

Oct. 27, 1931.

W. E. LONG

1,829,286

CONTROL DEVICE FOR RECEIPT PRINTING MACHINE

Filed Nov. 6, 1929

3 Sheets-Sheet 1

Fig. 1.

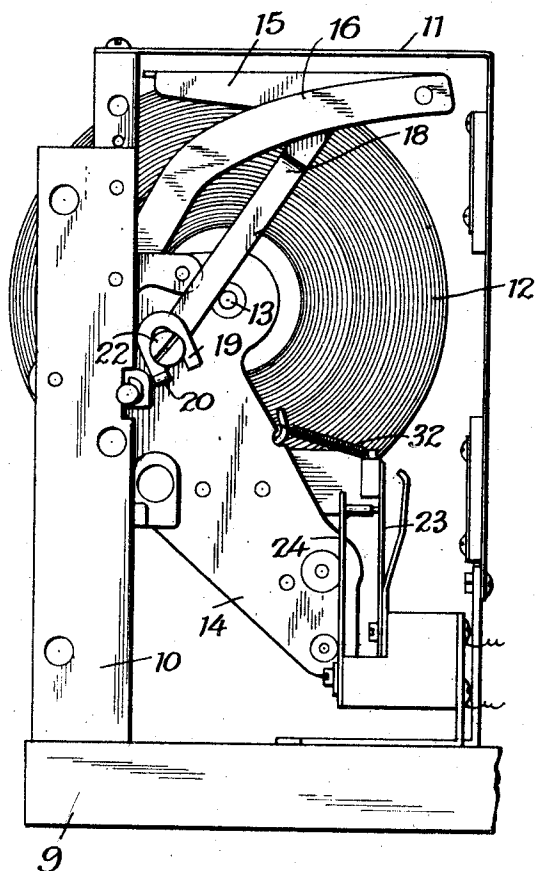


Fig. 3.

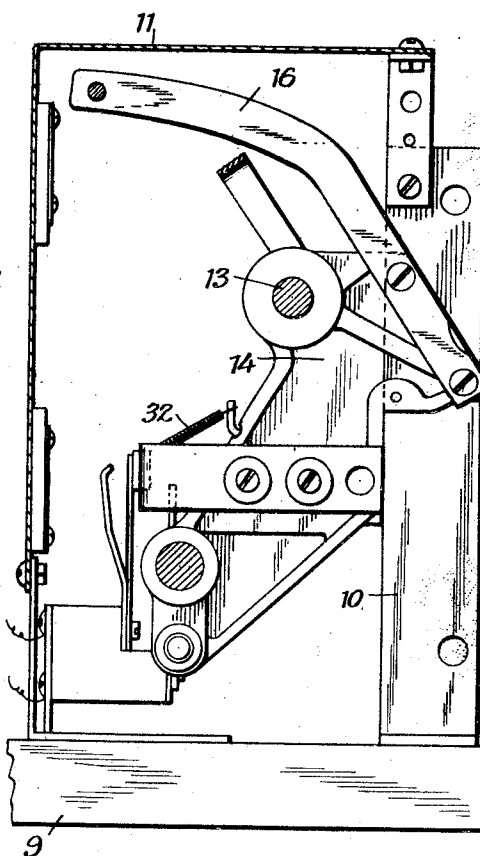


Fig. 7.

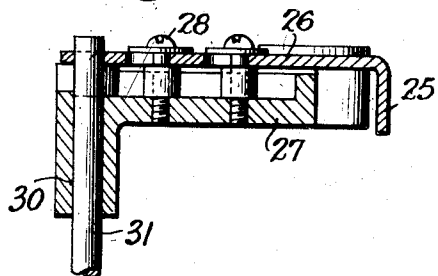
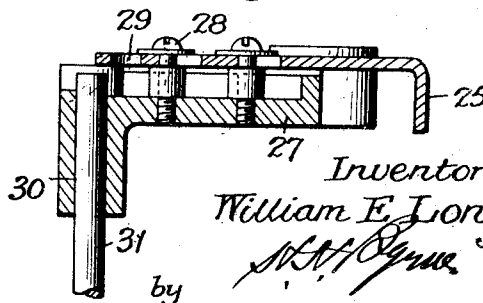


Fig. 8.



Inventor:
William E. Long,
by *W. H. B. B.*
Attorney.

Oct. 27, 1931.

W. E. LONG

1,829,286

CONTROL DEVICE FOR RECEIPT PRINTING MACHINE

Filed Nov. 6, 1929

3 Sheets-Sheet 2

Fig. 2.

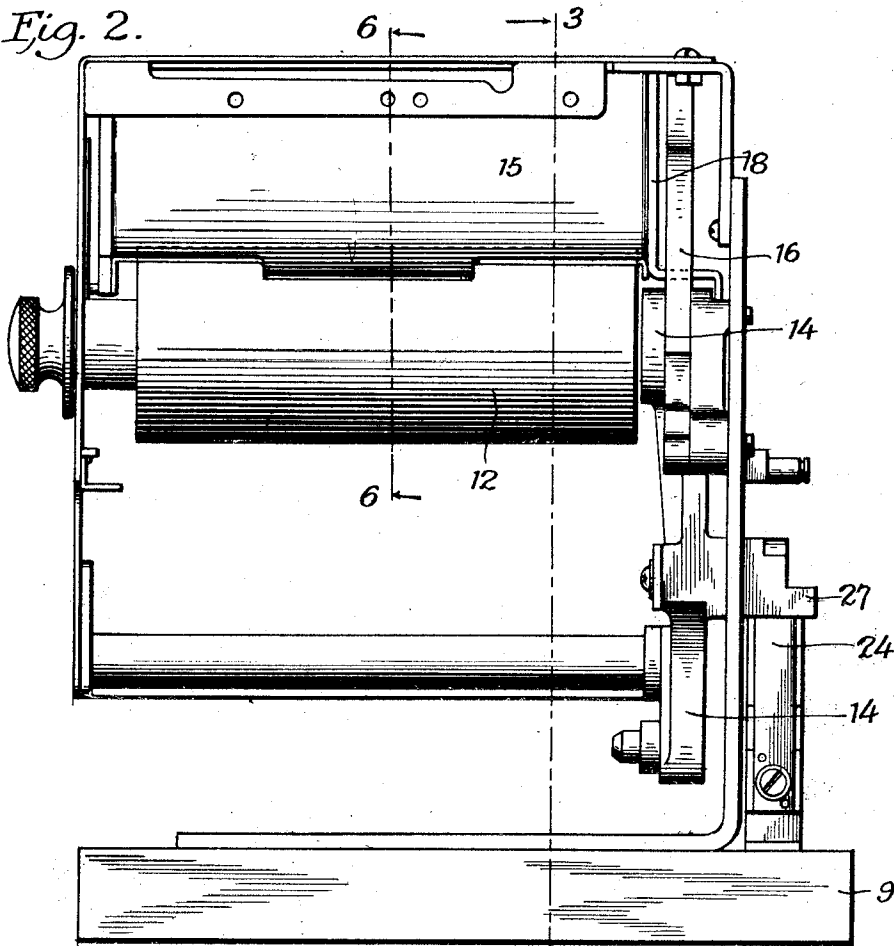
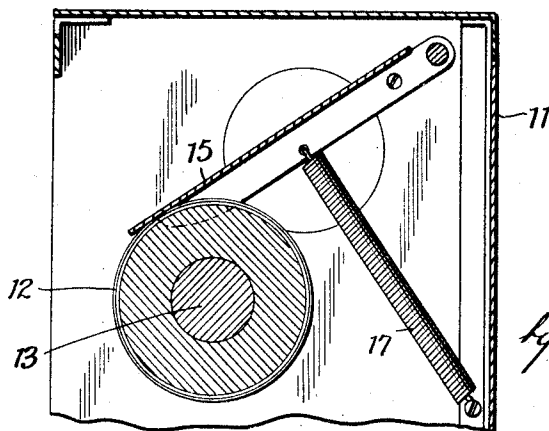


Fig. 6.



Inventor:
William E. Long.

by *W. H. Byrnes*

Attorney.

Oct. 27, 1931.

W. E. LONG

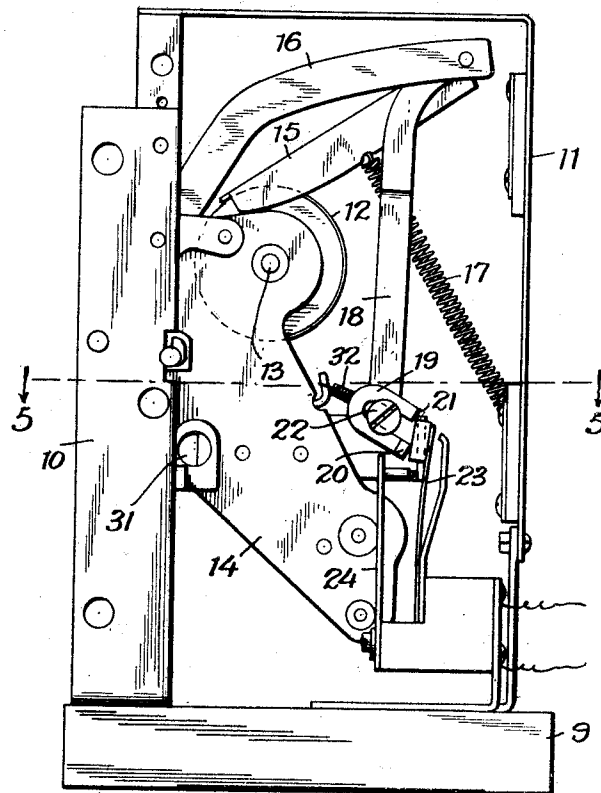
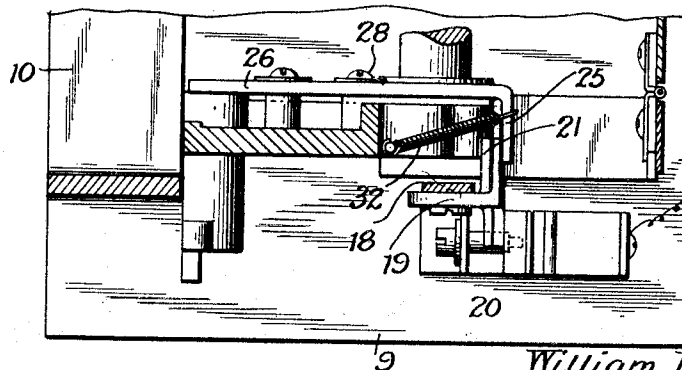
1,829,286

CONTROL DEVICE FOR RECEIPT PRINTING MACHINE

Filed Nov. 6, 1929

3 Sheets-Sheet 3

Fig. 4.



William F. Long,
by *N. H. Jones*
Attorney.

UNITED STATES PATENT OFFICE

WILLIAM E. LONG, OF NEW YORK, N. Y.

CONTROL DEVICE FOR RECEIPT PRINTING MACHINE

Application filed November 6, 1929. Serial No. 405,264.

The present invention relates to apparatus for automatically controlling machines which employ a paper feed roll and consists in the combinations and arrangements of parts hereinafter described and particularly set forth in the accompanying claims.

The invention has for its purpose to provide a device for automatically controlling the power source and operative mechanism of machines designed for printing bills of sale, check or receipt printing, such as cash registers, fare registers, accounting and adding mechanisms, such to be accomplished by means of an electric circuit breaker and an interlocking device that are caused to automatically function by the exhaust of the supply roll of paper.

Systems now in use depend upon the operator's ability to heed a signal that is foretold by means of a change in the color of the paper at the extreme end of the paper roll before it is entirely exhausted. Under such a system if the paper supply is not replenished in due time, the entire machine becomes clogged by the last of the receipt paper remaining in the machine when the supply is replenished.

By the use of my invention in connection with the machines enumerated above, such errors are avoided as well as any destruction to the printing mechanism, because the operator is getting an unmistakable warning by an inoperative machine thereby necessitating an immediate reloading of check paper.

The invention has for its further purpose to provide a mechanism of this character which is constructed as a unit or device to the end that the same may be readily applied to any cash register or adding or other machine now in use without requiring rearrangement or construction thereof; and wherein the normal operation and function of the machine are in no way interfered with.

Further advantages and objects of the invention are:

1. To eliminate all operations of the machine without issuing a receipt.
2. To protect the mechanism against illegible printing due to continuous inking of parts.

3. To protect the mechanism against severe strains and broken parts due to paper becoming clogged in machine.

4. To eliminate burning of motors and fuses on power lines.

5. To render machine operative by manual control for reloading of paper only; inoperative by electric power.

6. To eliminate the extra paper from collecting in machine and obliterating the print on tally or the audit sheet.

The invention is shown by way of illustration in the accompanying drawings wherein Figure 1 is a side elevational view showing the application of the device.

Figure 2, a front elevational view showing the paper roll nearing exhaustion.

Figure 3, a vertical sectional view taken on the line 3—3 of Figure 2.

Figure 4, a view in side elevation showing the paper roll nearing exhaustion.

Figure 5, a horizontal detail sectional view taken on the line 5—5, of Figure 4.

Figure 6, a vertical detail sectional view taken on the line 6—6 of Figure 2, and

Figures 7 and 8 are detail sectional views illustrating the locking device in operative and in-operative positions respectively.

Referring to the construction in further detail and wherein like reference characters indicate corresponding parts the construction comprises a base member 9, an upright support 10, a frame or cover section 11, and the usual paper roll 12 whose spool or core is journaled on the axle or spindle 13, in the bracket arm 14 and frame portion 11, as shown. The construction above described is of the usual type on cash registers, accounting and adding machines, or check and receipt printing mechanisms.

The invention herein disclosed comprises a follower or plate 15 that extends for the width of the paper roll 12 and normally lies in contact therewith as shown. The said follower is pivotally mounted on the bracket arm 16 of the machine frame portion 11, and a spring 17 normally holds the follower plate 15 under sufficient frictional contact with the paper roll 12, and also acts to op-

erate the controlling device when the paper roll has reached its exhausted position as indicated in Figure 4.

The control device per se consists of a depending arm 18 fulcrumed on the bracket arm 16 and carrying on its free end a shoe or yoke member 19 having two laterally and oppositely projecting portions 20 and 21 which function respectively to break the current and throw the machine locking device. The shoe member 19 is of yoke-like design and is adapted to have limited adjustment on its supporting arm 18 by the screw 22. (See Figure 4.)

The current breaking member 20 is adapted to engage with the movable contact 23 of the switch (23—24) and thereby interrupt the normal electric circuit for controlling and actuating the machine. It is further proposed that this interruption or breaking of the current will put out the usual lamps with which machines of this character are usually equipped for visible signaling purposes.

The member 21 of the shoe is adapted to engage with the projection 25 of the bar 26 that is slidably mounted on the frame portion 27 by the two studs 28, as shown in Figures 5, 7, and 8.

The sliding bar 26 has an aperture 29 that normally lies in alinement with the opening 30 that has movably mounted therein the control plunger 31. A spring 32 acts to retract the sliding bar 26 when the same has been displaced, and in its normal position the opening 29 of the bar receives the control plunger 31 as shown in Figure 7.

It will therefore be seen from the foregoing that when the paper roll has been exhausted and the follower 15 has reached that position shown in Figure 6 the arm 18 carried by said follower will have reached the position indicated in Figure 4 and thereby the switch (23 and 24) will be open, and in like manner the sliding bar 26 will be moved into its in-operative position. That is to say the condition of interlocking is produced by the movement of the sliding bar to the position shown in Figure 8 which blocks or stops the forward movement of the plunger 31. To restore the machine to position for operation it is necessary only to replace the exhausted roll of paper and raise the follower which carries the arm 18 when the contact is restored to normal and the bar 26 returns to position under tension of spring 32. The hole 29 of the bar is then in alinement with the opening 30 and allows the plunger 31 to come through when the control keys are again depressed.

It will be understood that the invention as herein disclosed is not limited to the details of construction shown and described as these may be varied without departing from

the spirit of the invention as defined by the claims.

What is claimed as new is:

1. The combination with a machine including a reel, a shiftable plunger, and an electric circuit closer, of a control apparatus therefor comprising a locking bar for the plunger, a reel follower, an arm carried by the reel follower, and a device carried by the arm having portions adapted to simultaneously engage with and break the circuit closer and to shift the plunger locking bar, for the purpose set forth.

2. The combination with a machine including a reel, a shiftable plunger, and an electric circuit closer, of a control apparatus therefor comprising a locking bar for the plunger, a reel follower, an arm carried by the reel follower, and a member mounted on the free end of the reel follower arm having projecting portions adapted to simultaneously engage with and break the circuit closer and to shift the plunger locking bar, for the purpose set forth.

3. The combination with a machine including a reel, a shiftable plunger, and an electric circuit closer, of a control apparatus therefor comprising a locking bar for the plunger, a reel follower, an arm carried by the reel follower, and a yoke member adjustably mounted on the free end of the reel follower arm having oppositely projecting portions adapted to simultaneously engage with and break the circuit closer and to shift the plunger locking bar, for the purpose set forth.

4. The combination with a machine including a reel, a shiftable plunger and an electric circuit closer, of a control apparatus therefor comprising a shiftable and spring tensioned locking bar for the plunger, a spring tensioned reel follower, an arm carried by the reel follower, a yoke member adjustably mounted on the free end of the reel follower arm having oppositely projecting portions adapted to simultaneously engage with and break the circuit closer and to shift the plunger locking bar for the purpose set forth.

In witness whereof, I have hereunto set my hand and seal at Washington, District of Columbia, this twenty-fifth day of October, A. D. nineteen hundred and twenty-nine.

WILLIAM E. LONG. [L. s.]