E. E. CLAUSSEN.

DISPENSING APPARATUS.

APPLICATION FILED DEC. 2, 1911.

1,093,976.

Patented Apr. 21, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

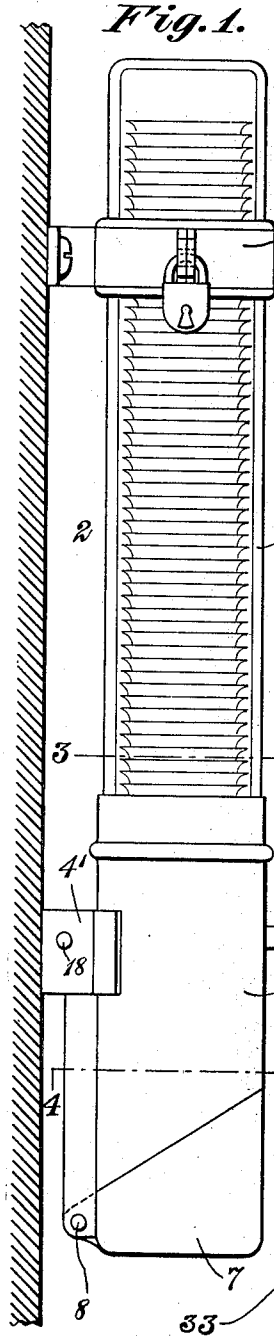


Fig. 3.

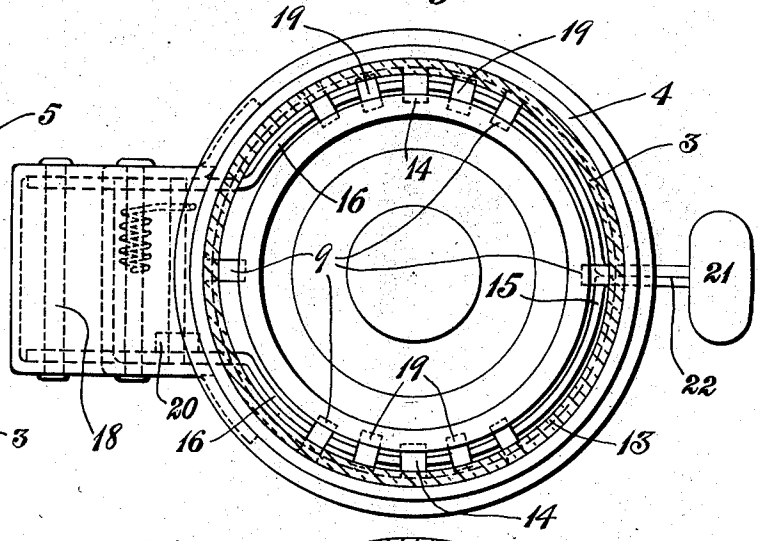


Fig. 4.

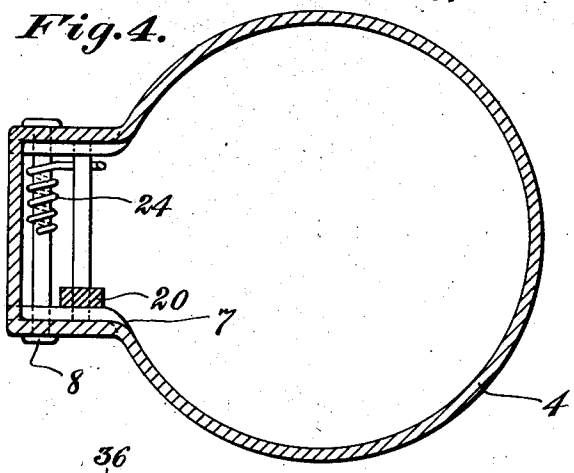


Fig. 6.

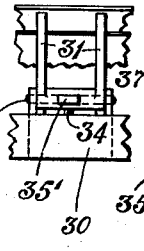
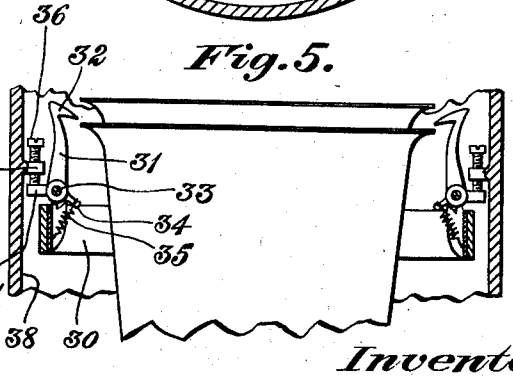


Fig. 5.



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By his Attorneys,

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DISPENSING APPARATUS.

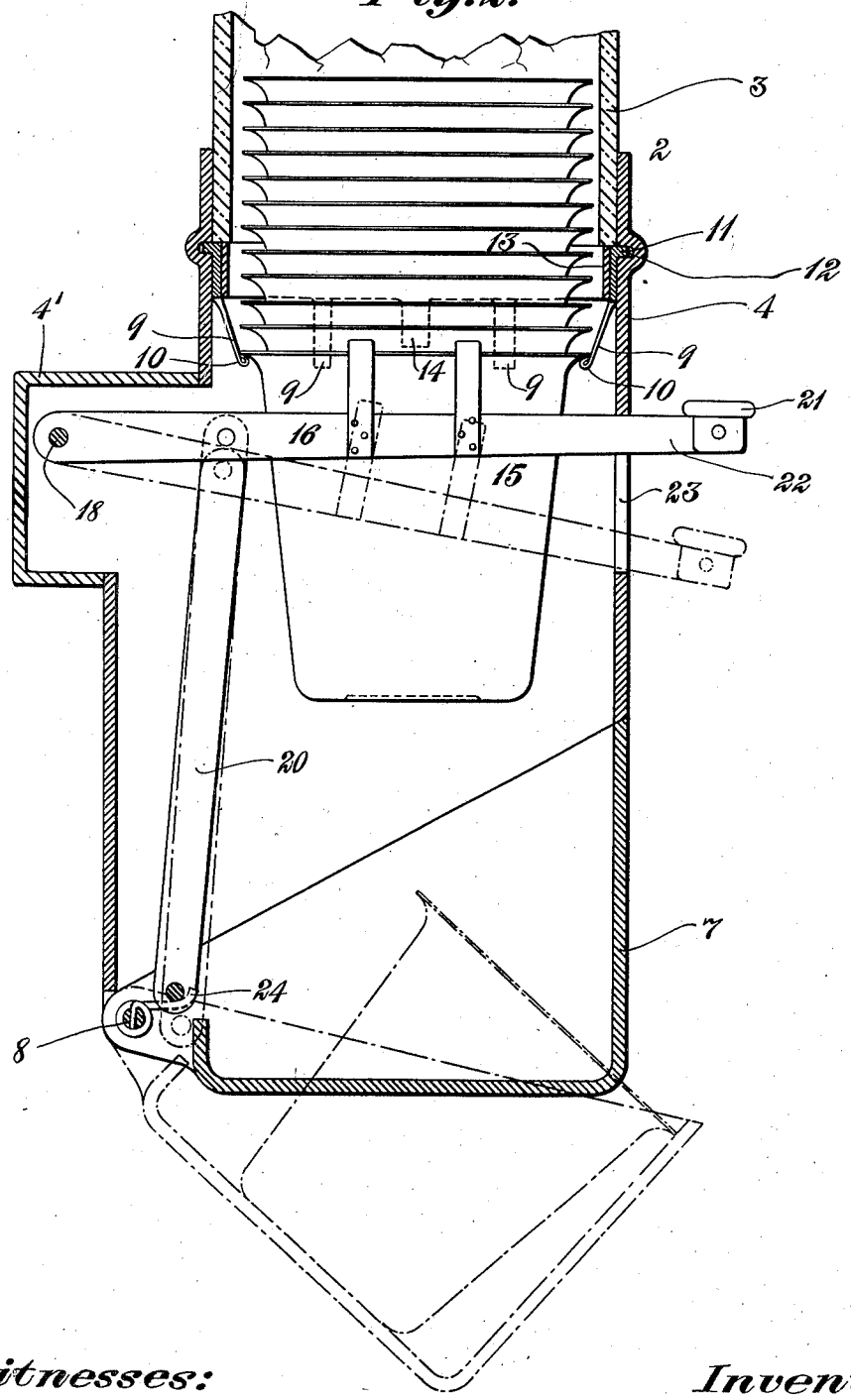
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2 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD E. CLAUSSEN, OF HARTFORD, CONNECTICUT.

DISPENSING APPARATUS.

1,093,976. Specification of Letters Patent. **Patented Apr. 21, 1914.**

Application filed December 2, 1911. Serial No. 663,600.

To all whom it may concern:

Be it known that I, EDWARD E. CLAUSSEN, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Dispensing Apparatus, of which the following is a specification.

This invention relates to dispensing apparatus, the object of the invention being to provide an effective apparatus of this character whereby paper drinking cups or other articles can be delivered singly or individually or in other suitable manner, with facility.

An apparatus involving my invention comprises other features of advantage which with the foregoing will be set forth at length in the following description where I will outline that form of embodiment of the invention which I have selected for illustration in the drawings accompanying and forming part of the present specification, this showing being to enable those skilled in the art to practise the invention.

From the observations just made it will be evident that I do not restrict myself to the disclosure made by said drawings and description; I may depart therefrom in several ways within the scope of the invention included in the claims following said description.

Referring to the drawings: Figure 1 is a side elevation of a dispensing apparatus involving my invention. Fig. 2 is a sectional view of the lower part of the same. Figs. 3 and 4 are sections on the lines 3—3 and 4—4 respectively of Fig. 2. Fig. 5 is a sectional view partly in elevation of a modified form of cup detaching or separating member, this view also showing two of the cups and a portion of the container therefor. Fig. 6 is a detail view in elevation of one of the clips.

Like characters refer to like parts throughout the several views, which it will be observed are on different scales.

An apparatus embodying my invention preferably includes in its make-up a suitable container or housing for the articles to be dispensed, which as will be gathered from the statements already made may be of any desirable character; in the present instance this container is adapted to house or inclose a stack of drinking cups, and although these cups may be disposed in the container in any suitable manner, they are as is customary in nested order.

A container such as properly answers my requirements, is that denoted in a general way by 2 and which as illustrated comprises the upper member 3 and the lower member 4, the former being generally made in the form of a glass tube and being closely fitted in the upper portion of the member 4 which ordinarily consists of a metal casing or shell which may be formed by casting or made from sheet metal. I may as illustrated, surround the glass tube 3 with a divided ring or clamping member 5, the sections of which may be held in clamping relation under lock and key as shown. The rear section of the clamping device 5 is shown provided with a rearwardly extending arm adapted to be fastened by screws or otherwise to a wall or other support. The casing or shell 4 is represented provided with a hollow arm 4′ adapted to be similarly connected with said support. The upper end of the glass tube in the construction shown is closed, the lower open end thereof fitting the upper open side of the shell 4 and said tube is adapted to contain the stack of nested cups, the lower end of the stack extending a short distance into the casing or shell and being preferably as will hereinafter appear supported in said shell against accidental movement. When all the cups from the apparatus have been vended, the clamping device 5 will be freed from the tube 3 at which time said tube can be lifted out of the shell 4 and be replenished with a fresh supply of cups after which the tube will be inverted and the lower end of the stack inserted into the shell 4 with said lower end sustained upon the supporting means of whatever character the same may be.

In connection with the casing or container 2 I prefer to provide an individual or single cup dispensing member, and although said dispensing member may take any desirable form, it is shown as being practically in the form of a valve or closure 7 for the lower open end of the container 2, being in the present case pivoted as at 8 to the rear lower side of the casing or shell 4. When the valve or closure is shut as shown in Fig. 1, the apparatus is wholly closed in, so that the contents thereof will be protected from the action of dust and other objectionable matter. In the construction shown the upper edge of the valve is on an upward, for-

ward incline, and this inclined edge is adapted to bear normally against the correspondingly-inclined lower edge of the casing or shell 4 as represented in said Fig. 1. As will hereinafter appear I separate a cup or some other article, from a stack or otherwise-formed group, and cause the same to pass as by gravity onto the said valve or closure 7 and preferably during this particular action the valve is opened which is accomplished in the present case, by swinging said valve downward, so that the person desiring a cup can reach onto the valve and obtain the same. The valve is of pan or basin shape, and owing to this shape the cup thereon cannot be accidentally displaced therefrom as said valve opens. The means whereby the valve 7 can be opened or closed in alternation will be hereinafter described as will also be the means for effecting the delivery of a cup from the stack onto said valve, although I might indicate at this time that these several means act during the same time, although not necessarily in unison.

As a means for sustaining the stack of nested cups I may as illustrated provide several downwardly and inwardly inclined springs 9, the tips of which have enlargements 10 to fit the turned over portion of the rim of the lowermost cup of the stack. The shanks of said springs 9 merge into a band adapted to have its free ends brought together to form a ring which fits against the inner surface of the shell 4 the upper edge of said band having a flange 11 adapted to closely fit an annular channel 12 within the shell 4. To aid in preventing displacement of the band with which the springs 9 are integral, the divided resilient ring 13 may be provided, said ring being adapted to engage the inner surface of said band, and by its springy effect aiding in securely holding it in place. There may, of course, be any desired number of springs 9. The resilient or spring ring is shown provided with several pendent spring tongues or ears 14 adapted to engage the stack immediately above the lowermost cup, and these spring tongues or lugs effectually prevent accidental upward movement during the return movement of the withdrawing device as will hereinafter appear and they also equally effectually aid in supporting the stack, acting as auxiliary supporting means; that is they are supplemental to the main supporting springs 9 to which I have already referred.

The withdrawing device is shown as consisting of a lever denoted in a general way by 15, and this lever comprises companion side branches 16 fulcrumed on a transverse shaft 18 which is supported in the side walls of the hollow attaching arm 4′ of the casing or shell 4. The rear portion of each of the branches is straight, while the forward portion thereof is circular, the two circular portions being united at the front and being situated within the shell 4 and presenting together almost an annulus, and in describing such part as an annulus, I do not mean necessarily that it is circular but rather that it is in the form of a band or open construction; through the annular or open portion the lower part of the stack extends. On the circular portions of the lever are fastened the shanks of resilient fingers such as the hooks 19 of which as illustrated, there are four, two being connected with each branch of the lever. The upper or active ends of these hooks normally lie across the upper edge of the lowermost cup of the stack at which time the lever 15 will be practically horizontal, although this particular disposition of the lever is not material. When the lever is swung downward said hooks 19 will separate or withdraw the lowermost cup from the stack during which action the hooks or springs 9 momentarily spread or open outward to release said cup, and then close into normal position to receive the descending stack. As soon as the lowermost cup is separated from the stack it falls onto the valve 7 which is preferably, but not necessarily, operatively connected with the lever 16, for instance by means of a connecting rod or link 20 pivoted to the respective parts. To facilitate the operations of the lever 16 the same may be provided with a finger piece 21 connected with the forwardly extending arm 22 of said lever, the shell 4 having an elongated vertical slot 23 through which said arm 22 extends. As intimated when the lever 15 is pulled down the lowermost cup will be separated from the stack; and as the lever is returned to its original position, the fingers or hooks 19 will rise therewith and as they ride against what is then the lowermost cup they will be spread outwardly, so that when they reach the upper edge of said lowermost cup, their active ends or hook portions can spring over the top of said lowermost cup. When the lever is being moved upward the hooks 19 exert an upward thrust upon the stack, but the stack is effectually prevented from being moved upward at this time, by the tongues or lugs 14 which exert a pressure upon the stack sufficient to prevent such action. Coiled around the pivot 8 of the valve or closure 7 is a coiled spring 24, the action of which is to positively shut said closure or valve and therefore through the rod 20, return the lever 15 to its original position.

The foregoing detailed description covers the construction shown in Figs. 1 to 4 inclusive. In Figs. 5 and 6 I show a different form of detaching member. In these two last mentioned views the cup detaching lever 30 is constructed and mounted exactly like

the lever 15 already described. Upon the open or annular portion it is provided at substantially diametrically opposite sides with clips 31, the branches or fingers of which have hooks 32 at their upper ends. The transverse portions of the clips 31 consist of sleeves supported by pivots 33, the lever 30 being equipped with bearings to sustain these pivots. The inner sides of the sleeve-like transverse portions of the clips 31 are shown provided with lugs 34 to which pull springs 35 are connected, said springs also being connected with the lever 30, by reason of which the two clips are yieldingly mounted. Said transverse portions are provided at their rear with lugs 35′ adapted when the lever 30 is in its uppermost position to engage against stops 36 which may as shown consist of screws tapped through projections 37 on the inner side of the container 38. As the lever 30 is drawn down the lugs 35′ will move away from the lower ends of the screws 36 so that the springs 35 can pull the hooks 32 of the companion clips 31 over the upper edge of the lowermost cup of the stack whereby on the continued downward movement of said lever the said lowermost cup will be separated from the stack. On the upward movement of the lever 30 the two clips will engage what is then the lowermost cup, and owing to the fact that they are yieldingly mounted they can be swung outwardly. On the continued upward movement of the lever the lugs 35′ will engage the screws 36 which, as will be clear present adjustable stops so as to entirely move the clips 31 away from the stack of cups.

What I claim is:

1. In an apparatus of the class described, the combination of a container for a stack of nested drinking cups, means for supporting said stack, means for positively withdrawing the lowermost cup from the stack, and yieldable fingers for engaging the stack and preventing accidental upward movement thereof on the return movement of said withdrawing means.

2. In an apparatus of the class described, the combination of a container for a stack of nested drinking cups, means for positively withdrawing the lowermost cup from the stack, and a ring fitted within the container and provided with yieldable fingers for engaging the stack and for preventing accidental upward movement thereof on the return movement of said withdrawing means.

3. In an apparatus of the class described, the combination of a container for a stack of nested drinking cups, a plurality of springs within the container for supporting the stack, a ring in the container to aid in holding said springs in place, and means for positively withdrawing the lowermost cup from the stack, said ring having means to prevent accidental upward movement of the stack on the return movement of said withdrawing means.

4. In an apparatus of the class described, the combination of a container for a stack of nested drinking cups, yieldable means for engaging the lowermost cup to thereby support the stack, and auxiliary yieldable supporting means, for engaging the stack at a higher point, the lowermost cup of the stack extending below the first mentioned supporting means.

5. In an apparatus of the class described, the combination of a container for a stack of nested drinking cups, a lever pivotally supported within the container and accessible exteriorly thereof, a pivoted valve for said container, constituting a dispensing member therefor, means upon the lever for positively separating the lowermost cup from the stack on the downward movement of the lever, a link connecting the lever and the valve at a point to the rear of said cup separating means, and means active independently of the valve, for supporting the stack.

6. In an apparatus of the class described, the combination of a container for a stack of nested drinking cups, yieldable supporting means for supporting the stack and engaging the lowermost cup, and auxiliary yieldable supporting means situated above said other supporting means for also supporting the stack and at the same time preventing upward movement of said stack.

7. The combination of a container for a stack of nested drinking cups, a closure for said container by opening which access may be had to the interior of said container, a movably mounted member provided with means for separating a cup from the stack, means independent of said movably mounted member and the closure, for supporting the stack, and an operative connection between said movably mounted member and the closure whereby when one of said parts is operated, the other will through said connection, be also operated.

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

EDWARD E. CLAUSSEN.

Witnesses:

HEATH SUTHERLAND,

L. L. MARKEL.