

No. 765,971.

PATENTED JULY 26, 1904.

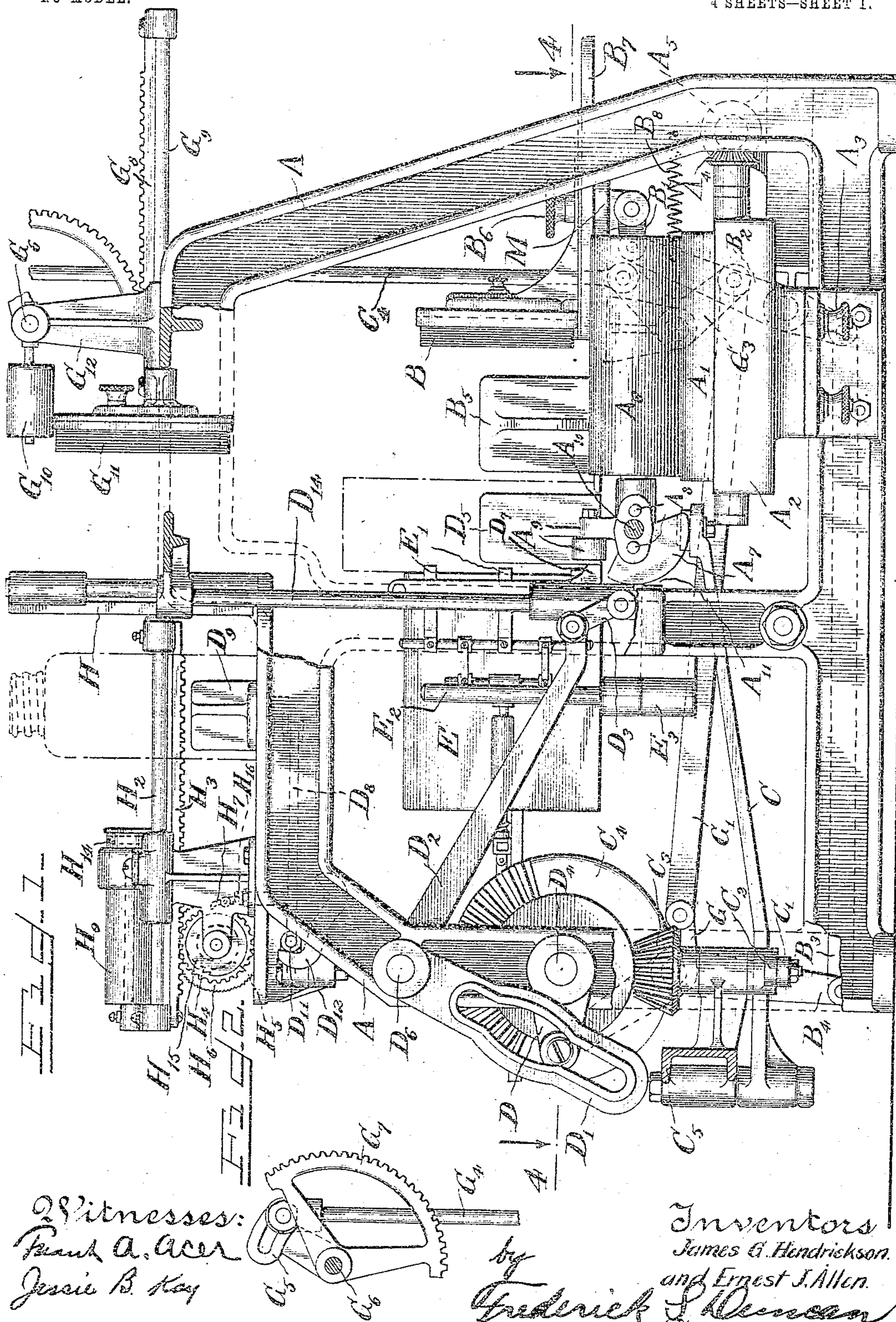
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LABELING MACHINE.

APPLICATION FILED JUNE 6, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



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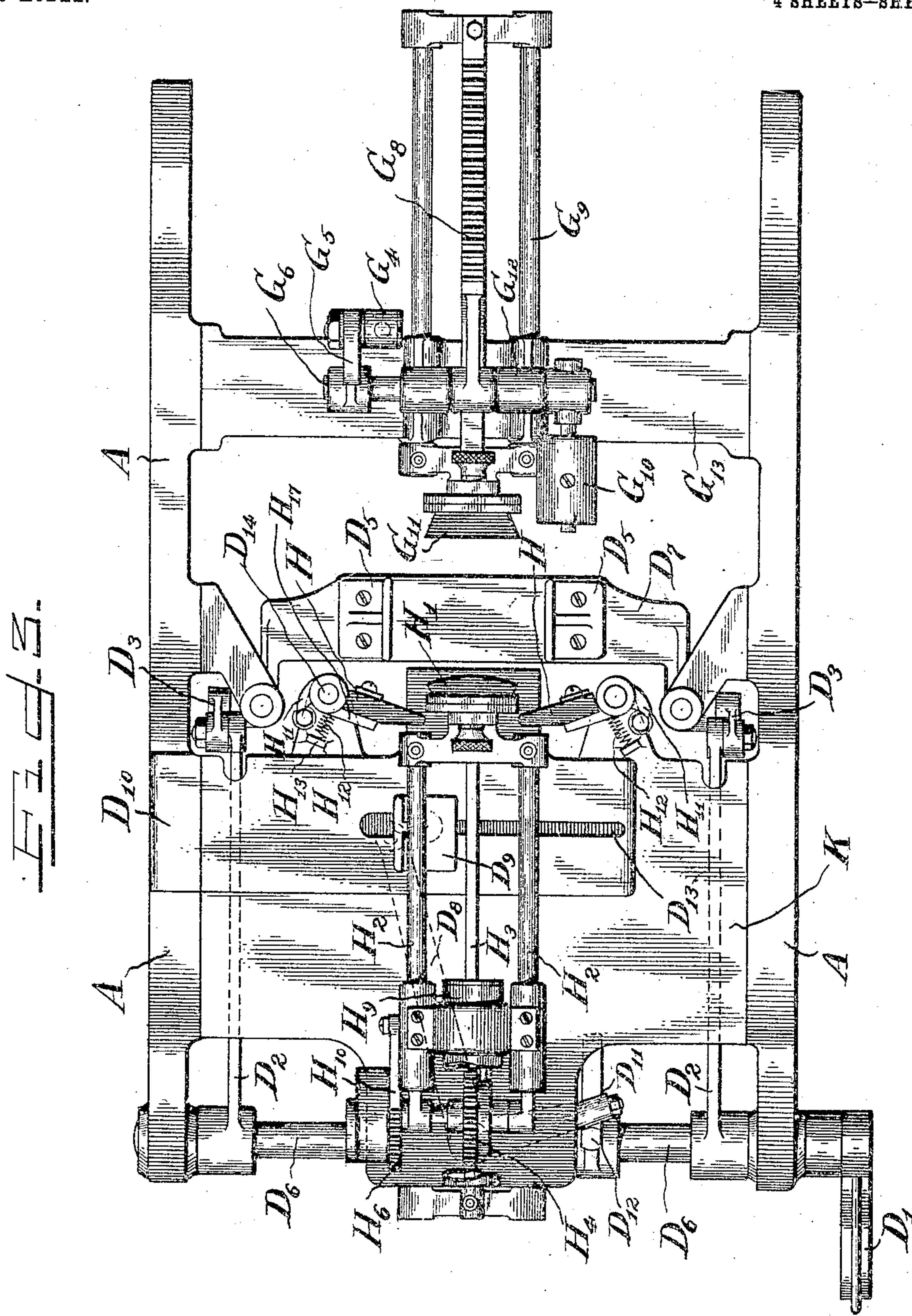
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4 SHEETS—SHEET 2.



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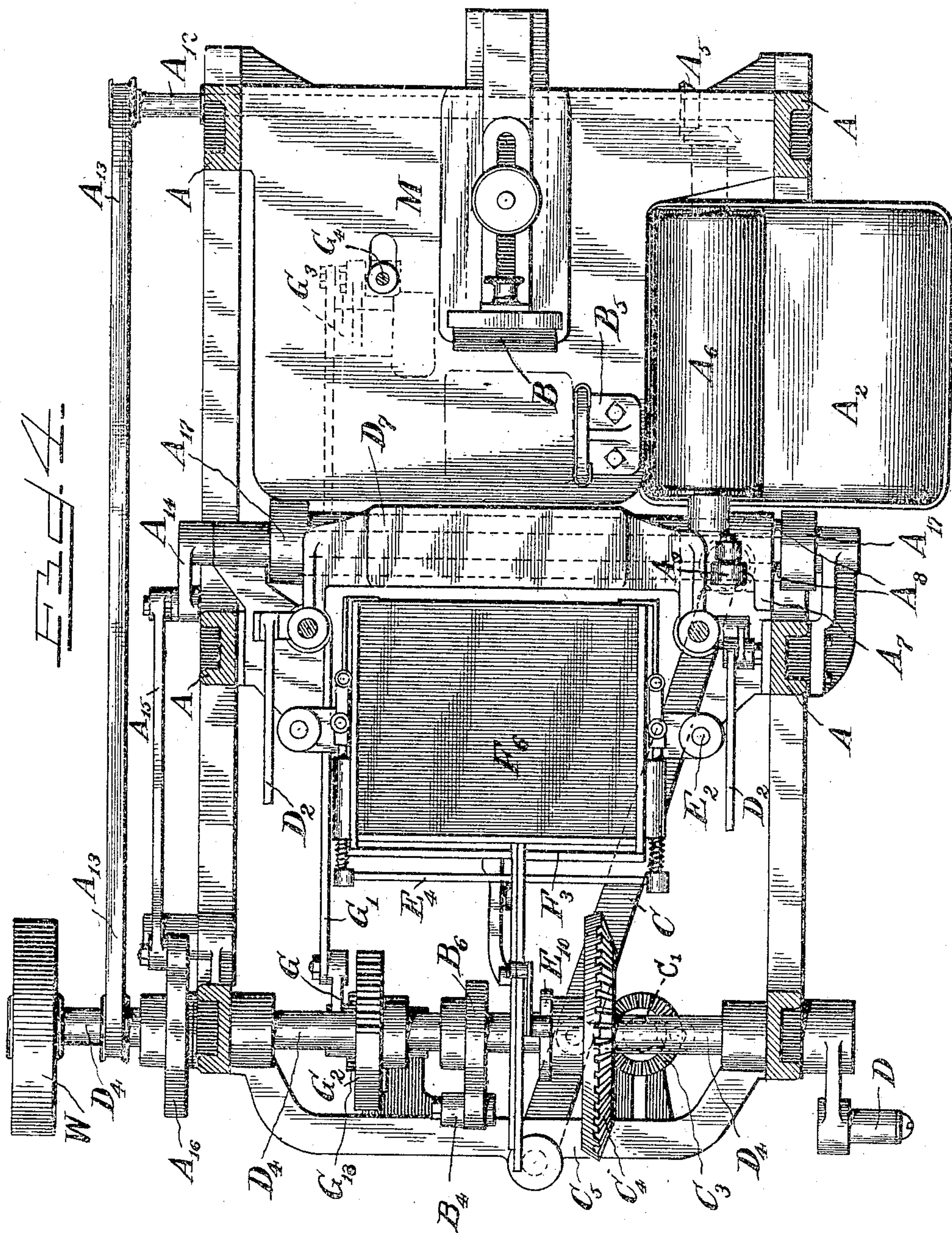
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4 SHEETS—SHEET 3.



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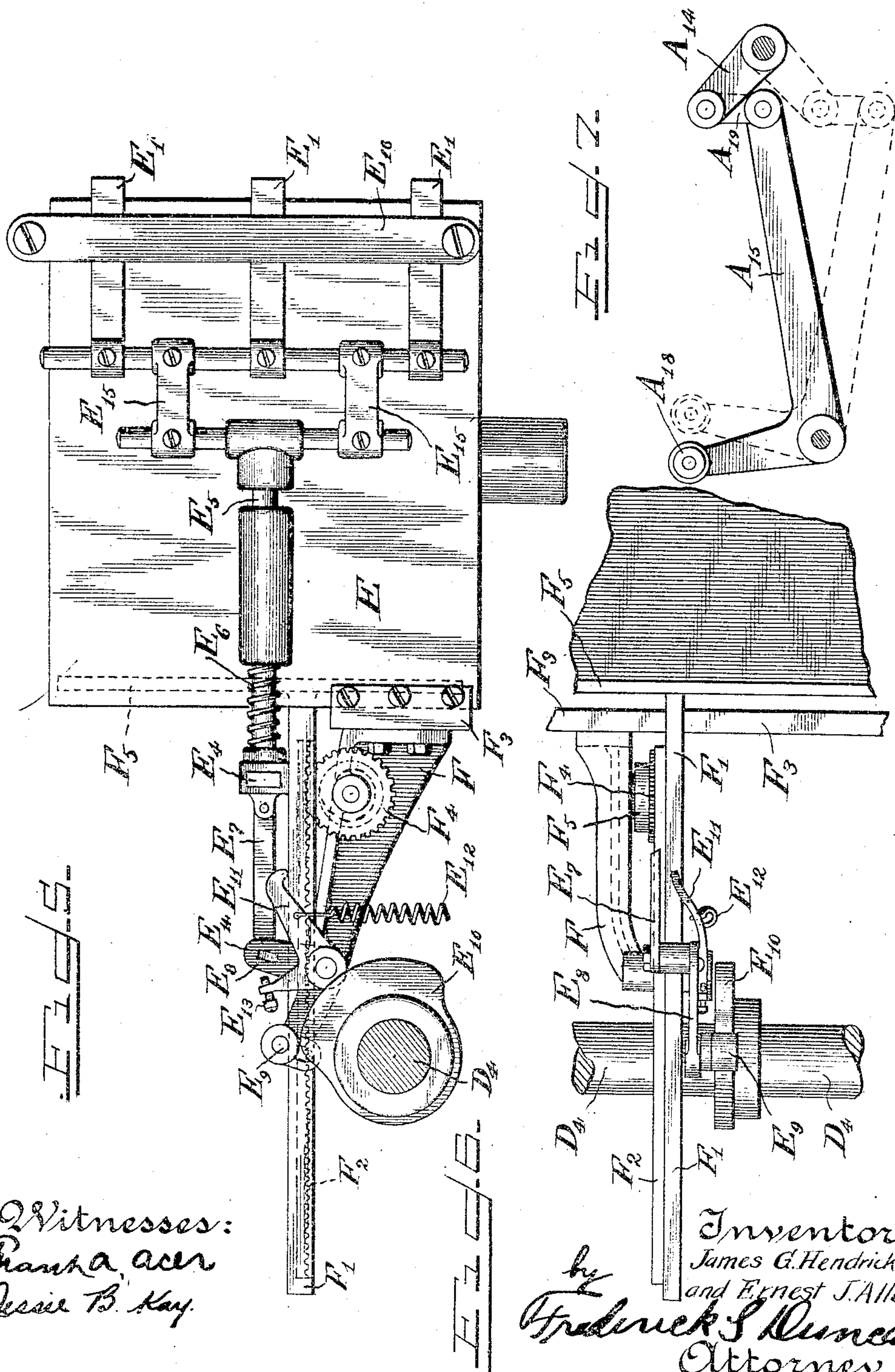
J. G. HENDRICKSON & E. J. ALLEN.

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NO MODEL.

4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

JAMES G. HENDRICKSON, OF BAYONNE, NEW JERSEY, AND ERNEST J. ALLEN, OF ROCKVILLE CENTER, NEW YORK, ASSIGNORS, BY MESNE ASSIGNMENTS, TO NEW YORK LABELLING MACHINE COMPANY, A CORPORATION OF NEW YORK.

LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 765,971, dated July 26, 1904.

Application filed June 5, 1902. Serial No. 110,259. (No model.)

To all whom it may concern:

Be it known that we, JAMES G. HENDRICKSON, of Bayonne, in the county of Hudson and State of New Jersey, and ERNEST J. ALLEN, of Rockville Center, in the county of Nassau and State of New York, citizens of the United States, have invented certain new and useful Improvements in Labeling-Machines, of which the following is a specification, taken in connection with the accompanying drawings, which form a part of the same.

This invention relates to labeling-machines, and relates more particularly to machines for applying a label to three sides of an article.

In the accompanying drawings, in which the same reference character indicates similar parts in the several figures, Figure 1 is a side elevation of a machine embodying this invention, parts being broken away. Fig. 2 is a detail. Fig. 3 is a plan view. Fig. 4 is a sectional plan view taken substantially on the line 4 4 of Fig. 1. Fig. 5 is a detail elevation of the label-box. Fig. 6 is a plan view of the same. Fig. 7 is a detail.

The frame A, which is indicated in Fig. 1, is composed of two similar side members rigidly secured together by suitable supports. The label-box E is mounted in the frame, this box being supported by the two vertical rods E², which are mounted upon the supports E³. The label-box by suitable means may be adjusted at any desired height upon these rods, so as to cooperate properly with the articles to which the labels are applied. As indicated in detail in Figs. 5 and 6, the label-box is provided at its rear end with the label-platen F⁵, which is secured to the platen-stem F⁷ so as to move horizontally. This platen-stem has upon its under surface the rack F², which engages the teeth of the pinion F⁴, mounted in the bracket F, secured to the label-box by the member F³. The pinion F⁴ is operated by the spiral spring, (indicated in dotted lines,) so that this pinion normally tends to press the label-platen outward and in this manner forces the stack of vertically-disposed labels toward the outer end of the label-box.

The platen-latch E¹¹ is pivoted upon the support F and is held down by the strong spring E¹², so that it normally engages the upper side of the platen-stem. This grips the platen-stem sufficiently, so that the platen is prevented from moving outward under the action of the spring-operated pinion F⁴. This latch is, however, released from engagement with the platen-stem whenever the stop E⁸ on the grip-lever E¹⁴ comes into engagement with the screw E¹³ on the latch.

The grips E⁷ are mounted on either side of the label-box and, as is indicated in Fig. 4, extend around the forward end of the same, so that they engage the first label in the stack F⁶. These grips are guided by the bars E¹⁶ on either side of the label-box and are connected by the rods indicated to the links E¹⁵. The grip-rods E⁵ pass through suitable bearings indicated on the sides of the label-box, and their rear ends are engaged by the springs E⁶, which normally force them backward to cause the grips to engage the labels. These grip-rods are secured to the bar E⁴, which is operated by the grip-lever E¹⁴, pivoted to the bracket F. This bell-crank grip-lever E¹⁴ has its end connected to the bar E⁴ by the link E⁷. The roll E⁹, which is operated by the cam E¹⁰ on the power-shaft D⁴, is adjustably mounted in a slot in the grip-lever, so that it cooperates properly with this cam at all times and allows in this manner the vertical adjustment of the label-box. The operation of the label-box is as follows: The stack of vertically-disposed labels is held in the label-box by the grips E⁷, which are spring-pressed. The outer label has paste applied to it, and when an article is pressed against this label the grips are released to allow the label to be withdrawn edgewise. The grips are moved outward to release this label by the grip-lever which has been described, which is operated by the cam E¹⁰ to move the grips into the released position. (Indicated in Fig. 5.) When the grips are released, the platen-latch is forced into engagement with the platen-stem and prevents the platen from pushing the stack of labels

outward against the grips. After the pasted label has been withdrawn from the label-box the cam E^{10} ceases to operate upon the grip-lever and the springs E^6 move the grips so
 5 that they again engage the stack of labels, and at this time the stop E^8 engages the screw E^{13} and withdraws the platen-latch from the platen-stem, so that the pressure of the spring
 10 once more operates upon the platen to feed the stack of labels forward against the grips.

The paste apparatus comprises the paste-reservoir A^2 , which is secured to the frame by the nuts A^3 . The feed-roll A^1 is mounted in this reservoir and is revolved continuously
 15 during the operation of the machine by the beveled gears $A^4 A^5$, the shaft A^{12} of the gear A^5 being driven from the power-shaft D^4 by the belt A^{13} . (Indicated in Fig. 4.) In this manner the feed-roll is continuously operated
 20 and supplies paste to the paste-roll A^6 whenever this roll is in contact therewith. The paste-roll is revolvably mounted in the paste-slide A^7 , which reciprocates upon the traverse-rods A^8 . These traverse-rods are mounted at
 25 either end in the heads A^{17} , and these heads are mounted upon the tilting-shaft A^{10} , having suitable bearings in the frame of the machine at either end of the traverse-rods. This tilting-shaft is operated to tilt the paste-roll from the
 30 position indicated in Fig. 1 to the dotted position indicated in that figure, so that it may be traversed across the label-box to apply paste to the outer label in the stack. The cam A^{16}
 35 on the power-shaft D^4 engages the roll A^{18} on the tilting-lever A^{15} . (Shown in detail in Fig. 7.) This lever, through the link A^{19} , moves the tilting-shaft by the crank A^{14} , secured to this shaft, so that by this means the paste-roll is tilted from a horizontal to a vertical position.
 40 The paste-roll is traversed moving along the traverse-rods A^8 by the traverse-arm C, pivoted to the frame of the machine at C^5 and having its forward end formed to engage the traverse-lug extending around the paste-slide
 45 A^7 , as indicated in Fig. 1. The traverse-arm is driven from the power-shaft D^4 in the following manner: The mutilated gear C^4 is mounted on this power-shaft, and during a half-revolution the pinion C^3 is given a complete
 50 rotation, so that the crank C^2 , secured to this pinion, is rotated. The link C^1 serves to connect this crank with the traverse-arm C, so that at every revolution of the power-shaft the traverse-arm is given a quick oscillation,
 55 so as to carry the paste-roll across the label-box in contact with the forward label in the box. The roller A^9 on the paste-slide comes into contact with the guide A^{11} under these conditions to maintain the paste-roll in
 60 contact with the labels.

The carrier mechanism for moving the articles to be labeled through this machine comprises in general terms the following elements: The reciprocating plunger B engages
 65 an article placed against the stop B^5 and forces

this article into the elevator D^7 and into contact with the forward pasted label in the stack. The elevator then moves upward, the grips having released the forward label, which is
 70 carried upward with the article adhering to it. Then when the elevator reaches the upper level the ram G^{11} moves forward, carrying the article out of the elevator and between the two wipers and into contact with the cushion H' . (Indicated in Fig. 3.) This cushion
 75 moves forward, and the projecting ends of the label are smoothly applied to the sides of the article by the pivoted wipers H. The ram having retreated, the completely-labeled article is engaged by the ejector D^9 and moved
 80 laterally out of the path of the cushion, whereupon the cushion moves back into its forward position. (Indicated in Fig. 3.) As is indicated in Fig. 4, the article shown adjacent the
 85 plunger B in dotted lines is of such size that the labels in the stack F^6 extend completely across the face of the article and are also long enough to extend around each of the adjacent
 90 sides. The outer label in the stack has been pasted throughout its whole extent, so that when the article is forced against this pasted
 95 label the label adheres to the article throughout the face in contact therewith. Thereafter when the article is forced between the wipers the ends of the label are pressed smoothly
 100 against the article, extending any desired distance around the sides of the same. It is of course manifest that the relative size of the articles and labels in the stack determines the
 105 extent to which the labels will extend around the sides of the article. It is of course understood that articles do not need to be of rectangular cross-section to be labeled in this machine, since articles of somewhat irregular
 110 shape may be operated upon.

The elevator D^7 is mounted to reciprocate vertically on the vertical rods D^{14} and is provided with the two guides D^5 , which may be
 115 laterally adjusted so as to properly engage articles of different size. The elevator is operated by the elevator-lever D^2 , connected to the elevator by the link D^3 . This lever is secured to the rock-shaft D^6 , to the outer end of which is secured the slotted link D^1 . The
 120 roll mounted on the crank D on the power-shaft D^4 engages this slotted link, which, as indicated, is formed with the relieved portions near the center of the same and by this means operates the elevator, as will be apparent. The relieved portions of the slot in this link
 125 serve to make a pause at either end of the movement of the elevator, so that the elevator is stationary at the top and bottom of its movement for a considerable time.

The plunger B, formed of any suitable material and preferably having a yielding face to engage articles properly, is adjustably
 130 secured to the plunger-slide B^7 by the set-nut indicated. The movement of this slide, which is mounted in suitable guides in the frame of

the machine, is effected by the link B', which, as is indicated in Fig. 1, is pivoted to the member M, which is adjustably secured to the slide B' by the thumb-nut B⁶. The link B' is pivoted to the lever B², (indicated in dotted lines in Fig. 1,) the lower end of this lever being connected by the link B³ with the lever B⁴ at the other end of the machine pivoted to the frame. The upper end of this lever is actuated by the cam B⁵ on the power-shaft D⁴. If desired, of course, a suitable spring B⁸ may be employed in this mechanism, which tends to hold the plunger downward and to maintain the lever B⁴ in contact with the cam B⁵.

The ram G¹¹ (indicated in Fig. 1) is formed with a face preferably of yielding material and adjustably secured to the ramrods G⁹, mounted to reciprocate in the frame of the machine. The rack G⁸ is secured to these rods, as indicated in Fig. 3, and the ram-sector G⁷, secured to the shaft G⁶, which is mounted in the bracket G¹², engages this rack and operates the ram. The counterweight G¹⁰ is secured to the shaft G⁶ and serves to equalize the movements of the parts. As seen in Fig. 2, the slotted link G⁵ is secured to the shaft G⁶, and the upper end of the rod G⁴ is adjustably secured in this slot, so that by this means the extent of movement of the ram may be suitably varied. The lower end of the rod G⁴ is connected with the bell-crank lever G³, (shown in dotted lines in Fig. 1,) this lever being connected by the link G⁷ to the crank G. This crank is given an intermittent rotation by the mutilated gear G², which at each revolution engages the pinion G¹³ and rotates the crank through a complete revolution, so that by this means the ram is given a quick reciprocation, after which it is allowed to remain in the position indicated in Fig. 1 for a considerable period.

The cushion H', preferably of yielding material, is adjustably secured to the cushion-rods H², mounted to reciprocate in suitable bearings in the frame. The rack H³ is also secured to and moves with the cushion-rods and is engaged by the pinion H⁴, as indicated in Fig. 1. This pinion is normally pressed forward by the spring H⁵, the force of which may be suitably adjusted by the ratchet H⁶, secured to the spring and which is engaged by a suitable pawl H¹⁰. The detent-wheel H¹⁵, formed with the notches indicated, is engaged by the detent H⁷ and operates to prevent the return of the cushion and to hold the cushion in its outward position. The movement of the cushion is also regulated by the piston H¹⁴, secured to the same, which operates in the air dash-pot H⁹.

The wipers H (indicated in Fig. 3) are pivotally mounted to move about the pins D¹⁴, these wipers being preferably formed of yielding material and removably secured to the frames H¹⁷. These wipers are held in the position indicated by the springs H¹², which en-

gage the frames and also a suitable stop H¹³ on the frame of the machine. The tail H¹¹ of each of the frames is by this means held against a stop, so as to properly position the wipers.

The ejector-platform D¹⁰ is secured to the top of the frame of the machine and is formed with a suitable slot D¹³. The ejector D⁹ is mounted to move across this platform and is operated by a connection with the ejector-lever D⁸, which passes up through this slot. The ejector-lever, as is indicated in Fig. 3, is pivoted to the frame of the machine, and its outer end D¹¹ is engaged by the ejector-fork D¹², which, as is shown in Fig. 1, is secured to the rock-shaft D⁶. In this manner the ejector is reciprocated to force articles transversely along the ejector-platform, and, furthermore, when the ejector has reached the end of its stroke and has forced an article clear of the cushion, the ejector moving into the position indicated in Fig. 3, the projection H¹⁶ on the ejector-lever engages the tail of the detent H⁷ and releases this detent from the detent-wheel, so that the spring H⁵ is allowed to force the cushion forward into the position indicated in Fig. 3.

The operation of this machine is as follows, it being understood that a complete cycle of the machine takes place for every revolution of the power-shaft D⁴, which is rotated continuously by the pulley W: Articles are fed into the machine against the stop B⁵, and then the plunger B moves forward, carrying an article between the guides D⁵ into contact with the pasted outer label in the label-box. The elevator then moves upward, carrying the article and the adhering label with it, the grips E having been released to allow the label to be withdrawn from the label-box. While the elevator is in this upward position, the paste-roll is tilted into a vertical position and then traversed across the label-box to apply paste to the outer label, the grips being under these conditions held against the labels to retain them in the box. The paste-roll is then returned to its horizontal position in contact with the feed-roll. (Indicated in Fig. 1.) The pasted article is engaged by the ram and moved into contact with the cushion. Then the cushion, article, and ram are moved together, so that the wipers engage the label and smoothly press the ends of the same down upon the two sides of the article. When the article reaches its rearward position upon the ejector-platform, the detent H⁷ comes into action and prevents the return of the cushion. The ram then retreats, leaving the article free. The ejector then operates to move the article transversely along the ejector-platform out of the path of the cushion. The detent is then released, and the cushion is restored to its normal position. (Indicated in Fig. 3 by the spring.)

It is of course apparent that the labels in

the label-box may be of such a size as to extend around three sides of an article, or they may be of any other shape, so as to partially extend around the sides of the article, although
 5 this machine is especially designed to apply labels to several sides of articles. It is manifest that many modifications may be made by those familiar with this art, and parts of this machine may be employed without using all
 10 of the same and may be employed in connection with other devices without departing from the spirit of this invention. We do not, therefore, wish to be limited to the disclosure which we have made in this case; but

15 What we claim as new, and what we desire to secure by Letters Patent, is set forth in the appended claims:

1. In a labeling-machine, a label-box provided with movable grips to engage the outer
 20 label in the box, a paste-roll mounted to tilt and to traverse across said label-box to apply paste to the outer label, an elevator, a plunger to force an article into said elevator and into contact with the pasted label in said label-box, means to operate said elevator to
 25 carry said article and the pasted label adhering thereto edgewise out of said label-box, movable wipers, a spring-pressed cushion, a ram to move said pasted article into contact
 30 with said cushion and between said wipers to press the ends of said label upon said article and an ejector to move said article out of the path of said cushion.

2. In a labeling-machine, a label-box, means
 35 to apply paste to the outer label in said label-box, a plunger to force an article into contact with said pasted label, an elevator to move said article and the pasted label adhering thereto edgewise out of said label-box and
 40 means relatively movable with respect to said article to press the ends of said label upon said article.

3. In a labeling-machine, a label-box, means to apply paste to the outer label in said box,
 45 a plunger to move an article into contact with said label, means to move said article and the label adhering thereto edgewise out of said label-box and means to press the ends of said label against said article.

50 4. In a labeling-machine, a label-box, means to apply paste to a label in said label-box, means to press an article into contact with said pasted label and means to move said article to withdraw said label edgewise out of
 55 said label-box.

5. In a labeling-machine, a label-box, paste apparatus and means to move an article into engagement with said label-box and to withdraw said article and the label adhering to said
 60 article edgewise from said label-box.

6. In a labeling-machine, a label-box, a paste apparatus, means to press an article into contact with a pasted label in said label-box, means to withdraw said label and article from
 65 said label-box, wipers, a spring-pressed cushion

and a ram to press the ends of said label against said article.

7. In a labeling-machine, a label-box, a paste apparatus, means to move an article perpendicularly into contact with a pasted label in
 70 said label-box, and means to press the ends of said label upon said article.

8. In a labeling-machine, a label-box, movable grips cooperating with said label-box, a paste apparatus comprising a feed-roll, a paste-
 75 roll, means to tilt said paste-roll and to traverse the same in contact with the labels in said label-box to apply paste thereto, and a movable elevator operating adjacent said label-box to move an article and the label adhering
 80 thereto away from said label-box.

9. In a labeling-machine, a label-box, a continuously-operating feed-roll mounted in a paste-reservoir, a tilting-shaft, traverse-rods
 85 secured to said tilting-shaft, a paste-slide mounted to reciprocate upon said traverse-rods, a paste-roll mounted to rotate on said paste-slide and means to tilt said paste-roll out of contact with said feed-roll and to traverse
 90 said paste-roll adjacent said label-box to apply paste to the labels therein.

10. In a labeling-machine, a label-box and paste apparatus comprising a paste-roll, means to tilt said paste-roll and to traverse the same
 95 adjacent said label-box to apply paste to labels therein.

11. In a labeling-machine, a label-box, a movable elevator operating adjacent said label-box to remove an article from said label-box
 100 and paste apparatus operating to apply paste to labels in said label-box while said elevator is away from said label-box.

12. In a labeling-machine, a cushion, a spring to operate said cushion, a detent to prevent the return of said cushion, wipers to en-
 105 gage an article, an ejector mounted adjacent said cushion, a ram, means to support an article having a label adhering thereto and means to operate said ram to force said article into engagement with said cushion and to
 110 move it together with said cushion between said wipers to press the ends of said label upon said article, means to withdraw said ram and means to operate said ejector to move said article out of the path of said cushion, said
 115 means disengaging said detent to allow the return of said cushion after said article has been removed from the path of said cushion.

13. In a labeling-machine, a spring-pressed cushion having a detent to prevent the return
 120 of said cushion, a reciprocating ram, an ejector mounted adjacent said cushion, said ram operating to force a labeled article in contact with said cushion to press the label upon said article, said ram moving said article into the
 125 path of said ejector, means to operate said ejector to move said article out of the path of said cushion and thereupon to disengage said detent to allow the return of said cushion.

14. In a labeling-machine, a spring-pressed
 130

cushion to support an article, a detent to prevent the return of said cushion, means to move an article out of the path of said cushion and to disengage said detent to allow the return of said cushion after said article has been removed from the path of said cushion.

15. In a labeling-machine, a label-box, means to apply paste to labels in said label-box, a stop adjacent said label-box to aline articles with respect thereto and means to move an article perpendicularly into contact with a pasted label in said label-box.

16. In a labeling-machine, a label-box, means to apply paste to labels in said label-box, an elevator provided with laterally-adjustable guides, means to press an article between said guides into contact with a pasted label in said label-box and means to operate said elevator to move said article and the label adhering thereto away from said label-box.

17. In a labeling-machine, a label-box, to

support a stack of vertically-disposed labels, means to apply paste to said labels, a carrier having guides, means to press an article between said guides into contact with said labels and means to operate said elevator to remove said article and the label adhering thereto away from said label-box.

18. In a labeling-machine, a label-box to support a stack of vertically-disposed labels, means to apply paste to said labels, a vertically-movable elevator having a guide to aline articles with respect to said label-box, means to press an article into contact with said labels and means to operate said elevator to move said article and the label adhering thereto vertically away from said label-box.

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