

(No Model.)

3 Sheets—Sheet 1.

J. C. McBEAN.
MACHINE FOR ATTACHING LABELS.

No. 413,787.

Patented Oct. 29, 1889.

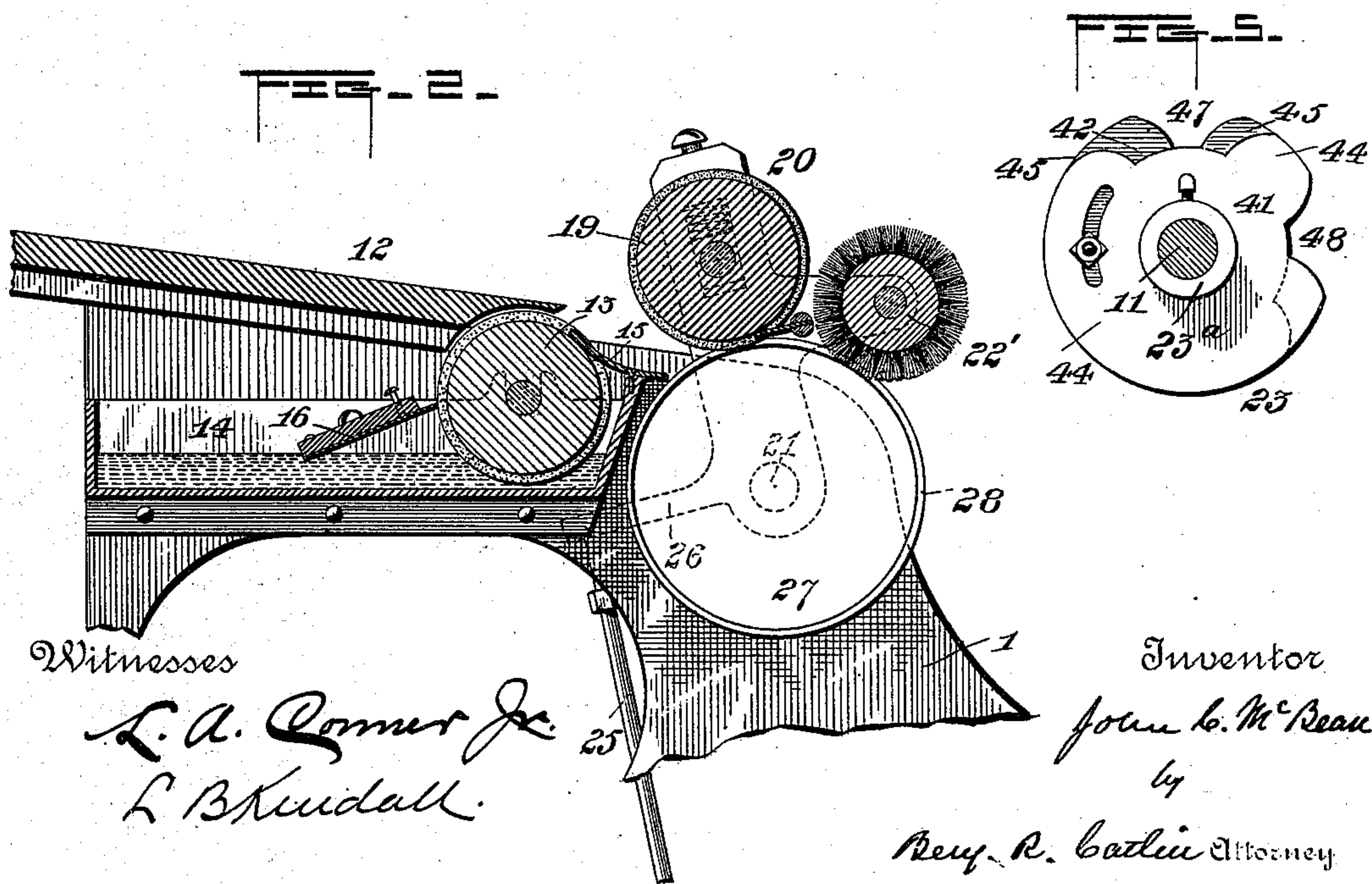
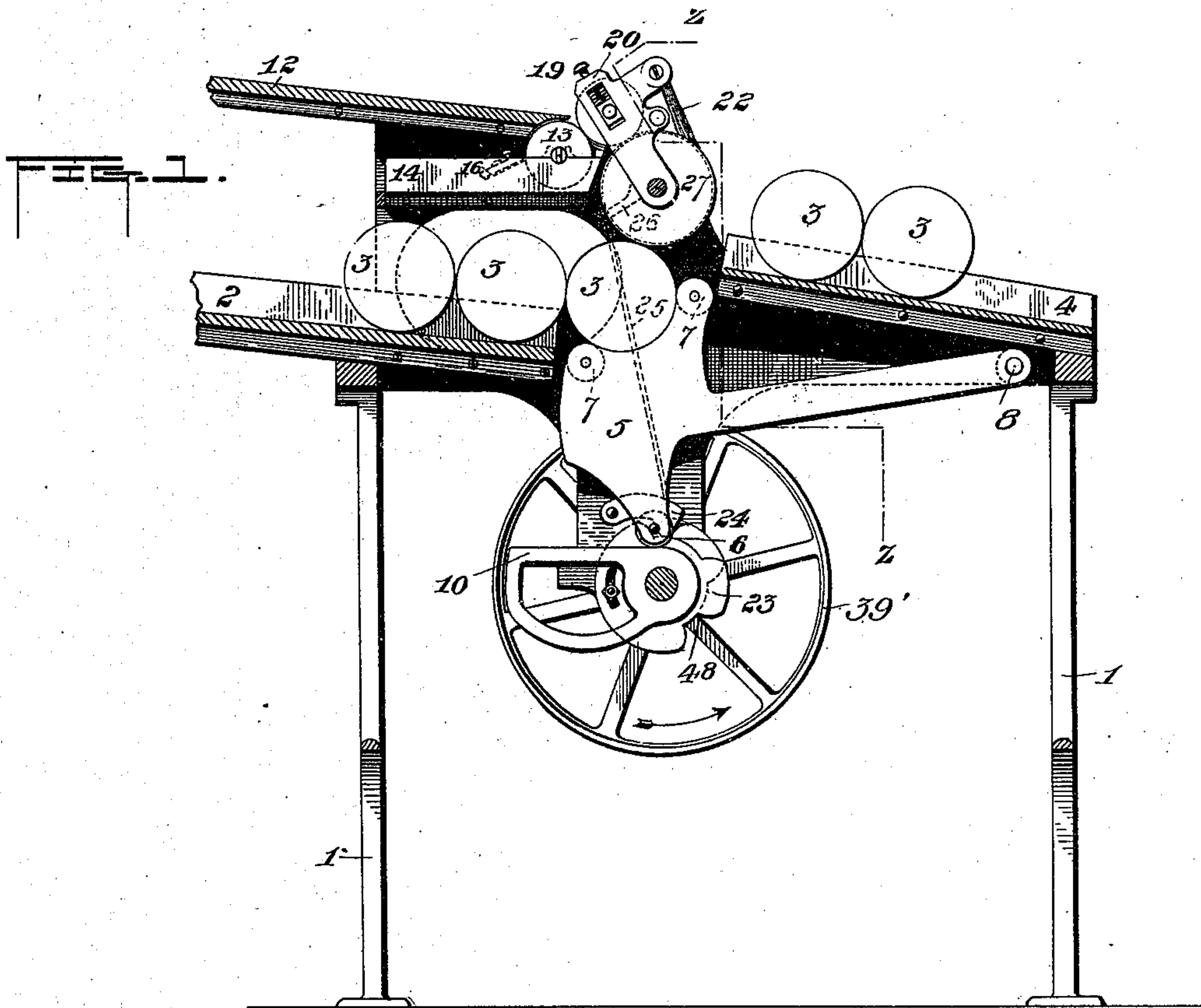
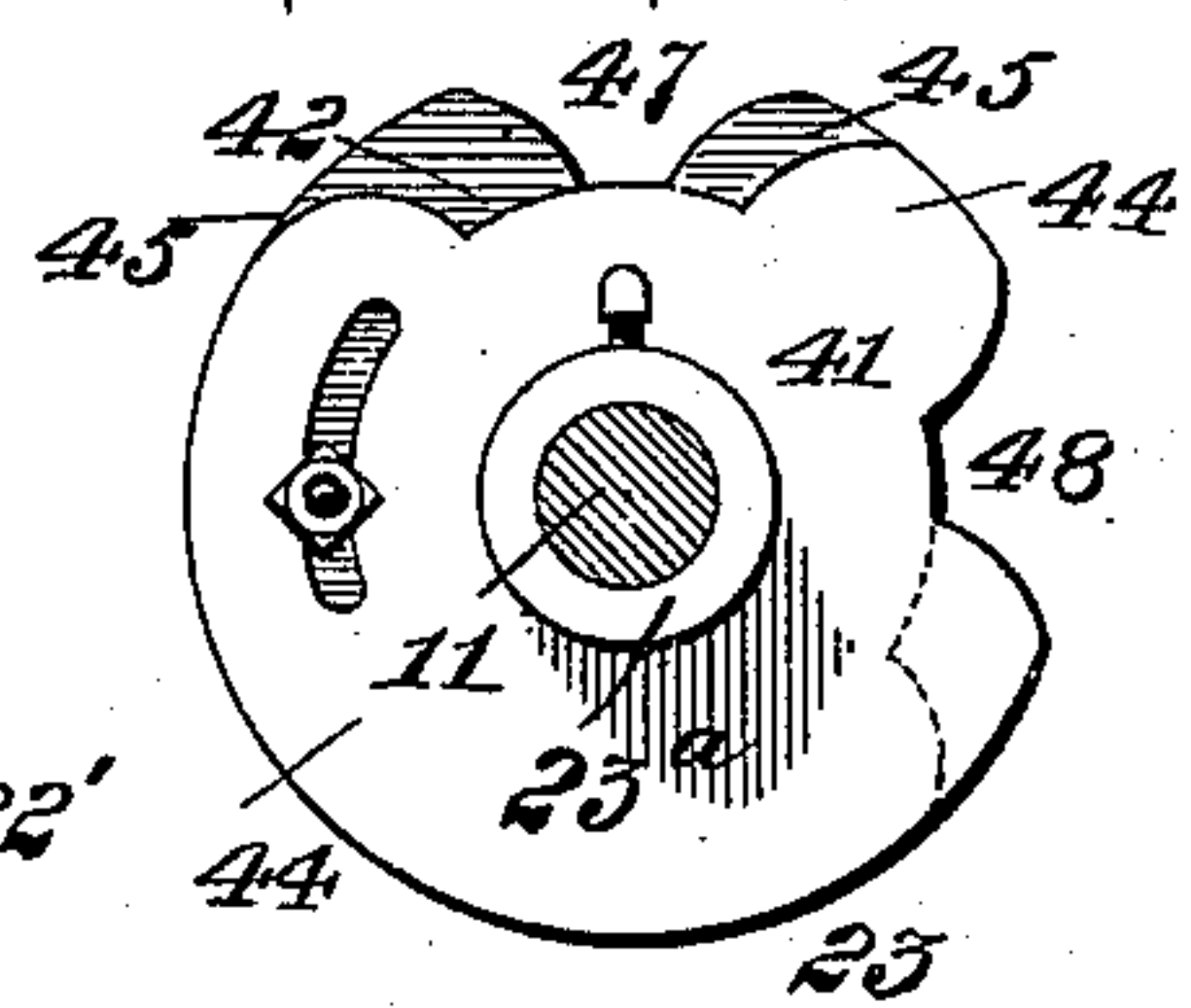


FIG. 3.



Witnesses

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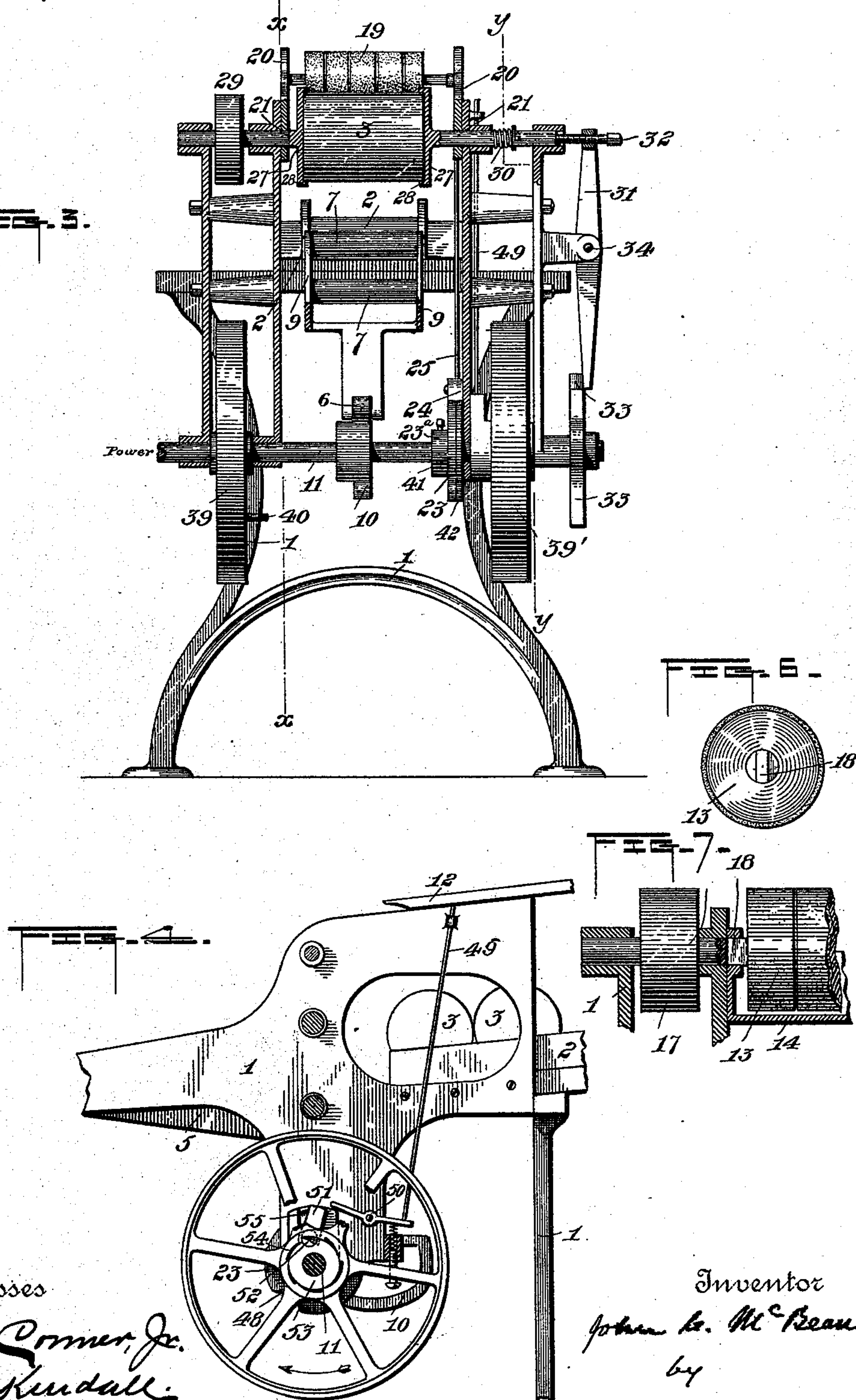
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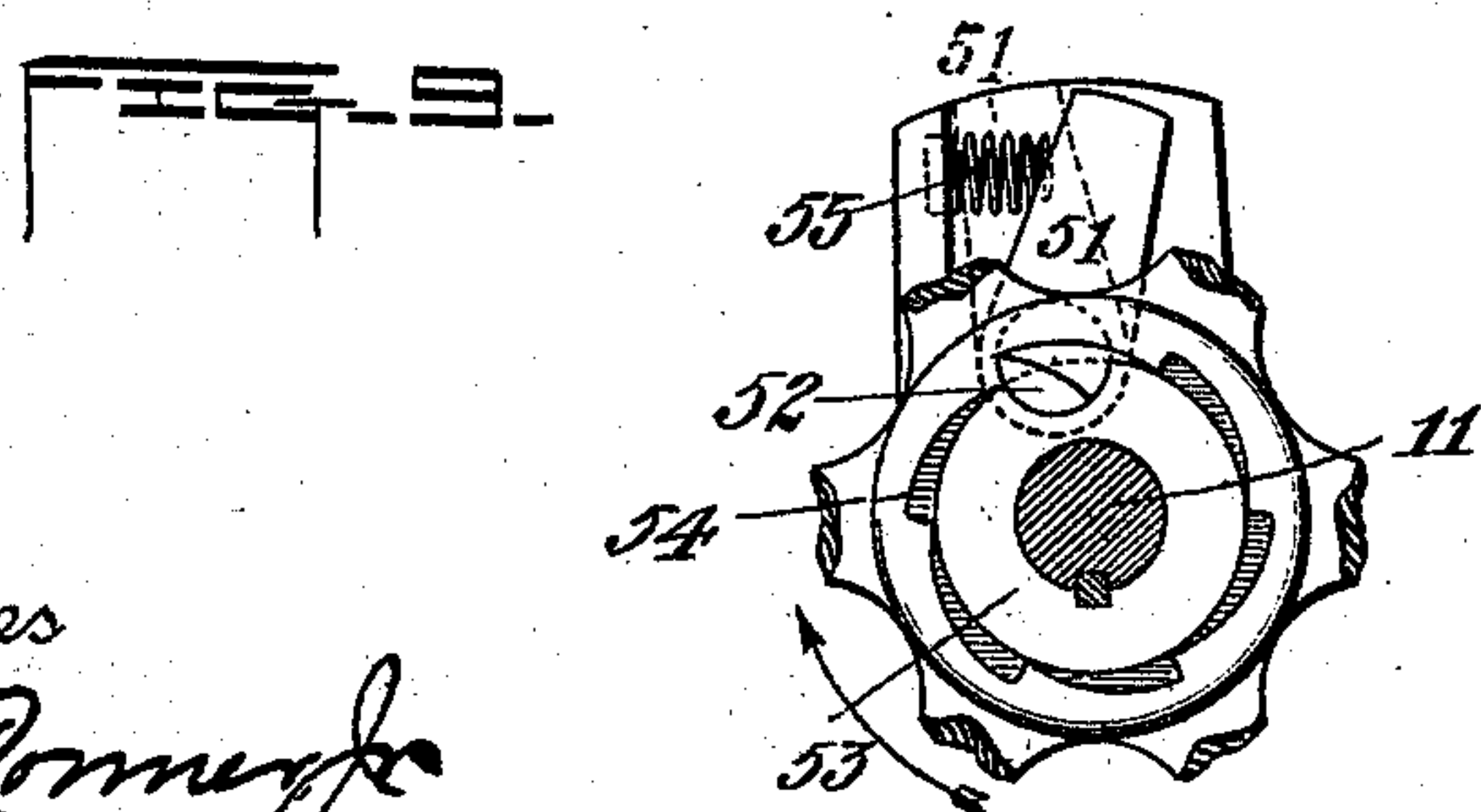
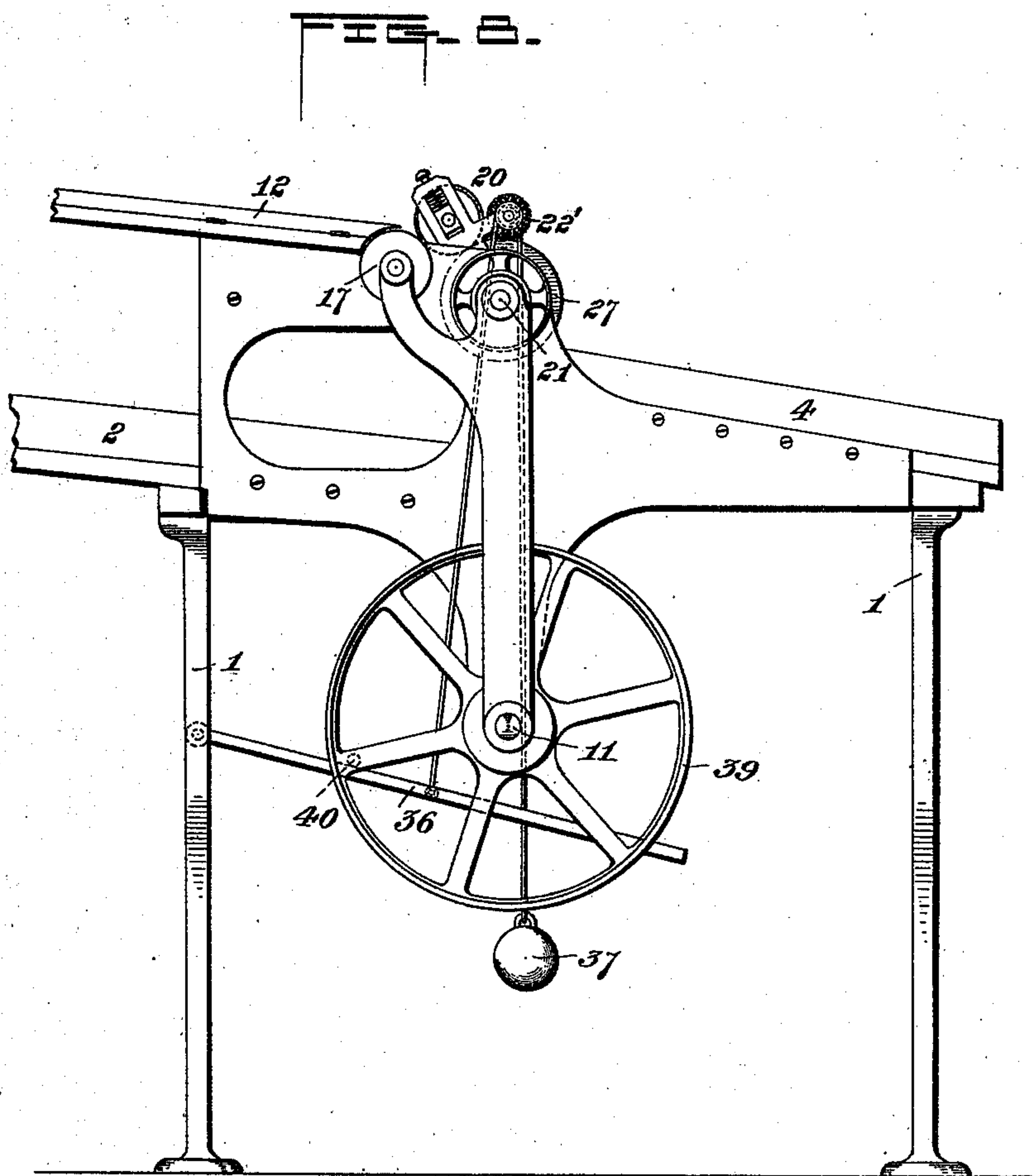
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UNITED STATES PATENT OFFICE.

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FOURTHS TO ALEXANDER ROSS, SAMUEL J. PARKER, AND BURTON
F. BLACKALL, ALL OF SAME PLACE.

MACHINE FOR ATTACHING LABELS.

SPECIFICATION forming part of Letters Patent No. 413,787, dated October 29, 1889.

Application filed August 22, 1888. Serial No. 283,483. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. McBEAN, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Machines for Attaching Labels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a simple and efficient machine for pasting labels upon cans, that can be operated with convenience, speed, and certainty; and the invention consists in parts and combinations hereinafter described and particularly pointed out.

In the drawings, Figure 1 represents a section on line $x x$, Fig. 3; Fig. 2, an enlarged section on same line, the can and a part of the belt-roller frame being omitted. Fig. 3 is a section on line $z z$ of Fig. 1. Fig. 4 is a section on line $y y$, Fig. 3; and Figs. 5, 6, 7, 8, and 9 are views of details.

The numeral 1 indicates the frame supporting the various shafts and other parts of the machine.

2 indicates an inclined table, down which the cans 3 are automatically rolled to a position on the elevating mechanism; and 4, a similar table on a higher plane, down which the cans automatically pass after the attachment thereto of a label.

The elevating mechanism consists of the frame or bracket 5, journaled or hinged at 8, and supporting between its side plates 9 the anti-friction rollers 6 and 7. The free end of frame 5, which receives a can on its rollers 7, is raised to carry the can up to the plane, where it can receive a label by the cam 10 fast on shaft 11, which revolves in the direction of the arrow and engages roller 6, the curved face of said cam having the effect to raise the frame in which roller 6 is supported, and the can which rests upon rollers 7, to the desired height.

12 indicates a table, from which the labels are fed to the paste-roller 13, supported to re-

volve in paste-box 14. Upon this box are secured fingers 15, which lie in grooves formed in the surface of the paste-roller to prevent the label from adhering to the same and to guide the label onto the can.

16 indicates a "doctor" or paste-spreader, consisting preferably of an adjustable plate bearing upon the surface of the roller. The roller is made readily removable by the construction shown in Figs. 5 and 6. The journal of the pulley 17 is slotted at its end to receive a corresponding part 18 of the axis of the roller. This construction permits the roller, the journals of which are supported in open bearings, to be lifted and drawn out of engagement with the pulley, and by a reverse operation to be readily replaced. The removal of the roller allows the paste-box also to be taken out.

I am aware that removable covers have been employed in connection with boxes and rollers used for applying mucilage and like substances; and I do not wish to be understood as making claim to such device, my improvement in this particular having relation to the particular arrangement herein set forth, whereby the table is adapted and arranged for supplying labels to the paste-roller and thence to the machine, and is also utilized to cover the paste-box.

The label is pressed onto the paste-roller, and thence drawn forward onto the can by the action of a felt roller 19, which is journaled in a swinging frame or bracket 20, journaled or hinged at 21. The roller-journals rest in spring-pressed box-bearings made adjustable by screws. The frame 20 also supports a brush 22 and fingers 23, which rest in grooves formed on the surface of the felt roller, which fingers prevent the label from adhering to the roller and guide it onto the can. The swinging felt-roller bracket 20 drops by gravity moving about its support 21 to carry down the felt roller to press the end of a label upon the paste-roller, and is then lifted to allow a part of the label to pass without being pressed upon the paste-roller by the cam 23, made fast on shaft 11, through the medium of the pivoted pawl 24, connected

to said frame by rod 25 and arm 26. This cam, which will be more particularly herein-after described, is adjustable to so time the lifting and dropping of the felt roller that the ends only of the label are pasted. The can is supported during the attachment of the label by the grippers 27, one of which, next the belt-pulley, is fixed in longitudinal direction. The other is made adjustable by its axis sliding in its bearings, a spring 30 being arranged to move it outwardly against a cam-lever 31, pivoted at 34 and operated by cam 33 on shaft 11, the lever being adjustably connected by a screw 32, which bears against the end of the axis or journal of the gripper. These parts are so constructed and arranged and their movements are so timed that the movable gripper is brought against the end of a can, pressing it against the opposite gripper at the time that the can is raised to its highest position to hold and revolve it during the application of a label, and so that it is moved away from the can to release it as soon as the label has been attached. When released by the gripper, the can is prevented from dropping vertically by the next can, which has moved down the feeding-table onto rollers 7 in the lower position of the frame or arms 5, and it is guided by said can onto the delivering-table. One or both of the gripper-faces are provided at their peripheries with a narrow annular rim or flange 28, which forms a seat for the can. The flange overlaps the can lengthwise slightly, and serves both to guide the edge of the label and make secure the grip of the holding device, allowing the force of the grip lengthwise to be diminished to some extent. The inner edge of this flange 28 may be slightly chamfered or rounded to guide the can to its seat in the same.

The revolving brush 22', which is preferably used to lay or smooth down the label, is journaled in the frame and moved in opposite directions alternately to brush opposite ends of said label by means of the lever 36, pivoted to the frame, and of weight 37, which parts are connected, as shown, by a rope or chain that passes over a pulley on the axis of the brush. The lever is represented in full lines at rest, the weight having any convenient support when not in operation. The revolution of the drive-wheel 39 carries a pin 40 down upon the lever, depressing it and rotating the brush to lay on the first end of the label. As pin 40 begins to ascend, the lever is raised by the weight reversing the direction of the brush, the arrangement being such that it then brushes down or lays the last end of the label, the brushing in both cases being toward the nearest end of the label.

The straight or fixed brush 22, heretofore referred to, is operative, but it is not adapted to move from the body of the label toward each end, as its movement cannot be reversed in manner analogous to that of the roller above

described, and the latter is preferred for this among other reasons.

The cam 23 (represented in Fig. 7) is made in two parts 41 and 42, of which 41 is keyed to the shaft 11 by means of a hub 23^a. Part 42 is adjustably secured to 41 by means of a set-screw seated in the former and passing through a circumferential slot 43 in the latter. Each part of the cam has a portion of its periphery cut away at two points, leaving between such cuts, which are of unequal lengths, the complete or uncut parts 44 and 45 of the cam-plates 41 and 42, respectively. These uncut portions determine the length of time that must intervene between the dropping of pawl 24 successively into the notches or cuts in the periphery of the cam, and consequently the time between the pasting of the two ends of the label, and as these parts of the cam are adjustably connected their relative position can be varied as required to paste labels of various lengths. Thus, if a comparatively short label is to be attached to a can, the part 42 is adjusted on 41 by the screw-and-slot connection, so that the uncut portions 44 and 45 shall considerably overlap each other. By this adjustment it is provided that pawl 24, after dropping into notch 47, shall be raised and held upon the combined surfaces of 44 and 45 for only a comparatively short period and then drop into notch 48, and that the felt roller, through the medium of rod 25 and bracket-arm 26, shall be held up a corresponding period during the interval between the pasting of the first and last ends of the label by the descent of the felt roller to press the same against the paste-roller, as above described.

Power is transmitted to the above-described mechanism through wheel 39', having normally a loose connection with shaft 11. When it is desired to attach a label and to start the machine for this purpose, the shaft and wheel are connected by a clutch, through the medium of the rod or bar 49, which can be depressed by forcing upon its upper end the table 12, which is hinged at its side. This bar is attached to one end of a lever 50, pivoted near its center and having its other end connected and arranged to stop a crank-arm 51 of a clutch piece or key 52. This piece fits a curved depression in a hub 53 fast on shaft 11, both the clutch-piece and the depression being curved in cross-section, as shown. The piece is also slightly curved on its upper surface, said curvature being made to correspond with the interior of the surface of the wheel which surrounds the hub. This interior surface is provided with a series of depressions 54, parallel with the clutch and with the depression in which it rests.

A spring 55 is applied to the crank-arm of the clutch-piece in such manner as to partially rotate the piece when the opposite end of lever 50 is depressed and the adjacent end is raised, as represented in Fig. 4. This partial rotation of the clutch key or piece 52

brings its edge in engagement with the depression or groove 54 in the wheel, and thus clutches together the wheel and shaft, which, as before stated, occurs whenever the table 12 is depressed by the operator and lever 50 is turned on its fulcrum to throw its free end out of engagement with the arm 51 of the clutch-piece.

The operation may be briefly described as follows: Cans having been placed on table 2, roll down automatically to position indicated in Fig. 1, one being supported on rollers 7 of the frame 5. Thereupon shaft 11, being coupled to the drive-wheel 39, revolves in the direction of the arrow on cam 10, which cam lifts frame 5 and the can supported on it into contact with the felt roller. At this instant the movable gripper 27 is made to press the can against the fixed gripper by means of lever 31, operated by cam 33 on shaft 11, the can being securely held in the seats formed by the rims 28 on their faces. The can is revolved from the shaft 11 by belt-wheels 35 and 29, the latter having the diameter of the can. A label having been moved from the lower end of the table 12 onto the paste-roller, which is revolved by means of pulley 7, is at the proper moment pressed upon said roller by the descent of the felt roller, the pawl 24 simultaneously dropping into notch 47, which has been brought in proper position by the revolution of the shaft. As the pawl rises out of the notch 47 onto the surface of 44 and 45, the felt roller is lifted, moving up in contact with the can, to which it is held by the spring above its movable bearing. The label held between the felt roller and can is drawn forward by this revolution, and when the felt roller is again dropped by the descent of the pawl 24 into notch 48 the last end of the label is over the paste-roller, and is pressed upon it and then farther drawn forward by the can and felt roller, both ends of the label being seasonably brushed, as hereinbefore described, by means of the rotary brush rotated alternately in opposite directions by the pin on the drive-wheel and by the weight. As soon as the last end of the label has been brushed the gripper is released by the action of spring 30, the lever 31 having been seasonably released from the cam 33. In the meantime, the frame 5 having been allowed to descend by the continued movement of cam 10, a second can has automatically taken its place upon rollers 7 and under the can held by the grippers, and when the latter is released it rolls off from said second can onto the delivery-table 4, and the operation can then be repeated.

It is obvious that the machine may be modified in parts without sacrificing all the advantages of the invention. While a wooden roller covered with felt is preferred, other known materials may be used, also other means for connecting the label-table to the machine or supporting it thereon, and other

means for depressing the clutch-operating lever and other clutch mechanism could be substituted; and it is also obvious that other cams and connecting devices may be adopted without departing from the invention, and whenever parts are named it is to be understood that equivalent devices acting in substantially the same way and for a like purpose may be substituted.

In my improvement the incoming can is fed to the machine below its predecessor, which having been raised is supported by the gripper, and that the latter can, when released by the gripper, falls upon the former and rolls from off it toward the delivery end of the machine. Other than the particular means for introducing and removing cans may be substituted, provided the incoming can is thereby placed under and receives a labeled can when it is dropped by the gripper. In my improvement, also, the machine is automatically arrested after a label has been pasted and before the felt roller is again dropped onto the paste-roller, and the parts are again left in position for the attachment of another label whenever the machine is started, whereby the felt roller is kept from the paste-roller, except when the operator wishes to paste a label. The stopping and starting of the machine may be effected by any suitable mechanism.

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

1. In a machine for attaching labels to cans, a can-feeding table, a can-lifting device, and a can-delivery table located above the feeding-table arranged substantially as set forth, whereby a can fed onto the lifting device will be under a can to be fed or dropped onto the delivery-table.

2. In a machine for attaching labels to cans, a can feeding or supplying table, can-elevating mechanism, and can-gripping devices, and a delivery-table located on a higher plane than the supply-table, whereby a can may be fed, lifted, gripped, and then released and passed laterally onto the delivery-table in a plane above the incoming can, substantially as set forth.

3. In a machine for attaching labels to cans, the pivoted lifting-bracket and an inclined table to automatically deliver a can upon the bracket, in combination with a cam for lifting the bracket and can, substantially as set forth.

4. In a machine for attaching labels to cans, the felt roller having yielding journal-bearings, a swinging bracket moving about the axis of the can-grippers, and a cam and connecting-rod, whereby the felt roller is moved back and forth upon the surface of a can held in the grippers, substantially as set forth.

5. In a machine for attaching labels to cans, the combination of the felt roller and its journaled bracket, with the two-part adjustable cam and the intermediate devices, whereby

the felt roller can be applied to the ends of labels of unequal lengths, substantially as set forth.

6. In a machine for attaching labels to cans, 5 the cam having two parts, each with portions of its periphery cut away at different points, one part being keyed to the shaft and provided with a slot, and the other part provided with a set-screw, and thereby made adjustable 10 on the fixed part to cause the peripheral portions situated between the cuts or notches to overlap more or less, according to the length of a label to be pasted, in combination with the journaled felt-roller bracket and inter- 15 mediate devices, substantially as set forth.

7. In a machine for attaching labels to cans, the combination of the rotary brush, pivoted lever, cord and weight, and the pin on the drive-wheel, whereby the brush is alternately 20 rotated in opposite directions to brush the opposite ends of the label, substantially as set forth.

8. In a machine for attaching labels to cans, the combination of the hinged table with the

loose pulley, the main shaft, and clutch mechanism, whereby the table is used to operate the clutch to start the machine, substantially as set forth. 25

9. In a machine for attaching labels to cans, the combination of the table, loose pulley, 30 shaft, and cranked clutch-piece, with the springs, lever, and intermediate rod, whereby the clutch is operated and the machine started or stopped, substantially as set forth.

10. In a machine for attaching labels to cans, 35 the combination of the felt roller having yielding journal-bearings, with the spring-fingers resting in grooves in the circumference of the felt roller, both roller and fingers being supported in a swinging or journaled bracket, 40 whereby the fingers are kept constantly in the grooves, substantially as set forth.

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

JOHN C. McBEAN.

Witnesses:

ALEX ROSS,

M. D. PHILLIPS.