C. ERRETT.

CUP DISPENSER.

APPLICATION FILED DEC. 15, 1916.

1,229,733.

Patented June 12, 1917.

3 SHEETS—SHEET 1.

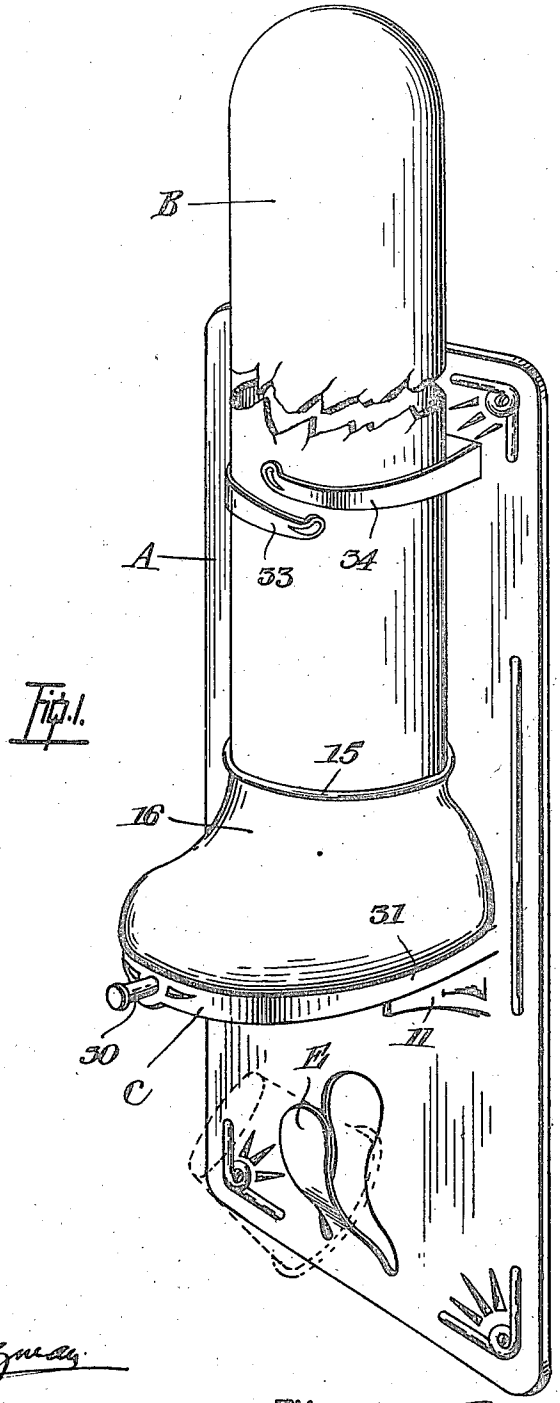


Fig. 1.

WITNESS:

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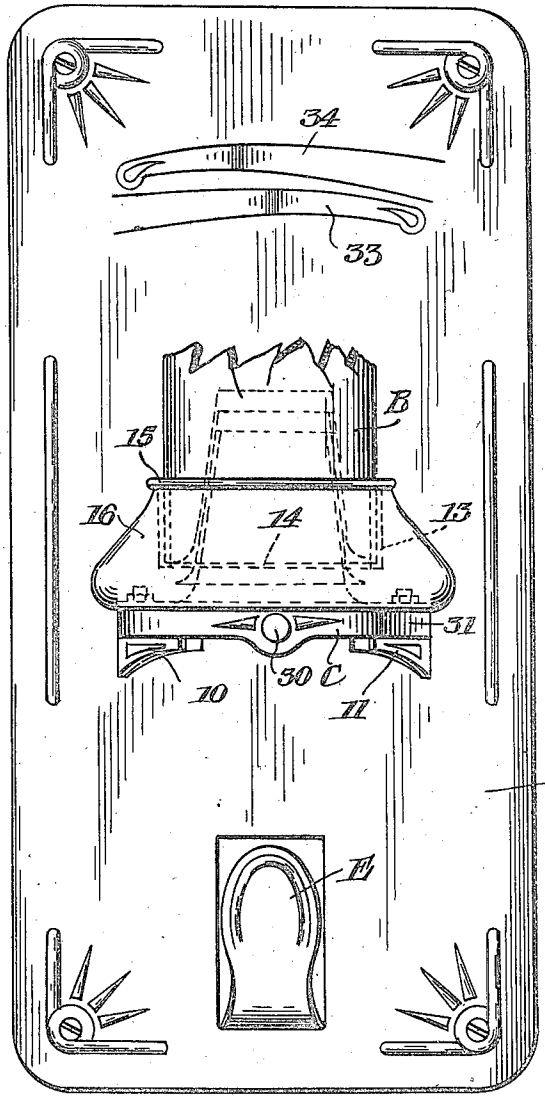


Fig. 2.

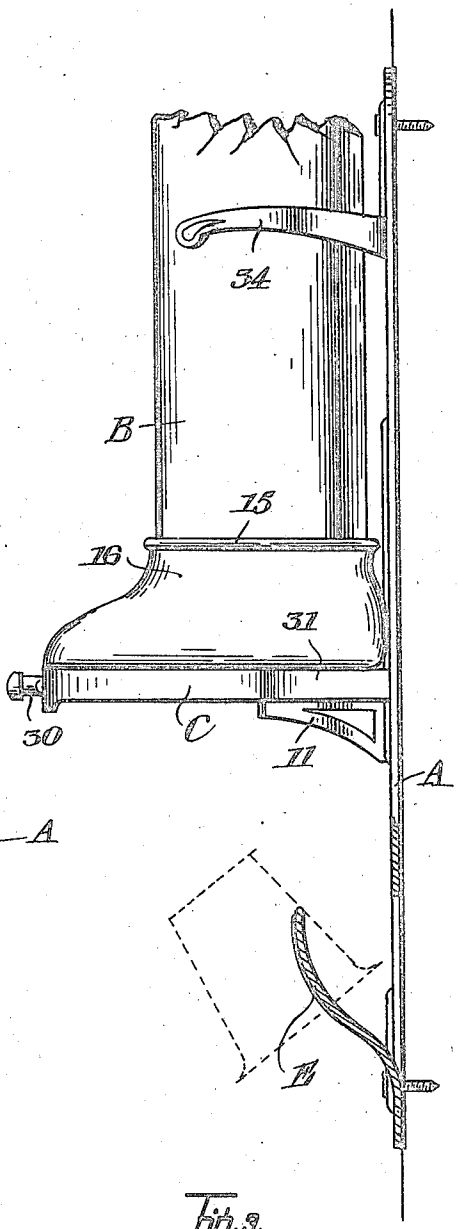


Fig. 3.

WITNESS

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3 SHEETS—SHEET 3.

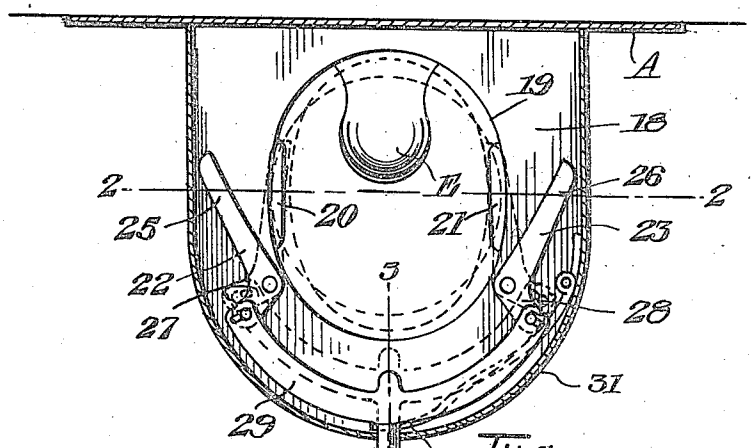


Fig. 4.

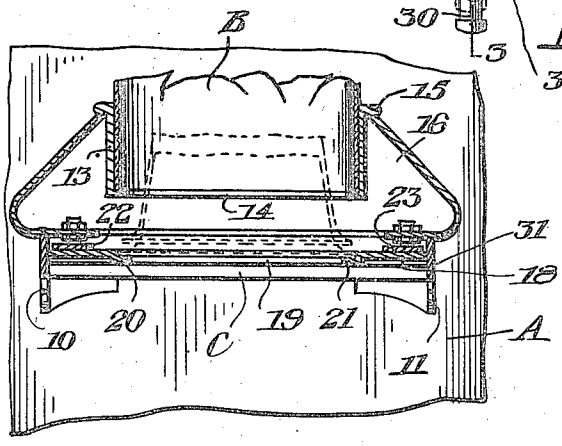


Fig. 5.

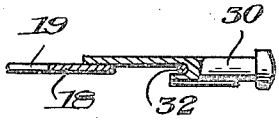


Fig. 6.

WITNESS

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UNITED STATES PATENT OFFICE.

CHARLES ERRETT, OF NEW YORK, N. Y.

CUP-DISPENSER.

1,229,733. Specification of Letters Patent. Patented June 12, 1917.

Application filed December 15, 1916. Serial No. 137,208.

To all whom it may concern:

Be it known that I, CHARLES ERRETT, a subject of the King of Great Britain, and resident of the city of New York, in the State of New York, United States of America, have invented certain new and useful Improvements in Cup-Dispensers, of which the following is the specification.

This invention relates to improvements in cup dispensers of the type particularly used for dispensing flexible paper cups and the objects of the invention are to provide a simple and effective means by which the end cup of a stack may be released for use.

It is already well known to separate paper cups by means of wedged members adapted to be inserted between the lips of the cup. This action, however, in addition to contamination of the lip of the cup from a sanitary standpoint, is also likely to damage or multilate the lip. This difficulty is overcome in the present invention by engaging the sides of the cup and causing separation to be effected by distorting the cup whereby the tapered sides of the outermost cup will bear against the next cup and be thus forced outwardly.

The invention comprises the improved construction and arrangement of parts hereinafter described and set forth in the accompanying specification and drawings forming part of the same.

In the drawings,

Figure 1 is a perspective view of an embodiment of the invention.

Fig. 2 is a front elevation.

Fig. 3 is a side elevation partially sectional.

Fig. 4 is a sectional plan view of the dispensing mechanism.

Fig. 5 is a vertical section of the dispensing mechanism on the line 2—2 of Fig. 4.

Fig. 6 is a sectional detail taken along the line 3—3 of Fig. 4.

In the drawings like characters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents a suitable supporting member or plate designed itself to be attached to any convenient fixed support and conveniently formed of pressed sheet metal. B represents a tubular container for the cups in a stack, which are inverted therein. This container is conveniently formed of glass and supported from a shelf C on the supporting member A.

In the particular mechanical construction which I have illustrated, the shelf C is supported by tongues 10 and 11 struck out of the sheet metal supporting member A, but any convenient construction might be adopted. The end of the tubular container B is adapted to rest within a ring 13, a flange 14 on which supports the lower edge of the tubular member, the ring 13 having a flange 15 at the upper end adapted to fit an aperture in an annular supporting member 16 and bear against the upper side of the supporting member as shown in Fig. 5. The lower side of the supporting member is bolted or otherwise detachably connected to the shelf C.

The shelf C includes a supporting plate 18 having an oval aperture 19 through which the cups are adapted to pass as they are dispensed. At the sides of the aperture supporting projections 20 and 21 are formed on which the lowermost cup of the stack is normally adapted to rest as shown in Fig. 5.

Means are provided on the supporting plate by which the lowermost cup of the stack may be compressed from opposite sides to thereby distend the cup in a transverse direction to cause the tapered sides to force the outermost cup in an outward direction. The means which I have shown are to be taken as only one of many instrumentalities which may be provided for the purpose and comprises a pair of pivoted dogs or fingers 22 and 23, shaped after the form of bell-cranks, the arms 25 and 26 of which are adapted to be moved over the projections 20 and 21 to engage the side of the cup and compress the same, and the arms 27 and 28 of which are pivoted to an operating bar 29, a certain play being allowed at the pivoting point, which may be accomplished by making a pin and slot connection between the two.

The operating bar is provided with a push button 30, which projects through the casing 31 formed on the shelf C and which is adapted to contain the operating mechanism parts. The dogs 22 and 23 are retained in normal position by suitable spring means, which in the embodiment illustrated comprise a spring 32 secured to the casing 31 and having one end engaged with the button 30.

The cups as they are dispensed, one by one, from the tubular container B, will fall

downwardly and suitable means are provided for supporting them in convenient position to enable them to be lifted or removed by the operator.

The means I have provided comprise a hook E projecting outwardly from the supporting member A, in such a position as to catch the cup as it falls, as shown in Fig. 3.

To support the upper part of the tubular member B in position, tongues 33 and 34 may be struck out from the supporting member A being adapted to be bent around the tubular member B, as shown in Fig. 1.

The apparatus is designed to be used especially in connection with the various forms of flexible paper cups, which are at present manufactured, and which are almost all tapered.

A stack of such cups is inverted and placed in the container B, the stack being supported by the projections 20 and 21. When it is desired to secure or dispense a single cup, the push button 30 is pushed inwardly, which swings the dogs 22 and 23 inwardly against the sides of the lowermost cup, into the position shown in dotted lines in Fig. 4. This compresses the sides of the lowermost cup in a lateral direction, causing it to assume an oval shape such as is indicated in dotted lines in Fig. 4.

A further result of this transverse distortion is that the distended sides of the cup will press with a moderate pressure against the sides of the next innermost cup. The result of this pressure will be to force the lowermost cup outwardly, thence causing it to drop downwardly through the oval opening 19, while the next outermost cup is supported at first by the upper surface of the dogs 22 and 23, and then by the projections 20 and 21. The cup which has been dispensed drops downwardly onto the hook E from which it may be removed.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention within the scope of the claims constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limited sense.

What I claim as my invention is:

1. A dispenser for flexible cups or the like comprising means for supporting a stack of cups, and means for compressing the end cup of the stack to cause separation therefrom.

2. The combination with a stack of tapered, flexible cups, of means for distorting the shape of the end cup of the stack to cause separation thereof from the stack.

3. A dispenser for flexible cups or the like comprising means for supporting a stack of cups, means for exerting a pressure simultaneously on opposite sides of the end cup to thereby distort the same and exert a pressure against the stack which will cause ejectment of the cup being distorted.

4. A dispenser for flexible cups or the like comprising means for supporting a stack of cups, a pair of compressing members adapted to be inserted between the lips of the two end cups of the stack and means for actuating said members.

5. A dispenser for flexible cups or the like comprising means for supporting a stack of cups, a pair of compressing members adapted to be inserted between the lips of the two end cups of the stack and means for actuating said members, and spring means for holding the compressing members in normal position.

6. A dispenser for flexible cups or the like comprising a supporting member having apertures and projections in the side of the apertures adapted to support the stack, compressing members above the projections adapted to engage and compress the end member of the stack.

7. A dispenser for flexible cups or the like comprising a supporting member having a pair of tongues struck out therefrom, a tubular supporting member for cups adapted to be embraced by the tongues, a supporting shelf on the supporting member, mechanism on the supporting shelf including a pair of compressing members adapted to engage and compress the end members of the stack of cups in the tubular supporting member, and means on the lower part of the supporting member adapted to hold the cup discharged.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES ERRETT.

Witnesses:
FREDERICK L. HACKENBURG,
ETHEL FRIEDRICHS.