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J. G. & M. O. REHFUSS.

APPARATUS FOR CONVEYING TOPS AND BOTTOMS OF CANS.

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NO MODEL.

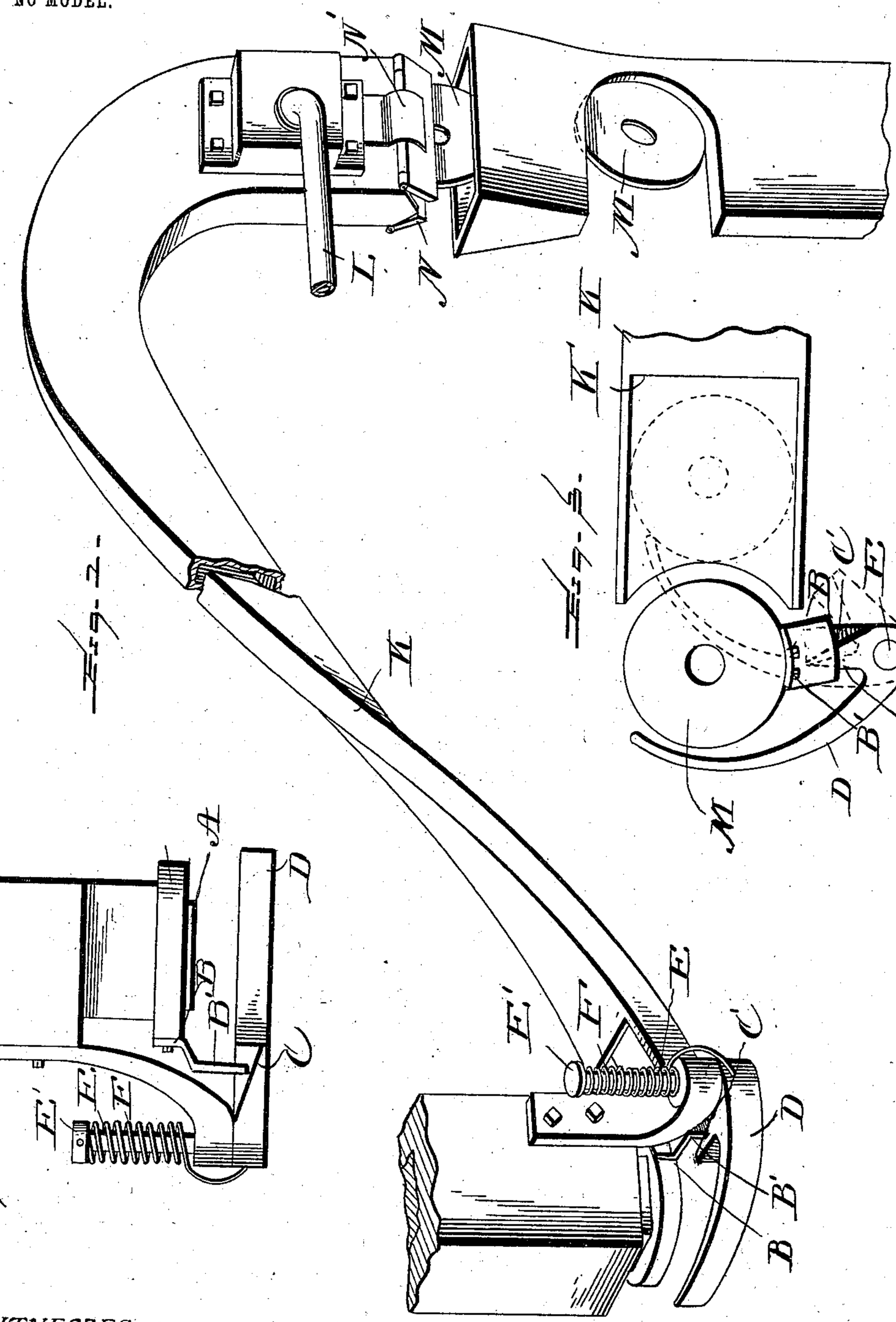

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

WITNESSES:

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APPARATUS FOR CONVEYING TOPS AND BOTTOMS OF CANS.

SPECIFICATION forming part of Letters Patent No. 725,588, dated April 14, 1903.

Application filed May 6, 1902. Renewed March 23, 1903. Serial No. 149,205. (No model.)

To all whom it may concern:

Be it known that we, JOHN G. REHFUSS and MARTIN O. REHFUSS, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Conveying Tops and Bottoms of Cans; and we do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in apparatus for pneumatically conveying tops and bottoms for cans from locations adjacent to cutting-dies where the tops and bottoms are stamped from the sheets of tin to positions adjacent to the body portions of cans to which they are adapted to be automatically applied; and the invention consists, in connection with the punch, of means for actuating an arm whereby the top or bottom for a can may be automatically thrown into the pneumatic conveyer and deposited into a chute, where it assumes a position to be caught by the body portion of a can and clapped thereover by means which is clearly set forth in our former application, Serial No. 97,907.

The invention consists, further, in various details of construction and combinations of parts, as will be hereinafter fully described and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts in the several views, in which—

Figure 1 is a perspective view showing the manner of throwing the tops and bottoms as they are cut from a sheet of tin into a pneumatic conveyer, also the exit end of the conveyer, where the tops and bottoms are deposited into a chute through which they pass to locations to be applied to the ends of the body portions of the cans. Fig. 2 is a detail view, in side elevation, of the die and arm actuated thereby for throwing the top or bottom into the pneumatic conveyer. Fig. 3 is a top plan view of the entrance to the pneumatic conveyer and the arm for throwing the top or bottom into said conveyer.

Reference now being had to the details of the drawings by letter, A designates a punch, there being one upon each side of the portion of the machine which is adapted to stamp the tops and bottoms from a strip of tin and which is covered by our previous application. As the pneumatic conveyer for carrying the tops and bottoms is of a similar construction on each side of the machine, we have illustrated but one system. Said die is caused to reciprocate by any suitable mechanism, and at each downward thrust thereof a top or bottom for a can is adapted to be stamped from the strip and rest upon a die or table. Fastened to said die is a block B, having an inclined edge B′, which is adapted at each downward thrust of the die to contact with an inclined surface C′ upon the projecting end C of an arm D, whereby said arm is thrown out of the path of the die on the downward descent of the latter. The arm D is mounted to turn upon a pivoted post E, and a coil-spring F is fastened at one end to the head E′, which, if desired, may be a nut fastened to the post, whereby said nut may be turned to regulate the tension of said spring. The opposite end of the spring bears against the end C′ of the arm D and is adapted to throw the latter forward toward the entrance to the pneumatic conveyer after the die has punched a top or bottom and rises to relieve the arm from contact with its inclined edge.

K designates a pneumatic conveyer, which is preferably disposed at an angle and has an opening K′ adjacent to the end near the table or die where the top or bottom for the can is punched. Communicating with said pneumatic conveyer adjacent to its exit end is a suction-pipe L, through which air is drawn for the purpose of drawing the top or bottom for the can up the inclined passage-way. Pivoted to the opposite walls of the exit end of the pneumatic passage-way are the

valves N, which are normally held closed by the suction drawing the air through the pipe L; but said valves are adapted to open to allow a top or bottom M for a can to pass out of the passage-way by the impact of the top or bottom coming against the free ends of the valves with sufficient force to cause the same to open. A spring N′ is fastened to each side of the chute and bears yieldingly against the valve N to coöperate with the pneumatic current to close said valves. The exit end of the pneumatic passage-way is positioned, preferably, adjacent to the top of the chute Q, into which the top or bottom for the can drops by gravity to be placed upon the ends of the can, in a manner disclosed by our former application before referred to.

The operation of our invention is simple and will be readily understood. It is as follows: At each downward thrust of the die the arm D will be thrown out of the path of the die as the inclined outer end of the block B comes in contact with the surface C′ of the end C, and after the top or bottom has been stamped from a sheet of tin as the die rises, so that the inclined surfaces will be free of each other, the tension of the spring F will throw the arm D forward with sufficient force to cause the top or bottom to pass into the inlet-entrance to the pneumatic passage-way K, whence it is caught by the suction in the passage-way and carried up to a location where it comes in contact with the valves N, and the impact of the top or bottom coming in contact with said valves will cause the latter to open outward to allow the top or bottom to pass out and into the chute Q, from which it falls by gravity and is deposited in position to be applied to the body portion of a can.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A pneumatic conveyer for carrying tops and bottoms of cans to be applied to the body portions thereof, comprising a spring-actuated arm adapted to feed a top or bottom into said conveyer, and valves at the exit end of the conveyer normally held closed by the suction in the latter and designed to open under the impact of a top or bottom coming in contact therewith, as set forth.

2. In combination with a pneumatic conveyer, a pivoted arm adapted to throw the top or bottom of a can into said conveyer, and a reciprocating member adapted to swing said arm, as set forth.

3. In combination with a pneumatic conveyer, a reciprocating die, a spring-actuated arm, and means connected with said die for swinging said arm to cause the spring to be under tension as the die is depressed, as set forth.

4. In combination with the pneumatic conveyer, an arm, a post to which the same is pivoted, a spring secured at one end to the head of said post and at its other end held against the arm, a reciprocating die, a block with an inclined surface carried thereby and adapted as the die is depressed to throw said arm out of the path of the die, and place the said spring under tension, whereby as the die rises said arm is thrown by the tension of the spring to feed the top or bottom of a can into said conveyer, as set forth.

5. A pneumatic conveyer, for carrying tops and bottoms of cans to be applied to the body portions thereof, having combined therewith a pivoted arm mounted adjacent to one end of the conveyer and means for automatically operating same to push the tops and bottoms for the cans into the conveyer, as set forth.

6. In combination with a pneumatic conveyer for carrying tops and bottoms to be applied to the body portions of cans, a pivoted spring-actuated arm mounted adjacent to the entrance of said conveyer and means for automatically throwing the free end of said arm into the end of the conveyer, as set forth.

7. In combination with a pneumatic conveyer, a spring-actuated arm mounted adjacent to one end thereof and means for actuating said arm, hinged valves at the opposite end of the conveyer, and means for holding said valves against the inclined end of said conveyer, as set forth.

8. In combination with a pneumatic conveyer having a spring-actuated arm pivotally mounted adjacent to one end thereof and means for throwing said arm toward the end of the conveyer, hinged valves mounted on the other end of the conveyer, and designed to close against the inclined end of the conveyer, and spring-arms bearing against said valves, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN G. REHFUSS.
MARTIN O. REHFUSS.

Witnesses:
J. B. JARDELLA,
JOS. ZEIGLER.