June 11, 1935. E. CONTI 2,004,520

DISPENSER

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Fig. 1.

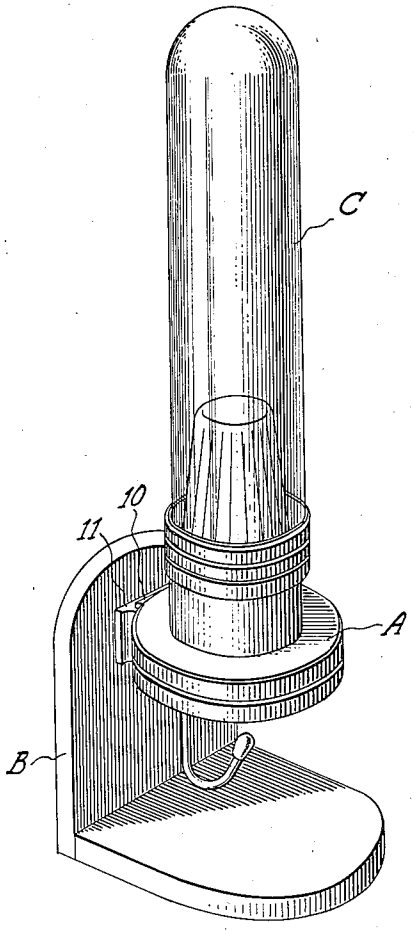
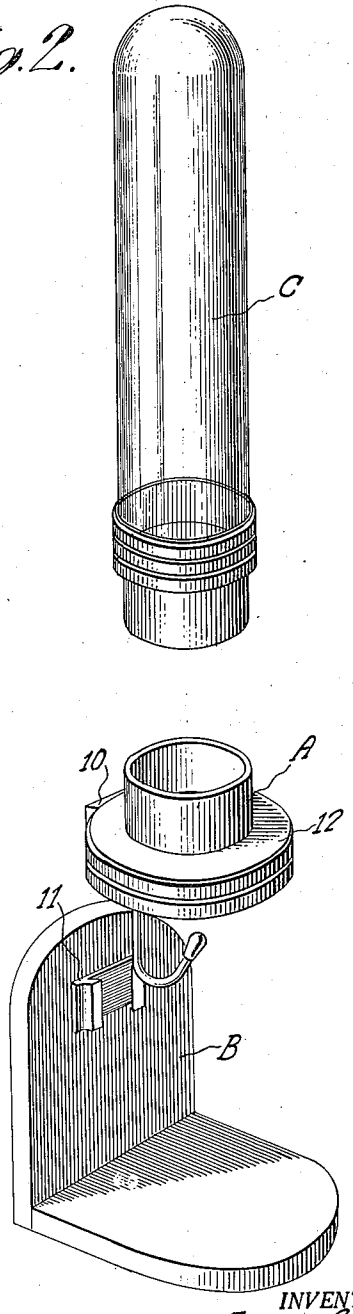


Fig. 2.



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Fig. 3.

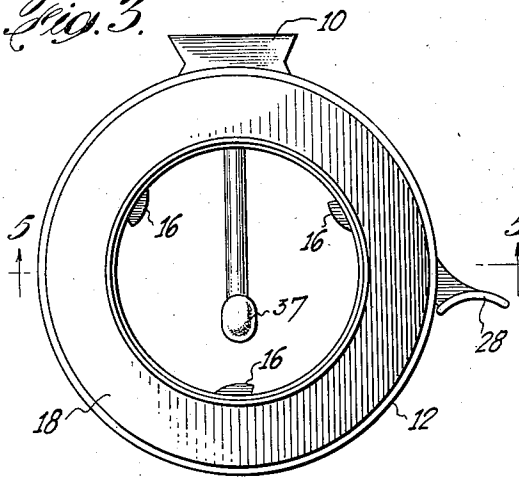


Fig. 4.

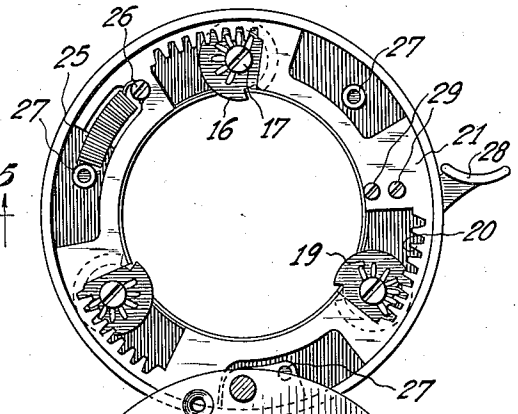


Fig. 5.

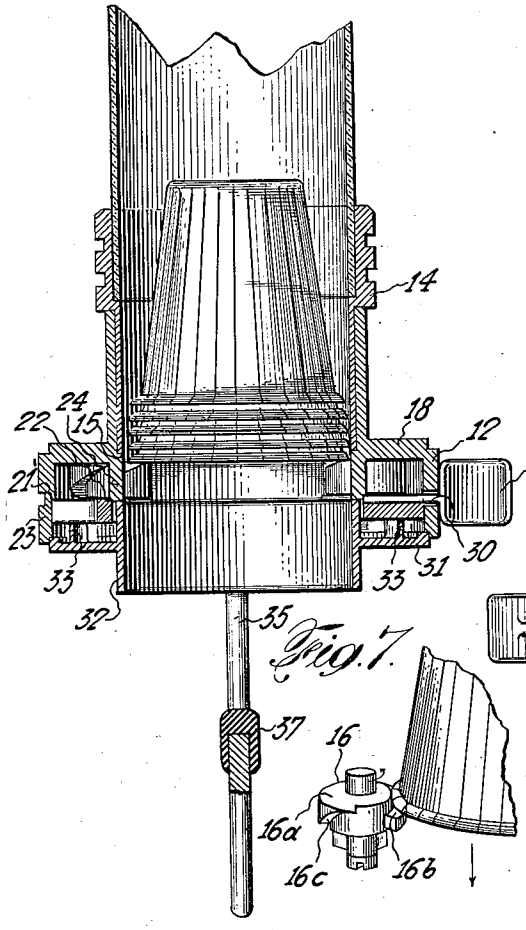


Fig. 6.

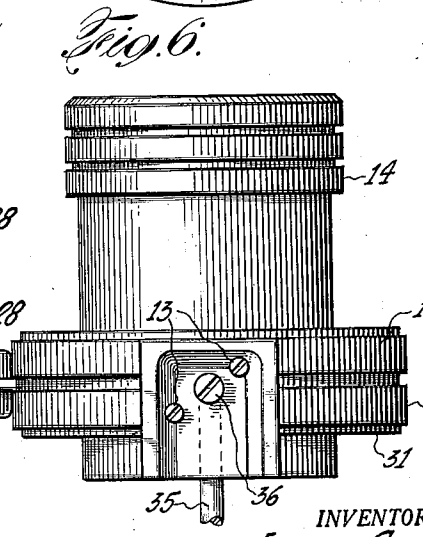


Fig. 7.

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UNITED STATES PATENT OFFICE

2,004,520

DISPENSER

Eugene Conti, Mount Vernon, N. Y., assignor, by mesne assignments, to Herz Cup Company, Incorporated, New York, N. Y., a corporation of New York

Application July 13, 1933, Serial No. 680,171

2 Claims. (Cl. 312—44)

The present invention relates to dispensers, for discharging articles lineally from a stack of such articles, as distinguished from the type of dispensers which discharge articles laterally from a stack, and has for an object the provision of improvements in this art. The dispenser which has been selected to illustrate the principles of the invention and which is shown in the accompanying drawings is intended to be used for dispensing articles which are provided with flanges on the sides thereof, such as paper drinking cups, so the present description will be directed principally to this embodiment of the invention, though it will be realized that the invention may have other embodiments.

Referring to the drawings which form a part of this specification:

Fig. 1 is a side view in perspective of the dispenser;

Fig. 2 is a similar view showing the major units of the dispenser separated from each other;

Fig. 3 is a top plan view of the dispenser proper;

Fig. 4 is a bottom plan view with the cover turned back to show the operating mechanism within;

Fig. 5 is a vertical section taken on the line 5—5 of Fig. 3;

Fig. 6 is a side elevation of the dispenser proper; and

Fig. 7 is a fragmentary detail showing a cup in position to be discharged.

Referring to Figs. 1 and 2, a dispensing unit A is shown mounted on a support B. The support shown is adapted to rest on a table but it will be obvious that the support may be fastened to a wall or any other suitable anchorage, the means and method of supporting the dispenser forming no part of the present invention. As specifically illustrated, the connection for attaching the dispenser to the support comprises a dove-tailed key 10 engaging a dove-tailed bracket 11 fastened to the support. The key may be formed integral with the housing 12 of the dispenser or may be attached thereto by screws 13 as shown in Fig. 6. A dome C for protecting the articles to be dispensed surmounts the dispenser housing 12. The dome is preferably formed of glass in order that the articles within may be seen, and is provided with a metal base sleeve 14 which enters the cylindrical upper portion of the housing and rests on a shoulder 15 formed therein.

Arranged within the housing there are a plurality of dispenser elements 16 mounted upon headed studs 17 screwed into the upper flange 18 of the housing. The dispenser elements are provided with pinions 19 which are operated by the intermeshing teeth 20 of a ring gear 21. Part of the teeth of the pinions are cut away to permit the maximum travel of the ring gear which is correspondingly widened at each end of each row of teeth 20 to form a relatively wide flat plate. This plate-like ring gear has bearing upon shoulders 21' and 22 formed on the inside of the outer wall 23 of the housing and on the outside of the inner wall 24. The ring gear 21 is urged in an anti-clockwise direction (as viewed in Fig. 4) by a coil spring 25 secured to the plate and to the housing. A screw 26 may be employed for securing one end of the spring to the plate and a screw-receiving lug 27 may serve for securing the other end of the spring to the housing. The lower surface of the plate ring gear is recessed to receive the spring and the housing-attached end of the spring is secured to the lug 27 in a plane below the bottom surface of this recess whereby the spring is caused to exert an upward pull on the ring gear to urge it against the shoulders 21' and 22.

An operating handle 28 is secured to the other side of the ring gear. It is shown as being attached by screws 29 but it may be formed integral with the ring gear if the housing is suitably divided to permit the assemblage of parts. As shown, the handle has a flat portion which is carried in a slot 30 formed in the side wall 23 of the housing. This additionally serves to maintain the plate ring gear in operating alignment.

The lower portion of the housing between the walls 23 and 24 is closed by a cover 31 which is formed with a barrel 32, which may be considered as an extension of the inner wall 24 of the housing, which is employed for guiding the articles past the dispensing elements. The upper surface of the cover 31 is provided with arcuate ribs 33 which further serve to retain and guide the plate ring gear. The cover is retained on the housing by screws (not shown) which take into the threaded ends of the lugs 27, to one of which, as explained, the end of the spring 25 is fastened. One of the lugs, that shown at the back of the housing, is considerably lengthened circumferentially and forms stops at either end for limiting the movement of the ring gear, the gear being suitably recessed exteriorly to receive the lugs 27.

When drinking cups are dispensed they are most conveniently advanced in inverted position. Accordingly, the present dispenser is provided with a curved finger 35 for catching the cups.

This finger may be inserted in a socket in the wide lug 27 and may be secured in adjusted positions by a set screw 36. The end of the finger which catches the cups is provided with a bulbous tip 37 of a softer material, such for example as bakelite or hard rubber, the tip having a recess which fits the finger. Glue may be used if desired to hold the tip on the finger.

The dispenser elements 16 are formed with a segmental flat upper surface 16*a* forming a support for the cup above the one being dispensed and for the stack thereabove, a segmental flat lower surface 16*b* and a downwardly inclined surface 16*c*. The surface 16*b* is sufficiently extensive circumferentially to support the edges of the lowermost cup when the dispenser is inactive. The inclined surface 16*c* begins in front of and above the surface 16*b* so as to engage the upper side (as the cup is disposed) of the rim of the lowermost cup and the lower side of the second cup from the bottom. The lower cup is dispensed without pushing the stack upward. By having three dispensing elements 16 the cups are supported at three points and there is no danger of having some of the dispensing elements engage the lower side of the cup rim while others engage the upper side as might happen if the stack should be unevenly supported.

The operation will undoubtedly be clear without further explanation. It is to be understood that the invention may have other embodiments within the scope of the subjoined claims.

I claim:

1. A dispenser for a stack of articles, comprising in combination, a tubular guideway for the articles, a plurality of dispensing devices disposed circumferentially around said guideway, a plate-like ring for operating said devices, an outer tubular wall retaining said ring, said wall and the exterior portion of said guideway being provided with ledges forming an upper bearing for said ring, a spring secured at one end to the lower surface of said ring and at the other end to a fixed support above the level of the lower surface of the ring whereby to urge the ring circumferentially and upward, and a cover plate for the space between said wall and said guideway, said plate including a tubular portion forming an extension for said guideway and a circumferential axially extending rib for assisting in retaining said ring.

2. A dispenser for a stack of articles, comprising in combination, a tubular guideway for the articles, a plurality of dispensing devices disposed circumferentially around said guideway, a plate-like ring for operating said devices, an outer tubular wall retaining said ring, said wall and the exterior portion of said guideway being provided with ledges forming an upper bearing for said ring, and a spring secured at one end to the lower surface of said ring and at the other end to a fixed support above the level of the lower surface of the ring whereby to urge the ring circumferentially and upward.

EUGENE CONTI