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T. J. BEREGH

FEED CONTROL STOPPING MECHANISM FOR PAPER FOLDING MACHINES

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FIG. 1

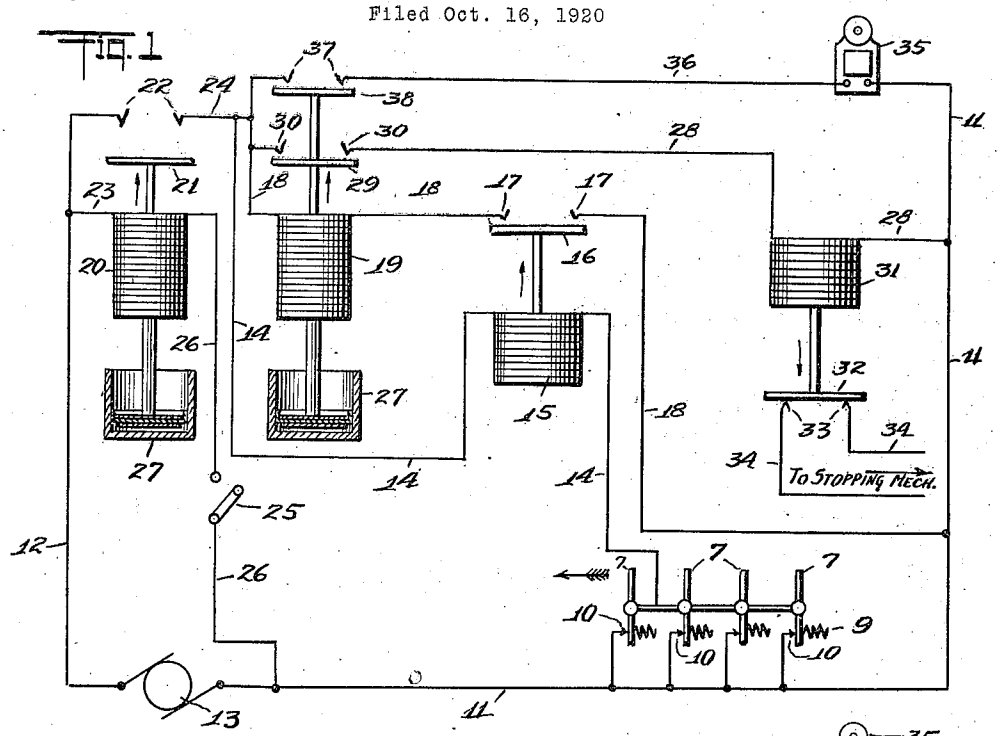
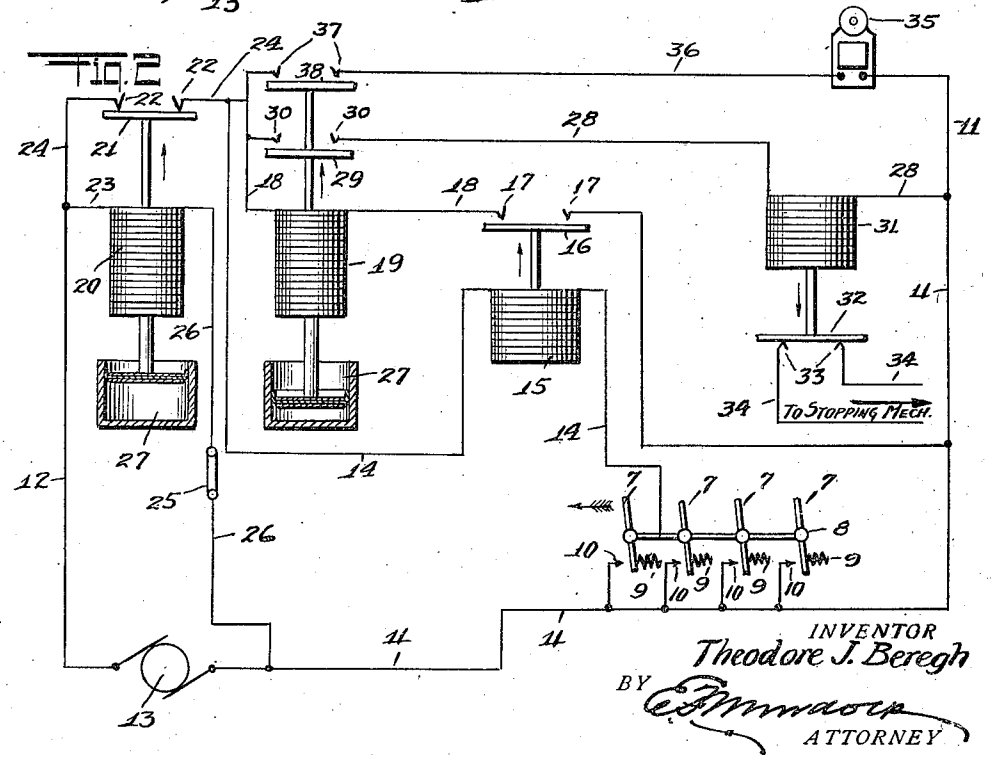


FIG. 2



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FEED-CONTROL-STOPPING MECHANISM FOR PAPER-FOLDING MACHINES.

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To all whom it may concern:

Be it known that I, THEODORE J. BEREGH, a citizen of the United States, and a resident of the city of New York, Bronx County, and State of New York, have invented certain new and useful Improvements in a Feed-Control-Stopping Mechanism for Paper-Folding Machines, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: To provide an actuating mechanism for the driving mechanism of a folding machine operable as the result of the failure to deliver sheets to any predetermined station to which the said sheets are moved; to actuate the stopping mechanism of the driving mechanism unless prevented by the normal operation of delivering the folded sheets from the folding mechanism; to provide correlated circuit closing devices operable at different speeds to conform with the function of the folding machine to which it is applied; and to provide a signal for notifying the stoppage of the folding machine.

Drawings.

Figure 1 is a diagrammatic view of the mechanism above mentioned and parts associated therewith showing the mechanism in its inactive position.

Figure 2 shows the same in its active position.

Description.

Folding machines which may be equipped with the stopping mechanism of the character mentioned are provided at the delivery station of said folding machines with stacking troughs into which the folded sheets are delivered on edge to be moved forward out of the delivery line to make room for succeeding sheets. At such stations the trough is supplied with some form of yielding detent which is rocked by the passing paper to be resiliently or otherwise returned to its upright position behind the folded paper for preventing the return of the folded paper when the stacker is retracted to its initial or normal position.

The stacking trough in the majority of folding machines have extensions at opposite sides of the stacker or oscillating member that successively moves the paper to opposite sides of the center of the trough. The stacker is recessed on its edge to pass the ends of the yielding detent blades 7. In the drawings the blades 7 are shown as pivoted on centers 8 on which they are normally rocked by compression springs 9 to the upright position shown in Fig. 1 of the drawings. In the upright position shown, the lower ends of the blades 7 make electric contact with the back points 10 which are electrically incorporated in the electrical supply circuit embodying the wires 11, 12 and a dynamo 13. The back points 10 are directly connected with the line 11 of the electric circuit. The blades 7 are mutually, electrically united and are incorporated in an electric circuit having the branch wire 14 and the solenoid 15.

The solenoid 15 cooperates with the blades 7 to lift the connector 16 into contact with the pack points 17. The back points 17 form switch terminals of a branch circuit incorporating the branch wire 18 and a timed solenoid 19.

The function of the solenoid 15 is to open the line 18 and deenergize the timed solenoid 19 each time the blades 7 are rocked out of contact with the back points 10 which operation is actuated by the stacking mechanism of the folding machine. In other words whenever the stacking mechanism is operating normally to deliver a folded sheet, the solenoid 15 is de-energized to open the circuit incorporating the branch wire 18 and the timed solenoid 19. If for any reason the folding machine has become choked and the folded sheet does not rock the blades 7, the solenoid 15 maintains closed the circuit incorporating the wires 18 and the solenoid 19.

Normally, the solenoid 19 is energized in the position shown in Fig. 2 of the drawings after the timed solenoid 20 has moved the connector 21 into contact with the back points 22 of the branch circuit incorporating the wires 14 and 24. The solenoid 20 is energized whenever the starting switch 25 is

closed. When the said switch is closed, the circuit incorporating the wire 23, solenoid 20, wire 26, switch 25 and the dynamo 13 is completed. Dash pots 27 regulate the speed of operation of the solenoids 19 and 20. The speed of the solenoid 20 is arranged so that after the switch 25 is closed, a sheet of paper being delivered to the machine at that time, will pass through the various folding devices to the stacker before the circuit closers for the stopping mechanism are brought into operation.

By this arrangement if the circuits incorporating the wires 24, 14, solenoid 15, blades 7, contact points 10 and wire 11, is completed, the solenoid 15 becoming energized the connector 16 is lifted to complete the circuit embodying the wire 18, solenoid 19, wires 24, 12 and 11. The solenoid 19 now being energized starts to lift the connector 29 to engage the back points 30. The back points 30 are incorporated in a circuit embodying the wire 28, solenoid 31, and the wires 11, 12, 24 and dynamo 13. The solenoid 31 when energized lifts the connector 32 away from the back point contacts 33 of the control circuit for the starting mechanism of the folding machine which is operated on a closed circuit comprising the wires 34.

It is evident that if the connector 29 engages the back points 30 to complete the circuit embodying the solenoid 31, the stopping mechanism for the folding machine will operate to stop the said folding mechanism. This happens whenever paper passing through the folding machine does not reach the stacker in time to rock the blades 7 away from the back points 10 before the solenoid 19 has time to lift the connector 29 to the back points 30. This always happens in the event of a choke of the paper transpiring in the folding mechanism.

Under normal conditions the operation of the folding mechanism on the stacker and the blade 7 therein is so frequent that the circuit embodying the solenoid 19 is maintained substantially open, the dash pot 27 preventing the lift of the connector 29 during the period of electrical impulse imparted to the solenoid 19. It is only when the impulse is continued to saturation that the connector is lifted to make the contact complete the circuit incorporating the solenoid 31.

By this arrangement it will be seen the operator can place his feed control mechanism in condition to become operative, subject to the relatively slow operation of the folding mechanism in delivering the folded paper to the stacker.

An audible alarm represented in the drawings as the bell 35 is incorporated in the control mechanism by means of a branch circuit wire 36 which is connected with the wire 11 of the main circuit and with the wire 24 through the back point contacts 37 and the connector 38 which is structurally united with the connector 29 to be operated by the solenoid 19.

By this arrangement, whenever a folding machine is stopped as a result of the operation of the present feed control mechanism, the bell 35 sounds an alarm and continues to ring until the switch 25, or other means provided, is opened.

Claims.

1. The combination of an actuating mechanism for a folding machine having a stacker for moving successively the folded sheets toward a delivery station of said machine; an electrically-actuated stopping mechanism for said machine; and means operatively connected with said folding machine adjacent the delivery station thereof, comprising a switch member operably disposed in the path of the folded sheets for operation thereby, electro-mechanical means for actuating said stopping mechanism by varying the electrical condition thereof, an electric circuit embodying a source of supply, said electro-mechanical means, and a slow operating circuit closer adapted to operatively affect said circuit when energized, and means for energizing said slow operating circuit closer.

2. The combination of an actuating mechanism for a folding machine; an electric circuit incorporating an electro-mechanical device for actuating the operating circuit of a stopping mechanism for said folding machine; a plurality of electro-mechanical devices for actuating said device; timing means for retarding the operation of the first mentioned electro-mechanical device during the passage of a sheet of paper from the feed to the delivery of a paper folding machine; and timing means for retarding said electro-mechanical devices in correspondence with the operation of the delivery element of said folding machine.

3. The combination of an actuating mechanism for a folding machine; an electric circuit incorporating an electro-mechanical device for actuating the operating circuit of a stopping mechanism for said folding machine; a circuit breaker controlling said electric circuit, operably connected with the delivery element of said folding machine; and a timing device for rendering said electric circuit in service condition, said timing device being retarded in its action to correspond with the interval of time required to run a sheet through said folding machine.

4. The combination of an actuating mechanism for a folding machine; an electric circuit incorporating an electro-mechanical device for actuating the operating circuit

of a stopping mechanism for said folding machine; a circuit breaker controlling said electric circuit, operably connected with the delivery element of said folding machine; a timing device for rendering said electric circuit in service condition, said timing device being retarded in its action to correspond with the interval of time required to run a sheet through said folding machine; and manual means for making the operation effective of said last mentioned timing device.

THEODORE J. BEREGH.