No. 614,784. Patented Nov. 22, 1898.

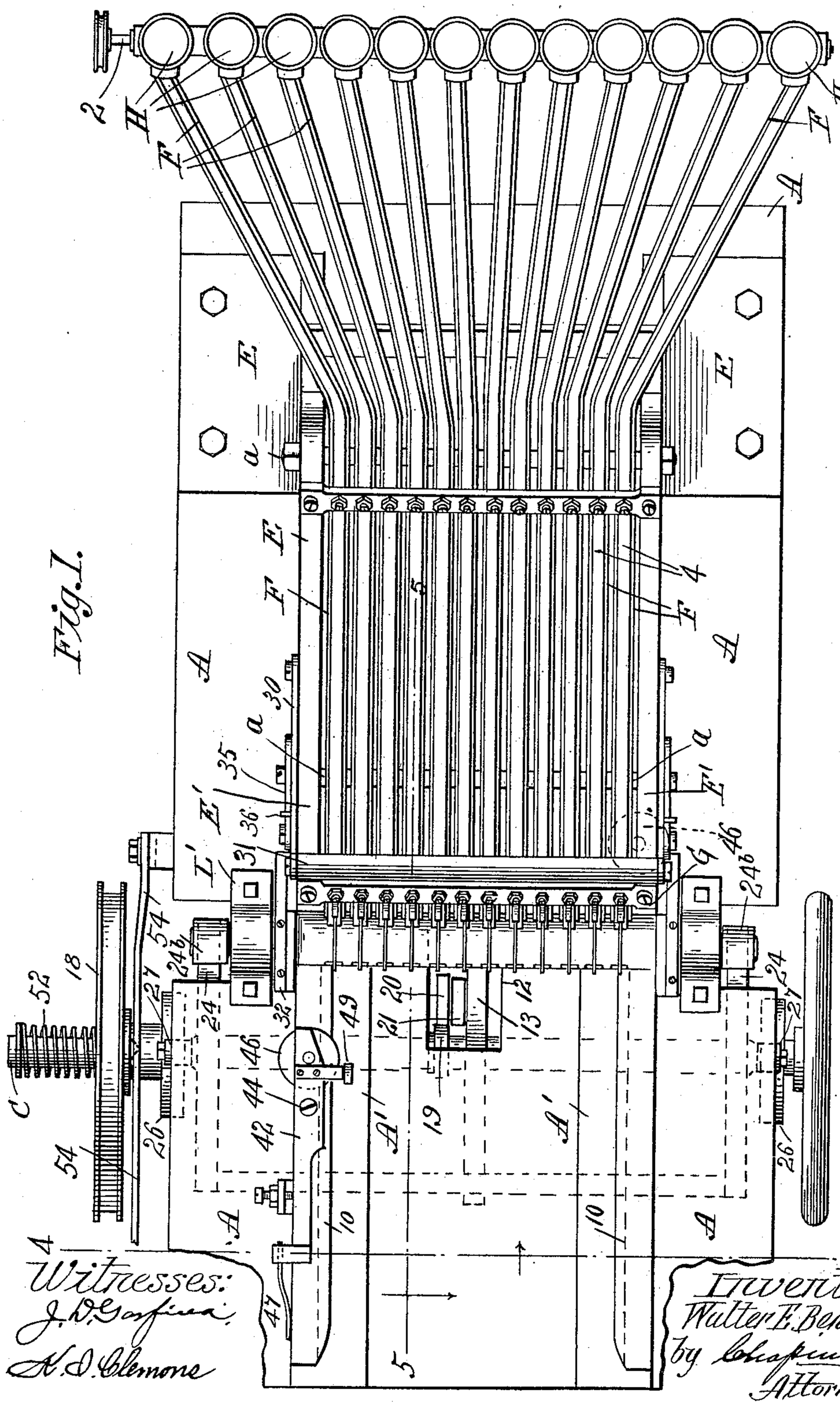
W. E. BENNETT.

MACHINE FOR FINISHING BUTTONS.

(Application filed Dec. 30, 1897.)

(No Model.) 7 Sheets—Sheet 1.

Fig. 1.



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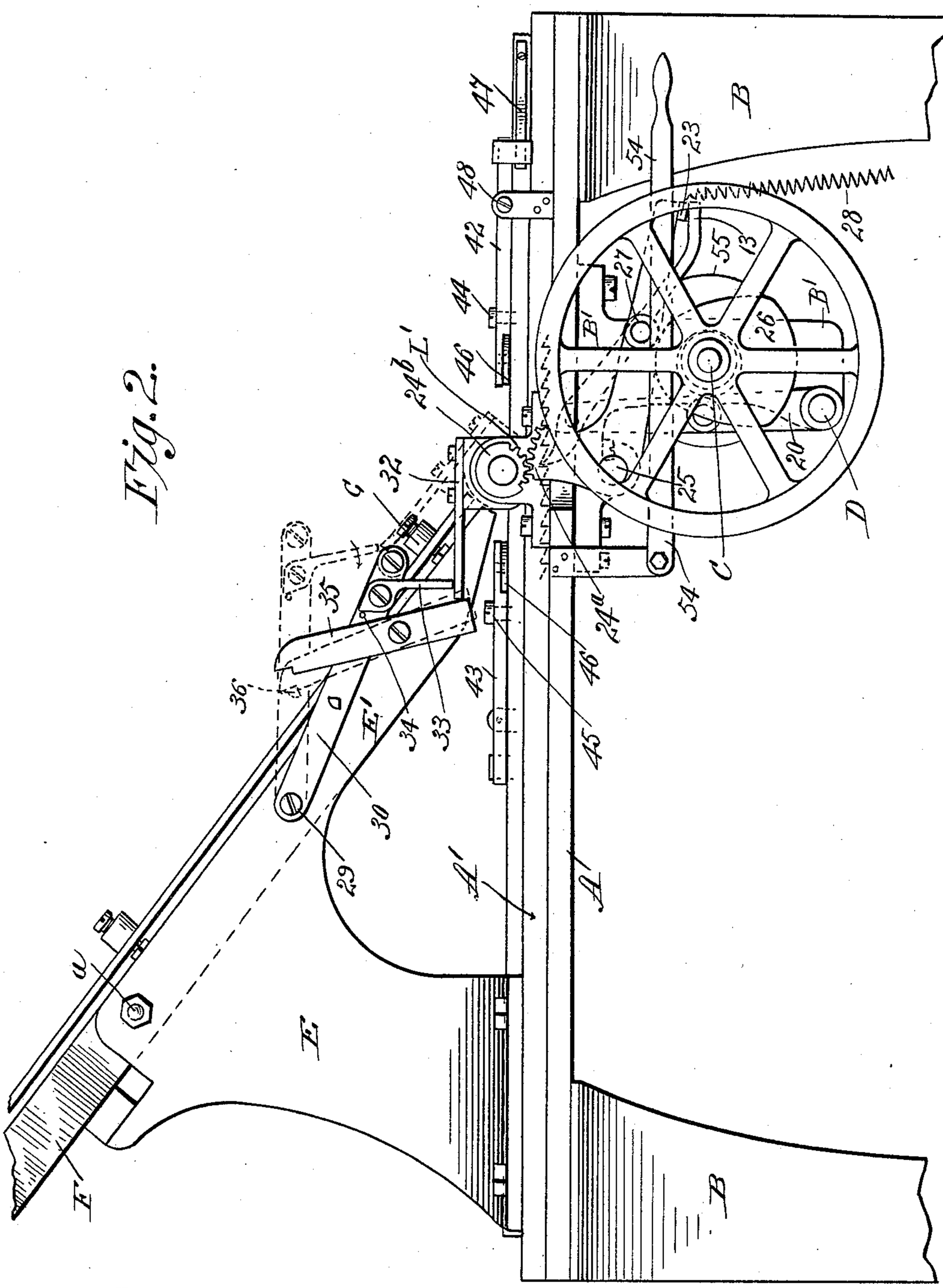
(No Model.) 7 Sheets—Sheet 2.

Fig. 2.



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(No Model.) 7 Sheets—Sheet 3.

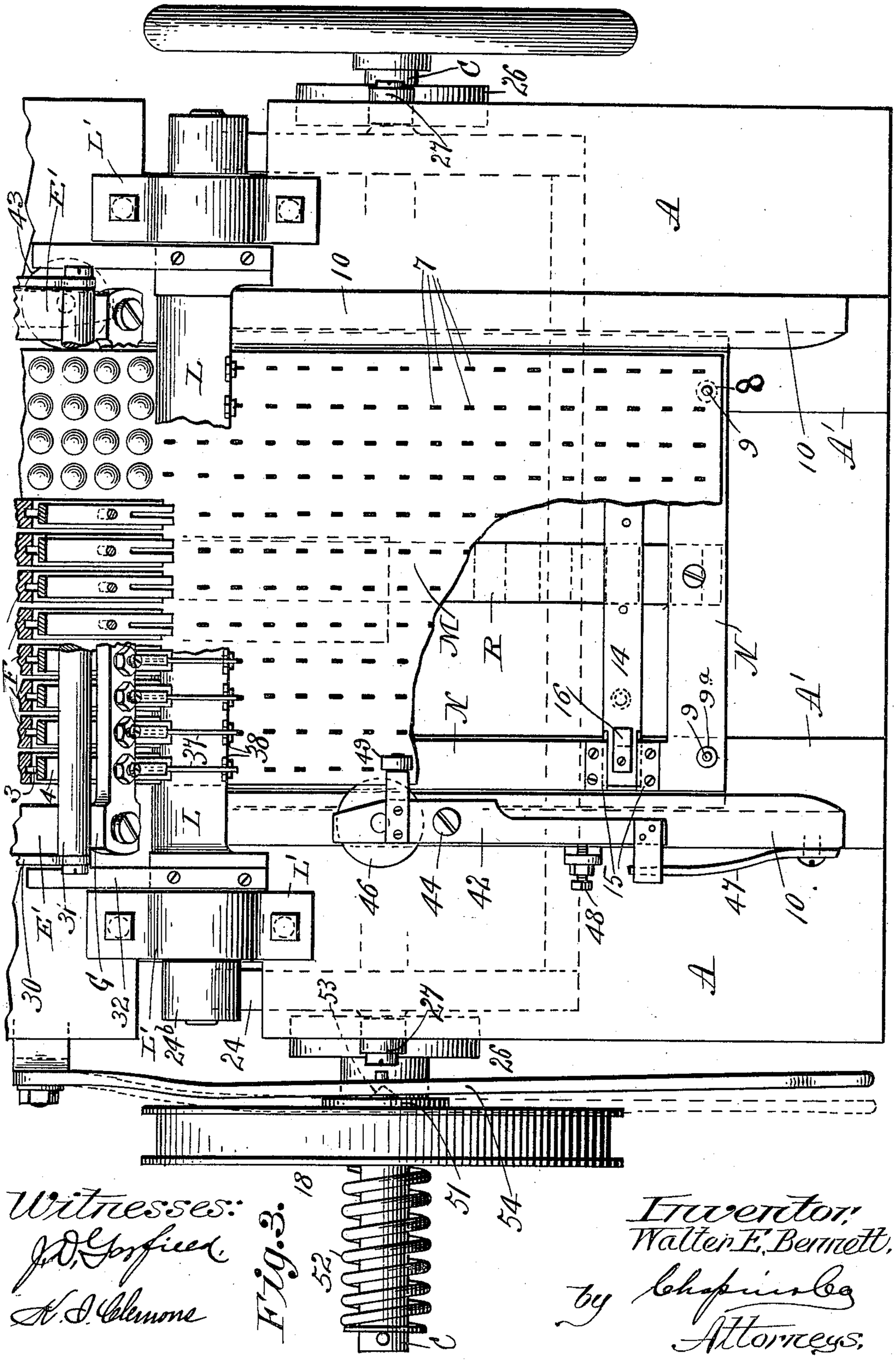

Fig. 3.

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(No Model.) 7 Sheets—Sheet 4.

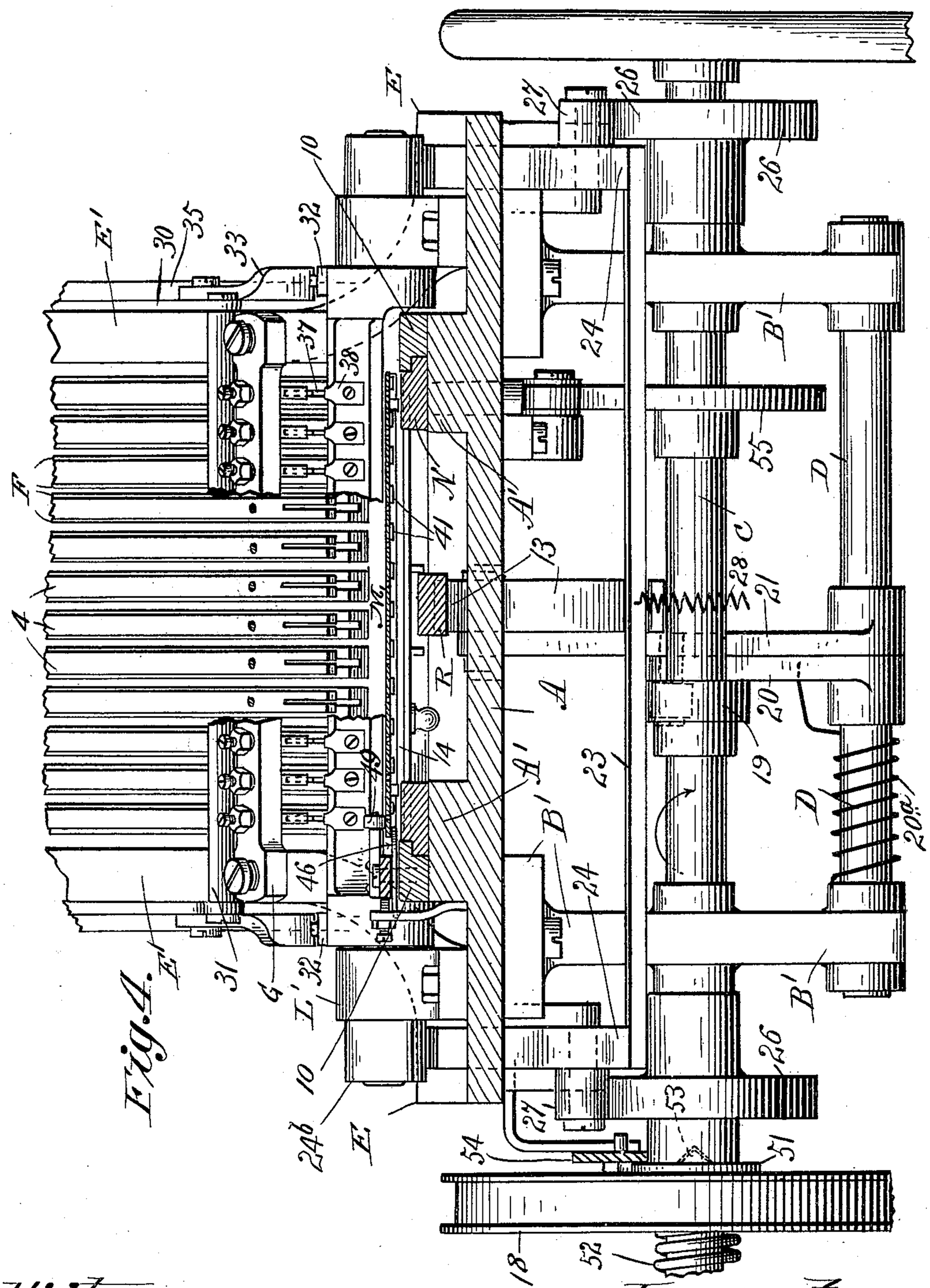

Fig. 4.

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(No Model.) 7 Sheets—Sheet 5.

Fig. 5.

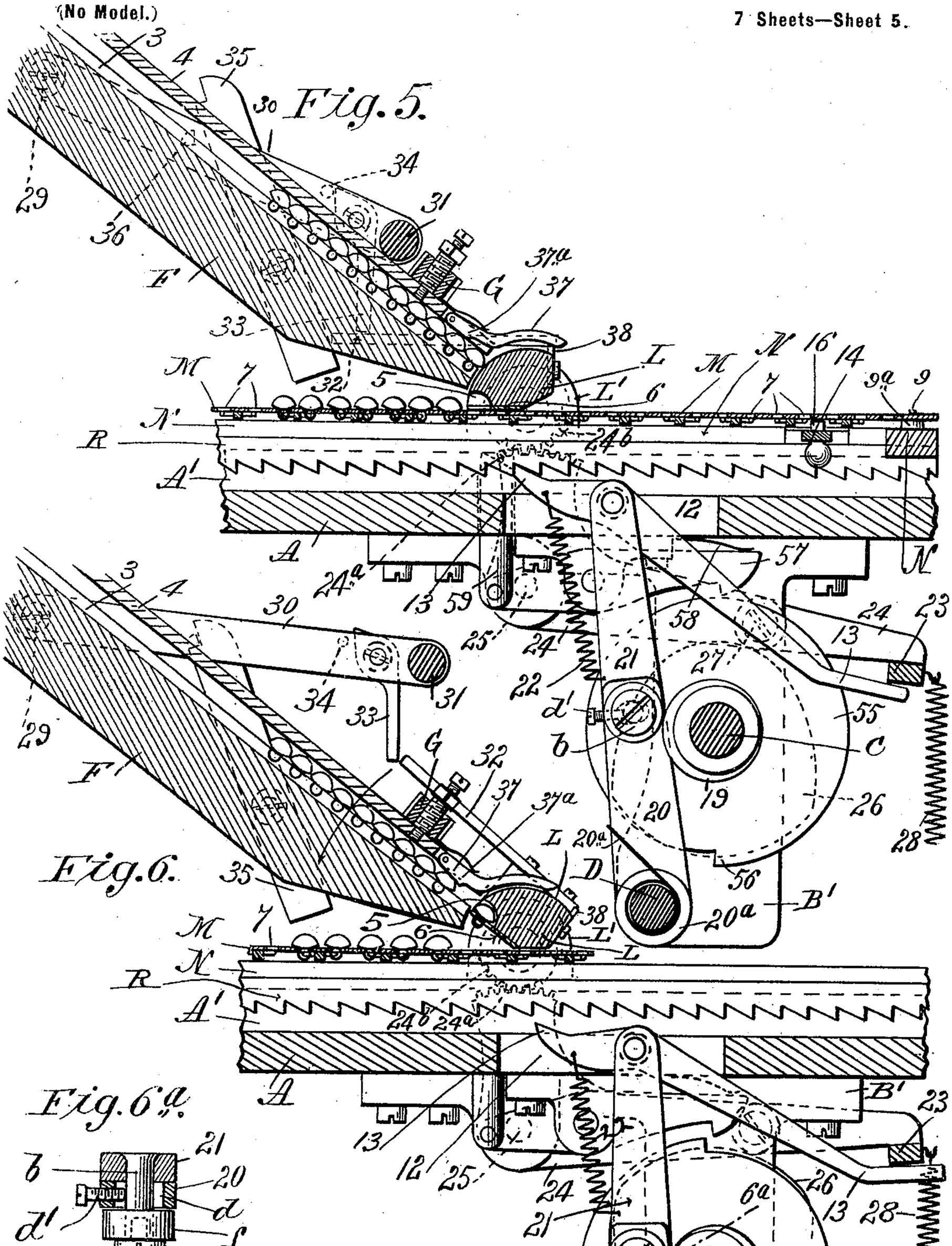

Fig. 6.

Fig. 6a.

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(No Model.) 7 Sheets—Sheet 6.

Fig. 7.

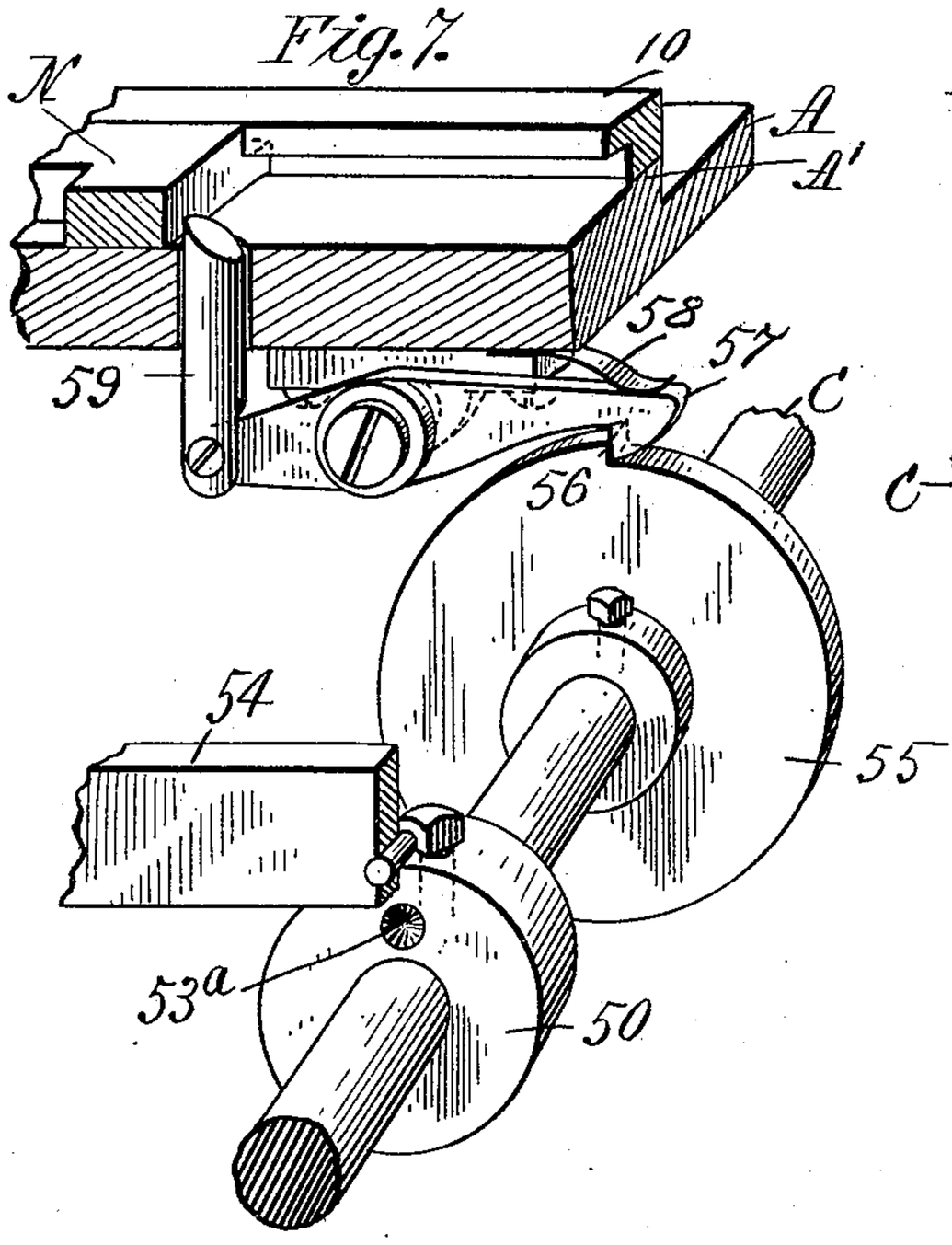

Fig. 8.

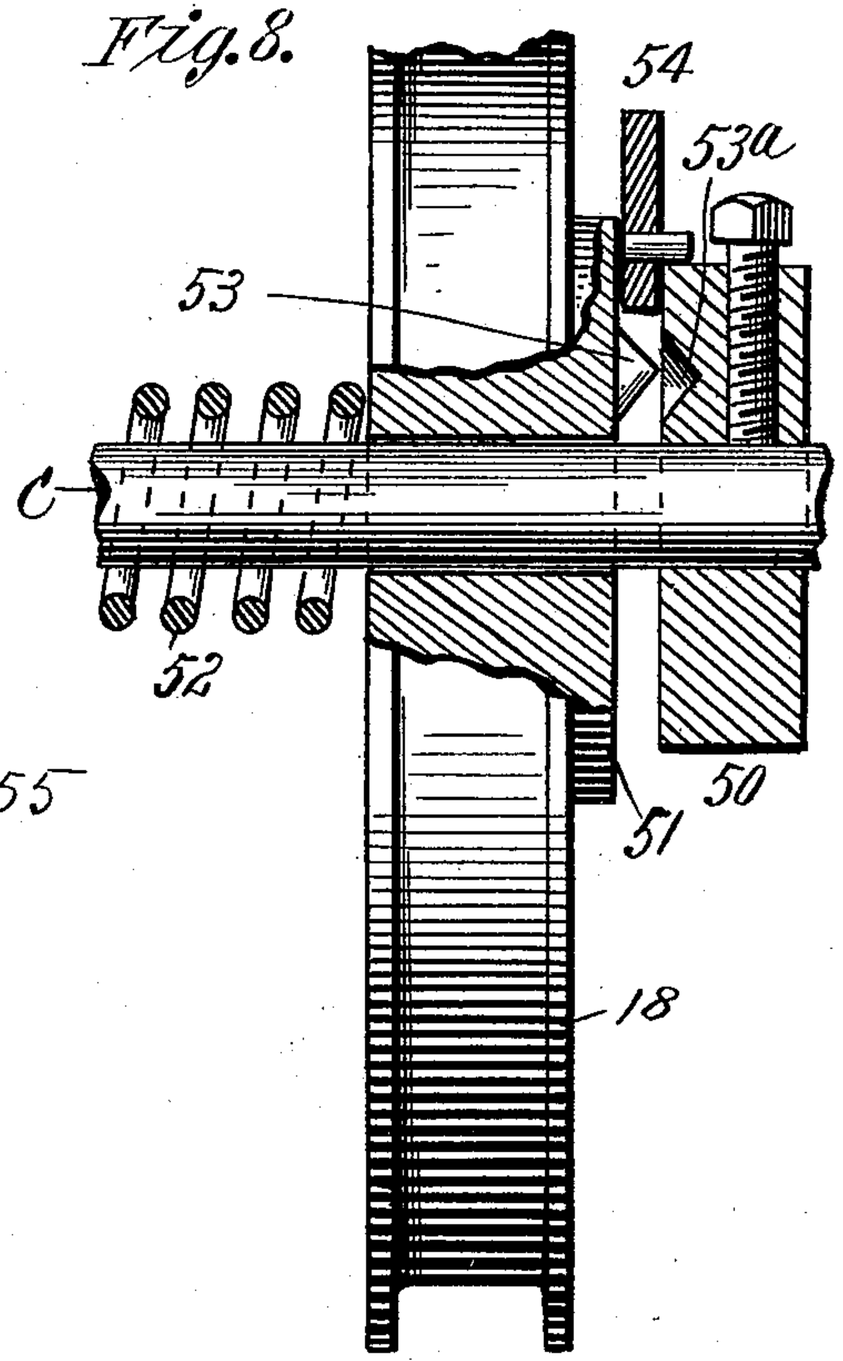

Fig. 10.

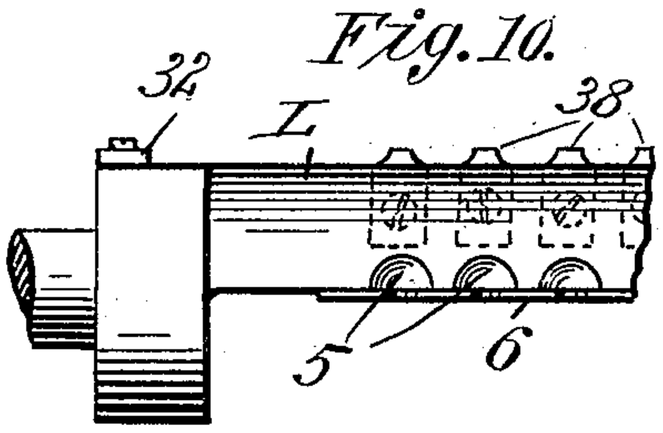

Fig. 9.

Fig. 11.

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(Application filed Dec. 30, 1897.)

(No Model.) 7 Sheets—Sheet 7.

Fig. 12.

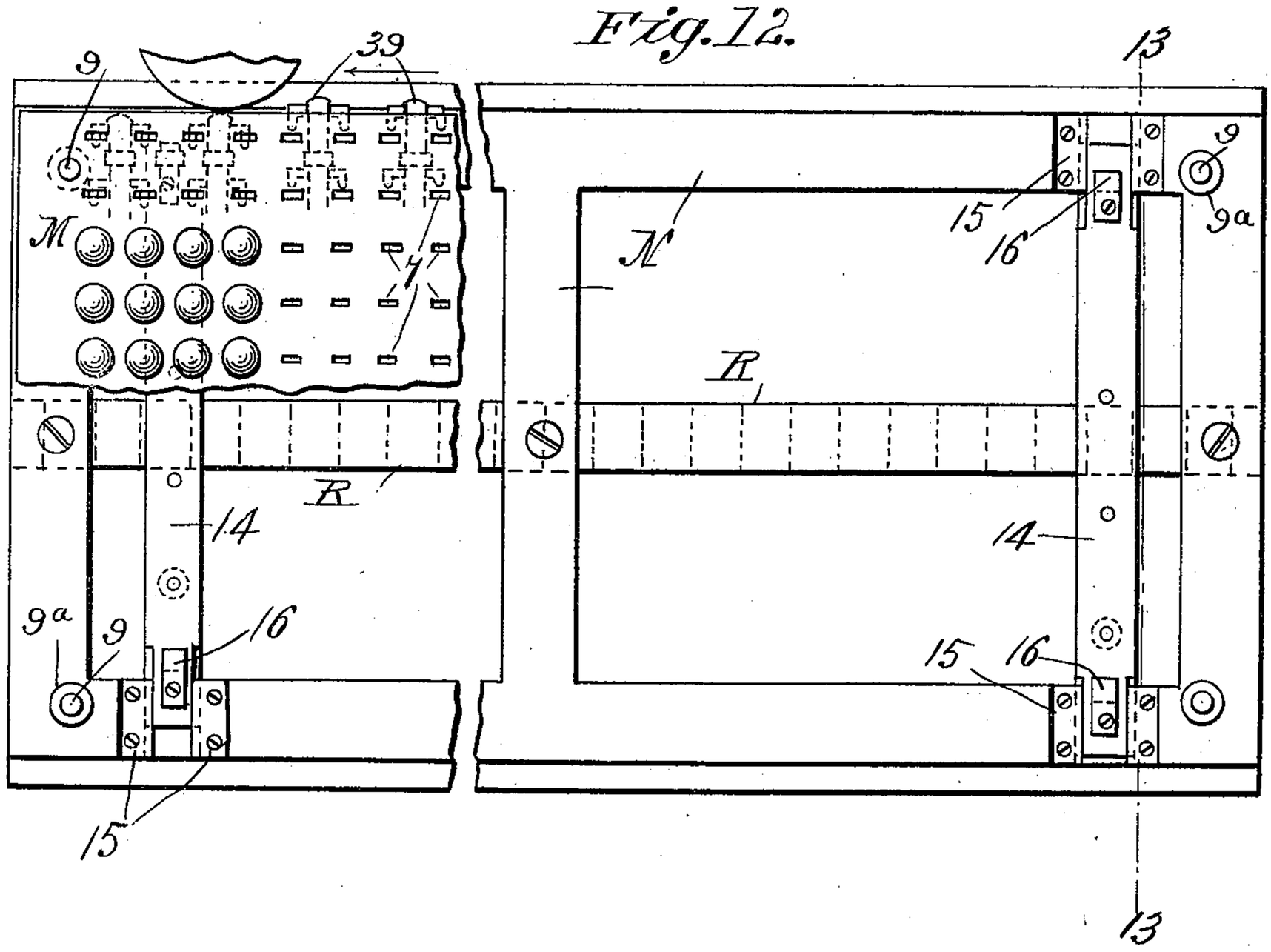


Fig. 13.

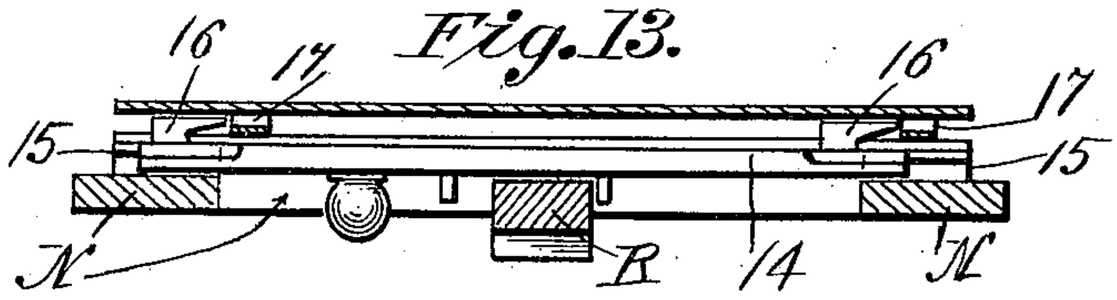
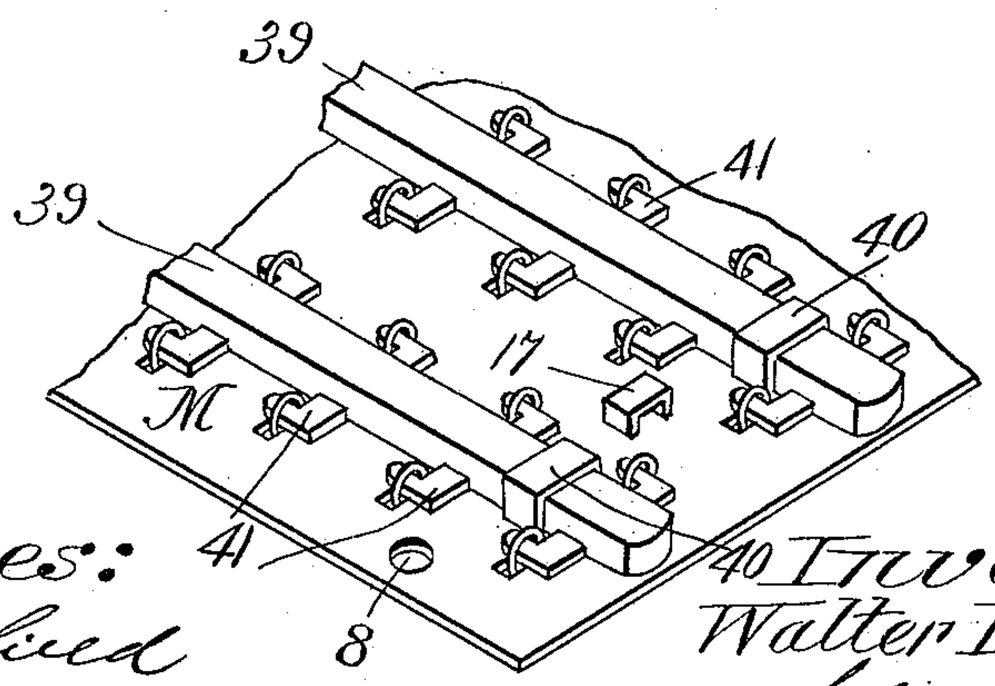


Fig. 14.



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UNITED STATES PATENT OFFICE.

WALTER E. BENNETT, OF PORTSMOUTH, NEW HAMPSHIRE, ASSIGNOR TO THE MORLEY BUTTON MANUFACTURING COMPANY, OF SAME PLACE.

MACHINE FOR FINISHING BUTTONS.

SPECIFICATION forming part of Letters Patent No. 614,784, dated November 22, 1898.

Application filed December 30, 1897. Serial No. 664,617. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. BENNETT, a citizen of the United States of America, residing at Portsmouth, in the county of Rockingham and State of New Hampshire, have invented new and useful Improvements in Machines for Manipulating Buttons for Finishing Them, of which the following is a specification.

This invention relates to the manufacture of shank-buttons, and especially to machines for placing said buttons in suitable trays or plates through apertures in the bottom of which the shanks of said buttons protrude, and for mechanically operating locking-strips on the bottom of said trays to temporarily attach said buttons in parallel rows to said trays, in which they are handled during the subsequent operations of enameling, and to provide means for preventing the disarrangement or breaking of any of the parts of the machine in case the buttons should not pass freely from the feed-troughs to the devices adapted to receive them; and a further object is to provide the machine with an automatic stop-motion; and the invention consists in the construction of the machine, as fully hereinafter specified, and pointed out in the claims.

Referring to the drawings forming part of this specification, Figure 1 is a top plan view of a machine embodying my invention, a part of the table thereof being broken away. Fig. 2 is a side elevation thereof. Fig. 3 is a somewhat enlarged plan view of the table of the machine, showing a button tray or plate thereon partly broken away. Fig. 4 is a sectional elevation on line 4 4, Fig. 1, looking to the right. Fig. 5 is a sectional elevation taken on line 5 5, Fig. 1, looking in the direction of the arrow on that line. Fig. 6 is a view similar to Fig. 5, showing the parts in another position. Fig. 6ª is a section showing cam-roller adjustment. Fig. 7 is a detail view of part of a stop-motion mechanism. Fig. 8 is a view of another part of the stop-motion mechanism. Fig. 9 is a perspective view of a button-receiving bar. Figs. 10 and 11 are detail views of said button-receiving bar. Fig. 12 is a plan view of a part of a button-receiving tray or plate and the frame on which it is supported for passing through the machine. Fig. 13 is a sectional view of Fig. 12, taken on line 13 of that figure. Fig. 14 is a view of the under side of a part of one of the button trays or plates, showing the means thereon for locking the buttons thereto.

The machine consists of a table A, of metal, having two parallel ribs A′ extending lengthwise thereon from end to end. This table is supported on suitable legs B, and under the table in proper hangers B′ are supported the main shaft C and the rock-shaft D.

On the rear end of the table A and on opposite sides thereof are two side frames E, one end E′ of said frames extending in an inclined position down toward the surface of the table, as shown in Fig. 2. These side frames support the inclined button-troughs F, which are of metal, and the parallel portions thereof comprised between said side frames E are bolted together and to said frames by bolts *a*. The part of said troughs extending beyond said frames E are spread laterally and radially, and their upper extremities turn upward and are provided with suitable button-receiving hoppers H. (Shown only in Fig. 1.) The said outer ends of the button-troughs F are secured together transversely, and a button-agitating shaft 2 passes transversely through said hoppers to keep the buttons therein moving when the machine is in operation to prevent the clogging of the lower ends of the hoppers, and suitable means (not shown) are provided for rotating the said button-agitating shaft by a belt on a pulley at the end thereof. The said button-troughs F consist of rectangular pieces of metal, in the upper surface of which is cut a centrally-located groove 3 for receiving the shanks of the buttons and whereby they are guided to the delivery end of the button-trough in proper position and which are shown only in Fig. 3 in cross-section and in Figs. 5 and 6 in longitudinal section on a larger scale. Metal strips 4, a little wider than the head of a button, are adjustably supported over the button-troughs F on the cross-bars G, which are secured by their ends to the side frames E, and the outer extremities of said metal strips are secured to the button-hoppers H at a proper distance above the surface of the button-troughs. One of said cross-bars is lo-

cated near the delivery ends of the button-trough and the other about midway between the ends of said troughs. A button-receiving bar L is supported transversely on the said table A in suitable bearings L′ and is of the form in cross-section shown in Figs. 5, 6, and 9. Said bar has an oscillating movement in its bearings, and the curved side thereof, which is concentric with its center of oscillation, moves across the ends of the button-troughs F and in close proximity thereto. This button-receiving bar L when at the limit of its oscillatory movement in one direction (shown in Fig. 6) receives buttons from the troughs F in the pockets 5, (see Figs. 9, 10, and 11,) provided therefor in the edge of said bar, and at the limit of its movement in the opposite direction (shown in Fig. 5) passes the shanks of said buttons, which project through a slotted plate 6 on said bar down through the apertures 7 of a button tray or plate M, which moves intermittently through the machine in proximity to the said button-receiving bar L. During the operation of the said bar L to insert a series of buttons into the tray the latter is stationary; but as soon as the bar has reached the position shown in Fig. 5 and while it is temporarily stationary said tray M is made to move transversely to said bar L and thereby draw the buttons out of the pockets 5 therein. The degree of feed movement of said tray is such as to bring another row of the apertures 7 in position to receive another series of buttons from the said bar L. As soon as the buttons are drawn out of said pockets the bar L begins its return movement, its curved side having served to close the ends of the button-troughs F during the operation of placing a series of buttons on the tray M, as described. The said button-tray M is made of sheet metal and has the said apertures 7 punched therethrough in parallel lines, the distance between which coincides with the distance between the centers of the button-troughs F. Holes 8 are punched in the said button-trays M at each corner thereof and engage pins 9 on the frame N, on which said trays are carried through the machine. Suitable locking devices on the under side of the trays and operated by the machine to temporarily attach the buttons to said trays are provided and will be described farther on. The said frame N, on which the button trays or plates M are secured and carried through the machine, is shown separated from the machine in plan view in Fig. 12 and in cross-section in Fig. 13. Said frame is rectangular in form and is for convenience made of sufficient length to carry two or more of the button-trays M. The frame is made, preferably, of cast-iron and moves endwise through the machine, its sides bearing on the ribs A′ of the table A and between suitable gibs 10, bolted to said ribs. (See Fig. 4.)

A ratchet-bar R is screwed to the under side of the frame N, extending lengthwise thereof midway between its sides, and an opening 12 through the table of the machine is provided through which the frame-operating pawl 13 engages said ratchet-bar.

Means for removably securing the button-trays M to the frame N consist in two or more locking-bars 14, arranged to be moved by the operator transversely on the upper side of said frame between suitable clips 15 by means of a button on the under side of said locking-bars. On the upper side of the said locking-bars are two hooks 16, having flat upper surfaces, and on the under side of the trays M are properly-shaped loops 17 (see Figs. 12 and 13) for receiving the said hooks 16 when the locking-bars are moved by the operator to secure the trays to the frame. The under surface of the said hooks 16 are slightly tapered, as shown in Fig. 13, whereby said trays M may be firmly secured to the frame N. The only support for the latter is on the top of the said hooks 16, which leaves the under side of said button-trays M entirely clear of the frame, whereby the locking devices for securing the buttons by their shanks, which protrude through said trays, may be operated at the proper time.

As heretofore stated, the button-trays M are alined relative to the frame N by the holes 8 registering with the pins 9 at the corners of the button-tray, which pins are provided with a base 9^a, of larger diameter, on which the button-trays rest, the tops of said bases being on a level with the tops of the said hooks 16. Means for moving said frame N and the button-trays M thereon intermittently under the oscillating button-receiving bar L and for operating said bar are provided as follows: The main shaft C extends transversely across the machine, supported in suitable hangers B′, as stated. Said shaft is driven by a pulley 18, having a clutch engagement with said shaft, which will be described farther on. On said shaft C is secured a cam 19, and secured to the rock-shaft D, which is supported in said hangers B′ in a position below said main shaft and parallel therewith, are the levers 20 and 21 side by side, and said cam 19, by the rotation of the main shaft C acting on the end of the short lever 20, imparts to said lever 21 a reciprocating movement lengthwise of the machine. A spring 20^a, coiled about the rock-shaft D and having one end secured to the hanger B′ and the other to the lever 20, holds said lever in contact with the said cam 19. Fig. 6^a shows a means for adjusting the throw of the frame-operating lever 13 to engage the ratchet-teeth of the bar R without lost motion. A stud *b* is fixed in said lever 21 and projects through an elongated slot *d* in the said lever 20, and on the end of said stud the roll *f* is secured, which bears against the cam 19 on the main shaft C. In said lever 20 is an adjusting-screw *d′*, by the manipulation of which the lever 21 may be adjusted relative to the said lever 20 on the main shaft C and the pawl-lever on the end of the lever 21

adjusted relative to the teeth of the ratchet-bar R. Said lever 20 extends up to a point a little above the said main shaft C, and said lever 21 extends up to a point close under the ratchet-bar R and slightly to one side thereof, and to the upper end thereof is pivotally secured the frame-operating lever 13 for engagement with the teeth of said ratchet-bar. A spring 22 is attached by one end to said frame-operating lever and by its opposite end to said lever 21 for normally holding the short end of said frame-operating pawl out of engagement with the ratchet-bar R and for holding the opposite end thereof up against the under side of a bar 23, which extends across the machine and unites one end of each of the elbow-levers 24, pivotally supported at 25 on the table A. The opposite short ends of said elbow-levers extend upward from said pivoted points 25 and are provided with segmental racks 24^a, which engage circular racks 24^b on the ends of the button-receiving bar L, supported for a reciprocally-rotating movement in bearings L′ on the table of the machine. Said elbow-levers 24 are moved in one direction—that is, to rotate the button-receiving bar L from the position seen in Fig. 5 to that shown in Fig. 6 by the engagement of cams 26, located near each end of the main shaft C, with a roller 27, secured to the horizontal portion of each of the elbow-levers 24. When the said button-receiving bar L is rotated in the opposite direction—that is, to place the buttons delivered to it from the button-troughs F while it is in the position shown in Fig. 6 in their proper places on the button-tray M—said rotation is imparted to it by the action of the coiled spring 28, secured by one end to the cross-bar 23 and by its opposite end to the floor or other convenient point, and which spring is extended by the movement of the levers 24 under the action of the cam 26, above described.

The reason the spring 28 is employed to impart the feeding movement to the button-receiving bar L is to save the machine from derangement or breakage in case a button should become wedged between the end of the trough and the pockets 5 in said button-receiving bar L.

It is apparent that should a button fail to pass at the proper time from the end of one of the troughs F into the oppositely-located pocket of the receiving-bar L, but should stop with a portion of its body overlapping the end of the button-trough, and the said button-receiving bar L should be rotated by a positive movement instead of by the spring 28, that great damage would be done to the machine; but should this occur with the button-receiving bar L, actuated, as described, by said spring 28, the latter has not sufficient power to move said button-receiving bar and it will remain substantially in the position shown in Fig. 6, and the elbow-lever 24 being held in the position shown in said figure thus prevents the engagement of the short end of the frame-operating pawl 13 from engaging the teeth of the ratchet-bar R. The main shaft C continues to rotate and the lever 21 swings said frame-operating pawl reciprocally under said button-receiving bar L out of contact therewith until the obstructing button has been removed either by the operator or by the trough-shaking mechanism, whereupon the spring 28 completes its movement and the operation of the machine is resumed. The mechanism for a shaking or jarring movement to thebutton-troughs whereby the buttons are aided in descending said troughs is constructed as follows: On each of the side frames E at 29 are pivoted two arms 30, and a bar 31 unites the free ends of said arms, which bar is free to be lifted above and to fall when released and strike on the tops of the metal strips 4, constituting the tops of the troughs, in which position the said bar 31 is shown in Fig. 5. On each end of the button-receiving bar L a finger 32 is secured in position to project toward the button-trough F, and when said bar L is oscillated the said fingers swing close to the sides of the ends E′ of the frames E, the two extreme positions of said fingers being shown in Figs. 5 and 6. Near the ends of the arms 30 on the outside thereof are the short swinging levers 33, depending therefrom, which are free to swing in one direction on their pivots when the fingers 32 move from the position shown in Fig. 6 to that shown in Fig. 5; but said levers 33 are stopped from swinging in the opposite direction by a pin 34 in said arms 30, and therefore when the fingers 32 move from the position shown in Fig. 5 to that shown in Fig. 6 they engage with the ends of the said levers 33 and lift the bar 31 to the position shown in Fig. 6, at which point the fingers 32 pass out from beneath the ends of the levers 33, as shown. Said bar 31 is held in the elevated position shown by the engagement of gravity-actuated stop-arms 35, pivoted to the side of the arms 30, as shown, which stop-arms have a notch cut in their upper ends, which when the arms 30 have reached a certain height engage with a pin 36 in said arms and prevents the fall thereof until the lower end of the stop-arm is struck by the fingers 32 on their downward movement, which trips said stop-arms 35 and allows the bar 31 to fall upon the top of the troughs, near their delivery ends, giving them a slight jarring motion. After said stop-arms 35 have been tripped, as stated, the lower end thereof continues to bear against the end of the fingers 32 until the notches in the upper end of said arms again come into position to engage the pins 36 by the rearward movement of said fingers 32. Ordinarily the action of this shaking device is sufficient to disengage any button that may become lodged in the troughs, though occasionally it is necessary for the operator to do it. A device is provided for preventing more than one but-

ton at a time from each row of the buttons in the several feed-troughs F from sliding down in contact with the first buttons which enter the pockets 5 of the button-receiving bar L when the latter is in position to receive said buttons, and said device consists of a spring-actuated finger 37, pivoted by one end on the end of each of the metal strips 4 of the button-troughs F and which bears normally on the second button from the lower end of the trough, a slight lip 37ª, Fig. 6, projecting down between said first and second buttons. The first button in the trough, however, is free from any pressure from the finger 37. The free end of said finger is curved to conform to the outline of the curved part of the button-receiving bar L. The extremity of said curved end of the finger 37 is beveled off on the under side, as shown in Figs. 5 and 6, and is engaged by the end of a plate 38, screwed to the back side of the said button-receiving bar L, when the latter, having received the first button of the row in the trough in a pocket 5 thereof, is oscillated to place that button on the button-tray M with its shank passing through one of the apertures 7 therein. Just prior to the end of said oscillating movement of the button-receiving bar the said plate 38 engages the beveled end of the spring-actuated finger 37 and raises it, allowing the button previously engaged by it to slide down into contact with the curved surface of said bar, as shown in Fig. 5, and upon the return movement of said bar and before the pockets 5 arrive in positions to receive another series of buttons the plate 38 moves out from under the end of the spring-actuated finger 37, and the latter springs down upon the second button with sufficient pressure to hold the row of buttons in the trough against any further movement until the next feeding movement of the button-receiving bar L takes place.

As hereinbefore stated, the buttons are temporarily locked to the trays M by devices on the under side of said trays which are operated by the machine after the buttons have been placed on said trays in parallel transverse rows, the shanks of the buttons protruding through the apertures in the trays.

The construction of said button locking or securing devices and means for operating them is as follows: A series of bars 39 (see Fig. 14) are supported for a sliding motion transversely on the under side of the button-trays, suitable loops 40 of proper form being attached to said trays to receive said bars, one of which serves as a lock for two rows of buttons. Said bars are of substantially the length of the width of the button-trays M, and the ends thereof are slightly rounded and are made preferably of metal. A series of fingers 41 for engaging the shanks of the buttons are secured at proper intervals to said bars 39, having their operative ends lying parallel with said bars and transversely to the shanks of the buttons to be secured. If the bars 39 are moved lengthwise in one direction, the said fingers 41 pass through the shanks of the buttons, securing them to the button-trays. If the said bars are moved in the opposite direction, said fingers are withdrawn from the shanks of the buttons and leave the latter free to be removed from said trays.

The means provided for operating the locking-bars 39 by the action of the machine are as follows: Referring to Fig. 4, it will be seen that the operative position of the trays in the machine is with their edges lying somewhat above the surface of the gibs 10. On the latter (see Fig. 2) are located the horizontally-movable levers 42 and 43, pivotally secured to said gibs at 44 and 45, (see Fig. 2,) one on each side of the machine and one in front and one back of the button-receiving bar L, the function of one of which is to act upon the ends of the said bars 39 to place them in proper position to be acted upon by the other of said levers, whereby the said buttons are secured to the button-trays. The said levers have each a flat wheel 46 secured to one end thereof and of such width that the periphery of said wheels projects under the edge of the button-trays M on their passage through the machine and engages with the ends of the locking-bars 39 on said button-trays to move them in opposite directions. Each end of said levers 42 43 opposite to that to which the wheels 46 are secured is engaged by one end of a spring 47, attached to the table of the machine, (see Figs. 2 and 3,) whereby the said wheels 46 are normally forced in toward the opposite edges of said button-trays M.

An adjusting-screw 48 for each of the levers 42 43 is located in an upstanding lug secured to the edge of the table A, the point of said screw bearing against said levers 42 and 43 for properly adjusting the peripheries of said wheels 46 against the ends of said locking-bars 39. On the top of said lever 42 a short arm 49 is secured, having a roll thereon for bearing on the edge of the button-tray to support the latter against the action of the wheel 46 as the bars 39 are moved by the contact of their ends with said wheel.

The sole function of the lever 42 and its wheel 46 is to move the locking-bars so that the fingers 41 will not overlap the apertures 7 in the button-trays M when said apertures arrive under the button-receiving bar L, and the said roll is employed on the arm 42, because the button-tray at this point is not supported, as is the case when the wheel 46 of the lever 43 operates to lock the buttons, at which point the button-receiving bar L would prevent any springing up of the button-tray.

To insure the immediate stopping of the machine as soon as the end of a button-tray passes under the button-receiving bar L, a stop-motion of the following construction has been provided, the description of which necessitates first a description of the clutch mechanism on the driving-pulley 18 on the main-

shaft C, illustrated on an enlarged scale in Fig. 8, in which is shown a portion of the shaft C, to which is secured a collar 50 by a set-screw 50ª, against the side of which the hub 51 of the pulley 18 is normally held in close contact by the spring 52, located on the said main shaft C outside of said pulley 18. The latter turns freely on the main shaft C, and in its said hub 51 is a round stud 53, the portion of which that projects beyond the side of said hub being cone-shaped, and a similarly-shaped depression 53ª in the side of the collar 50 receives said cone-shaped stud, being held in engagement therewith by the pressure of the spring 52, forcibly holding the pulley 18 against said collar. The taper of the stud 53 is such that if the main shaft C is suddenly stopped the continued rotation of the driving-pulley 18 will cause said stud by reason of its cone-shaped end to move the said pulley on the shaft, causing a separation between the hub thereof and the side of the collar 50, and allow the shipper-lever 54, supported by one end to the table A, to fall by gravity into the space between them, thereby preventing their reëngagement until the shipper-lever has been raised by the operator. A pin 54ª, which projects beyond the side of the shipper-lever 54, (see Figs. 7 and 8,) will strike on the collar 50, and thus permit only the lower edge of said lever to enter the space between said collar and the hub of said driving-pulley.

The mechanism by which the main shaft is arrested in its movement (see Fig. 7) consists in a disk 55, rigidly secured on the shaft and having a projection 56 on the periphery thereof. A hooked lever 57 is pivotally hung to the under side of the table in position to have its hooked end moved by a suitable spring 58 into the path of rotation of the projection 56 on the said disk 55. The opposite end of said hooked lever 57 is connected to a vertically-moving plunger 59, whose upper extremity extends through the table and bears on the under side of one of the sides of the frame N, thereby holding the hooked end of the lever 57 out of engagement with the projection on the disk 55. When the end of the frame passes over said plunger, the spring 58 throws the hooked end of the said lever downward and into engagement with said projection on the said disk 55, instantly arresting the rotation of the main shaft C. One side of the plunger 59 is beveled, as shown in Fig 7, which permits the frame N when slid into the machine to automatically depress the plunger 59, leaving the main shaft C free to rotate as soon as the shipper-lever has been moved to permit the engagement of the driven pulley 18 with said main shaft.

In operating this machine after the button-hoppers H have been supplied with buttons and the troughs F have been filled by manually operating the shaking device the frame N has one or more trays placed thereon and locked in position, and said frame is placed in the machine described and moved along until the forward end thereof depresses the plunger 59 of the stop mechanism, and the shipper-lever is then raised to start the machine. After the button-trays on one frame have been filled if the operator is on hand with another frame which can follow the first; the operation goes on but if the operator is not ready with another frame as soon as the end of the frame in the machine passes over the plunger 59 the stop-motion operates, as described, to stop the machine.

The construction of the button-trays M has been described herein sufficiently to make clear its relation to the other parts of the machine and the manner of its operation; but it is not claimed herein, as it forms the subject of a separate application, filed December 30, 1897, under Serial No. 664,618, to which reference may be made for a more detailed description thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A machine for setting shank-buttons in trays for enameling and analogous processes, comprising a moving tray for receiving said buttons, one or more feed-troughs terminating in proximity to the surface of said tray, a button-receiving bar located between the said tray and the lower ends of said troughs, pockets in said bar located opposite the ends of said troughs for receiving buttons therefrom, means for imparting oscillating movements to said bar, and an intermittent movement to said tray beneath said bar, substantially as described.

2. A machine for setting shank-buttons in trays for enameling and analogous purposes, comprising a moving perforated tray for receiving said buttons, one or more feed-troughs terminating in proximity to the surface of said tray, a button-receiving bar located between the said tray and the lower ends of said troughs, pockets in said bar located opposite the ends of said troughs for receiving buttons therefrom, interoperative means for oscillating said bar and for imparting intermittent movements to said tray, whereby the movement of said tray is controlled by said bar-oscillating means, substantially as described.

3. A machine for setting shank-buttons in trays for enameling and analogous processes, comprising a moving perforated tray for receiving said buttons, one or more feed-troughs terminating in proximity to the surface of said tray, a button-receiving bar located between the said tray and the lower ends of said troughs, pockets in said bar located opposite the ends of said troughs for receiving and transferring buttons from said troughs to said tray, means for positively oscillating said bar in one direction to receive said buttons, and for yieldingly oscillating it in the opposite direction for transferring said buttons to said tray, and means controlled by the movement

of said bar for intermittently moving said tray beneath said bar, substantially as described.

4. In a machine for setting shank-buttons in trays for enameling and analogous processes, a suitable table, a perforated tray for receiving said buttons, button-securing devices on the under side of said tray for temporarily securing buttons thereto, a frame for supporting said tray and having a sliding movement on said table, one or more feed-troughs terminating in proximity to the surface of said tray, a button-receiving bar located between the said tray and the lower ends of said troughs, pockets in said bar located opposite the ends of said troughs for receiving buttons therefrom, means for imparting oscillating movements to said bar, and an intermittent movement to said tray beneath said bar, and mechanism for operating the said button-securing devices on said tray, substantially as described.

5. In a machine for setting shank-buttons in trays for enameling and analogous purposes, a suitable table, a tray for receiving buttons, a frame supporting said tray and having a sliding movement on said table, ratchet-teeth on the under side of said frame and an intermittently-moving pawl-lever for engagement with said ratchet-teeth; one or more feed-troughs, an oscillating button-receiving bar for transferring buttons from said feed-troughs to said tray, and interoperative means for oscillating said button-receiving bar and imparting intermittent movement to said pawl-lever, whereby the operation of the latter to move said tray-supporting frame is controlled by the movements of said bar, substantially as described.

6. A machine for setting shank-buttons in trays for enameling and analogous purposes, comprising a moving perforated tray for receiving said buttons, one or more feed-troughs terminating in proximity to the surface of said tray, a button-receiving bar located between the said tray and the lower ends of said troughs, pockets in said bar located opposite the ends of said troughs for receiving buttons therefrom, interoperative means for oscillating said bar and for imparting intermittent movements to said tray, whereby the movement of said tray is controlled by said bar-oscillating means, and mechanism operated by the movement of the said tray to stop the machine as the end of said tray passes under said button-receiving bar, substantially as described.

7. In a machine for setting buttons in trays for enameling and analogous processes, a suitable table, a tray for receiving said buttons, a frame to which said tray is secured, which has a sliding movement on said table, one or more feed-troughs, an oscillating button-receiving bar for receiving buttons from said troughs and transferring them to said tray, button-controlling levers secured to each of said feed-troughs and suitable connections between said levers and said button-receiving bar for operating said levers; means for imparting oscillating movements to said button-receiving bar and an intermittent movement to said tray beneath said bar, substantially as described.

8. In a machine for setting shank-buttons in trays for enameling and analogous purposes, a suitable table, a tray for receiving buttons, a frame supporting said tray and having a sliding movement on said table, ratchet-teeth on the under side of said frame and an intermittently-moving pawl-lever for engagement with said ratchet-teeth; one or more feed-troughs, an automatic button-controlling lever pivotally supported on the delivery ends of said troughs, an oscillating button-receiving bar for transferring buttons from said tronghs to said tray, means on said button-receiving bar for operating said button-controlling lever, shaking or jarring mechanism for said feed-troughs, a finger on said button-receiving bar for operating said shaking mechanism, and interoperative means for oscillating said button-receiving bar and imparting intermittent movement to said pawl-lever, whereby the operation of the latter to move said tray-supporting frame is controlled by the movements of said bar, substantially as described.

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Witnesses:
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K. I. CLEMONS.