O. JAEGER.

DISPENSING APPARATUS.

APPLICATION FILED JUNE 16, 1915.

1,195,587.

Patented Aug. 22, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

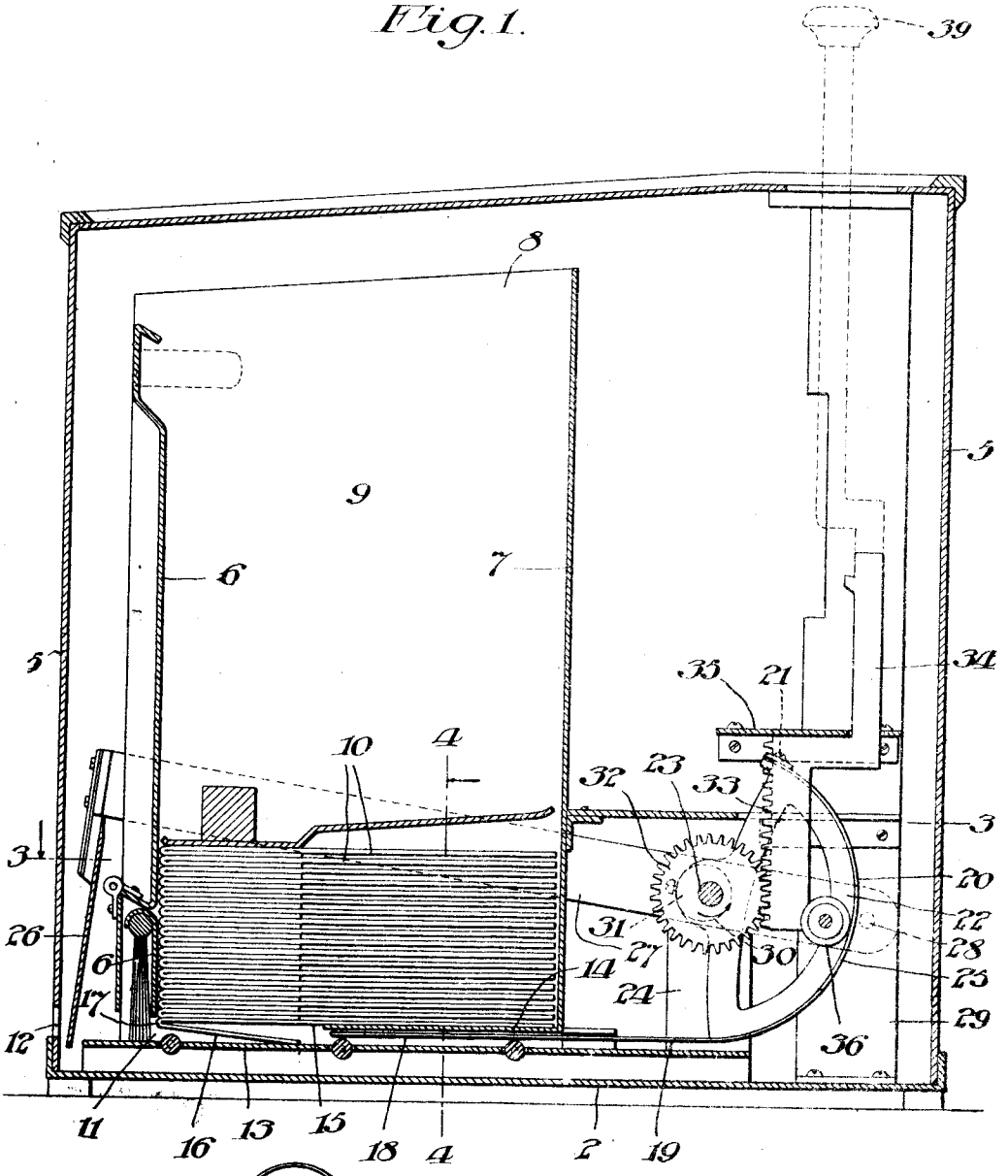
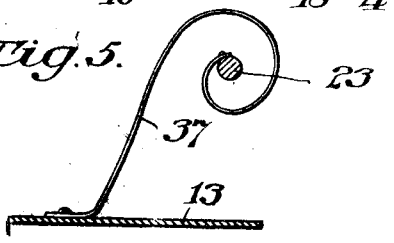


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 2.

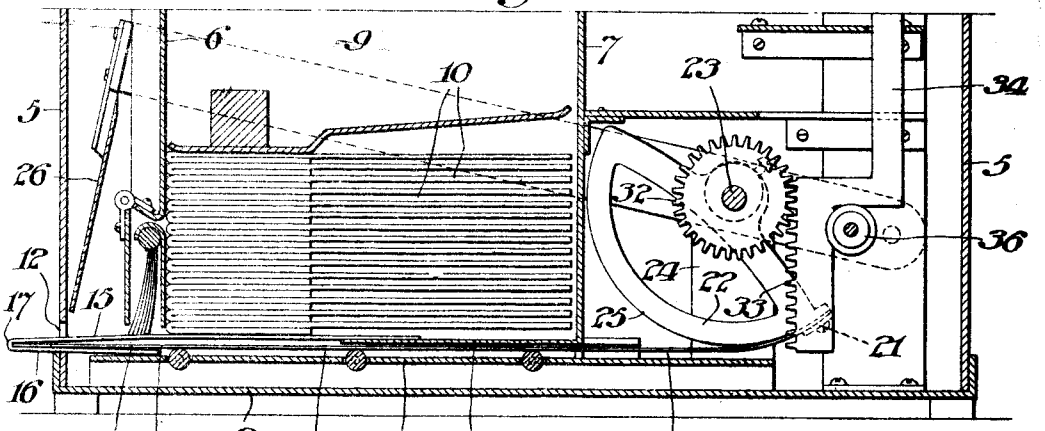


Fig. 3.

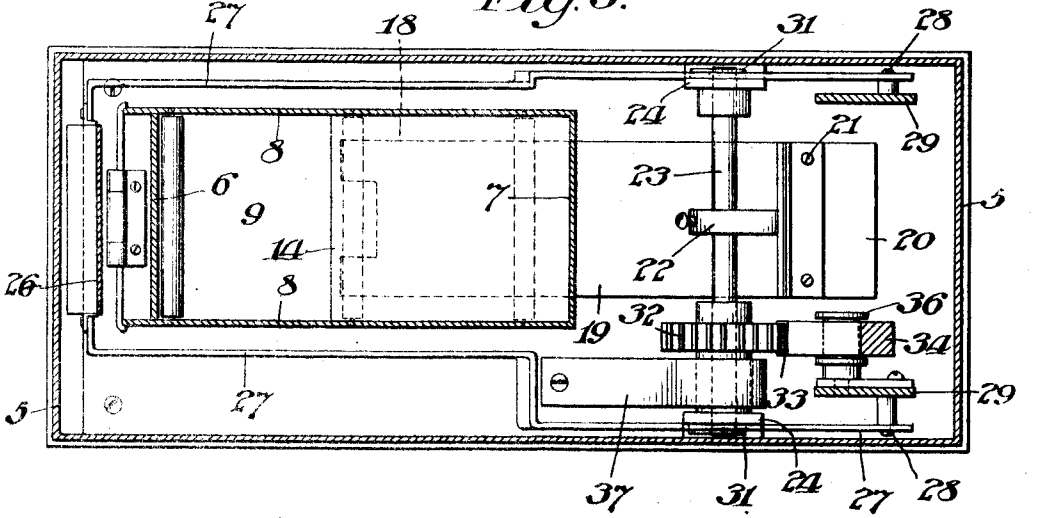
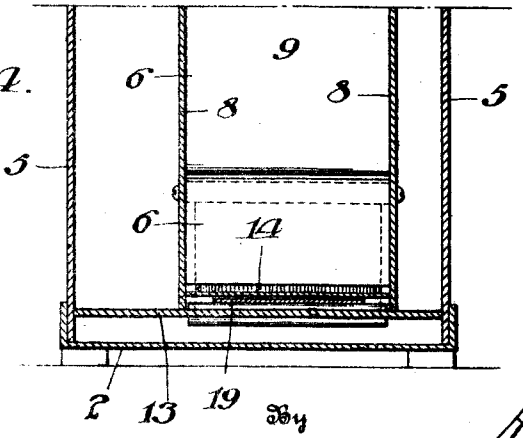


Fig. 4.



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UNITED STATES PATENT OFFICE.

OTTO JAEGER, OF ELKINS PARK, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO INDUSTRIAL SERVICE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF DELAWARE.

DISPENSING APPARATUS.

1,195,587. Specification of Letters Patent. Patented Aug. 22, 1916.

Application filed June 16, 1915. Serial No. 34,356.

To all whom it may concern:

Be it known that I, OTTO JAEGER, citizen of the United States, residing at Elkins Park, Montgomery county, Pennsylvania, have invented certain new and useful Improvements in Dispensing Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in dispensing apparatus having a suitable container for the articles to be dispensed and an ejector adapted to eject the articles through a suitable discharge opening in the container.

The primary object of my invention is to provide a novel ejector and a novel operating means therefor which shall consists of few parts and which may be made in compact form and which shall occupy little space within the apparatus.

A further object of my invention is to provide a door movable to and from a normal position closing the discharge opening in the container in combination with a novel, simple and efficient means, operated by the ejector operating means, for moving the door into and from its normal position to permit articles to be dispensed through the discharge opening.

The invention consists in the novel construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a vertical section through a dispensing apparatus embodying my invention, showing the parts in normal position. Fig. 2 is a view of the lower portion of Fig. 1, showing the position of the parts after the operation thereof to discharge an article through the discharge opening in the container and before the parts are returned to normal position. Fig. 3 is a horizontal section, on line 3—3 of Fig. 1, omitting the articles to be dispensed. Fig. 4 is a vertical section, on line 4—4 of Fig. 1, omitting the articles to be dispensed. Fig. 5 is a sectional detail showing the operating spring.

Referring to the drawings, 2 designates the base of the machine or apparatus and 5 a casing supported thereon.

Supported on the base 2 within the casing 5 are vertically extending walls 6, 7 and 8 inclosing a chamber or container 9 adapted to receive and contain the articles 10 to be dispensed. The forward wall 6 of the container 9 has a discharge opening 11 therein through which the articles 10 may be successively projected by devices hereinafter described, and the casing 5 also has a discharge opening 12 therein in front of the opening 11 and through which the articles 10 may be projected when they are projected through the opening 11.

The container 9 is provided with a horizontal bottom wall or plate 13, and also with a horizontal partition wall or plate 14 extending across the rearward portion of the container a slight distance above the bottom plate 13 thereof, the forward end of the plate 14 being spaced from the front wall 6 of the container for a purpose hereinafter explained.

The articles 10 to be dispensed, herein shown, are folded sheets of paper, each comprising a flat body 15 shaped to fit freely into the container 9, and an end portion 16 folded at 17, and extending beneath one end of the body portion 15, as clearly shown in Fig. 1. When the articles 10 are stacked within the container 9, the stack rests upon the partition plate 14, and the folded end portions 16 are all above the space between the forward end of the plate 14 and the wall 6; and, owing to the natural tendency of the folded paper to spring back and resume its original unfolded condition, the folded end portion 16 of the lowermost article 10 will spring down from the body 15 thereof and bear against the bottom plate 13, as shown in Fig. 1.

Between the bottom plate 13 and the partition plate 14 and rearwardly of the downwardly-extending end portion 16 of the lowermost article 10, is the forward end portion 18 of an ejector plate 19 which is formed of spring metal. The rearward portion 20 of the spring ejector plate 19 is secured, at 21, to a member 22 which is secured to a horizontal shaft 23. The shaft 23 is mounted to turn in suitable bearings 24 rising from the base 2, thereby pivotally supporting the member 22. This member 22 is provided with a curved face 25, preferably concen-

tric with the shaft 23, adapted to form a bearing for the rearward portion 20 of the ejector plate 19. The member 22 and shaft 23 are so located with respect to the partition plate 14 that the bottom of the curved face 25 of the member 22 will occupy a position substantially in the same horizontal plane with the bottom of the plate 14 in all positions of the member 22, so that when the member 22 and shaft 23 are turned from the position shown in Fig. 1 to the position shown in Fig. 2, the ejector plate 19 will be projected straight through the space between the plates 13 and 14, the ejector plate 19 leaving the parts of the curved face 25 of the member 22 as they move upwardly from the plane of the horizontally-extending portion of the plate 19, and so that when the member 22 is returned from the position shown in Fig. 2 to the position shown in Fig. 1, the spring plate 19 will be formed around and reëngaged with the curved face 25 of the member 22 without disturbing the straight horizontal condition of the forward portion 18 of the plate 19. I am thus enabled to connect an ejector plate having an active portion moving in a straight line, directly with a pivoted operating part without the additional parts heretofore required between the ejector plate and a pivoted operatting part therefor.

When the ejector plate 19 is moved from the position shown in Fig. 1 to the position shown in Fig. 2, the forward end of the ejector plate will enter between the folded portion 16 of the lowermost article 10 and the body 15 thereof and will engage the fold 17 and project the forward portion of the said lowermost article 10 through the discharge openings 11 and 12; and, after the article 10 has been thus projected, it may be readily drawn from the container 9 by hand.

To close the discharge openings 11 and 12 when the parts are in the normal position shown in Fig. 1, and thus prevent the insertion of devices into the container 9 for the withdrawal of the articles 10 therefrom, I provide a door 26 between the front wall of the casing 5 and the front wall of the container 9. The door 26 is carried by the forward ends of arms 27 arranged on the respective sides of the container 9 and having their rearward ends pivoted, at 28, to standards 29 rising from the base 2. The arms 27 are provided with openings 30 to which are fitted eccentrics 31 secured on the shaft 23. The eccentrics 31 are arranged relatively to the member 22 so that when the shaft 23 is turned to move the member 22 from the position shown in Fig. 1 to the position shown in Fig. 2, the eccentrics 31 will raise the arms 27 and thereby raise the door 26 to permit the article 10 to be projected through the discharge openings 11 and 12, and so that when the shaft 23 and member 22 are returned to the normal position shown in Fig. 1, the door 26 will be lowered to close the openings 11 and 12.

To actuate the shaft 23 and thereby operate the ejector plate 19 and door 26, I provide the following: Secured to the shaft 23 is a gear wheel 32 which is in mesh with a gear rack 33 formed on the lower end of a vertically movable plunger 34 which is guided in an opening in a horizontal plate 35 and by a flanged roller 36 engaging the back of the lower portion of the plunger 34. The roller 36 is mounted to turn on a stud on one of the standards 29, and the plate 35 is secured to the standards 29 and the rear wall of the container 9. The plunger 34 is maintained normally elevated in the position shown in Fig. 1 by the action of a spiral spring 37 having one end secured to the shaft 23 and the other end secured to the plate 13 and tending to turn the shaft 23 in the direction of the arrow. By depressing the plunger 34 the parts may be moved from the normal position to the position shown in Fig. 2 to dispense an article 10, thereby winding the spiral spring 37 around the shaft 23; and, after an article 10 has been dispensed and the pressure is removed from the plunger 34, the spring 37 will return the parts to the normal position, shown in Fig. 1, for a succeeding operation.

A suitable coin-controlled mechanism may be contained within the casing 5 for operating the plunger 34, so that an article 10 may be dispensed each time a coin is inserted into the apparatus; or, should it be desired to operate the plunger 34 directly by hand, it may be extended up through and above the top of the casing 5 and provided with a suitable handle or knob 39 on the upper end thereof, as indicated by dotted lines in Fig. 1.

I claim:

1. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, an ejector plate movable within the container, guides to which said plate is slidably fitted, said plate having a flexible end portion movable through a curved path into and from said guides, and means operative to move said end portion.

2. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, a horizontal ejector plate movable within the lower portion of the container and having a flexible end portion, means to guide the ejector plate, a pivoted member connected to said flexible portion and having a curved portion adapted to receive and form a bearing for said flexible portion when said member is turned, said flexible end portion being operative to

push said plate when said member is moved and means operative to turn said member.

3. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, a horizontal ejector plate movable within the lower portion of the container and having a flexible end portion, means to guide the ejector plate, a pivoted member connected to said flexible portion and having a curved portion adapted to receive and form a bearing for said flexible portion when said member is turned, a reciprocative plunger, and means operated by said plunger to turn said member.

4. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, a horizontal ejector plate movable within the lower portion of the container and having a flexible end portion, means to guide the ejector plate, a rotatable shaft, a member carried by said shaft and connected to said flexible portion, a gear wheel carried by said shaft, a reciprocative gear rack engaged with said gear wheel, and means operative to move said gear rack.

5. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, an ejector adapted to be operated to dispense articles from the container, a rotatable shaft, means operated by the shaft for operating the ejector, a pivoted arm, a door carried by said arm and movable therewith to and from a normal position closing said opening, means operated by said shaft for moving said door, and means operative to turn said shaft.

6. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, an ejector adapted to be operated to dispense articles from the container, a rotatable shaft, means operated by the shaft for operating the ejector, a door movable to and from a normal position closing said opening, an eccentric carried by said shaft, means operated by said eccentric for moving said door, and means operative to turn said shaft.

7. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, an ejector adapted to be operated to dispense articles from the container, a rotatable shaft, means operated by the shaft for operating the ejector, a door movable to and from a normal position closing said opening, a pivoted arm carrying said door, an eccentric carried by said shaft and operatively connected to said arm, and means operative to turn said shaft.

8. In a dispensing apparatus, a casing providing a container for the articles to be dispensed and having a discharge opening in the front wall thereof, an ejector adapted to be operated to dispense articles from the container, a rotatable shaft, means operated by the shaft for operating the ejector, a door movable to and from a normal position closing said opening, a pivoted arm carrying said door and having an opening therein, an eccentric carried by said shaft and fitted to the opening in said arm and adapted to move said arm, and means operative to turn said shaft.

In testimony whereof I have hereunto affixed my signature this ninth day of June, A. D. 1915.

OTTO JAEGER.

Witnesses:
THOMAS C. LEONARDS,
I. M. TUNIS.