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CUP DISPENSING APPARATUS.

APPLICATION FILED OCT. 12, 1914.

1,190,276.

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Fig. 1

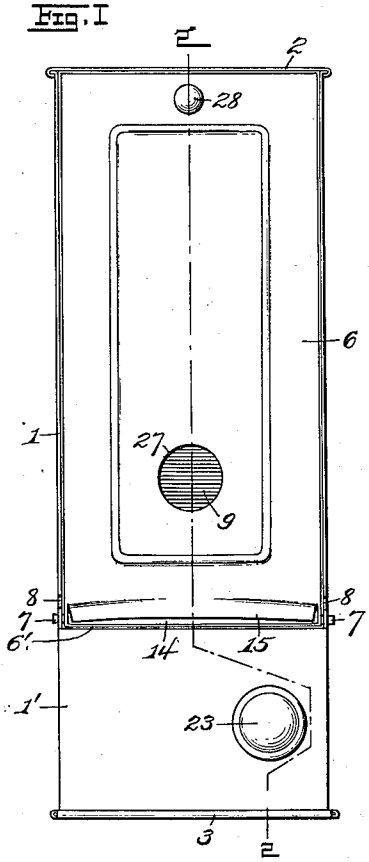


Fig. 2

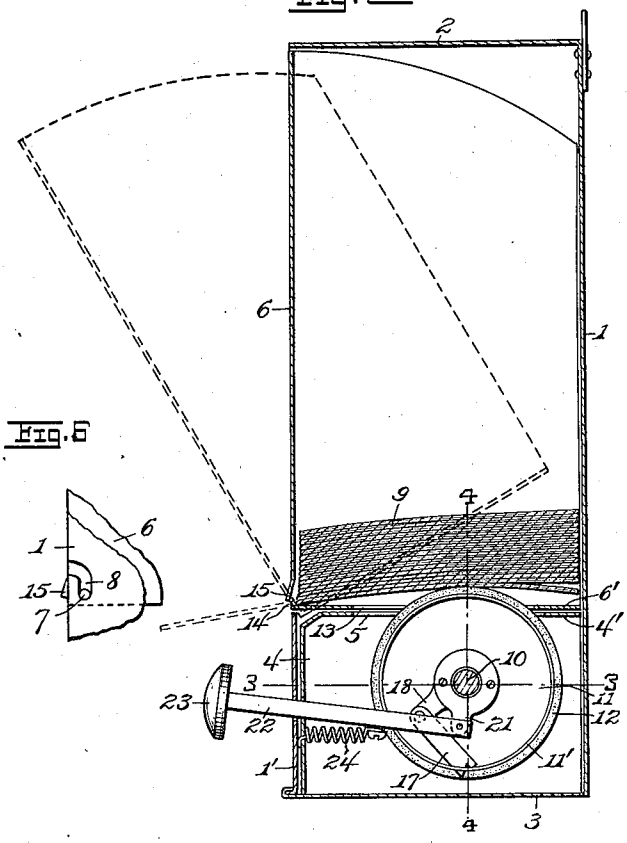


Fig. 6

Fig. 3

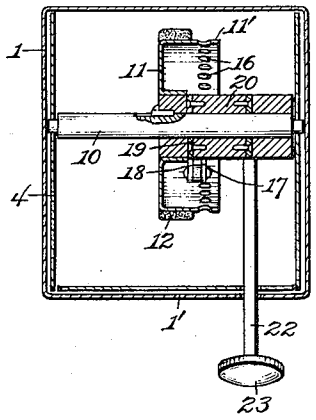


Fig. 4

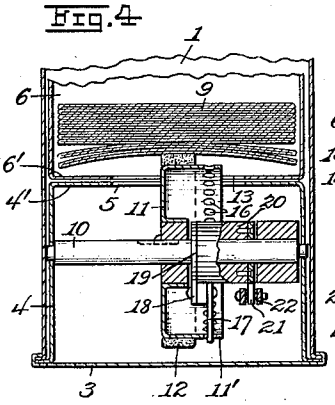
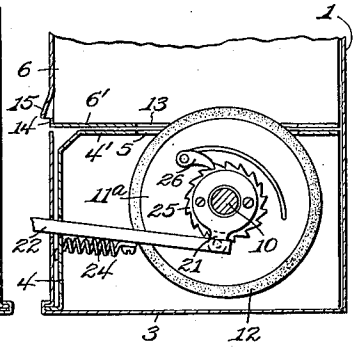


Fig. 5



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CUP-DISPENSING APPARATUS.

1,190,276. Specification of Letters Patent. Patented July 11, 1916.

Application filed October 12, 1914. Serial No. 866,197.

To all whom it may concern:

Be it known that I, WILBUR D. FLOOD, a citizen of the United States of America, and resident of Martins Ferry, county of Belmont, and State of Ohio, have invented certain new and useful Improvements in Cup-Dispensing Apparatus, of which the following is a specification.

This invention relates broadly to merchandise dispensing devices, and specifically to apparatus for dispensing drinking cups.

The primary object of the invention is to provide an apparatus for dispensing, one at a time, the ordinary flat paper sanitary drinking cups of commerce.

A further object is to provide a device of the character mentioned capable of containing a large number of drinking cups, which is extremely simple, inexpensive and durable in construction, which is composed of but few operating parts, which is positive in its operation, and which is actuated by the mere pressing of a plunger.

With these and other objects in view, the invention resides in the features of construction, arrangement of parts and combinations of elements which will hereinafter be fully described, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation of the invention; Fig. 2 is a section of the same taken substantially on the line 2—2, Fig. 1; Figs. 3 and 4 are sections taken respectively on the lines 3—3 and 4—4, Fig. 2; Fig. 5 is a partial vertical section similar to Fig. 2, showing a modification; and Fig. 6 is a fragmentary view, showing in side elevation the pivotal mounting of the cup container.

Referring to said drawings, in which like designating characters distinguish like parts throughout the several views—1 indicates a casing, rectangular in cross section, and preferably formed of sheet metal, said casing having a fixed top 2 and a removable bottom 3, the latter being slidable to and from a position closing the lower end of said casing, and when in closing position, maintaining in place within the lower part of said casing 1 a second sheet metal casing 4. Said second casing is substantially of inverted U-shape in vertical section, as shown in Fig. 4 having a horizontally disposed portion 4′ provided with a slot 5, the purpose of which will presently be made apparent.

The front wall 1′ of the casing 1 extends upward from the lower end only to a point in substantially the same horizontal plane with the top portion 4′ of the casing 4, and from said point upward to the top of said casing 1 the latter is wholly open, no front wall being provided. Fitted within the casing 1 above the top 4′ of casing 4 is a substantially rectangular cup container 6, U-shaped in horizontal section, and having a bottom 6′ which, in the normal position of said container, closely overlies said top 4′, as shown in Figs. 2, 4, 5 and 6. The side walls of said container 6 carry fixed outwardly directed pins or trunnions 7 thereon at points adjacent to their lower front edges, which seat in curved slots 8 provided therefor at suitable points in the front edges of the side walls of the casing 1, as shown in Figs. 1 and 6. Said container 6 is normally supported by said trunnions 7 in an upright position within the casing 1 with the rear edges of its side walls resting against the rear wall of said casing, and its front wall thus serves as a front for the open front of said casing, as is clearly shown in Figs. 1, 2 and 5. When desired, as when it is necessary to refill the container with drinking cups 9, the container is rocked forward on its trunnions to substantially the position shown in dotted lines in Fig. 2, the upper edges of its side walls being curved to permit of such movement without interference from the fixed casing top 2. In this position the container may be wholly removed from the casing and refilled, the cups being introduced through the open back thereof and disposed flatwise in superposed relation on the bottom 6′. After being refilled, the container is remounted within the casing 1, its trunnions 7 being first introduced in the slots 8. The weight of the container supplemented by

the weight of the cups therein serves to maintain the former seated in upright position, as will be readily understood.

Having its opposite ends suitably journaled in the side walls of the internal casing 4 is a shaft 10 having mounted thereon in fixed relation thereto a wheel 11 on the periphery of which is disposed a band 12 of a suitable soft, pliable material, preferably rubber. Said wheel is so positioned that it projects upward through the slot 5 in the top 4′ of said casing 4 and through a registering slot 13, provided in the bottom 6′ of the cup container 6, and assumes elevating relation to the rear ends of the cups 9, as shown in Fig. 2, engaging the lowermost of said cups substantially midway between the lateral edges thereof, as shown in Fig. 4. The distance which said wheel extends through the slot 13 is such that, excepting adjacent to their front ends, the cups are thereby supported clear of the bottom 6′, thus rendering practically negligible the frictional resistance offered by said bottom to the forward sliding movement of the lowermost cup. Further, due to the narrow width of that portion of the wheel which engages the cups, and also due to the fact that said cups are engaged by said wheel substantially midway between their lateral edges, as aforesaid, the lowermost cup, and possibly one or two cups closely overlying said lowermost cup, assume bowed or arched positions, as is clearly shown in Fig. 4, the bow or arch of the lowermost cup being, in any event, more pronounced than that of overlying cups. Thus, when the wheel 11 is rotated forward, but slight frictional resistance to forward movement of the lowermost cup is offered by the next overlying cup; and, since a greater frictional resistance is offered to movement of the less bowed next overlying cup, the lowermost cup is alone caused to move forward to and through the dispensing slot 14 provided in the front wall of the cup container 6 on the horizontal plane of the base 6′. To facilitate the passage of the slightly bowed front end of the forwardly moved cup, an arched downwardly and forwardly projecting lip 15 is formed to define the upper boundary of said dispensing slot.

The wheel 11 as herein shown is formed by stamping a piece of thin sheet metal into dished shape, as is clearly shown in Figs. 3 and 4. The periphery is made of greater width than is required for mounting the cup-engaging band 12, thus providing a laterally directed uncovered extension 11′. An annular line of perforations 16 is provided in said extension adapted to be engaged by the free end of a downwardly and rearwardly extending dog 17 which has its opposite end pivotally mounted upon the end of a downwardly and forwardly extending arm 18 carried by a shaft-encircling disk 19 which is fixed upon a sleeve 20 rotatable on said shaft 11. Also carried in fixed relation to said sleeve 20 is a downwardly directed arm 21 to which is pivotally connected the inner end of a plunger 22 which has a substantially horizontal disposition and has its opposite end projected outward through the front wall 1′ of the casing 1.

As is obvious, inward movement of the plunger 22, produced by pressure applied to the push-button 23 carried on the outer end thereof, causes the sleeve 20 to rotate forward and, through the arm 18, actuates the rearwardly inclined dog 17 to engage one of the perforations in the wheel extension 11′ and to rotate the wheel 11 forward therewith. Said wheel in its forward movement carries therewith the lowermost cup 9 with which it is in frictional engagement, causing said cup to be projected through the dispensing slot 14 such a distance that it may be conveniently grasped by the fingers, whereupon said cup may be readily withdrawn by hand.

A retractile coil spring 24 has one end attached to the plunger and its opposite end attached to a suitable fixed part, as to the front wall of the internal casing 4, and is adapted, after actuation, as aforesaid, to return to normal position the plunger and associated parts rotatable on shaft 10, the dog 17 freely passing over the perforations 16 in its return movement and thus permitting the wheel 11 to remain stationary.

In the modification illustrated in Fig. 5, a ratchet wheel 25 is substituted for the disk 19, and a pawl 26 pivoted on the wheel 11′ in operative relation to said ratchet wheel is adapted to be engaged by the latter for communicating forward rotation to said wheel 11 and is also adapted to ride freely over the teeth of said ratchet wheel when the latter is rotated rearwardly. When the modified form of actuating mechanism described is employed, the wheel 11′ may be of ordinary solid wheel construction.

A sight opening 27 is preferably provided at a suitable point in the front wall of the cup container 6, as shown in Fig. 1. Said front wall also preferably carries, at a point adjacent to its upper end, a small knob 28, or equivalent device, by means of which the container may be engaged by hand for tipping or rocking the latter forward on its trunnions.

The cup advancing mechanism is assembled within the casing 4 prior to introducing the latter within the casing 1, it being only necessary to insert and connect the plunger after the introduction of said mechanism, and to then fit the bottom 3 in place.

What is claimed is—

1. A cup dispensing apparatus comprising a rectangular casing having an open

side, a cup container disposed within said casing and having an open side, said casing and said container being reversely disposed to constitute an inclosure, said casing having curved slots in its opposite sides adjacent to the front edges of the latter, laterally directed trunnions carried by said container removably mounted in said slots and whereby said container is supported in pivotal relation to said casing, said container having a bottom provided with an opening therein and also having a dispensing slot in its exposed face, a wheel rotatable within the lower end of the casing and having a portion of its periphery extending through the opening in the bottom of said container, and means for rotating said wheel.

2. A cup dispensing apparatus comprising an open-faced rectangular casing having a closed top, a cup container normally occupying an upright position within said casing and pivotally movable to and from said position through the open face of said casing, said container having an open upper end and being adapted to be rocked forward to withdraw said open end from beneath said top, said container having an apertured bottom and being provided with a dispensing slot in its front face adjacent to said top, and means protruding through the bottom aperture whereby cups disposed within said container may be thrust outward through said dispensing slot.

3. A cup dispensing apparatus comprising a casing of substantially U-shape in horizontal section, a cup container of substantially U-shape in horizontal section mounted within said casing and adapted for pivotal rocking movement with respect to the latter, said casing and said container being reversely disposed, said casing having a closed upper end and said container having an open upper end adapted to be exposed when the container is rocked forward, said container also having an apertured bottom and being provided with a dispensing slot in its face adjacent to said bottom, an arched forwardly and downwardly inclined lip defining the upper edge of said slot, and means operating through said apertured bottom adapted to advance the lowermost cup in said container outward through said slot.

4. A cup dispensing apparatus comprising an open-faced rectangular casing having a cup container removably mounted therein, said container being adapted for pivotal forward swinging movement with respect to said casing, said casing also having an apertured bottom and being provided with a dispensing slot in its face, an arched forwardly and downwardly inclined lip defining the upper boundary of said slot, a wheel having a portion of its periphery protruding upward through said bottom into elevating relation to the rear ends of the cups in said container, said wheel being disposed to engage the lowermost cup substantially midway between its lateral edges whereby said cup is caused to assume an arched form, and means for rotating said wheel forward for projecting the front end of said cup outward through said slot.

5. A cup dispensing apparatus comprising a casing having an open face, a cup container of substantially U-shape in horizontal section mounted within said casing and exposing the wall thereof opposite its open side through the open face of said casing, said casing having slots in its opposite side walls adjacent to the front edges of the latter, trunnions carried by said container mounted in said slots and pivotally supporting said container, an apertured bottom in said container, said container having a dispensing slot in its exposed wall adjacent to said bottom, and means operating through said apertured bottom whereby the lowermost cup in said container is thrust outward through said dispensing slot.

6. In cup dispensing apparatus, a casing, a cup container mounted within said casing and having an apertured bottom, a second casing removably mounted within the lower end of the first mentioned casing, a shaft journaled within said second casing, a wheel mounted on said shaft and having the upper portion of its periphery extending upward through said apertured bottom, a plunger, and means interposed between said plunger and said wheel whereby actuation of the former produces rotation of the latter.

7. In cup dispensing apparatus, a casing, a cup container mounted within said casing and having an apertured bottom, a second casing removably mounted within the lower end of the first mentioned casing, a shaft journaled within said second casing, a wheel mounted on said shaft and having the upper portion of its periphery extending upward through said apertured bottom, a pliable band encircling the periphery of said wheel, said wheel being formed of sheet metal and having a lateral annular extension provided with a series of perforations, a sleeve rotatable on said shaft adjacent to said wheel, a dog having pivotal connection with said sleeve and adapted when said sleeve is actuated in one direction to engage said perforations for rotating said wheel, and means for actuating said sleeve.

8. In cup dispensing apparatus, a casing, a cup container mounted within said casing and having an apertured bottom, a second casing removably mounted within the lower end of the first mentioned casing, a shaft journaled within said second casing, a wheel mounted on said shaft and having the upper portion of its periphery extending upward through said apertured bottom, a pliable band encircling the periphery of said wheel,

said wheel being formed of sheet metal and having a lateral annular extension provided with a series of perforations, a sleeve rotatable on said shaft adjacent to said wheel, a dog having pivotal connection with said sleeve and adapted when said sleeve is actuated in one direction to engage said perforations for rotating said wheel, a plunger, and means interposed between said plunger and said sleeve whereby horizontal movement of the former produces rotary movement of the latter.

In testimony whereof, I affix my signature in presence of two subscribing witnesses.

WILBUR D. FLOOD.

Witnesses:
H. E. DUNLAP,
W. F. KEEFER.