Jan. 5, 1937. C. W. GRAY ET AL 2,066,466

ENDORSING MACHINE

Filed Feb. 23, 1934 3 Sheets-Sheet 1

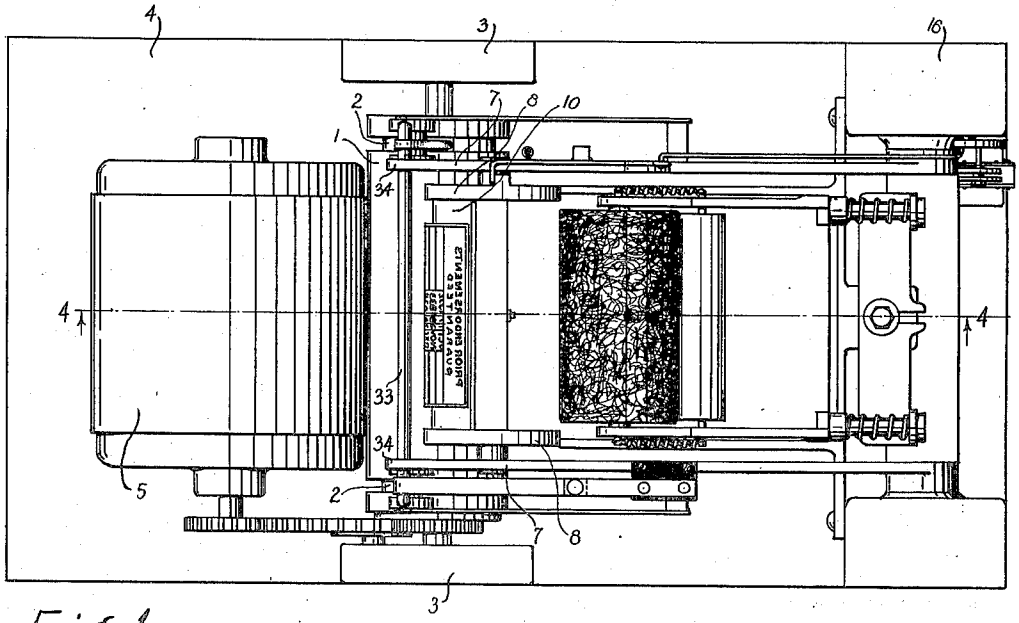

Fig. 1.

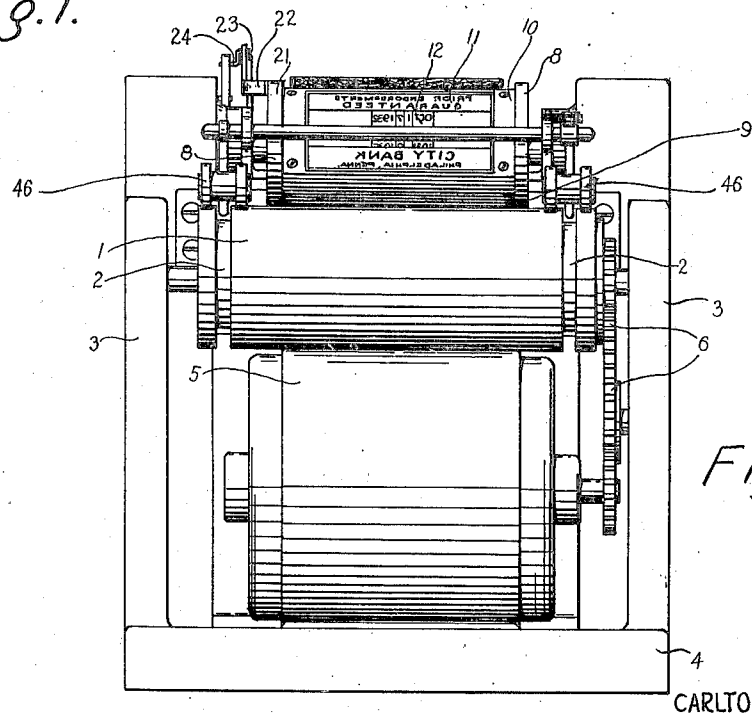

Fig. 2.

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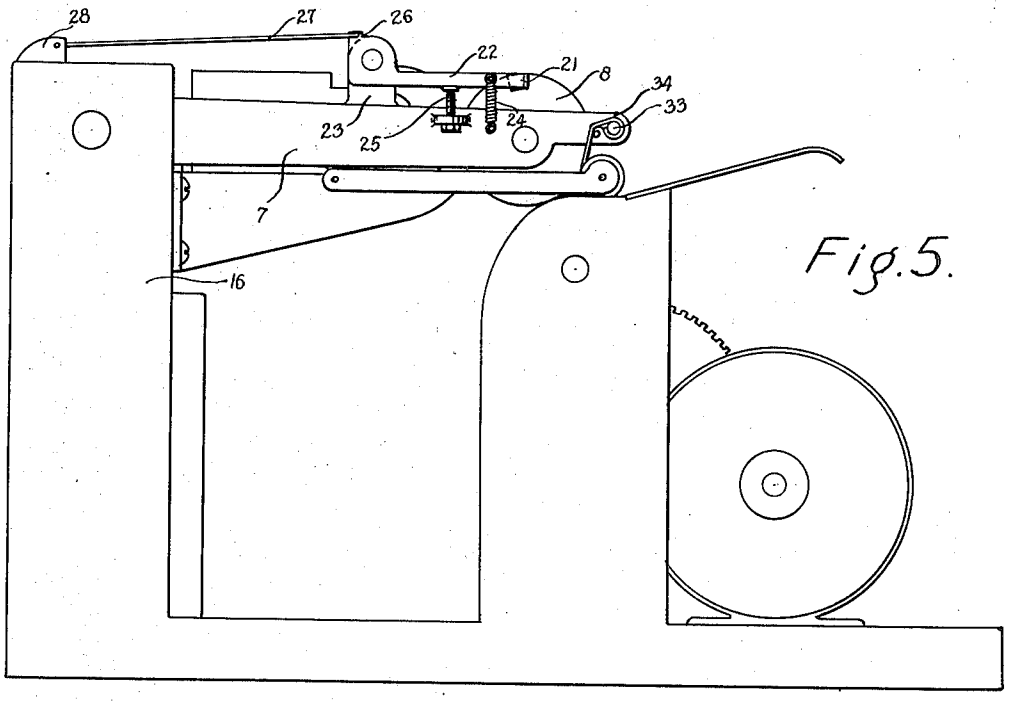

Fig. 5.

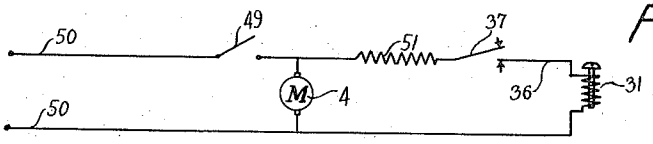

Fig. 6.

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Fig. 3.

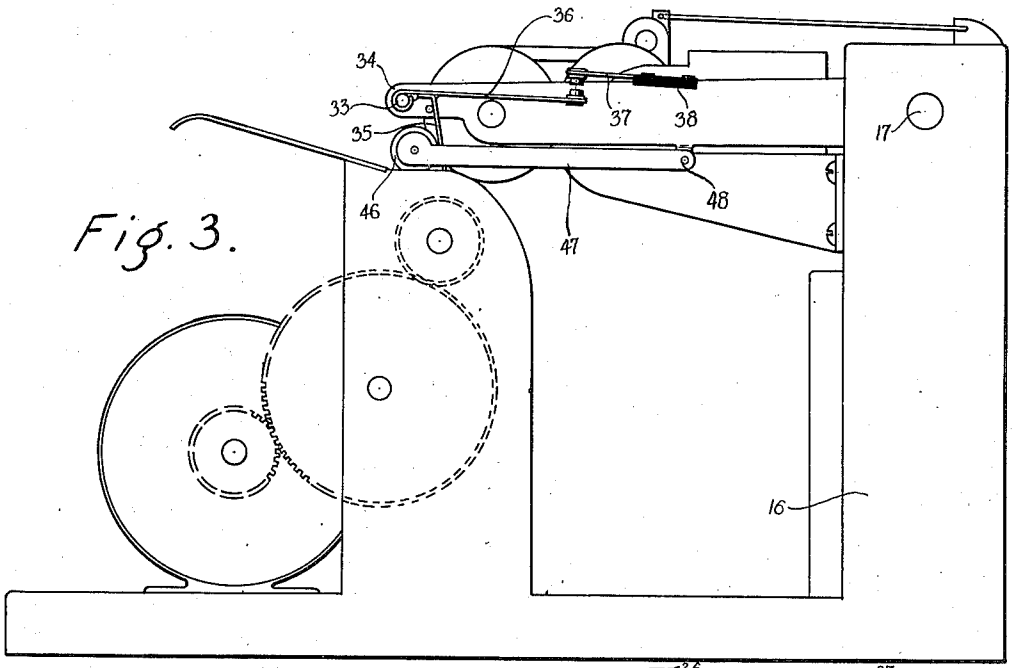
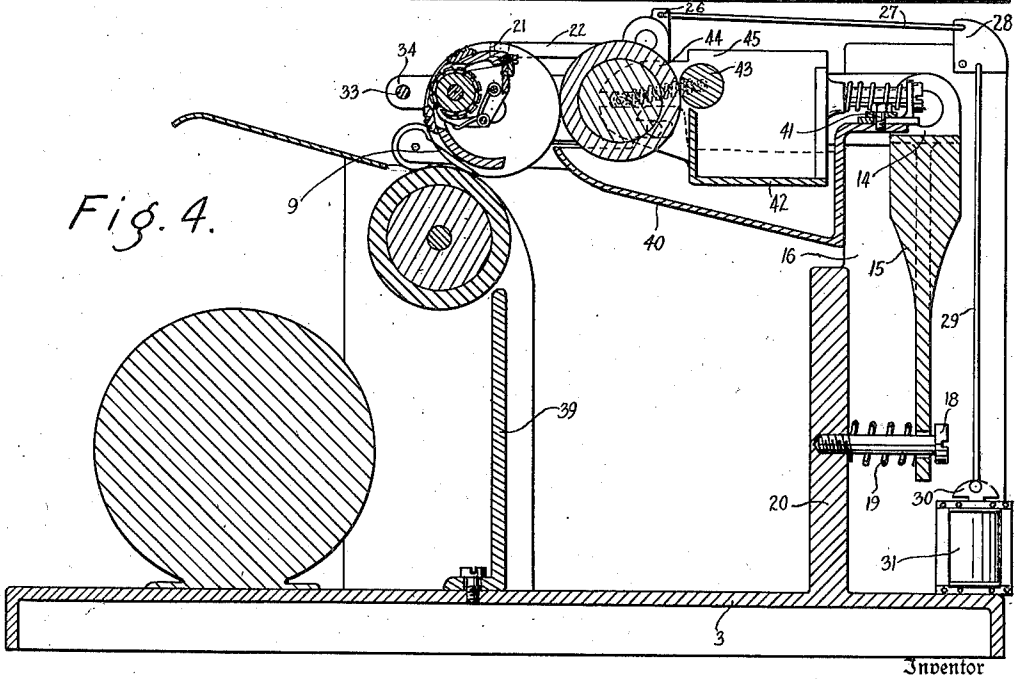


Fig. 4.



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Patented Jan. 5, 1937

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2,066,466

ENDORSING MACHINE

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Application February 23, 1934, Serial No. 712,453

6 Claims. (Cl. 101—236)

Our invention is an endorsing machine, including rotary platen and printing surfaces, by which a check or like instrument may be endorsed without defacement of the paper endorsed, and which eliminates the smudging action which results from both arcuate and rotary movement of the printing surface immediately preceeding contact with a sheet to be endorsed. Our improved machine also is free from damaging impacts between the impressor and platen rolls, is fast and accurate in operation and avoids jamming or fatigue of parts.

The axes of the impressor and platen rolls of our endorsing machine are maintained in substantially constant relation and parallel to one another during normal operation to ensure a pure rolling action on the checks, though they may have a slight yielding separation to prevent breakage by the accidental passage of extraneous objects or to accommodate papers of abnormal thickness. The rolls are so supported as to avoid movements thereof away from and toward one another with damaging impacts or in a manner adversely affecting the true rolling action which is required to obtain clear impressions of the endorsing type or stamp.

The impressor is normally latched with its printing surface in inoperative position between endorsing operations so as to avoid making impressions on the platen or defacing the faces of the checks. The center of gravity of the impressor roll is offset from its axis so that it tends to turn by gravity to move the printing surface toward printing position when the latch is released.

The mechanism holding the impressor roll in its inoperative position is controlled or released by the action of the checks as they are fed into the machine; the parts directly engaged by the paper imposing substantially minimum resistance to the movement thereof whereby to avoid crinkling the paper and jamming the machine, and being moved by the paper to control an electro-responsive device by which the controlling element or latch is operated.

The latching mechanism is operated by the electro-responsive device independently of the impressor support, thereby obviating the necessity of overcoming the inertia of heavy members, insuring quicker action, and permitting the utilization of a simple, light and inexpensive electromagnetic mechanism and connections between it and the latch.

The characteristic features and advantages of our invention will further appear from the following description and the accompanying drawings in illustration of a preferred embodiment thereof.

In the drawings, Fig. 1 is a top plan view of a machine constructed in accordance with our invention, a feed table being omitted; Fig. 2 is an end elevation of the machine, taken from the left as viewed in Fig. 1; Fig. 3 is a side elevation of the structure of Figs. 1 and 2 but with a feed table included; Fig. 4 is a vertical sectional view taken substantially along the line 4—4 of Fig. 1; Fig. 5 is a view similar to Fig. 3, of the opposite side of the structure; and Fig. 6 is a diagram of circuits embodied.

In the form of apparatus illustrated in the drawings, a platen roll 1, having a perimetral groove 2 adjacent to each end thereof, extends across the front of the machine and is journalled in standards 3 on a base 4 which also supports a motor 5 that is connected to the platen roll through suitable gearing 6.

An impressor roll, journalled between horizontal arms 7, comprises end discs 8 that have perimetral chord portions 9 and are connected by a cylindric side-wall segment 10 on which endorsing type 11, and an adjustable dating type mechanism 12, are supported. In the latched inoperative position of the impressor, as illustrated in the drawings, the portion 9 of the discs 8 are spaced from the platen roll 1. Also in this position, as indicated more clearly in Fig. 4, by the position of the segment 10 and the dating-stamp mechanism 12, the center of gravity of the impressor roll is forwardly offset from the roll axis, tending to move the impressor counter-clockwise to have the normal perimeters of the discs 8 engage the platen roll 1 and to move the endorsing and dating type between the rolls.

The horizontal arms 7, on which the impressor is supported, are rigidly connected, at the rear ends thereof, by a cross arm 14, from which an arm 15 depends between standards 16 on which all of the arms 7, 14 and 15 are pivotally mounted, as one rigid bell crank lever, by trunnions 17. A screw 18 cooperates, through a spring 19, between the arm 15 and a stationary base-supported partition 20, to bias the impressor roll toward the platen roll about the trunnions 17; the head of the screw 18 acting as a stop for adjusting the bias of the impressor toward the platen.

A latch dog 21 projects axially outwardly (Fig. 5) from one of the impressor discs 8 for cooperation with a latch arm 22 that is pivotally mounted in a lug 23 on one of the horizontal arms 7 and biased toward the dog by a spring 24 between the

latch arm and the adjacent arm 7; a screw 25, in a lug on the arm 7, acting as an adjustable stop for the latch arm. The arm 22 has an angularly-related branch arm 26 by which it is connected, through a link 27, a bell-crank lever 28, (Fig. 4) pivotally mounted on one of the standards 16, and a link 29, to a movable armature 30 of an electromagnet or solenoid 31 that is suitably secured on one of the standards 16 on the base 3.

A spindle or shaft 33 extends across the (Fig. 3) front of the machine between forward extentions 34 of the horizontal arms 7, in which it is journalled; arms 35 being rigidly secured to the shaft 33 and projecting substantially radially thereto to positions in the grooves 2 of the platen roll, toward the rear of the roll. One of the arms 35, as seen more clearly in Fig. 3, is mounted on a movable resilient switch arm 36 that is, in turn, rigidly connected to the shaft 33 and extends along one side of one of the horizontal arms 7 to a position where it has a contact element under a cooperating contact element on a resilient stationary switch arm 37; the latter being suitably mounted on the adjacent arm 7 and insulated therefrom, as by an insulating member 38.

The partition 20 cooperates with the rear standards 16 and with a partition 39 between the forward standards 3 to provide a space for the reception of checks after they are fed between the impressor and platen rolls; this space being accessible from the sides of the machine and protected from possible ink drippings from above by a trough 40 that is secured to the rear standards 16, as by screws 41 extending through laterally-projecting portions of the trough.

A member 42, above the trough 40, is constituted as an ink receptacle and as a journal support for inking and ink-spreading rolls 43 and 44, respectively; the member 42 being horizontally biased to press the inking roll 43 toward the impressor roll, as by springs 45 and other elements not germane to the invention.

Idler discs 46, (Fig. 3) arranged in pairs at opposite sides of the grooves 2 in the platen roll, are journalled in arms 47 extending parallel to the horizontal arms 7, to which they are pivoted, as at positions 48 and from which they are biased by gravity so that the discs rest on the platen.

As indicated in Fig. 6, the motor 4 and the solenoid 31 are connected in parallel and, through a master switch 49, to supply terminals 50; a resistor 51 being provided between the solenoid and the motor, and the positions of the switch arms 36 and 37 also being indicated.

In operation, with the platen roll 1 being rotated by the motor 5 and the impression roll being held by the latch dog and arm members 21 and 22, respectively, in the position indicated, when a check is fed between the platen roll 1 and the idler discs 46, it is carried against the fingers 35. These fingers merely operate the switch arm 36 and are not being required to oppose the relatively strong releasing forces of the latch members 21 and 22, and respond quickly to the impact of the paper, without unduly bending the paper or causing it to jam. This action closes the circuit of the solenoid 31 to separate the latch members 21 and 22 whereby the impression roll first turns by gravity and then, as the normal perimeters of the discs 8 engage the check, is positively driven by the action of the platen roll and the check. This action endorses the check and feeds it into the space between the partitions 20 and 39. The impressor roll, by engagement of the normal perimeters of its discs 8 with the check and the platen, is driven to position where the discs 8 again disengages the platen and the impressor is again in position to turn by gravity to start the ensuing endorsing operation. However, the previous check having disengaged the fingers 35 and the solenoid having been deenergized, the latch arm 22 is again in position to stop the impressor and to thereby prevent it from impressing the platen, unless a check is being fed between the impressor and platen rolls.

Having described our invention, we claim

1. An endorsing machine comprising impressor and platen rolls, movable means for pivotally supporting the impressor, mechanical means for controlling the rotation of the impressor, and electro-responsive means actuating the controlling means and moving such means relatively to the supporting means and relative to the impressor.

2. An endorsing machine comprising a base, a platen mounted on the base, a member movably mounted on the base, an impressor movably mounted on said member, cooperating latch elements on the impressor and said member, respectively, and electro-responsive latch-operating means including a switch element carried by said member.

3. An endorsing machine comprising a base, a platen on the base, an impressor carrying a latch member, means movably supporting the impressor on the base whereby the impressor is biased toward the platen, a latch arm mounted on the impressor-supporting means and cooperating with the latch member, and electro-responsive means operating the latch member and moving it relative to said impressor-supporting means and to said impressor.

4. An endorsing machine comprising a base, a platen on the base, an impressor carrying a latch member, means movably supporting the impressor on the base whereby the impressor is biased toward the platen, a latch arm mounted on the impressor-supporting means and cooperating with the latch member, electro-responsive means including an element mounted on the base, and means including relatively movable portions operatively connecting said latch member to said element.

5. An endorsing machine comprising a base, a platen roll on the base and having perimetral grooves, a motor and gear-connecting means on the base between the motor and the platen, an impressor roll biased for movement in impressing direction, a latch member connected with said impressor roll, means including a lever carrying the impressor and biasing it toward the platen, a latch arm on the lever cooperating with the latch member, a solenoid on the base and including a movable armature connected to the latch arm idler wheels engaging the platen and pivotally mounted on the lever, and an electric switch on the lever including fingers in the grooves.

6. An endorsing machine comprising an impressor roll and a platen roll, the bodily relation of the axes of the rolls being substantially constant in both the impressing and non-impressing relation, the axis of the impressor roller being normally stationary and such roller having only such slight yielding movement as is requisite for the passage of papers of different thicknesses, the impressor roll having a printing surface at a distance from its axis such that it contacts with paper passing over the platen without movement of the impressor axis relatively to the platen, roll controlling means comprising a latch preventing

turning of the impressor roll between impressing operations, electro-responsive means actuating said controlling means independently of any bodily movement of the impressor roll axis relatively to the platen axis, and means actuable by paper moving to impressing position for actuating said electro-responsive means, the impressor roll being initially turned by gravity upon the actuation of said controlling means and thereafter positively driven by the action of the platen roll to make an impression upon paper feeding to impressing position by a true rolling motion free of pounding impact.

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