillers properly in place for rolling. Stops on the rolling-board, as shown in Fig. 1, serve to keep the roller O at the end of the slots O′ toward the operator until the treadle H is operated to throw the carriage backward. Then the lever-rods E, being brought into operation by the downward pressure of the treadle, move the rolling-board by means of the pins *d* back through the slots *f* of the carriage D before the carriage itself is moved backward. This loss of motion, caused by the length of slot *f*, is sufficient to allow the roller-belt to drop by the action of gravity into the form of pocket shown in Fig. 2, to receive the binder and filler, as the backward movement of the rolling-board through the slots slackens the tension of the roller-belt and brings the roller-board nearer the bunching-roller P. This same backward movement of the rolling-board through the slots *f* serves to release the stops on the rolling-board, which have kept the finger-roller O forward in the slots O′ of the brackets S′, attached to the frame S. The withdrawal of the carriage and the rolling-board stops from O allows the spring *o* to move the roller O in the slots O′ toward the filler, and so by pressing it in place contribute to the rolling of the filler in the binder T, which is placed upon the belt, as shown in Figs. 1 and 2. As the treadle H is pressed to its limit, the rolling bunch is turned and pressed by the belt until it takes the position shown by *r* in Fig. 3, and is discharged automatically at the end of the treadle-stroke into one of the forms *c* of the portable section of the press-mold C, which moves freely on the table B under the carriage and rolling-board as the operator places it to receive the bunches.

It will thus be seen that to operate my machine for making long-filler bunches the hopper and its special attachments are removed and the machine is as shown in Figs. 1, 2, and 3. One operator sits in front, and by pressing with one foot on treadle H he moves the carriage backward to the position shown in Fig. 3, as above described, toward an assistant sitting behind the table, who takes the empty cigar-shaped mold N from its position in the arms D′ of the carriage and replaces it with another mold, which he has filled with long-filler tobacco. The operator then lifts his foot from treadle H, and the carriage moves quickly back toward him, in the position shown in Fig. 2, by the operation of the counterpoise-weight G′, operating as described. He then places a leaf or binder T in position on the belt, as shown in Figs. 1 and 2, and by depressing treadle H′ with one foot he brings down the plunger M through the mold N, which deposits the filler upon the binder T and presses it into the belt-loop. By pressing treadle H again he throws back the carriage, as above described, rolling the bunch *r*, depositing it into the press-mold,

and at the same time bringing the empty filler-mold back to the assistant to be replaced by a full mold from the number which he is constantly filling. While the carriage is still in this position the operator puts the bunch firmly into one of the forms of the press-mold and brings down the plunger M to press it more tightly into place. Then the carriage is brought back again by the release of the treadle H to roll another bunch from the filled mold, and so on.

In short-filler work my machine dispenses with an assistant for the operator by the use of the additional parts, which remain to be described, and are specially shown in Figs. 4 and 6.

U represents an upright support of the same height as support S, to be screwed to the table or bed-plate B to form the base of the hopper V. U′ are rails, on which the plates forming the movable bottom of the hopper operate. W is the lower one of these plates, and is fastened to the curved arms of frame D over the cigar-shaped mold N, having an opening of the size of mold N and of the same shape to allow the plunger to work as freely through the filler-mold as it did before plate W was attached. Plate W is long enough to extend underneath the plate X and to close the cigar-shaped opening in plate X. (Shown by dotted lines inside the hopper in Fig. 6.) Plates W and X thus form a complete bottom for the hopper V, into which the short-filler scraps are put for the automatic filling of the mold N. This filling takes place in the movement of the plates one upon the other, as governed by the action of the lugs *u u* on plate X, projecting downward and working in the slots *t t* of plate W. The spiral spring *s* on either side connects the back of the sliding plate X with the frame S, and tends to keep plate X toward the operator when not pushed from him upon the backward movement of the carriage, which pushing of the plate X backward is caused by its downwardly-projecting pins *u u* striking against the plate W at the end of the slots *t t* nearest the operator. This engaging of the pins *u u* with the plate W at the end of slots *t t* is at the proper point to bring the cigar-shaped opening *x* in plate X directly over the similarly-shaped opening in W, which is above the filler-mold, both openings in the plates being at the side of the hopper nearest the operator when the pins *u u* first engage with the ends of the slots, as above described. As the carriage proceeds in its movement from the operator, plates W and X move together in the same relative or registering position to the farther side of the hopper, where the movement of the carriage stops, as shown in Fig. 7. As the carriage returns toward the operator by the action of the counterpoise-weight, before described, the spring *s* keeps the plates in the same registering position, with the openings one above the other, thus allowing ample time for the mold to become thoroughly filled with the short-filler scraps from the hopper in which they have been thrown by the operator, in any desired quantity before beginning to work the machine. As the carriage resumes its normal position toward the operator, the plate W (after plate X has reached its normal position under the hopper and is stopped by the bar formed by the upper part of the lug U at the rear end of the hopper) passes out from underneath plate X, and at the end of the stroke the filled mold N is again under the plunger, which, upon the depressing of the treadle H′, presses the short-filler scraps out of the mold and into the binder, which the operator has placed upon the roller-belt, as described, for the making of long-filler bunches. The rolling of the bunch, its discharge into the press-mold, and its further pressing by the plunger, all take place as before described in referring to long-filler bunching. The treadle H is then used to send the carriage forward again, and upon the return-stroke the automatically-filled mold awaits the action of the plunger, and so on, with entire accuracy and a rapidity depending only upon the skill of the operator.

The same movement of the carriage which rolls up one bunch fills the emptied mold, and the operator is delayed in the constant operation of the machine only long enough to adjust the bunch properly in the press-mold before raising his foot from the treadle H to allow the return of the carriage.

The simplicity of my device for the automatic filling of the cigar-shaped mold with scraps, and the ready union of the short and long filler work in the same machine, the convenient discharge of the rolled bunch upon the press-mold, the adaptation of the roller-belt to the required size of the bunch, the shape and easy operation of the plunger, the corresponding shape of the filler-molds with their hinged bottoms, and the arrangement of the roller-belt are all points wherein my machine is different from and superior to all machines heretofore devised for cigar-bunching purposes.

Therefore, what I claim, and desire to secure by Letters Patent, is—

1. In a cigar-bunching machine, a reciprocating carriage-frame carrying a roller-board, a rolling-belt, and a removable mold having a yielding bottom, in combination with a treadle, counterpoise, and connecting rods and levers for reciprocating said carriage-frame, and a plunger for ejecting the tobacco from the mold when the latter arrives beneath it, substantially as described.

2. In a cigar-bunching machine, the combination of a reciprocating carriage consisting of a pair of side plates carrying a mold having a yielding bottom, a roller-board and a roller-belt stretched over said board and passing around suitable rollers, and mechan-

ism, substantially as described, for reciprocating said carriage, in the manner and for the purpose described.

3. In a cigar-bunching machine, a reciprocating carriage consisting of side plates carrying a mold having a yielding bottom, a rolling-board mounted between said plates and having a slight reciprocal movement independent of the carriage, whereby the bight is formed, and a roller-belt stretched over said board and suitable rollers, substantially as described.

4. In a cigar-bunching machine, a reciprocating carriage consisting of side plates, a roller-board having a slight reciprocal movement independent of said carriage, thereby forming a bight in the roller-belt, and a roller-belt stretched over said board and suitable rollers, in combination with a mold supported on the side plates of said carriage and having a yielding bottom, a plunger arranged to pass down through said mold and press the filler into said bight, and a sliding finger-roller mounted in a stationary framing, all arranged and adapted to operate as described.

5. In a cigar-bunching machine, a sliding carriage consisting of side plates and a rolling-board, and a roller-belt arranged on the board and adapted to have a bight formed therein, in combination with a removable mold having a yielding bottom and supported on said side plates and normally situated directly above the bight in said roller-belt, a plunger arranged to force the filler from said mold into said bight, a finger-roller situated above said belt, and suitable forms or molds into which the rolled bunches are discharged, and mechanism, substantially as described, for reciprocating said carriage, in the manner and for the purpose set forth.

6. In a cigar-bunching machine, the combination of a rolling-board, a roller-belt stretched over said board and around a bunching-roller, said board having an independent reciprocal movement, whereby a bight is formed between the same and said bunching-roller, a mold arranged upon the carriage and normally situated directly over said bight, and a plunger for forcing the filler into the bight, substantially as described.

7. In a cigar-bunching machine, a reciprocating carriage consisting of side plates, a rolling-board mounted between the same and capable of having a slight independent reciprocal movement imparted to it, and a roller-belt passing over said board and around suitable rollers, in combination with a finger-roller situated above said belt and mounted in a stationary framing provided with slots in which said roller slides, a filler-mold arranged on the carriage and having a yielding bottom, a plunger arranged to force the filler from said mold, a treadle, counterpoise, and connecting-rods and levers for reciprocating said carriage, substantially as described.

8. In a cigar-bunching machine, a reciprocating carriage consisting of side plates carrying a filler-mold having a yielding bottom and a rolling-board having an independent reciprocal movement, and a roller-belt stretched over said board and suitable rollers, in combination with a plunger for forcing the filler from said mold into the bight, a spring-actuated finger-roller situated above said belt and mounted in a stationary frame provided with slots in which said roller slides, suitable stops for holding said roller in position, and a treadle, counterpoise, and connecting-rods and levers for operating the machine, all arranged and adapted to operate in the manner and for the purpose substantially as described.

9. In a cigar-bunching machine, the combination of a hopper having a perforation in its bottom, a reciprocating carriage carrying a filler-mold, and a plate arranged to close the bottom of said hopper and having a perforation which registers with the perforation in the hopper and also that of the filler-mold, substantially as and for the purpose set forth.

10. In a cigar-bunching machine, the combination of a hopper having an opening at its bottom, a plate normally closing said opening and having a perforation arranged to register therewith, a reciprocating carriage carrying a filler-mold, a plate secured to said carriage above said mold and having an aperture arranged to register with the aperture in said upper plate, and also having elongated slots, and lugs on said upper plate sliding in said slots, in the manner and for the purpose substantially as described.

11. In a cigar-bunching machine, a hopper having a bottom consisting of a spring-actuated slide perforated to register with the filler-mold, in combination with a reciprocating carriage-frame carrying a filler-mold, a rolling-board and roller-belt, a plate covering the bottom slide of the hopper and provided with slots, and pins or lugs in said sliding bottom which engage said slots, substantially as described.

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

JOSEPH DE LA MAR.

Witnesses:
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