

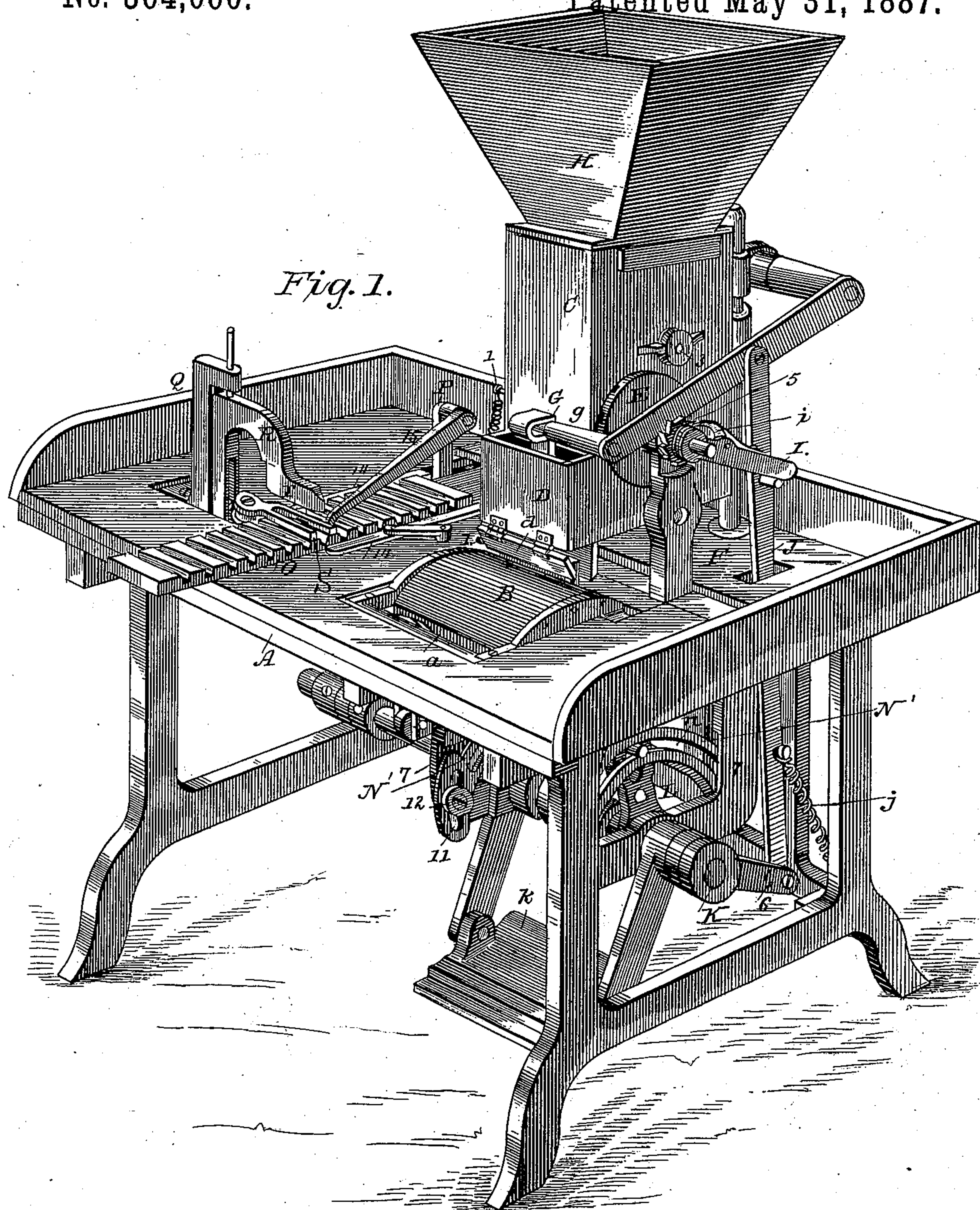
(No Model.)

4 Sheets—Sheet 1.

W. M. STEINLE & A. SENN.
CIGAR BUNCHING MACHINE.

No. 364,060.

Patented May 31, 1887.



WITNESSES:

Fred G. Dietrich
R. B. Turpin.

INVENTORS:

W. M. Steinle
A. Senn
BY *Munn & Co.*
ATTORNEYS.

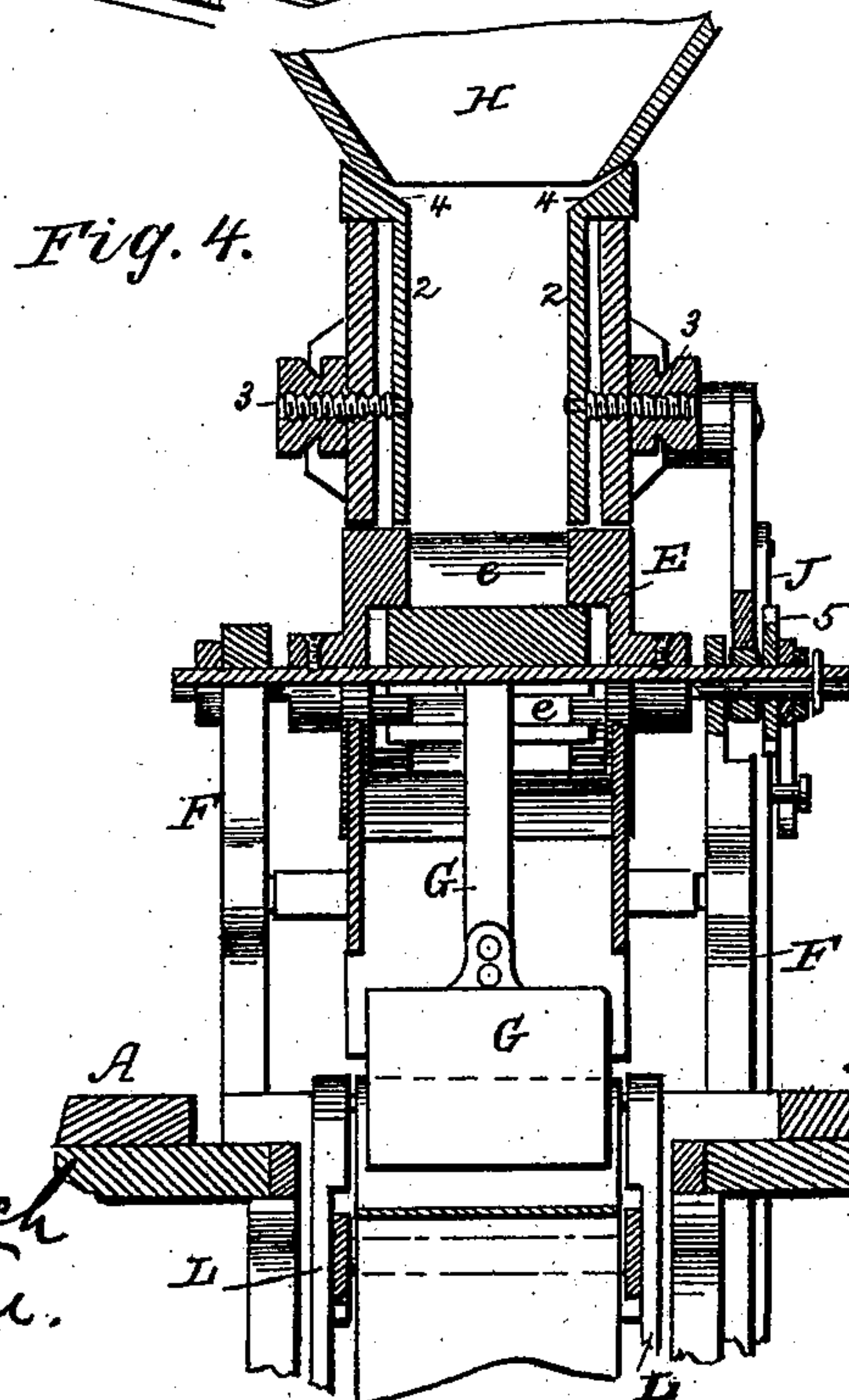
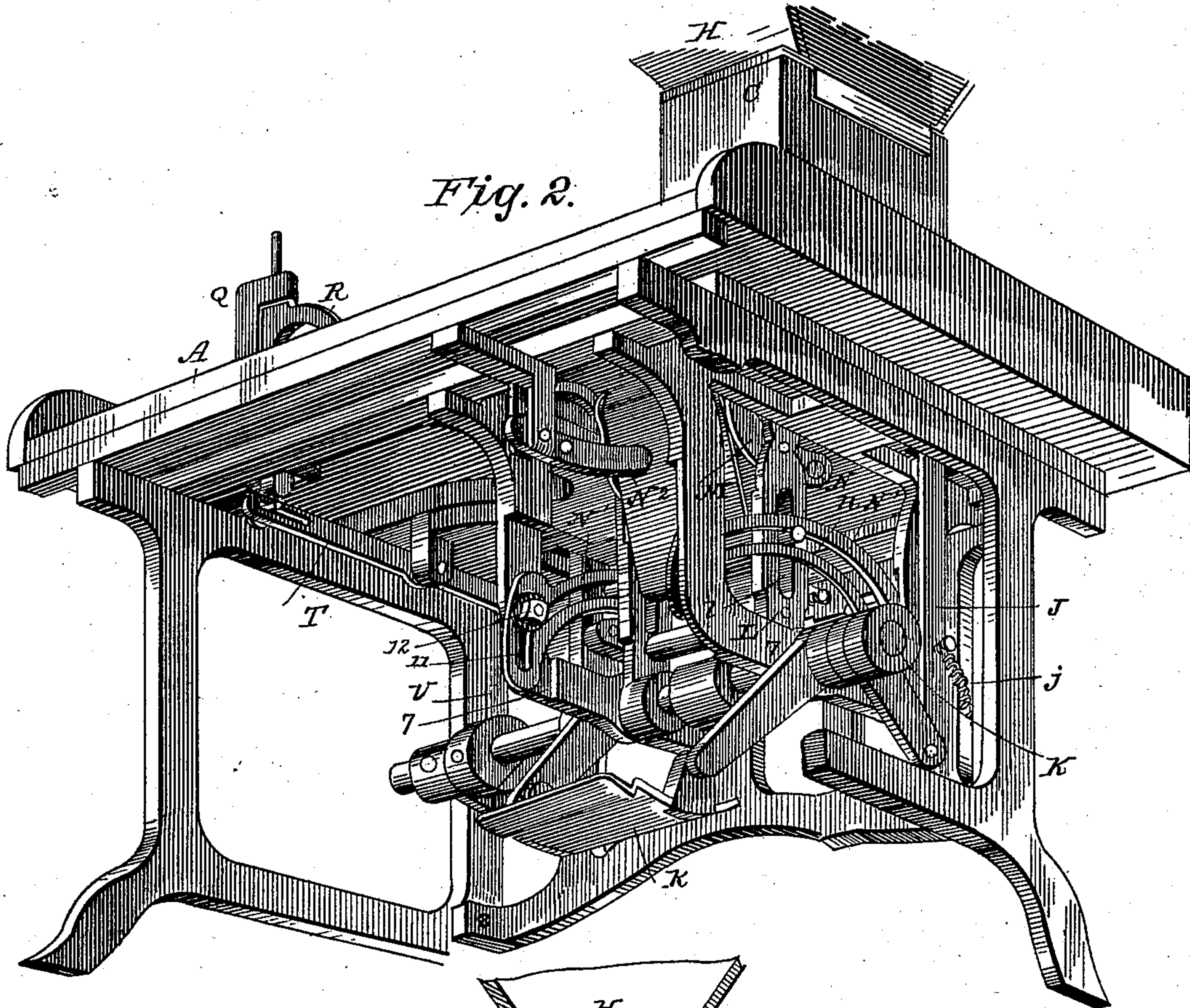
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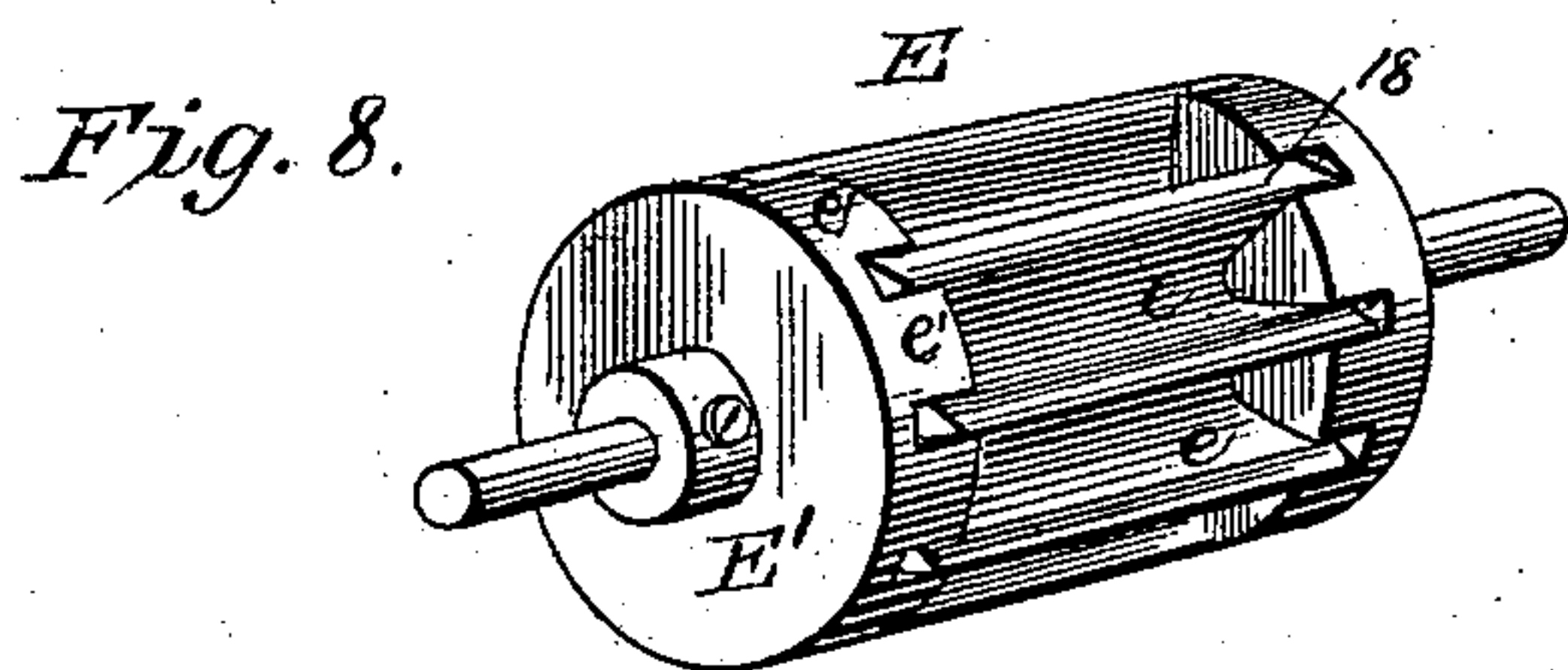
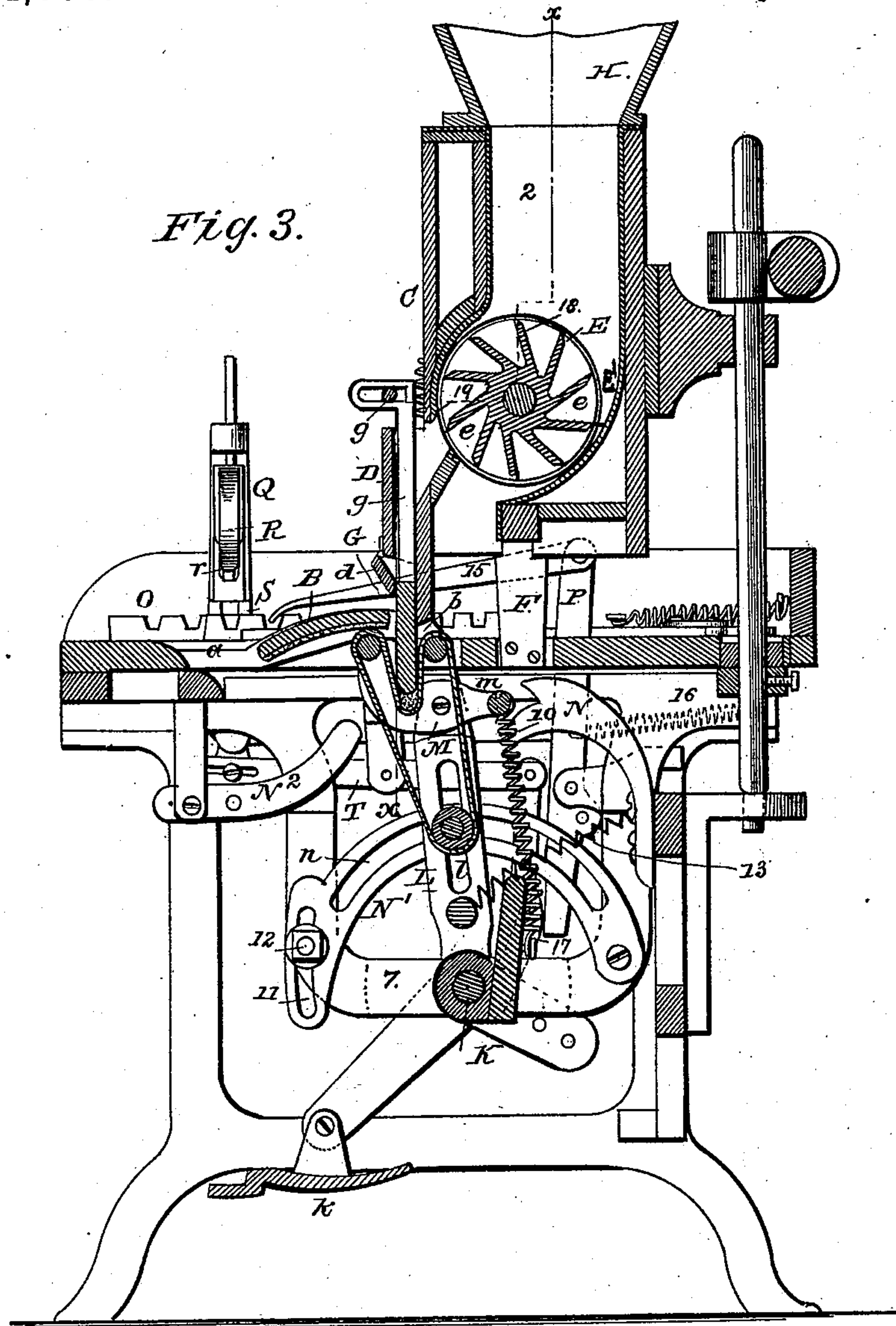
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4 Sheets—Sheet 4.

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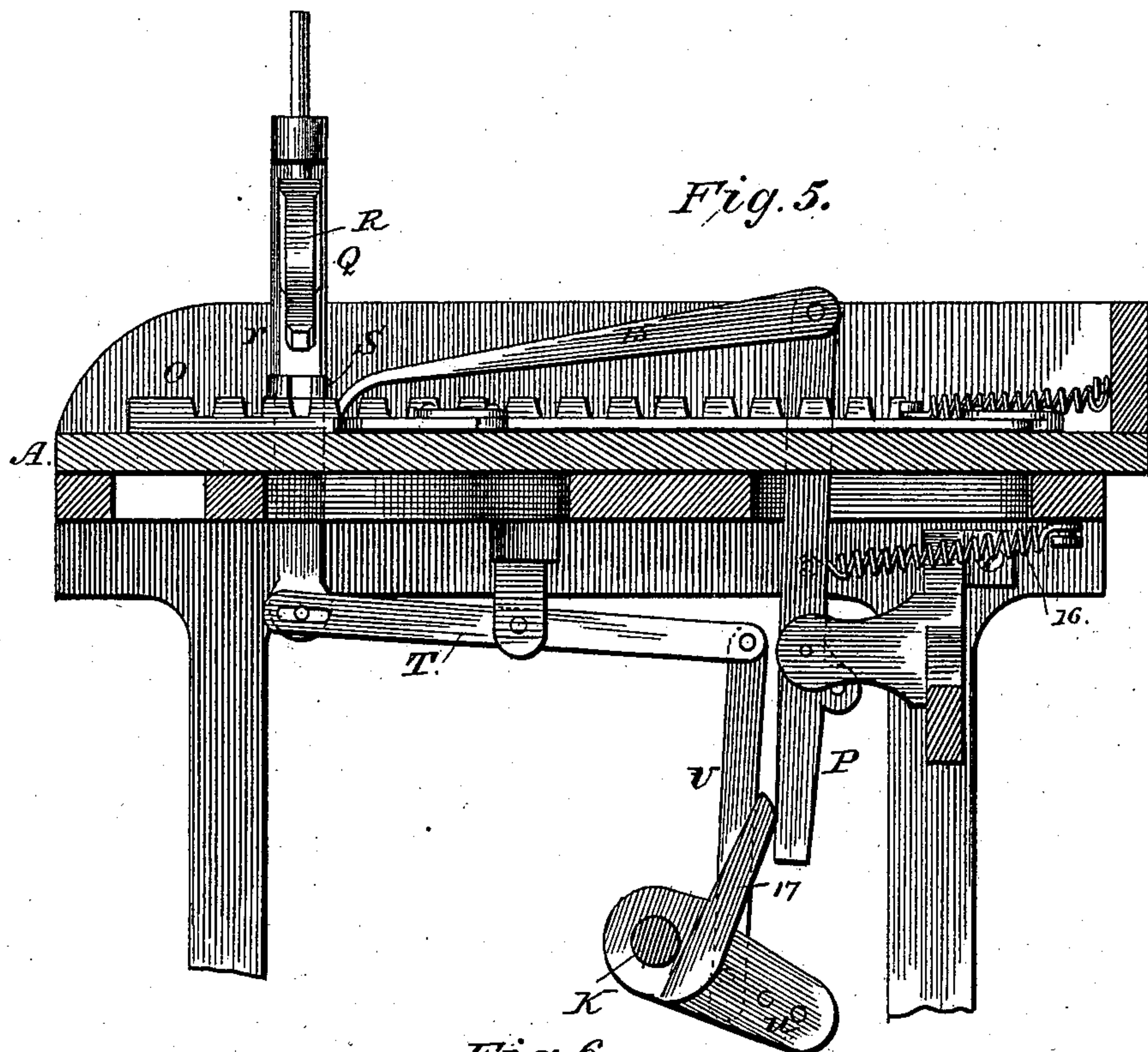


Fig. 6.

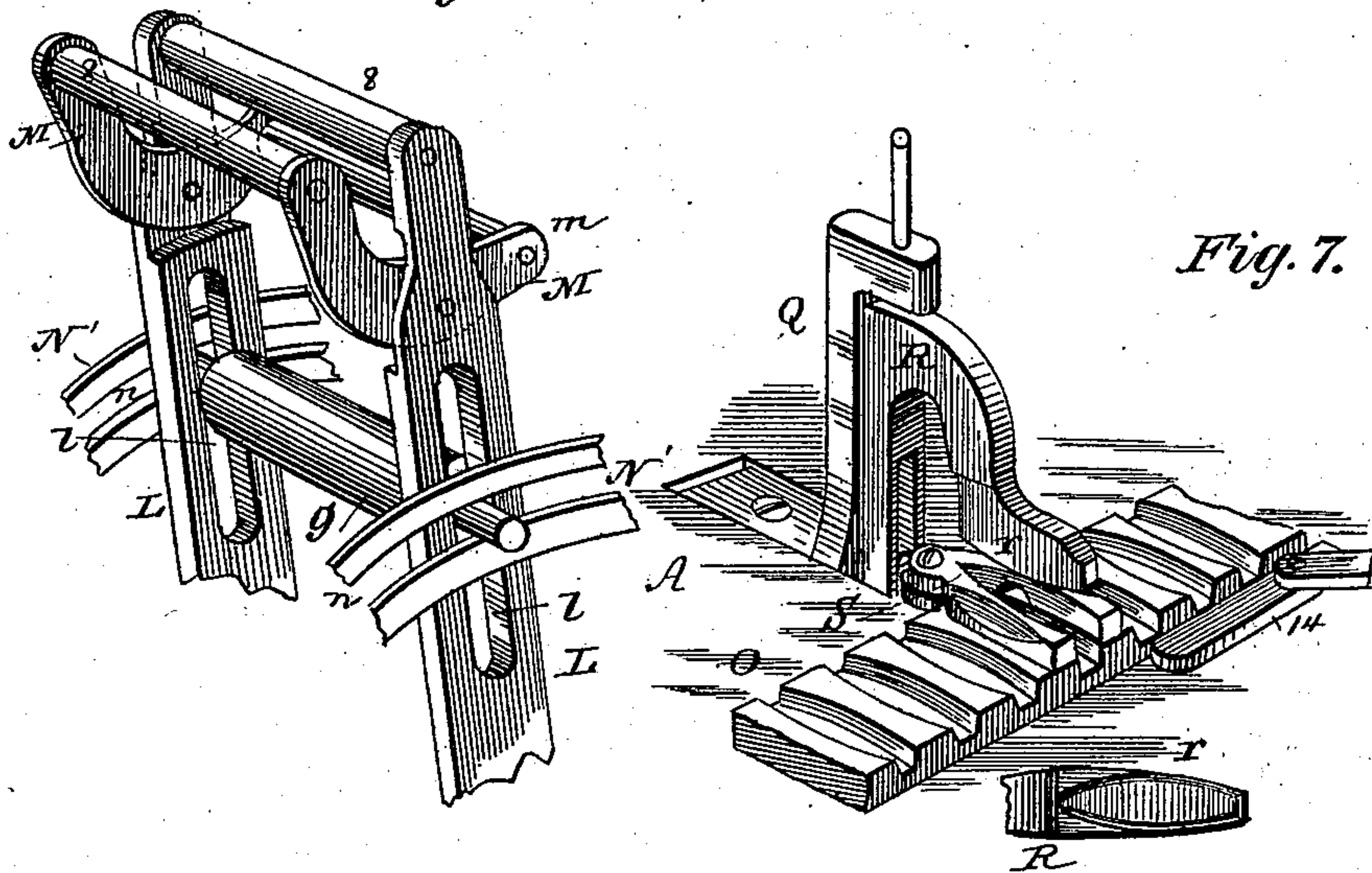


Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM M. STEINLE AND ANTON SENN, OF TOLEDO, OHIO.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 364,060, dated May 31, 1887.

Application filed May 10, 1886. Serial No. 201,728. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM M. STEINLE and ANTON SENN, of Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in Cigar-Bunching Machines, of which the following is a specification.

This invention is an improved cigar-bunching machine; and it consists in certain features of construction and novel combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of the machine, taken from the forward right corner thereof. Fig. 2 is a perspective view of the under side of the machine. Fig. 3 is a vertical section of the machine, drawn transversely through the feed-roller. Fig. 4 is a detail section of the roller and its case and the receiving-chamber, drawn at right angles to the section shown in Fig. 3. Fig. 5 is a transverse section of the machine, drawn in front of the mold and compressor, and showing the operating devices therefor; and Figs. 6, 7, and 8 are detail views.

The table A is provided with the friction-board B and has an opening, *a*, at the front of said board, through which the rolled bunch is ejected. This friction-board acts in connection with the apron and the support therefor to effect a rolling of the bunch, as is desired. At the rear of the board B an opening, *b*, is provided, through which the binder may be inserted and through which the filler may be supplied, in the manner presently described.

The case C for the feed-roller is supported above the opening *b* and has a receiving-chamber, D, the opening of which is adjacent to the opening *b*, and the discharge end of this receptacle is provided with a door, *d*, held normally closed by a spring, 1, as shown. The pocket feed-roller E is arranged within the case C and is usually journaled in uprights F, as shown. The chamber D is arranged to receive the filler from this roller, and a plunger, G, is movable vertically through said chamber, whereby to force the filler into the bight of the rolling apron, hereinafter described. The feed-roller is provided with a number of longitudinal cavities or pockets, *e*, fitted to receive the filler. To regulate the quantity of

filler fed by the roller, the latter is provided with one, or two, if desired, end pieces, E', having portions *e'* fitted to the cavities *e*, such pieces E' being adjustable, whereby the parts *e'* may be set into pockets *e*, to vary the lengths of the said pockets or cavities, and consequently vary the quantity of filler contained therein.

To prevent the pressure of material in the case on the roller beyond the ends of the cavities *e*, we provide such case with side pieces, 2, adjustable, as shown, whereby the width of the casing may be varied. In the construction shown the adjustment is effected by screws 3.

The cavities *e* of the feed-roller E are formed by and between the partitions 18, which extend outward in lines approaching a tangent, in order that they (the said pockets) will move readily and completely fill and discharge in the operation of the machine. The partitions 18, dividing these cavities, have their edges sharpened, and they operate against a sharp edge, 19, in the casing, so that any particle of tobacco that may get over said partitions will be cut, and so be prevented from obstructing the out-passage of the tobacco into the receiver D. It will also be noticed that the form of the cavities is such as to cause the same to fill completely by practically drawing or compressing the tobacco thereinto.

The casing is curved downward and under the feed-roller at the rear of the latter, forming at E a wedge-shaped extension of the casing or chamber, by which means the filling of the pockets is facilitated, because of the tobacco packing down in such extension E', and the partitions 18 being forced upward through the tobacco so packed.

When the hopper H is used, as is preferred, the upper edges of the sides 2 are beveled or inclined inwardly, as shown at 4, to guide the filler into the machine, and such beveled portions are extended laterally to enable the pieces 2 to be formed thin and at the same time prevent the material from getting behind and clogging the working of said side pieces. The trunnion of the feed-roller has a ratchet-wheel, 5, which is engaged by a pawl, *i*, on an arm, I. The plunger G is supported on an arm, *g*, and the arms *g* and I are connected with and op-

erated through the medium of a connecting link or rod, J, which is normally depressed by the action of a spring, j. The lower end of this bar J is engaged by a crank, 6, on the shaft K, which shaft is journaled to the framing and preferably to hangers 7 thereof, as shown. In operation this shaft is given an oscillating motion by means of the treadle k, and in so doing the feed-roller is intermittently revolved, supplying the filler to the chamber D, and the plunger is properly operated to supply such filler to the rolling devices.

On the shaft is fixed the rolling device, which is shown consisting of the main frame L, having side bars formed with slots l for the guide-roll, the supplemental frame M, pivoted to the frame L and having an extension, m, in rear of said pivot, and provided at its opposite end with the binder-roll, the binder-rolls 8, journaled one in each of said arms, and the guide-roll 9, having its journals adjustable in the main roller-frame and the apron.

A spring, 10, serves to normally hold the supplemental frame with its binder-roller close to that of the main frame, while a cam-like stop, N, is arranged to engage the extension m and open the binder-rolls for the reception of the filler, thus avoiding the necessity of forcing said rollers apart by the action of the plunger, as is preferred. These frames L and M form sections of and together constitute the support for the rolling apron.

It will be noticed that we use an endless traveling apron, and that the wear is consequently borne equally by all parts of same, and that the necessity of devices for securing the two ends of the apron, as when a strip-apron is used, to the supporting devices is avoided. It will also be seen that by adjusting the guide-roller either or both edges of the belt may be slackened or tightened, so that bunches of different sizes and of different shapes may be rolled. In the construction shown the devices for adjusting the guide-roller consist of frames N' N', having slots n, arranged to receive the trunnions of the guide-roller. At one end the frames N' are pivoted to the main frame, while their opposite or forward ends are adjustable vertically preferably by slots 11 and screws 12 turned therethrough into the framing. By so adjusting the ends of the frames N' next to the finishing-point of the rolling devices, the form desired to give the cigar is gradually approached as the rolling operation proceeds.

At the end of the stroke of the rolling devices a trip, N², engages the belt, drawing the apron tight and ejecting the rolled bunch through the opening a. In operation, previous to the filler being forced into the bight of the apron, the binder may be inserted through the opening b. A spring, 13, is arranged to force the rolling devices normally to the rear.

The mold O may be of ordinary construction, and it is held in and movable through guides 14, one of which may be spring-actuated to

give tension to the mold. This mold is fed forward as the cigars are supplied thereto and compressed and shaped by the pawl 15 on lever P. Said pawl engages the empty cavities of the mold. This lever is engaged by a spring, 16, which retracts the pawl and is operatively engaged by a crank-arm, 17, on the shaft K, which, as the shaft is oscillated, rocks the lever and causes the pawl to move the mold forward.

On the framing we provide a guide, Q, for the compressor R, which has its head r formed of the desired shape and with sharpened edges at the extreme point thereof. This compressor is movable through the shaper S. This shaper is held above the mold and, like the compressor, has sharpened edges at its extreme point. As the compressor descends on the cigar-bunch placed on the shaper, the edges of such compressor, at the ends thereof, cut the surplus tobacco of the bunch, and the compressor forces it (the bunch) into the mold-cavity below, thus avoiding the cigar being pressed too hard when in the mold. A lever, T, is pivoted between its ends, and has one end connected with the compressor and its opposite end connected by pitman U with a crank, u, on the shaft.

By the construction described it will be seen that each moving part of the machine is operated by the movement of the treadle.

As the rolled bunches are ejected through opening b they are taken and placed on the shaper and then compressed and shaped, when the mold is fed forward, providing another empty cavity below the shaper.

Having thus described our invention, what we claim as new is—

1. The combination, with the feed-roller having a ratchet and the operating mechanism, of the plunger, the pivoted arm supporting said plunger, the pivoted arm having a pawl arranged to engage the ratchet of the feed-roller, and a rod actuated by the operating mechanism and engaged with the plunger-arm and the pawl carrying arm, substantially in the manner described, and for the purpose specified.

2. The combination of the main shaft, the rolling apron having its support fixed to the shaft, whereby it may be swung by the rocking thereof, the plunger, the arm supporting said plunger, the feed-roller having a ratchet, the arm having a pawl engaging said ratchet, and the rod operated by the main shaft and engaged with the plunger-supporting arm and the pawl-carrying arm, substantially as set forth.

3. The combination, with the feed-roller, of the casing therefor having adjustable walls and devices whereby to secure said walls at any desired point of adjustment, substantially as set forth.

4. The combination of the feed-roller, the casing therefor having adjustable sides provided at their upper ends with inwardly-inclined edges, and a hopper above said casing, substantially as set forth.

5. The combination of the feed-roller, the adjustable ends therefor, and the casing for said roller, having adjustable sides, substantially as set forth.

6. The feeding-roller having its shaft provided with a ratchet, the arm having a pawl arranged to engage said ratchet, the plunger, and an arm supporting said plunger, combined with the shaft having a crank and a link connecting said crank with the pawl-carrying and plunger arms, substantially as set forth.

7. The combination of the main rolling frame, the supplemental frame pivoted to the main frame, a spring-connection whereby said frames are normally closed, the binding-rollers and guide-roller forming a support for the apron, the endless traveling apron supported around said rollers, the shaft supporting the main frame, the feed-roller, the plunger, and connections between said roller and plunger and the shaft, substantially as set forth.

8. The combination, with the main rolling frame having side bars provided with slots *l*, the supplemental frame pivoted to said main frame, the binding-rollers journaled to said frames, the guide-roller having its journals extended into and movable within the slots *l*, the endless traveling apron, and means for adjusting said guide-roller, substantially as set forth.

9. The combination of the traveling apron, the frames constituting the support therefor, the binding-rollers, the guide-roller movably supported and having extended journals, the frames *N'*, having slots fitted to receive the extended journals of the guide-roller, and means for securing said frames *N'* in their different adjustments, substantially as set forth.

10. In a cigar-bunching machine, the combination of a fixed friction-board, an apron, a support for said apron movable with reference to the friction-board, and a trip arranged to engage the apron and effect an ejection of the rolled bunch, substantially as set forth.

11. The combination of the fixed friction-board, the apron, the support for said apron having binding-rolls and a guide-roll, the latter being movable along the apron-support and having extended journals, and frames *N'*, having slots fitted and arranged to receive the extended journals of the guide roll, substantially as set forth.

12. The combination, with the binding-rollers and the guide-roller having extended journals and supports for said rollers, of the frames *N'*, having slots fitted to receive the trunnions of the guide-roller, said frames *N'* being pivotally supported at one end and adjustably supported at their opposite ends, substantially as set forth.

13. The combination of the pivoted main frame suitably supported whereby it may be oscillated, the binding-roller supported at one end of said frame, the supplemental frame pivoted to the main frame and having a binding-

roll at its upper end, the guide roller suitably supported and adjustable along the main frame, and the endless traveling apron, substantially as set forth.

14. In combination with the apron and the binding-rolls supported in pivoted or swinging frames, the friction-board and the trip arranged to engage the apron and effect an ejection of the cigar at the end of the friction-board, substantially as set forth.

15. The combination of a feed-roller for cigar-bunching machines, provided with a series of flanges or partitions projected outwardly in a direction approaching a tangent, forming pockets for the filler, and having their outer ends sharpened, forming edges, the hopper, and a part having an edge, as 19, substantially as set forth.

16. The combination of the casing and the feed-roller having ribs or partitions extended outward in lines approaching a tangent, the said casing being curved downward and inward in rear of the feed-roller, forming a wedge shaped extension of the chamber, substantially as set forth.

17. The combination of the friction-board, the apron, the movable apron-support formed in sections *L M*, pivoted together, and the latter having an extension, *m*, a spring, 10, a stop, *N*, arranged to be engaged by the extensions *m*, and a trip, *N'*, substantially as set forth.

18. The combination, with a friction-board, of the apron and a support therefor, such support being movably supported, whereby it and the apron may be moved with reference to the friction-board in the operation of the device, substantially as set forth.

19. The combination of a friction-board, a traveling apron, the frames constituting a support for the apron and the binding and guide rollers, such guide-roller being adjustable, substantially as described, whereby the shape of the bunch may be varied, the apron-support being movable with reference to the friction-board, substantially as set forth.

20. The combination of the apron, the main rolling frame pivotally supported and having a binding-roll, the supplemental frame provided with a binding-roll and pivoted to the main frame and having an extension in rear thereof, and a stop arranged to engage said extension and spread the binding-rolls apart when the rolling devices are in position to receive the filler, substantially as set forth.

21. The combination, with the rolling devices, the feed-roller, and a chamber arranged to receive the filler from said roller, of a spring-supported gate arranged to normally close the discharge-opening of the said chamber and a plunger whereby to force the filler out of said chamber and into the rolling devices, substantially as set forth.

22. The combination of the apron, the main roller-frame pivotally supported and having a binding-roll, the supplemental frame piv-

oted to the main frame and having an extension in rear of said pivot and provided at its forward end with a binding-roll, a stop arranged to engage the rear extension of the supplemental frame at the rearmost position of the rolling devices, the rolling-board, the feed-roller, the chamber arranged to receive the filler and having a spring-supported gate, the plunger for forcing the filler to the rolling devices, and the trip arranged to engage the apron and eject the cigar after it has been rolled, substantially as set forth.

23. The combination of the framing having guides for the compressor, the mold, the compressor held by said guides and movable vertically, the lever pivoted between its ends and having one end connected with the compressor, the shaft having a crank, and a link connecting such crank with the said lever, substantially as set forth.

24. The combination of the framing having guides for the compressor, the mold, the compressor, a lever pivoted between its ends and

having one end connected with the compressor, the shaft having a crank connected with said lever, a second lever having one end provided with a pawl arranged to engage the mold, and an arm on the shaft arranged to engage the said second lever, substantially as set forth.

25. The combination of the main shaft and the treadle for rocking the same, the rolling devices connected with said shaft, the feed-roller having its shaft provided with a ratchet, the case for said roller having chamber arranged to receive the filler therefrom, the arm having a pawl arranged to engage the feeding-roller ratchet, the plunger, an arm connected therewith, a crank on the shaft, and a connection between said crank and the pawl-arm and plunger-arm, substantially as set forth.

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Witnesses:

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