April 15, 1930. H. K. LORENTZEN 1,754,957

DISPENSING DEVICE FOR FLEXIBLE SHEET ARTICLES

Filed Nov. 19, 1926 2 Sheets-Sheet 1

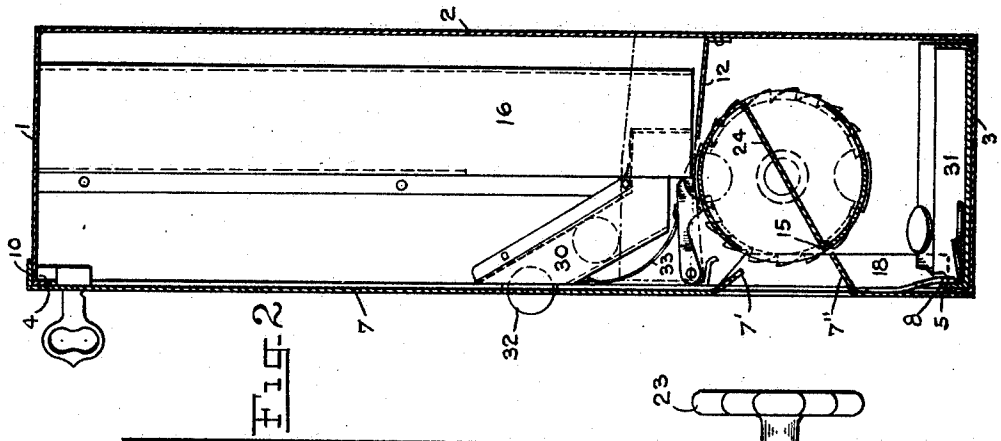


FIG. 2

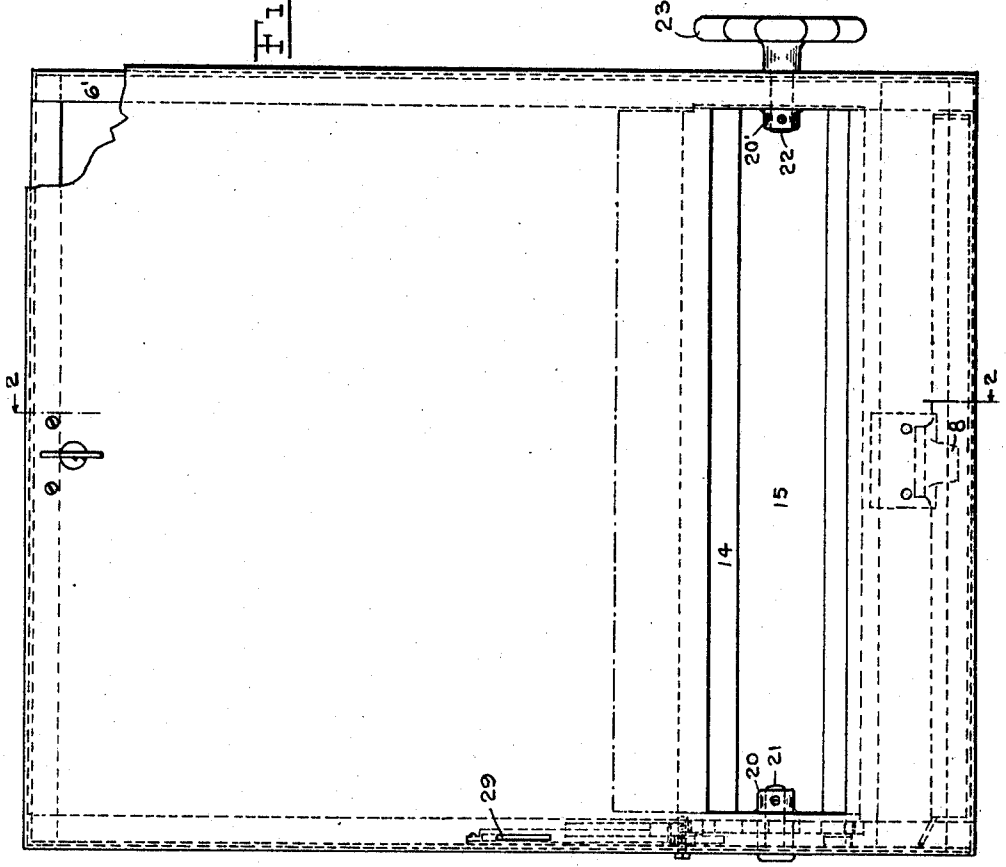


FIG. 1

Inventor
Hans K. Lorentzen
By his Attorney S. J. Cox.

April 15, 1930. H. K. LORENTZEN 1,754,957

DISPENSING DEVICE FOR FLEXIBLE SHEET ARTICLES

Filed Nov. 19, 1926 2 Sheets-Sheet 2

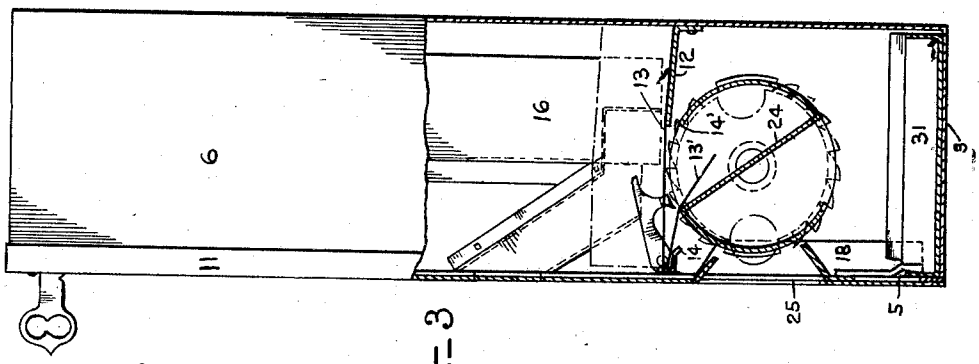


Fig. 3

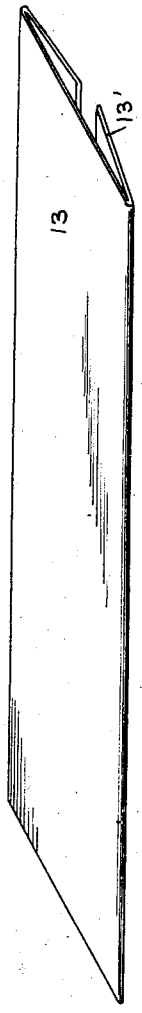


Fig. 4

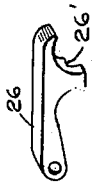


Fig. 6

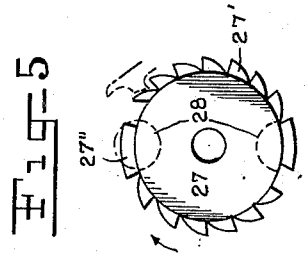


Fig. 5

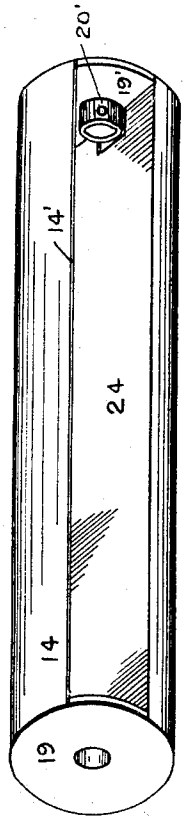


Fig. 7

Inventor
Hans K. Lorentzen
By his Attorney S. J. Cox.

Patented Apr. 15, 1930 1,754,957

UNITED STATES PATENT OFFICE

HANS K. LORENTZEN, OF NEW YORK, N. Y.

DISPENSING DEVICE FOR FLEXIBLE SHEET ARTICLES

Application filed November 19, 1926. Serial No. 149,341.

The improvements relate primarily to devices for dispensing relatively soft flexible articles, such as paper towels and napkins, but may be applied or adapted to other uses. Articles of the character indicated are usually light and tenuous and easily torn, unfolded or crumpled. It is therefore difficult to dispense them automatically and accurately in individual pieces and without danger of clogging or otherwise interfering with the operation of or injuring the dispensing mechanism. To produce an apparatus which will overcome these difficulties and provide strong, safe and durable means, which cannot be meddled with, for dispensing the articles, is the principal object of the present improvements.

The improvements are illustrated in the accompanying drawings, in which Fig. 1 is a front elevation of a dispensing mechanism embodying the improvements;

Fig. 2 is a medial vertical section thereof substantially on the line 2—2 of Fig. 1, looking in the direction indicated by the arrows;

Fig. 3 is a similar section to Fig. 2 of the lower part of the device, with the upper part shown in side elevation;

Fig. 4 is a perspective of one of the articles which the apparatus is intended to hold and dispense;

Fig. 5 is a detail of the coin operating ratchet wheel of the apparatus shown;

Fig. 6 is a detail of the pawl and dog which controls the operation of the dispensing cylinder, through the ratchet wheel; and

Fig. 7 is a detail in perspective of the dispensing cylinder.

In the illustrative embodiment of the improvements herein described and shown the apparatus is coin operated. The improvements, however, in their broader aspect, are not limited to coin operated or even to other vending machines, and may be employed in connection with any suitable controlling means.

The casing of the device comprises a top 1, back 2 and bottom 3 with upturned top and bottom edges 4 and 5 respectively, sides 6 secured to these parts and a removable front or cover 7 secured at the bottom by means of a depending inwardly extending tongue 8 overlapping the upturned bottom edge 5, and a lock 9 engaging behind the downwardly turned upper edge 4. The door also has a horizontal flange 10 formed by its inturned upper edge and vertical flanges 11 formed by turning in its side edges. These flanges overlap the front edges of the casing when the cover or door is in position, to form a secure closure.

A shelf 12 secured to the inside of the back and at a lower part of the casing supports a stack of folded towels or other articles 13 to be dispensed. These articles extend forward of the shelf and have the under, outer portion of the bottom article in contact with the outer shell of the dispensing cylinder 14, so that when the cylinder is turned to bring one of its longitudinal apertures 15 beneath such article its flap 13′ resting upon the cylinder will drop below the edge of the aperture into the path of the advancing edge of the latter and be engaged thereby. At both ends of the box or casing a hollow spacing projection 16 running from the shelf to the top is secured so that the ends of the stack of articles will be spaced from the sides of the casing and the bottom forward portion of each article will be prevented from coming in contact with any part of the device except the cylinder when it reaches the bottom of the stack. The forward edge of each article 13 is supported on a short shelf 17 extending across the front of the box and secured to the sides thereof at its ends, and the front cover has flanges 18 which are passed over the front vertical edge flanges 6′ of the casing, so as to extend inside the said case and guide the articles as they move to and through the discharge opening, which is

protected by the inwardly inclined upper and lower lips 7′, 7″.

The cylinder 14 is closed at its ends by disks 19, 19′ which have inwardly extending collars 20, 20′ to receive a spindle 21, fixed in the side of the casing, at one end, and the stub shaft 22 of an operating wheel 23, passed through the opposite side of the casing, at the other end, by means of which the cylinder is mounted for rotation. The cylinder also has a central partition 24 extending from the edge of one opening to the corresponding edge of the opposite opening which divides its interior into two compartments, and, with the flanges 18 and the lips 7′, 7″ effectively closes the interior of the casing so that access cannot be had thereto through the discharge opening 25. As the two openings 15 of the cylinder shell are diametrically opposite each other, a half turn of the cylinder is all that is necessary to pass one of the towels or other articles through the discharge opening. This is accomplished by turning the wheel 23 counterclockwise so that the flap 13′ falls into the opening 15 and is then carried to the discharge opening by the edge 14′ of the cylinder opening, where it will protrude so that it may be grasped by the fingers and drawn out through the opening.

The pawl 26 acts as a pawl to engage the ratchet teeth 27′ of the wheel 27 and prevent clockwise movement of the said wheel, and also, by dropping into the notch between one of the projections 27″ of the wheel and the nearest tooth checks the counter clockwise movement of the wheel after a half revolution. The pawl is pressed against the periphery of the wheel by the spring 33. The wheel is also provided with coin recesses 28 in its edges, and at one side of the teeth 27′, so that when a coin drops therein it will project above the stop 27″ and raise the pawl 26 through contact with the step 26′ thereof and permit pawl to pass over the stop. To operate the device, a coin, 32, is passed through the slot 29 so that it will gravitate to the bottom of the chute 30 and enter the recess 28 of the wheel 27, and take its position in the path of the pawl 26. When a half rotation of the cylinder has been accomplished the coin will fall from the wheel into the coin tray 31. As the wheel 27 is fixed to the end 19 of the cylinder 14 the movement of the latter is controlled by the devices for controlling the wheel.

What I claim is:

In mechanism for dispensing flexible articles supported within a casing, the combination with a cylindrical member having closed ends to be mounted below said flexible articles, of means secured to said closed ends for rotatably mounting said cylindrical member within said casing, said cylindrical member having its peripheral wall interrupted to provide diametrically opposed openings therein between segments of said peripheral wall, each of said segments having a forward edge and a rearward edge, and a partition plate for said cylindrical member extending diametrically across said cylinder and connecting the respective rearward edges of said segments, said forward edge upon rotation of said cylindrical member being adapted to engage the lowermost of said flexible articles for delivering the same to an opening in said casing.

Witness my hand this 18th day of November, 1926, at the city of New York, county of New York, State of New York.

HANS K. LORENTZEN.