

E. E. CLAUSSEN.  
COIN CONTROLLED APPARATUS.  
APPLICATION FILED MAR. 31, 1910.

1,010,861.

Patented Dec. 5, 1911.

2 SHEETS-SHEET 1.

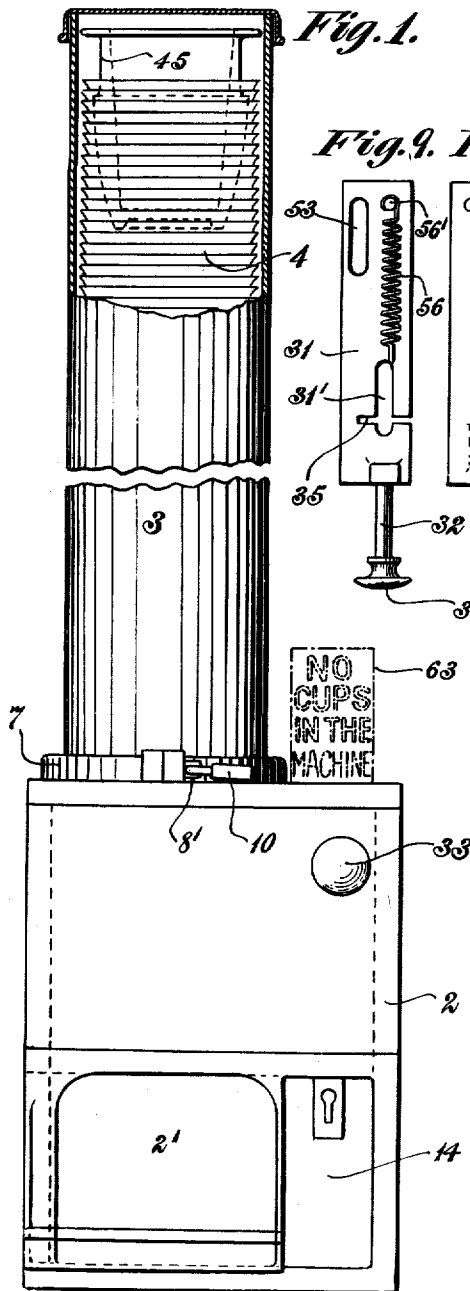


Fig. 9. Fig. 10.

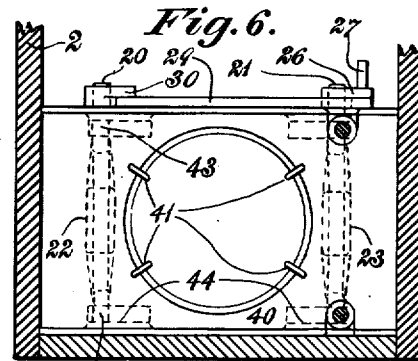
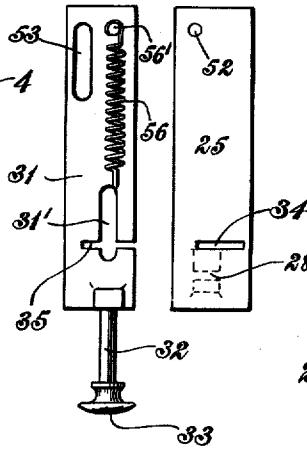


Fig. 4.

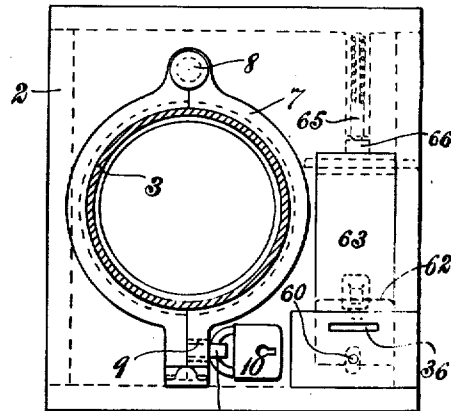
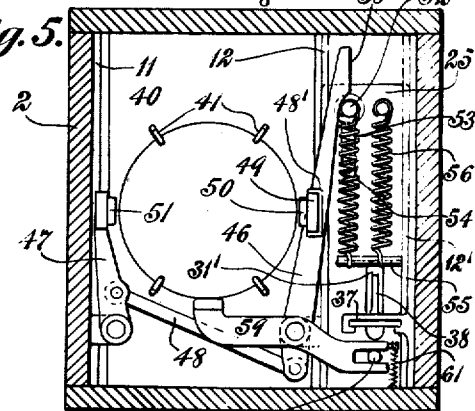


Fig. 5.



Witnesses:  
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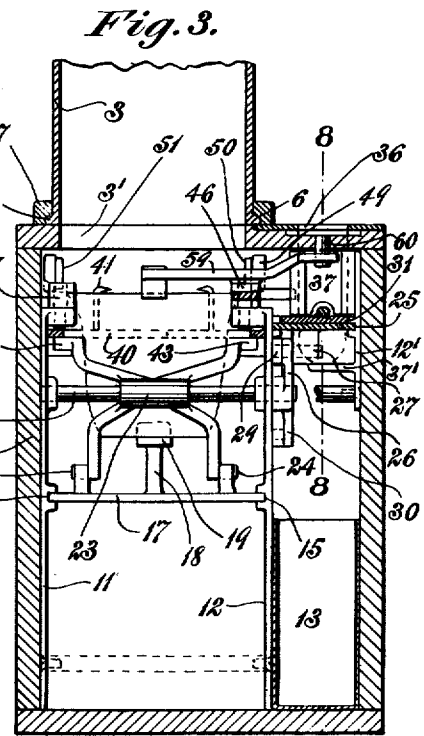
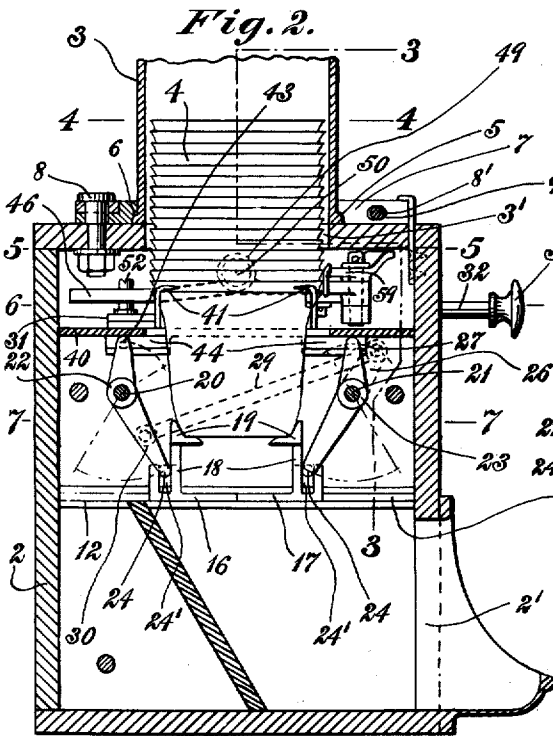
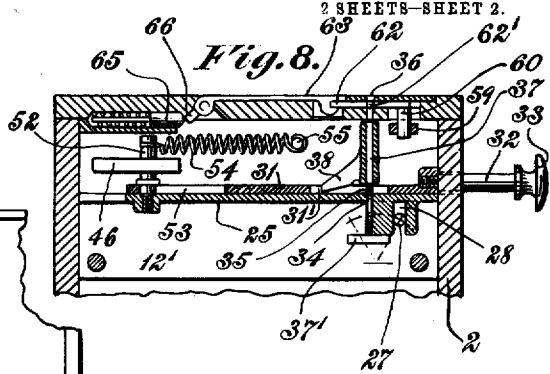
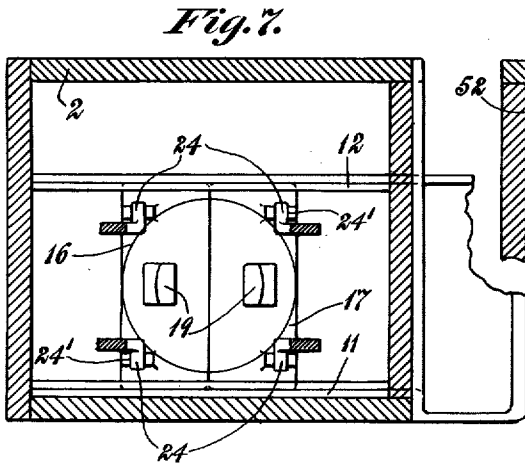
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2 SHEETS—SHEET 2.



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J. H. Elliott

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# UNITED STATES PATENT OFFICE.

EDWARD E. CLAUSSEN, OF HARTFORD, CONNECTICUT.

## COIN-CONTROLLED APPARATUS.

1,010,861.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed March 31, 1910. Serial No. 552,500.

*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 Coin-Controlled Apparatus, of which the following is a specification.

This invention relates to coin controlled apparatus, the object of the invention being to provide effective apparatus of this character, having simple means for securing the delivery of an article by the use of a coin of predetermined denomination.

In the drawings accompanying, and forming part of the present specification, I have represented in detail one convenient form of embodiment of the invention, which to enable those skilled in the art, to practice said invention, will be set forth fully in the following description, while the novelty of the invention will be included in the claims succeeding said description. From this it will be evident that I do not restrict myself to the disclosure made by said drawings and description; I may depart therefrom in many ways within the scope of my invention, as expressed in said claims. In the mechanism illustrated, the apparatus is adapted for vending or delivering individual drinking cups, although it is clear that it may be otherwise employed.

Referring to said drawings: Figure 1 is a front elevation of coin controlled apparatus, including my invention. Fig. 2 is a vertical section of the lower portion of said apparatus. Fig. 3 is a transverse section of the parts shown in Fig. 2, the section being on the line 3—3 of Fig. 2. Figs. 4, 5, 6 and 7 are horizontal sections on the line 4—4, 5—5, 6—6, and 7—7, respectively, of Fig. 2. Fig. 8 is a vertical section on the line 8—8 of Fig. 3. Figs. 9 and 10 are plan views of slides hereinafter more particularly described.

Like characters refer to like parts throughout the several figures.

In practice, the different parts of the delivering and coin controlled mechanism are preferably inclosed in a suitable cabinet or casing, and that denoted in a general way by 2 serves satisfactorily in this connection.

As intimated, the machine in the present instance is constructed for delivering individual drinking cups, and I provide a suitable container for the cups, the latter being

usually nested, and in the present case the series of cups is vertically disposed although this is not essential. The tube 3 serves as a suitable container for the cups 4, said container or tube being mounted upon the cabinet or casing 2, and its lower open end being in register with an opening 3' in the top of the said cabinet. The stack or pile of nested drinking cups 4, within the container or tube 3, extends downward through said opening 3', the lowermost cup being supported by suitable means, as will hereinafter more particularly appear. Preferably, although not necessarily, the container 3 is removable, so that when occasion requires, it may be supplied with a stack of cups. The said container or tube 3 shown having at its lower end externally thereof an annular bead 5 which fits a rabbet or channel 6 in the ring 7, said ring being of divided or split type and its sections being hinged to each other and to the casing 2 by a pivot 8, which may, as shown, consist of a bolt, the nut of which is inclosed in said casing. One of the sections of the split or clamping ring 7 may be equipped with a hasp 8' extending through a perforation 9 in the other section, and receiving a padlock 10, whereby the sections of the ring can be locked together to prevent surreptitious removal of said tube. By unlocking the lock 10, the sections of the ring 7 can be separated or opened to carry the ring free of the bead 5, and thereby permit the tube 3 to be lifted from place, so that it can be filled with the stack of drinking cups. As will be inferred, it is not essential that the container or tube 3 be removable, and it is also conceivable that I may employ a radically different form of device for receiving the drinking cups.

The cabinet or case 2 is provided generally interiorly thereof with some suitable means for sustaining certain of the parts of the controlling mechanism and the rigidly mounted, vertical plates 11 and 12 serve conveniently in this respect, the plate 11 being suitably fastened to one side wall of the cabinet, the plate 12 being separated from the opposite side wall, the space between said plate 12 and adjacent side wall of the cabinet being adapted to receive a coin box, as 13, into which the coins are discharged from the coin operated mechanism, said coin box 13 being removable through an opening in the front of the cabinet nor-

mally closed by a door 14 and maintained  
 in this condition by lock and key. The  
 stack or pile of cups as intimated is nor-  
 mally upheld by suitable supporting means,  
 5 upon which the lowermost cup rests, and if  
 this supporting means be retracted or with-  
 drawn sufficiently, said lowermost cup will  
 be released. I will now set forth a suitable  
 means for thus supporting the stack or pile  
 10 of cups. The said plates 11 and 12 have  
 channels, designated in each instance by 15  
 to receive the complemental slides 16 and  
 17, said slides being movable toward and  
 from each other and being operable by the  
 15 coin actuated mechanism, as will hereinafter  
 appear. Said slides are shown provided  
 with upstanding arms 18 furnished with  
 heads 19 which jointly normally receive the  
 advance, leading or lowermost cup, as shown  
 20 in Fig. 2, said heads being shaped approxi-  
 mately on their active faces to conform to  
 the shape of the cups. In Fig. 2 the slides  
 16 and 17 are shown as occupying their nor-  
 mal positions the lowermost cup resting  
 25 upon the two heads 19. When the slides 16  
 and 17 are separated, said heads 19 will be  
 moved from under the cup, thereby releas-  
 ing same. Were it not for the fact that the  
 cups are nested, the lowermost cup would  
 30 fall away from the stack or pile on the with-  
 drawal of the two heads 19. I provide, as  
 will hereinafter more particularly appear,  
 means for positively separating or detach-  
 ing the lowermost cup from the remainder.  
 35 Said means is operative when said lower-  
 most cup has been released.

The parallel plates 11 and 12 are shown  
 supporting the rock shafts 20 and 21, said  
 shafts having fastened thereto in some suit-  
 40 able manner the hubs of the levers 22 and  
 23, shown as being of cruciform or X-shape,  
 the lower branches of the two levers having  
 lateral pins or projections each designated  
 by 24, fitting slots or apertures 24' in the  
 45 two slides 16 and 17, said levers serving as  
 a convenient means for operating the said  
 slides and for also operating the means for  
 forcibly separating the lowermost cup from  
 the remainder, as I will hereinafter point  
 50 out.

In the present instance, the coin operated  
 mechanism is operatively connected with the  
 two shafts 20 and 21, as will now appear.  
 The plate 12 and a companion plate 12'  
 55 fastened to the cabinet 2 are provided with  
 suitable ways or channels to receive the slide  
 25, said slide in the present instance having  
 a working stroke from the front toward  
 the rear of the machine and serving on such  
 60 motion through the intervention of suitable  
 parts to rock simultaneously the two shafts  
 20 and 21. Fastened in some desirable man-  
 ner to one end of the shaft 20 is a crank-  
 arm 26 shown provided at its upper end  
 65 with a pin 27 fitting a slot 28 in the under

side of the slide 25. Said slide 25 is shown  
 occupying its retracted position in Fig. 8,  
 the two heads 19 at this time supporting the  
 lowermost cup. Through the aid of a coin,  
 as will hereinafter appear, the slide 25 is  
 70 advanced or moved toward the left in Fig.  
 8 and on this action the arm 26 is swung  
 over, thereby rocking the shaft 20, and at  
 the same time simultaneously rocking the  
 shaft 21 through means which I will now  
 75 describe. To the arm 26, near the upper end  
 thereof is connected one end of a link 29,  
 the other end of said link being connected  
 with an arm 30 extending downward from  
 the shaft 20. It therefore follows that  
 80 owing to the described connections, when the  
 slide 25 is advanced, the slides 16 and 17 are  
 separated so as to carry the supporting  
 heads 19 from under the lowermost cup and  
 thereby free the same. Resting on the slide  
 85 25 is a second slide 31, provided at its front  
 end with a forwardly extending rod 32,  
 which projects through a hole or perfora-  
 tion in the front of the cabinet 2 and is pro-  
 90 vided with a knob or finger piece 33 to  
 facilitate the operation of said slide 31. The  
 two slides 25 and 31 are coupled by a coin,  
 or its equivalent, as will hereinafter appear,  
 and when in this relation they can be ad-  
 95 vanced as one from front to rear by pres-  
 sure on knob 33. The slide 25 is shown hav-  
 ing an elongated transverse slot 34, while  
 the slide 31 has a slot 35 of similar length,  
 and when the two slides are in their re-  
 100 tracted positions, these slots will register or  
 coincide so that they can both receive a coin  
 for keying or coupling the two slides to-  
 gether, whereby when such condition en-  
 sues they can be moved as one in the manner  
 described. The top of the cabinet 2 has a  
 105 slot 36 through which the coin is initially  
 introduced, the coin passing through said  
 slot down a runway 37, and through the  
 registering slots 34 and 35 until it is arrested  
 by a ledge or flange 37' extending laterally  
 110 from the plate 12' this ledge being of an  
 extent sufficient to hold the coin in the slots  
 34 and 35 long enough to assure the proper  
 action of the delivery or vending mechanism  
 and other parts operatively associated there-  
 115 with.

In Fig. 8 the two slides 25 and 31 are  
 shown as occupying their retracted positions  
 and a coin is represented as resting on the  
 ledge 37' and in the registering slots 34 and  
 120 35. It will be assumed that the two slides  
 25 and 31 are advanced in the manner de-  
 scribed to effect the action of the vending  
 mechanism. When the slides have nearly  
 125 completed their advancing motion, the mar-  
 ginal portion of the coin is brought under  
 a knock-off device such as the stationary  
 cam 38 shown as extending from the run-  
 way 37 and into a longitudinal slot 31' in  
 the slide 31 to thereby impart a downward 130

thrust to the coin and carry the same below the supporting face of said ledge, just at about the time said coin has passed off the ledge 37', so that on the backward motion of the two slides, the ledge 37' will forcibly dislodge the coin, and in view of this construction it will not be possible to beat or defraud the machine.

There is shown vertically slidable in the cabinet 2 the plate 40 having a substantially central opening to receive the stack or pile of cups, the lowermost cup in practice fitting in this opening. In the present case, the means for detaching said lowermost cup is connected with said plate and is illustrated as composed of several hooks 41 around said opening, the hooks being adapted to engage over the upper edge of the lowermost cup, so that when the plate 40 is pulled downward, said cup is positively separated from the remainder.

The upper branches of the levers 22 and 23 present a convenient means for raising and lowering the plate 40, said branches being furnished with lateral pins 43 slidable in horizontal grooves 44 in the under side of plate 40. The plate 40 is shown as being in its elevated position in Fig. 2, the bills of the hooks 41 extending over the lowermost cup, which it will be observed, is resting on the two heads 19. When the lower branches of the levers 22 and 23 are swung outward, as already described, to move the heads 19 from under the lowermost cup, the upper branches of said levers are swung simultaneously toward each other and at about the time the heads 19 have passed clear of said lowermost cup, the hooks 41 will positively draw said lowermost cup downward, and when it is separated from the remainder it can fall into the lower part of the cabinet or casing 2 where it can be reached through an opening 2' therein.

The active portions of the hooks 41, as illustrated in Fig. 2, are not actually normally in contact with the upper edge of the lowermost cup by reason of which the heads 19 can move wholly clear of the lowermost cup before the hooks are brought into contact with the upper edge thereof, thereby preventing the said cup from being mashed or crushed, and said hooks overhang the said cup to a very small extent. The hooks are preferably made springy and owing to this they do not prevent the settling of the stack at the proper time when the lowermost cup has been vended, the hooks receding on the descent of the stack and when the lowermost cup is on the heads 19 the hooks will have snapped over the upper edge of said cup. To insure the proper descent of the stack of cups, the top one may contain a weight 45.

On the releasing motion of the heads 19 and the detaching action of hooks 41, it is essential that the stack as a whole be pre-

vented from descending, and stop means is provided for this purpose, said stop or arresting means being operative with the parts already described, and being governed by the coin actuated mechanism. The plate 12 is shown having a bearing for pivotally supporting a lever 46, said lever being so mounted as to present long and short branches or arms. The side wall of the cabinet 2, opposite the plate 12, carries a lever 47 pivoted to a suitable bearing on said wall, said two levers constituting grippers for the stack. A link 48 is shown as pivoted to the lever 47 between its ends and to the short arm of the lever 46, so that when the long arm of said lever 46 is swung inward, the lever 47 will be correspondingly moved. The two levers 46 and 47 constitute auxiliary supporting means for the stack and are adapted to be brought into contact with the pile or stack of cups just before the lowermost cup is separated from the stack so as to prevent temporarily gravitation of the stack and they are caused to recede at about the time the heads 19 are moved to their primary position to thereby permit descent of the stack.

The long arm of the lever 46 is shown provided with an upward projection 48' which receives the block 49 furnished with the disk 50, the head of the lever 47 being provided with a practically similar disk 51, the two disks being of some soft material, such as felt, and constituting the active portions of the stop or arresting means for stack. The disks 50 and 51 are brought into contact with the pile or stack just above the lower end thereof, or immediately above the upper edge of the lowermost cup or that which has been separated from the stack.

The slide 25 is shown equipped with a rigid pin 52 extending upwardly therefrom and through a longitudinal slot 53 in the slide 31, a pull-string 54 being shown as connected with said pin 52 and also with a pin 55 fastened within the cabinet, the spring 54 being for the purpose of retracting said slide 25, the spring 56 connected with the slide 31 and also with the pin 55 being furnished to retract or draw back the slide 31. The pin 52 presents a convenient means for operating the lever 46, the end of said lever being disposed in the path of said pin 52. The two disks or pads 50 and 51 are shown as being out of contact with the stack in Fig. 5, the slides 25 and 31 being back. On the advance of said slides the pin 52 will ride against the cam-face 58 of the long arm of the lever 46, and will therefore swing said long arm inward, the lever 47 being moved simultaneously inward through the parts described, so that the active portions of the opposing stop levers will be brought into contact with the stack, the parts being so timed that this will occur substantially at or about the time the heads 19 are carried

from under the lowermost cup. When the slides 25 and 31 are drawn back by the springs 54 and 56, the levers 46 and 47 can recede so as to move the disks or pads 50 and 51 away from the stack, thereby freeing the same and permitting it to settle onto the tow heads 19, which at this time are in their operative positions.

I provide means for indicating when the machine is empty, and that illustrated will now be set forth.

A feeler-lever 59 is shown pivoted between its ends by the pivot of the lever 46, the inner end of said lever 59 being at all times in contact with the stack of cups and the outer end thereof being shown as forked to receive the pin 60. A pull-string 61 which is rather light, so as not to affect the cups, is connected with the outer arm of said lever 59, and its normal tendency is to swing the said outer arm outward, such tendency however being resisted by the stack. When the stack has been depleted there will be nothing to restrain the lever 59, and it is then swung inward by the spring 61 to effect the action of the indicator.

Within a bore in the top of the cabinet 2 is a latch 62 from which the pin 60 depends. The latch 62 normally enters a notch in the flap 63 counter-sunk in the top of the cabinet. When the latch 62 is withdrawn from the notch, the flap 63 which constitutes a suitable indicating device, will be released, and I provide means as will hereinafter appear, for moving said flap to a vertical or indicating position when it is thus released. It will be assumed that the last cup has been vended; when this occurs, the outer arm of the lever 59 is swung outward, thereby pulling the latch 62 backward and releasing the flap 63, at which time a spring plunger 65 bearing against an angular projection 66 on said flap can elevate the latter to a vertical position. The flap may bear on its forward face printed matter to indicate that there are no more cups in the machine. The latch 62 has a slot 62' normally in register with the coin-slot 36 and when said latch is drawn back in the manner set forth the solid portion of the latch will cover the coin-slot 36, thereby positively preventing the introduction of a coin into the machine when the same is empty.

What I claim is:

1. An apparatus of the class described, comprising means for supporting a stack of nested cups, means for withdrawing the supporting means from the lowermost cup, means for positively separating the lowermost cup from the stack, and mechanism common to the supporting and withdrawing means for operating the same in sequence.

2. An apparatus of the class described, comprising a pair of slides provided with devices for supporting a stack of nested

cups, and means for moving said slides away from each other to release the lowermost cup, and for afterward moving said slides toward each other.

3. An apparatus of the class described, comprising means for supporting a stack of nested cups, means for withdrawing the supporting means, and a movable member provided with a hook for engaging the upper edge of the lowermost cup and operative to separate said lowermost cup from the stack on the movement of said movable member.

4. An apparatus of the class described, comprising means for supporting a stack of nested cups, means for withdrawing the supporting means from the lowermost cup, whereby said lowermost cup can be separated from the stack, and means for supporting the stack on the separating of said lowermost cup.

5. An apparatus of the class described, comprising means for supporting a stack of nested cups, means for withdrawing the supporting means from the lowermost cup, whereby the same can be separated from the stack, means for supporting the stack on the withdrawal of said lowermost cup, a feeler for engaging the stack, means for shifting said feeler when the stack is depleted, an indicating device, and means for operating said indicating device, by the said feeler on the shifting movement thereof.

6. An apparatus of the class described, comprising a pair of slides movable toward and from each other, and provided with means for supporting a stack of nested cups, said slides when separated being adapted to release the lowermost cup, a device provided with means for detaching said lowermost cup from the stack, a pair of levers for operating said slides and said device, and means for actuating said levers.

7. An apparatus of the class described, comprising a pair of slides provided with means for supporting a stack of nested cups, said slides being movable from each other to release the lowermost cup, a device above the slides provided with hooks to engage over the upper edge of said lowermost cup, a pair of levers operatively connected with said slides and with said device, and means for simultaneously operating said levers to cause the separation of said slides and the operation of said device.

8. An apparatus of the class described, comprising a container for a stack of nested cups, a device having an opening through which the stack extends, and provided with a series of hooks rising from the same and adapted to engage over the upper edge of the lowermost cup, and means for imparting a working movement to said device to cause the hooks to separate said lowermost cup from the stack.

9. An apparatus of the class described,

comprising a container for receiving a stack of nested cups, means for withdrawing the lowermost cup from the stack, and a pair of opposing gripping devices and means for causing said gripping devices to engage the stack above the lowermost cup on the withdrawal of the latter.

10. An apparatus of the class described, comprising a container for a stack of nested cups, means for separating the lowermost cup from the stack, a pair of levers above separating means, and means for moving said levers into contact with the stack on the withdrawal of the lowermost cup from the stack.

11. An apparatus of the class described, comprising a container for a stack of nested cups, means for separating the lowermost cup from the stack, a pair of levers located on opposite sides of the stack and provided with soft action portions, and means for operating said levers to carry said soft portions into contact with the stack above the lowermost cup on the separation of the latter from the stack.

12. An apparatus of the class described, comprising a container for a stack of nested cups, means for separating the lowermost cup from the stack, a feeler-lever normally engaging the stack, a spring for shifting said lever on the depletion of the stack, a

spring-operated indicating device, and a latch for normally preventing movement of said indicating device and operable by said lever on the shifting thereof to release said indicating device.

13. An apparatus of the class described, comprising means for containing a series of nested cups, means for positively separating the leading cup from the series, and means for gripping the series on such removal.

14. An apparatus of the class described, comprising means for containing a stack of nested cups, means for supporting the stack at the lower end and at a point above said end, and means for operating the supporting means in sequence.

15. An apparatus of the class described, comprising means for containing a stack of nested cups, means for supporting the stack at the lower end, and at a point above the said end, means for operating the supporting means in sequence, and means for separating the lowermost cup from the stack on the ineffective motion of the lower end supporting means.

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

EDWARD E. CLAUSSEN.

Witnesses:

HEATH SUTHERLAND,  
GEORGE MORTSON.