No. 756,580. PATENTED APR. 5, 1904.

P. F. CASSIDY & N. F. DOHERTY.

LABEL AFFIXING MACHINE.

APPLICATION FILED APR. 9, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1.

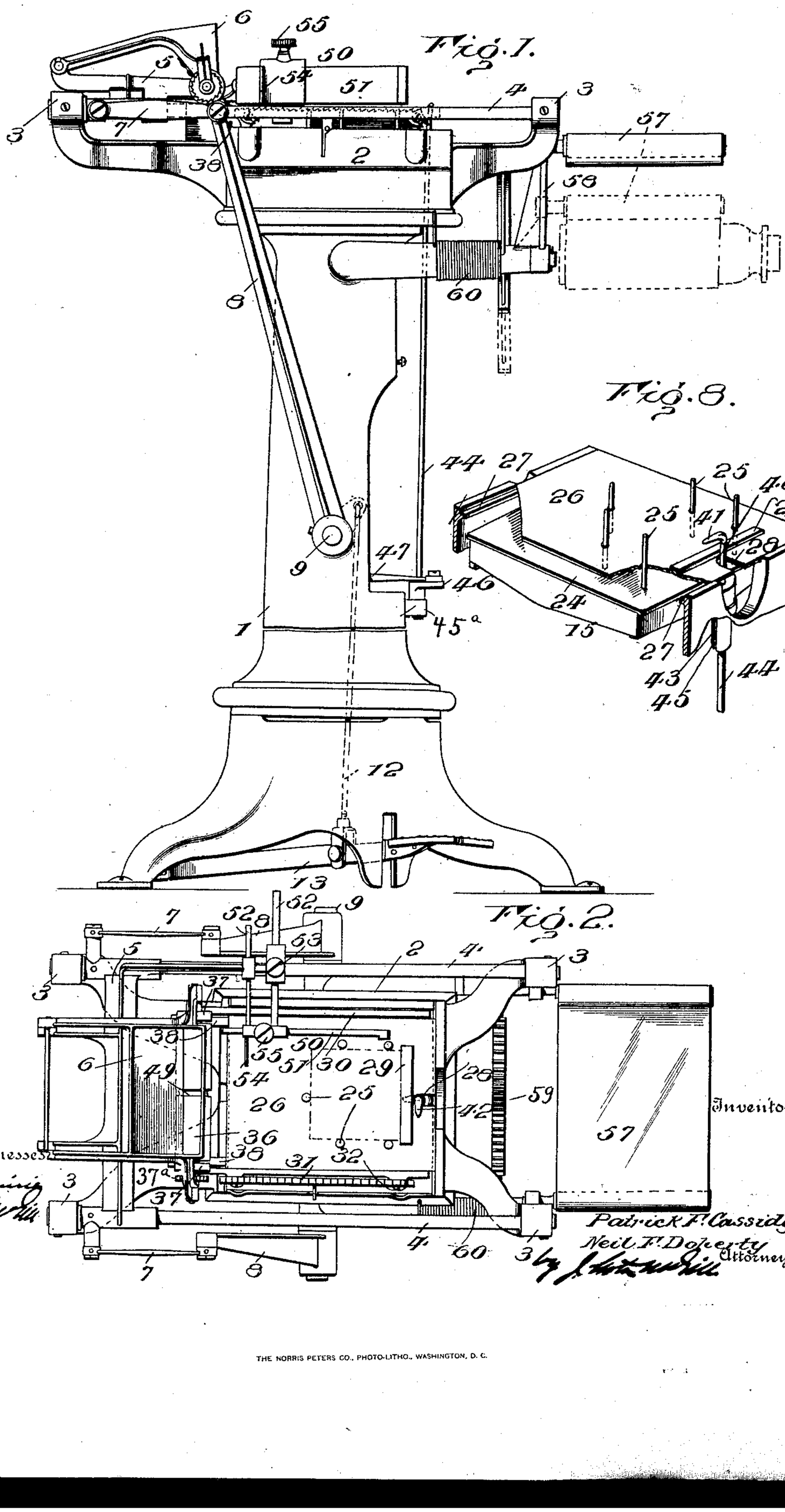

Fig. 3.

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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 3.

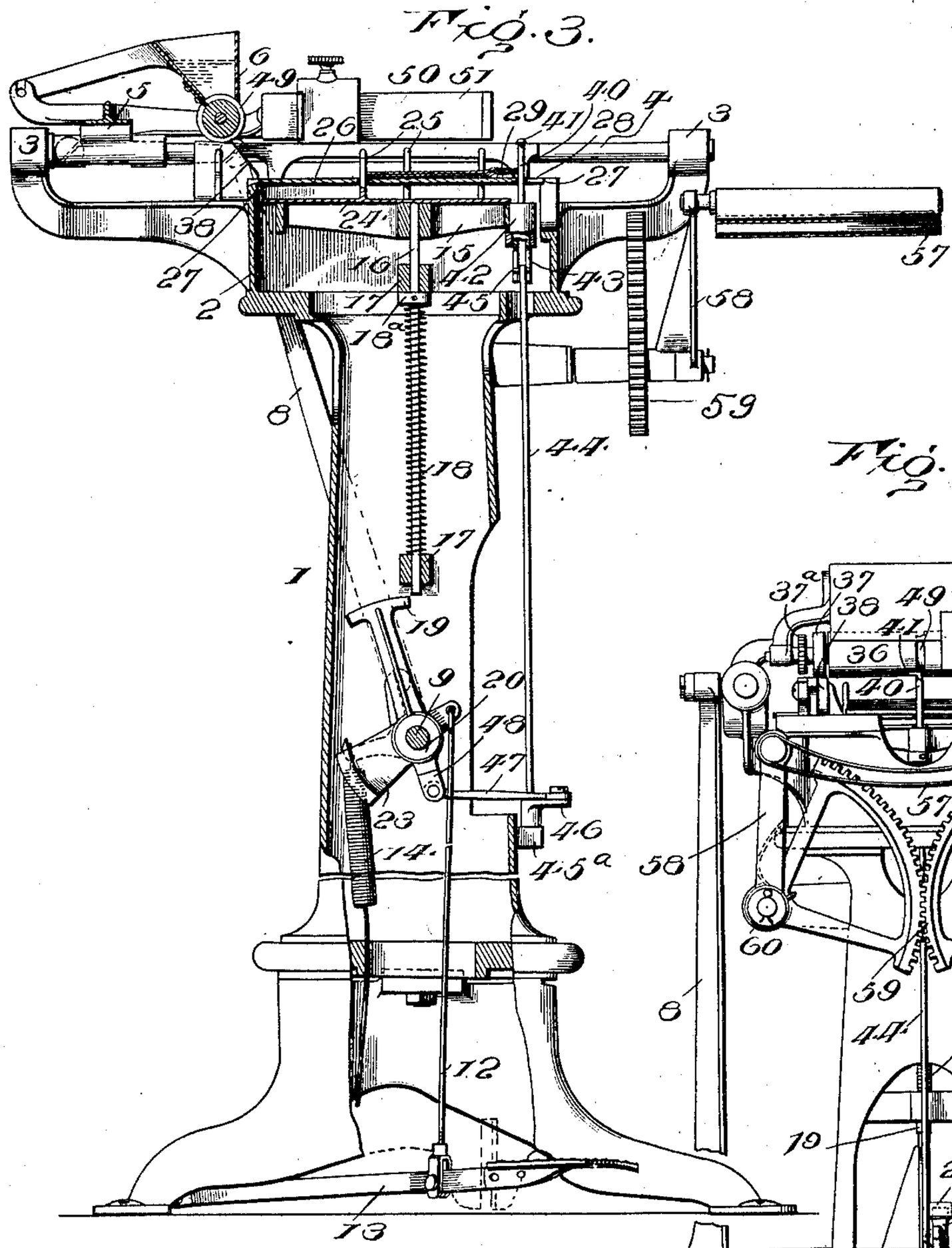
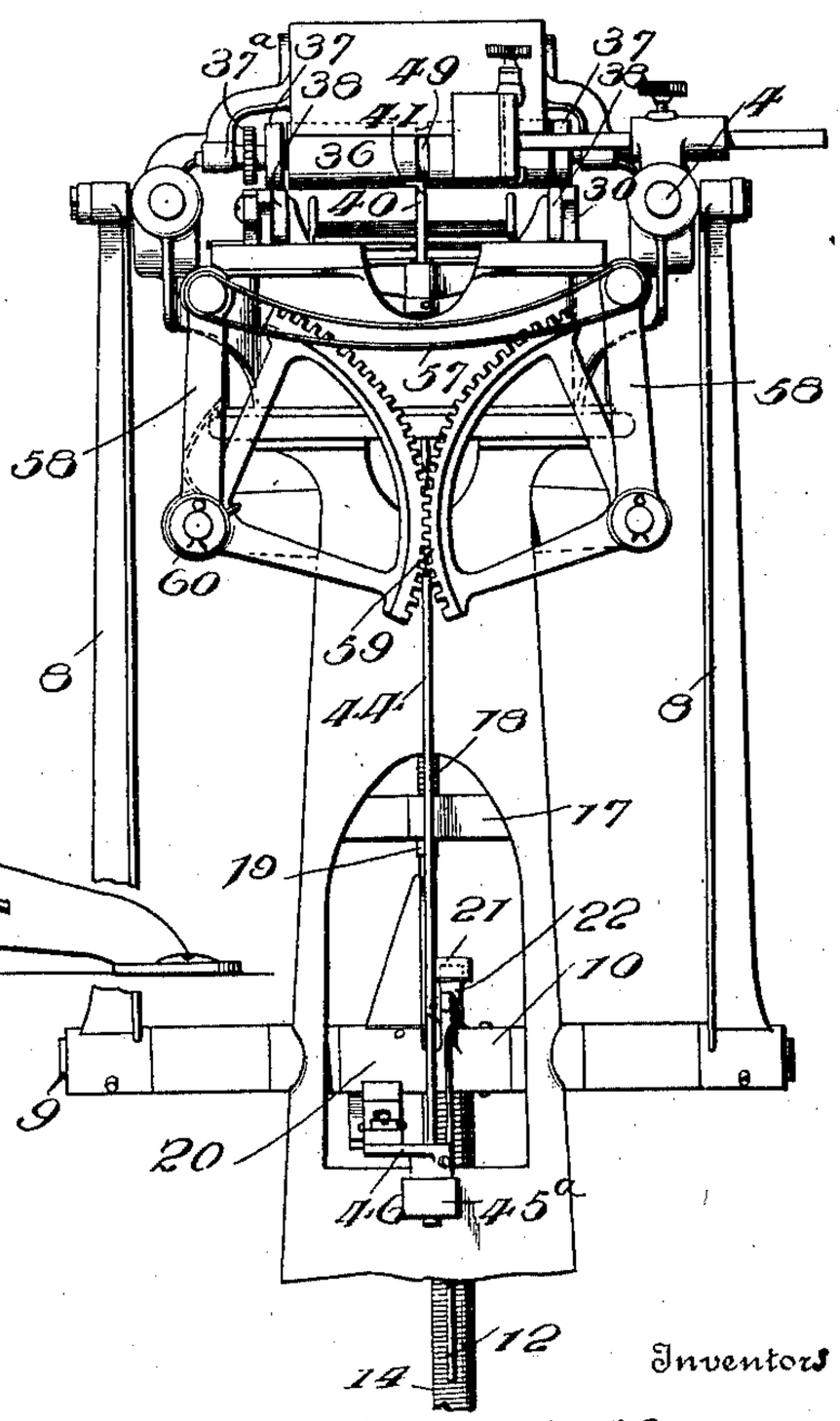


Fig. 4.



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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 5.

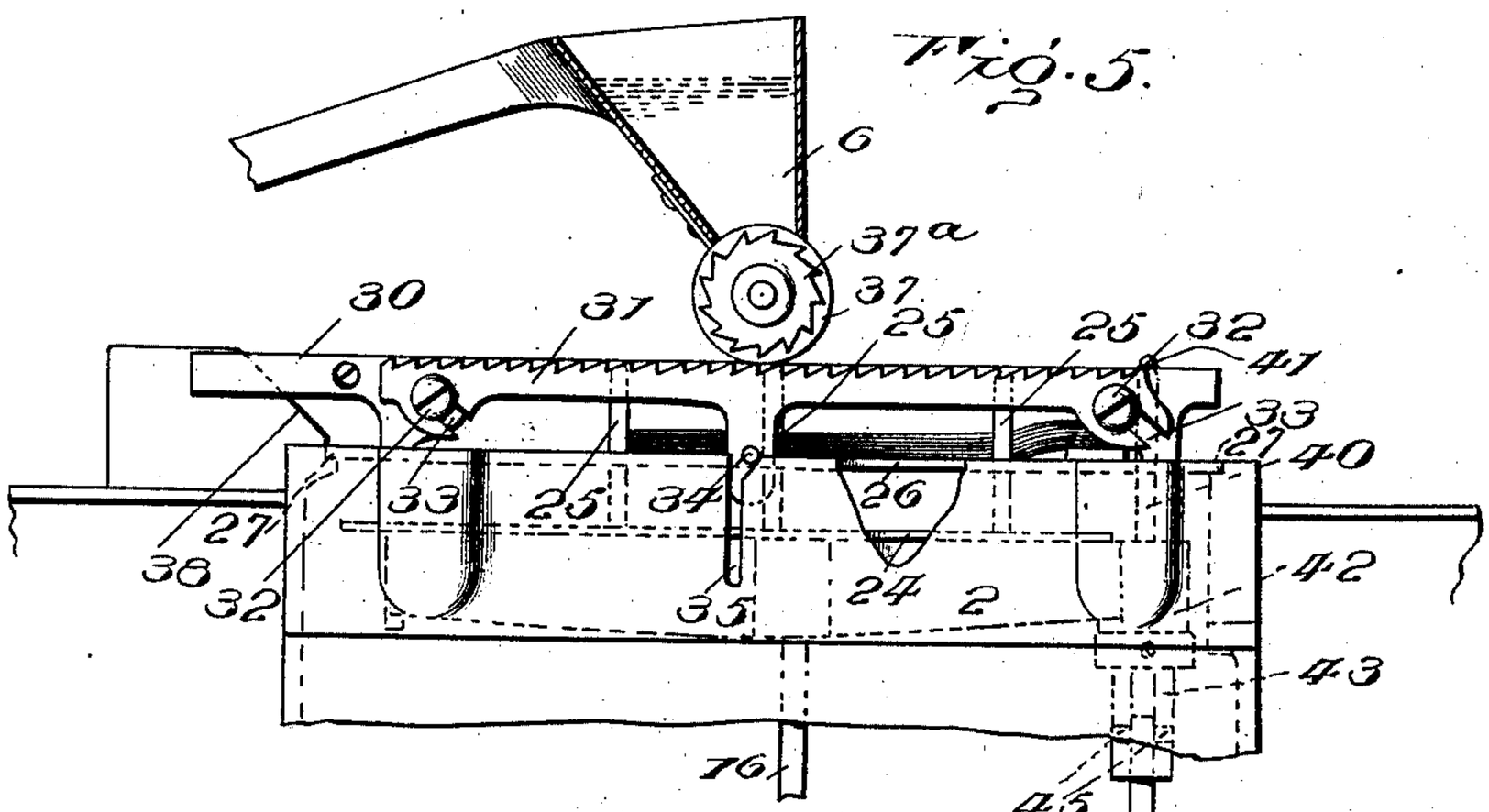


Fig. 6.

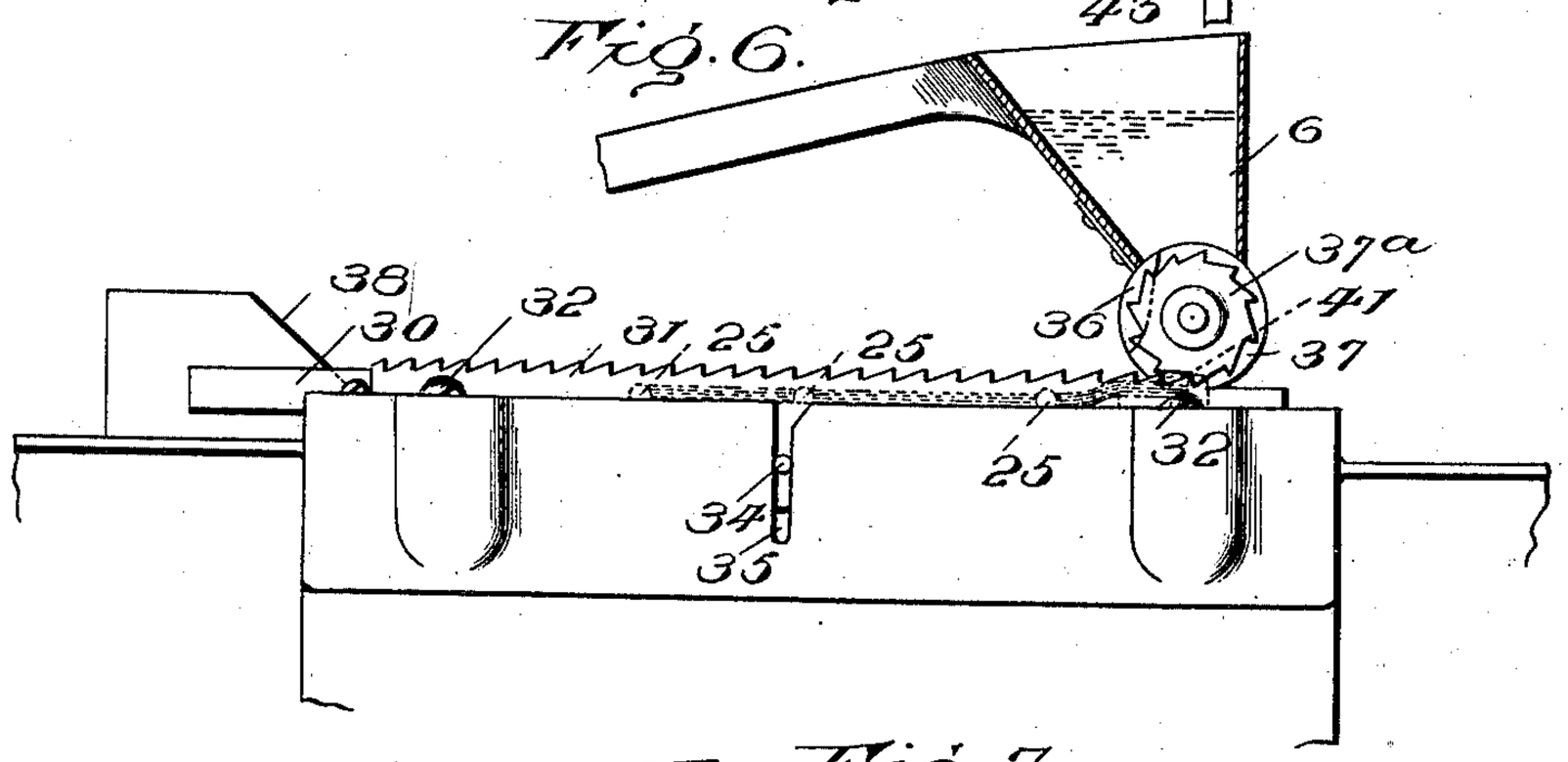
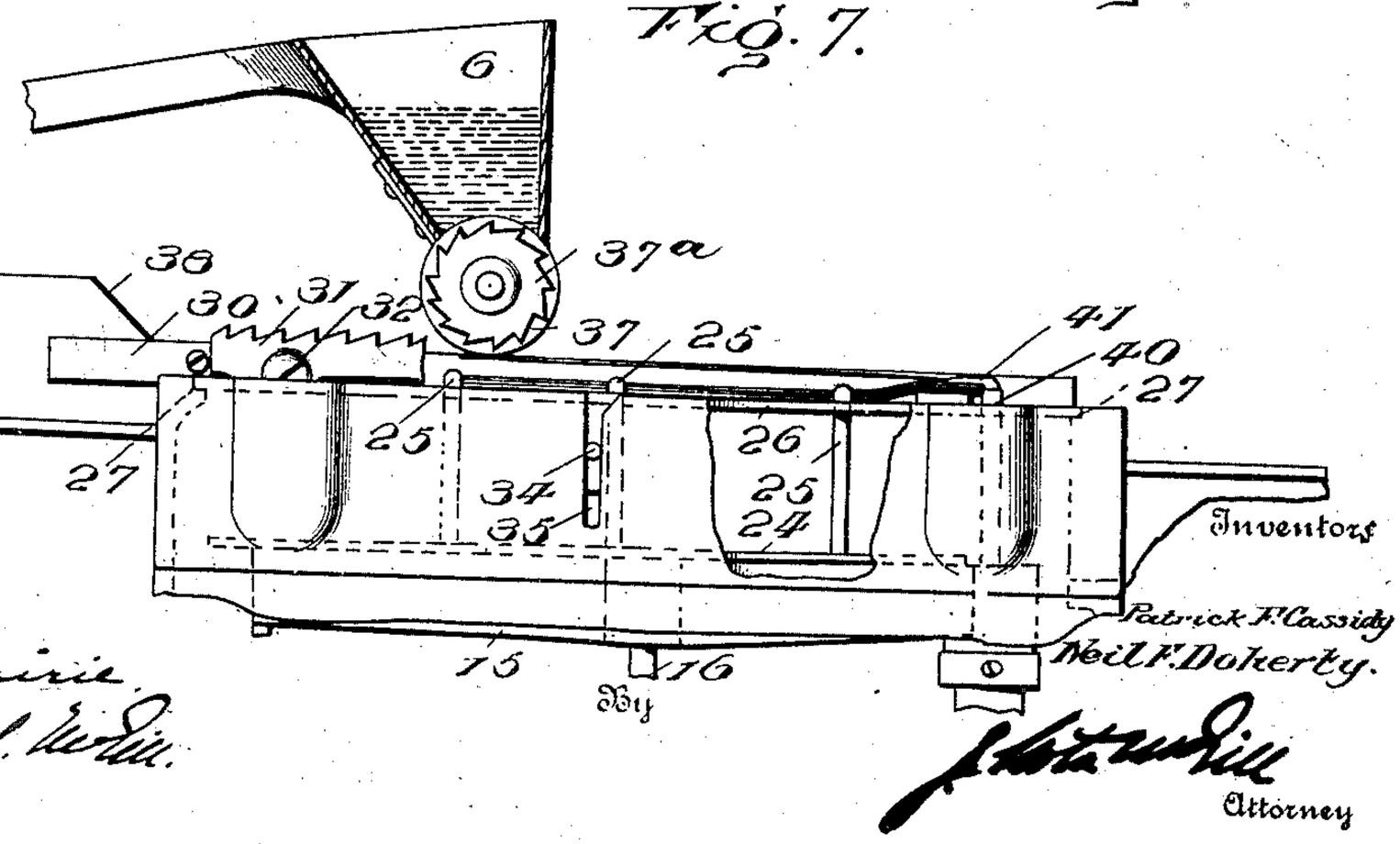


Fig. 7.



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No. 756,580. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

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LABEL-AFFIXING MACHINE.

SPECIFICATION forming part of Letters Patent No. 756,580, dated April 5, 1904.

Application filed April 9, 1903. Serial No. 151,830. (No model.)

To all whom it may concern:

Be it known that we, PATRICK F. CASSIDY and NEIL F. DOHERTY, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Label-Affixing Machines; and we 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.

The object of this invention is to provide improved means for insuring the engagement of the paste-applying roller with the topmost label of a pile or stack thereof and the uniform application of paste to such label throughout its length and width.

A further object is to provide simple and efficient means for holding the pile of labels during the application of the paste; and a further object is to generally improve and simplify the construction of label-affixing machines and promote efficiency in the operation thereof.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a side view, partly in section and with portions broken away. Fig. 4 is a front end view. Figs. 5, 6, and 7 are enlarged views showing different positions of the paste-receptacle, label-support, and coöperative mechanisms. Fig. 8 is a view in perspective of the label-bed with parts broken away.

Referring to the drawings, 1 designates the stand or pedestal, and 2 an approximately rectangular open-top housing having bearings 3 for two parallel guide-rods 4, whereon travels a carriage 5 for moving a paste-receptacle 6 back and forth above the housing. This carriage is connected by two pitmen 7 to two arms 8, keyed to a shaft 9, extended transversely through and supported by the stand. On this shaft within the stand is a collar 10, which is connected by a link 12 to a foot-treadle 13, by which the shaft is partially rotated as against the tension of a spring 14. The latter tends to normally hold the paste-receptacle and its carriage at the rear ends of the guide-rods—that is, to the rear of the housing.

15 designates the supporting-frame for the label-hopper. It is located within the housing, and from its center depends a rod 16, which is passed through two cross-pieces 17 and encircled by a spring 18, which tends to normally hold the frame in its raised position, its upward movement being limited by a stop 18ª. When the frame is thus held raised, the lower end of rod 16 is directly above a dog 19, extending from a hub 20, loose on shaft 9, such dog having a side lug 21 normally held against a shoulder 22 of collar 10 under the action of a weight 23, carried by hub 20. Hence when shaft 9 is turned under pressure on the treadle the dog is thrown forward, clearing the lower end of rod 16, so as to permit the latter to move downward under pressure on frame 15 and overcome the tension of the retaining-spring 18.

24 is the hopper-pin plate. It rests directly upon the frame 15 and has a series of studs or pins 25 extending upwardly and designed to retain the pile of labels in proper position. Immediately above this plate 24 is a label-supporting bed-plate 26, which at its ends rests upon seats 27 formed by the housing. It is equipped with a series of holes to accommodate the pins 25. When the frame 15 is lowered, the pin-carrying plate 24 will move with it, thereby drawing downwardly the pins 25, plate 26 remaining stationary, as do also the labels piled thereon. The pins, however, are not withdrawn entirely through plate 26, as shown in Figs. 6 and 7. In the front end of this plate is a slot 28, and immediately adjacent thereto extending the width of the hopper-space is a shoulder or support 29, upon which the front end of the pile of labels is designed to rest, so that at such end the pile will be slightly higher than at its inner or rear end. In order to accommodate labels of different sizes, the pin-plate and the label-supporting

plate are readily removable, so that plates having differently-distanced hopper-pins and pin-holes may be substituted.

30 designates two parallel tracks carried by the frame 15 at the sides thereof, and to one of these tracks a rack-bar 31 is loosely held by screws 32, passed through diagonally-arranged slots 33. A pin 34, projecting laterally from the rack-bar, extends into a slot 35 in the side of the housing, such slot being beveled at its upper end, so that when the frame 15 is lowered the rack-bar, which is normally about flush with or slightly below the upper surfaces of the tracks, although moving with the frame will be moved diagonally upward, throwing the rack-teeth into a plane slightly above the tracks.

The paste-receptacle 6 is constructed after the form embraced by Letters Patent of the United States No. 678,832, issued to Patrick F. Cassidy July 16, 1901. It is loosely and removably connected to the carriage 5, and the axle of the paste-roller 36 carries two wheels 37, which are designed to travel on the tracks 30 as the paste-receptacle is moved back and forth over the label-hopper. This axle also carries a ratchet-wheel 37[a], which is designed to mesh with the rack-bar 31 in the return or rearward travel of the paste-receptacle, causing the roller to revolve in the direction of its travel. As the paste-receptacle about reaches the limit of its rearward travel the wheels 37 engage inclined tracks 38 of the housing, whereupon the receptacle and its roller ride upwardly, thereby relieving the frame 15 of the weight of the receptacle and allowing it to rise under the recoil of spring 18. When the paste-receptacle is thrown forward upon reaching the front of the label-hopper, the dog 19 has been moved from beneath the rod 16, whereupon the weight of the receptacle will effect the lowering of the label-bed frame. Thus the hopper gage-pins are lowered out of the way, and they will so remain during a rearward travel of the paste-receptacle and until the weight thereof is removed from the frame, whereupon the dog 19 will as soon as frame 15 has been raised assume its normal position directly beneath rod 16. During this rearward travel of the paste-receptacle the paste-roller is revolved in the direction of such travel.

40 is a label-holder for preventing displacement of the pile or the adherence of a label to the paste-roller during the application of the paste. It embraces a rod the upper end of which has a right-angular hook 41. This rod is loosely mounted so as to have an axial movement in a bearing 42 of frame 15, and it has a sleeve 43, telescoping a rod 44, carrying a pin 45, extending into a slot in the sleeve, such connection permitting the hooked rod to move up and down with frame 15 and also provide for its axial turning by the partial rotation of rod 44. The latter at its lower end has its bearing in a block 45[a], extending from the stand 1, and an arm 46, secured on this rod, is connected by a link 47 to a lug 48 of hub 20. Normally the hooked end 41 occupies a position parallel to the front edge of the pile of labels, the rod extending through the slot 28 of the label-supporting plate; but during the forward travel of the paste-receptacle the rod is given a quarter-turn, throwing its hooked end across the front end of the label pile, and as the frame 15 is lowered the hooked rod moves with it, causing its upper end to bear down tight upon the labels resting upon the support 29. The pile is thus tightly held during the application of the paste. The paste-roller is formed with a central peripheral groove 49 to accommodate the hooked end of the pile-holder. The partial rotation of the hooked rod is effected by shoulder 22 of collar 10 bearing against the lug 21 of dog 19, causing such dog and its hub to partially rotate and draw inwardly on link 47.

As the paste-transferring roller is moved rearwardly with the paste-receptacle it applies paste to the entire surface of the topmost label, even to the corners thereof, save for the narrow central strip or space represented by the width of the peripheral groove 49. The roller being revolved in the direction of travel serves to raise the topmost label away from the pile—that is to say, the label will adhere to the roll, and in this way the paste is evenly applied thereto throughout its length and width. This is due to the fact that the outer or front end of the pile is elevated by the support 29, making such end higher than any other portion of the pile. In consequence all danger of applying paste to any of the labels other than that at the top of the pile is avoided. The label-holding rod remains in engagement with the pile while the label-supporting frame 15 is lowered—that is to say, until the weight of the receptacle is removed from the frame.

50 is a gage for limiting the extent to which bottles are to be extended inwardly over the label-bed, thereby insuring the proper positioning of the labels on the bottles. It comprises a plate 51, paralleling one side of the frame 15 and adjustable transversely thereto by two rods 52, extended through bearings in the carriage 5, one of such bearings having a holding-screw 53. On this plate 51 is an adjustable stop-plate 54, which may be moved longitudinally of the label-bed and held at the desired point by a screw 55. The bottle-gage travels with the carriage and is in position to guide the operator in placing a bottle on the label-bed by the time the paste-receptacle passes from the latter.

As soon as a label is taken up by a bottle placed in contact with its pasted surface the bottle, with the label facing downwardly, is placed within an endless belt 57, hung on crank-shafts 58, having their bearings in arms

extending from stand 1. These crank-shafts have intermeshing gear-segments 59, so as to insure their movement in unison, such shafts being returned to their normal positions upon removal of the bottle by the recoil of a spring 60.

Although the operation of the machine is believed to be sufficiently manifest from what has been said, yet it may be briefly set forth as follows: A pin-carrying plate and a label bed-plate suitable to the labels to be applied being first positioned, the operator presses downwardly on the foot-treadle, causing shaft 9 to partially rotate and throw the carriage and paste-receptacle forward. By the time the limit of such movement is reached the dog 19 has been moved from beneath or out of line with rod 16 by the engagement of shoulder 22 with lug 21. The weight of the paste-receptacle causes the frame 15 to lower and carry with it the hopper-pins, and at the same time the label-holder is projected across the end of the label pile and caused to firmly hold the latter in place. As soon as pressure is removed from the treadle the tension of spring 14, acting on shaft 9 and the paste-receptacle carriage, will cause the latter to move rearward. The rack-bar, having been extended upwardly above the tracks in the lowering of frame 15, is engaged by ratchet-wheel 37[a], thereby causing the paste-roller to rotate in the direction of its travel and in so doing apply paste to the topmost label. As soon as the wheels 37 engage the inclined tracks 38 they ride upwardly thereon, elevating the receptacle and removing its weight from tracks 30, allowing the hopper-pins to rise with frame 15. The operator then places a bottle against the stop-plate 54 of the bottle-gage, causing the pasted label to adhere thereto. Thereupon the bottle is placed within the endless belt, and the latter being drawn tightly around the bottle under the weight thereof on the belt the label is made to firmly adhere thereto.

We claim as our invention—

1. In a label-affixing machine, a label bed or hopper, paste-transferring means designed to engage the labels at one end of the pile thereof, means for actuating said transferring means to apply paste to the topmost label throughout the length thereof, hopper gage-pins movable downwardly through the label-bed as the paste-transferring means travels in engagement with the labels, and means for raising said hopper gage-pins to their normal position at the completion of the application of the paste to a label, as set forth.

2. In a label-affixing machine, the combination with the label-bed, of the hopper-pins, the paste-transferrer movable back and forth over the label-bed, the return movement of such transferrer being on a plane lower than its forward movement, means for lowering the hopper-pins simultaneously with the lowering of the transferrer, and means for applying the paste to a label in the return movement of the transferrer while the hopper-pins are lowered, as set forth.

3. In a label-affixing machine, the combination with the label-bed, of the hopper-pins, the paste-transferrer movable back and forth over the label-bed, the return movement of such transferrer being on a plane lower than its forward movement, means for lowering the hopper-pins simultaneously with the lowering of the transferrer, means for engaging and holding the pile of labels when the hopper-pins are so lowered, and means for applying paste to the lables in the return movement of the transferrer, as set forth.

4. The combination with the spring-held frame, and means for normally preventing the lowering thereof, of a paste-transferrer movable back and forth over such frame, means for removing said former means by the time the transferrer is moved in one direction, the weight of the transferrer serving to lower said frame when released of said holding means, and hopper-pins carried by said frame, paste being applied to the label by the transferrer when the hopper-pins are so lowered, as set forth.

5. The combination with the spring-held frame, and means for normally preventing the lowering thereof, of a paste-transferrer movable back and forth over such frame, means for removing said former means by the time the transferrer is moved in one direction, the weight of the transferrer serving to lower said frame when released of said holding means, hopper-pins carried by said frame, paste being applied to the label by the transferrer when the hopper-pins are so lowered, and means for automatically removing the transferrer from such frame upon the completion of the return movement thereof, as set forth.

6. The combination with the depressible frame, and the hopper-pins movable therewith, of the label bed-plate having openings for such pins, seats for said bed-plate independent of the frame, means for applying paste to the labels, and means for allowing said frame and pins to move downwardly during the application of the paste, as set forth.

7. The combination with the depressible frame, and the hopper-pins movable therewith, of the label bed-plate having openings for such pins, seats for said bed-plate independent of the frame, the paste-receptacle movable over said frame in opposite directions, means for holding the frame during one of such movements of the paste-receptacle, and means for releasing such holding means, the weight of the receptacle serving to effect the lowering of the frame and hopper-pins, as set forth.

8. The combination with the depressible frame, of the plate mounted thereon having a series of upwardly-projecting pins, a label

bed-plate mounted independently of the frame having a series of openings to accommodate said pins, the paste-transferrer movable back and forth over such frame and bed-plate, means for holding said frame elevated when the paste-receptacle is moved in one direction, the weight of such receptacle effecting the lowering of such frame and pin-plate at the completion of such movement, paste being applied to the labels in the return movement of the receptacle, while the frame and pins are lowered, and means for returning the frame and pin-plate to their normal positions at the completion of the return movement of the paste-transferrer, as set forth.

9. The combination with the housing, of the depressible frame mounted therein carrying track-rails, a plate on said frame having hopper-pins, a label bed-plate mounted on the housing independently of the frame, the paste-receptacle having wheels movable on said rails, means for moving such receptacle forward and backward over such frame, means for holding said frame elevated during such forward movement, the weight of the receptacle at the completion of such movement serving to depress the frame and hopper-pins, a paste-transferring roller carried by said receptacle, means for actuating the same in the return movement of the receptacle, and inclined tracks on the housing with which said wheels are designed to engage at the completion of the return movement of the receptacle, substantially as set forth.

10. The combination with the label bed-plate, the hopper gage-pins, and the movable frame supporting the latter, of the rack-bar carried by such frame, the paste-receptacle having a distributing-roller and a ratchet-wheel, means for moving said receptacle and roller forward and rearward over said hopper bed-plate, the return movement of such receptacle being on a plane lower than its forward movement, means for lowering the hopper gage-pins upon the completion of the forward movement of the paste-receptacle and means for simultaneously raising said rack-bar relatively to the frame so as to be engaged by said ratchet-wheel in the return movement of the receptacle, as set forth.

11. The combination with the housing having a slot in one wall, and the depressible frame carrying the hopper gage-pins, of the label bed-plate through which said pins are projected, the rack-bar having diagonal slots, screws passed through said slots for securing the rack-bar to the frame, a pin projecting laterally from said rack-bar into said slot of the housing, the paste-transferrer roller therefor having a ratchet-wheel for engaging said rack-bar when the transferrer is moved in one direction, and means for moving such transferrer forward and backward, said frame and hopper gage-pins being lowered and the rack-bar being moved therewith but raised relatively thereto to effect such engagement of the ratchet-wheel in the return movement of the transferrer, as set forth.

12. The combination with the label-bed having a raised support for a portion of the pile of labels, of the paste-transferrer movable over such bed above the labels, and designed to be lowered into engagement with the labels at the raised portion thereof, upon the completion of its movement in one direction, and means for effecting the application of the paste to the topmost label during the return movement of the transferrer, as set forth.

13. The combination with the label-bed having a raised support at one end of a pile of labels, and parallel track-rails at the sides of such bed, of the paste-transferrer movable over such rails to the raised end of the label pile, such rails and the paste-transferrer being lowered when the latter is at such end, and means for actuating the paste-transferrer in its return movement over the labels, as set forth.

14. The combination with the label-bed having a raised support for the front end of a pile of labels, and parallel track-rails at the sides of such label-bed, of the paste-receptacle having a paste-transferring roller, means for moving such receptacle forward and back over such rails, means for holding the rails and receptacle raised during the forward movement of the latter, such receptacle and rails being lowered at the completion of such latter movement, said roller thereupon engaging the top of the pile of labels, means for rotating such roller in the return movement of the receptacle, and means for elevating the receptacle at the completion of such return movement, as set forth.

15. The combination with the label-bed having a depressible frame and hopper gage-pins carried by such frame, of a label-holding device, comprising a rod, having a hooked end, mounted in said frame, and a paste-transferrer, said frame, gage-pins and holding device being lowered to allow the transferrer and holding device to engage the labels, as set forth.

16. The combination with the depressible frame, and the independently-mounted label bed-plate, of the hooked rod carried by said frame and extended above said bed-plate, a second rod having a telescopic connection with said hooked rod, and means for partially rotating said second rod when said frame is depressed, as set forth.

17. The combination with the stand and the housing, of the spring-controlled shaft mounted in the former, a carriage movable over the housing, means connecting such carriage to said shaft, a foot-treadle also connected to said shaft, a shoulder on the latter, a dog loose on said shaft having a lug designed to be engaged by said shoulder, means for normally holding such lug in such engagement, the frame having a depending rod beneath which such dog is movable, a plate carried by such frame hav-

ing hopper gage-pins, a label bed-plate mounted on the housing having openings to accommodate such pins, track-rails carried by such frame, a paste-receptacle connected to said carriage and having a paste-transferring roller, wheels carried by the latter movable on said track-rails, said dog preventing the lowering of said frame in the forward movement of the receptacle, such frame being so lowered by the weight of the latter at the completion of such forward movement, means for rotating said roller during the return movement of the paste-receptacle, inclined tracks on the housing with which said wheels are designed to engage at the completion of the return movement of the receptacle, and a spring for returning the frame to its normal position, as set forth.

In testimony whereof we have signed this specification in the presence of the subscribing witnesses.

PATRICK F. CASSIDY.
NEIL F. DOHERTY.

Witnesses to signature of Patrick F. Cassidy:

MICHAEL FLYNN,
TIM CURRY.

Witnesses to signature of Neil F. Doherty:

CHARLES J. MADDEN,
CORNELIUS C. BUCKLEY.