

Oct. 30, 1923.

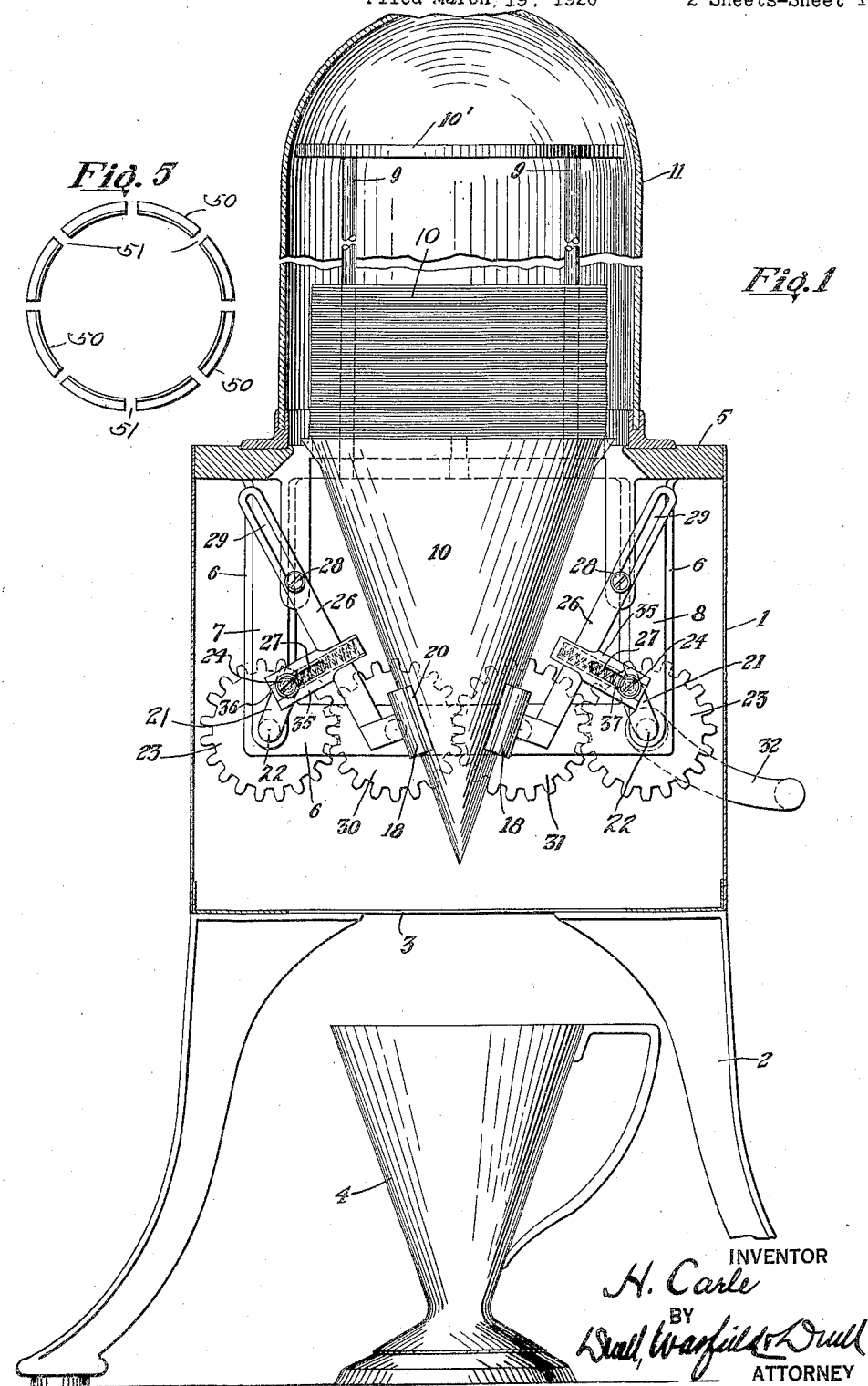
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H. CARLE

PAPER CUP DISPENSER

Filed March, 19, 1920

2 Sheets-Sheet 1



Oct. 30, 1923.

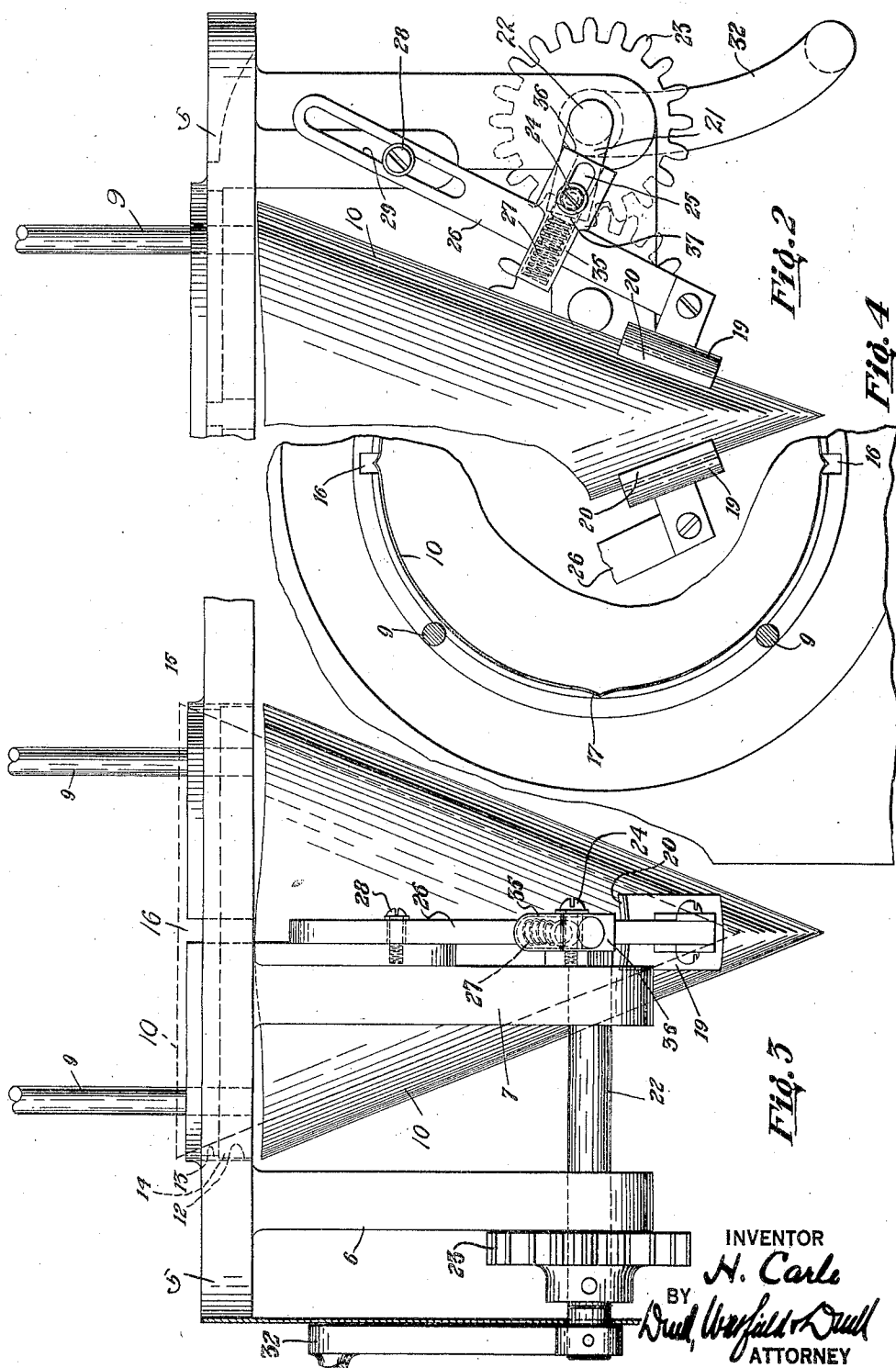
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PAPER CUP DISPENSER

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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE.

HAROLD CARLE, OF BUFFALO, NEW YORK, ASSIGNOR TO F. N. BURT COMPANY, LIMITED, OF TORONTO, CANADA, A CORPORATION OF CANADA.

PAPER-CUP DISPENSER.

Application filed March 19, 1920. Serial No. 367,060.

To all whom it may concern:

Be it known that I, HAROLD CARLE, a subject of the King of Great Britain, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Paper-Cup Dispensers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to dispensing apparatus, and with respect to its more specific features, to apparatus for dispensing articles, as cups and the like, especially paper cups, from a magazine or nest of cups.

One of the objects of the invention is the provision of a practical and efficient device for the purpose described which will not injure the cups.

Another object is the provision of a simple device whereby cups may be dispensed one by one from a closely nested arrangement or stack.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts, which will be exemplified in the construction hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings forming part of this specification, and wherein similar reference characters refer to similar parts throughout the several views,

Figure 1 is a vertical sectional view of the apparatus, the magazine part being broken away;

Fig. 2 is a side elevation of a portion of the device and clearly illustrating the construction of the gripper jaws;

Fig. 3 is a view taken at right angles to Fig. 2;

Fig. 4 gives a plan view of the cup seat and the relation between the same and the cup, under certain conditions, the magazine guide rods being shown in cross-section, and

Fig. 5 diagrammatically illustrates a modified form of seat.

The apparatus in connection with which the present invention is illustrated comprises a rectangular casing or box-like member 1 supported on legs 2 having a bottom open-

ing 3 through which the articles to be dispensed, in the present instance conical paper cups, may pass into a suitable receptacle, such as the cup-holder 4 illustrated in Fig. 1. In the present embodiment the top of the casing 1 comprises a relatively thick horizontal metallic frame, or plate 5, depending from which is a generally rectangular bracket 6 and two shaft hangers or brackets 7 and 8. Upstanding from the plate 5 are four smooth guide rods 9 connected at the top by a ring 10' and forming a magazine or receptacle for the cups. As illustrated in Fig. 1, a nest of conical paper cups 10, is placed in the magazine between the guide rods, the cups being inserted from the top through the ring 10', the glass cover 11 being first removed. These cups are closely nested in a vertical column as illustrated in Fig. 1, and as the bottom one is removed in the dispensing operation the upper ones gravitatively feed so that eventually all the cups are presented to the dispensing device.

In order to support the nest of cups, and especially the lowermost cup, in position for immediate dispensing, advantage is taken of the conical shape of the cups and a stationary open seat is provided, the edges of the seat contacting with the outer conical wall of the lowermost cup, thereby supporting the same and the cups thereabove. In the present embodiment the seat is formed by providing an opening in the plate 5 of lesser diameter than the greatest diameter of the cups. This opening is generally illustrated in Fig. 1, but is probably more clearly apparent from Fig. 3, where the dotted lines 12 and 13 indicate the wall of the opening, the same having an intermediate shoulder as illustrated at 14, the plate 5 having an upwardly extending flange 15 the inner wall of which is flush with the wall 13. Ordinarily, and preliminary to a dispensing operation, the lowermost cup or article to be dispensed extends through the opening in the plate 5, the edges of the opening contacting the outer conical wall of the cup near the mouth of the cup, the larger diameter of the cup above the opening restraining unrestricted passage of the cup through the opening under the influence of gravity, so that the effect is to uphold the magazine of nested cups. The cup seat includes laterally extending recesses, as, for instance, illus-

trated at 16, Fig. 4, which recesses communicate with the central opening, or passageway for the cups through the seat, and form, as it were, lateral enlargements of the central opening. By the provision of these recesses, it will be perceived that, when the bottom cup is to be dispensed and is drawn downwardly, these recesses permit temporary transverse flexing, bending and displacement of a portion of the flexible wall of the cup into the recesses, thereby easing passage through the opening in the seat and consequently lessening the gripping effect otherwise required to discharge the cup. It will be understood that the recesses referred to may be rectangular slots as indicated at 16, or mere concavities in the lateral wall of the seat, as, for instance, illustrated at 17. Viewed in another aspect, it will be perceived that by the provision of the recesses 16 or 17 as referred to, the cup is supported at different portions circumferentially of the cup, the seat being discontinuous circumferentially so that the seat might be formed of a series of circumferentially related sections or arcuate members, as, for instance, illustrated diagrammatically in Fig. 5 where the seat is formed of a series of relatively circumferentially short members 50 spaced apart circumferentially, the spaces 51 between the members being "recesses" as referred to in connection with the other figures.

In connection with the cup support or seat referred to there is provided a cup removing or drawing mechanism which in the present embodiment grips the end, or lowermost, cup of the column of cups and draws it from its seat and from the column. The numerals 18 indicate a pair of cup grippers or jaws each comprising a metallic block 19 one face of which is curved to conform to the curved outer surface, or side wall, of the cup and is faced with soft rubber, as indicated at 20, so as to provide cup contacting faces of soft resilient frictional material for obtaining an efficient friction grip on the cup. On the approaching movement between the gripper jaws they move toward each other and toward the longitudinal or axial line of the cup column to grip the end cup; they then move simultaneously downwardly, or in directions away from the cup support in paths parallel to the longitudinal axis of the cup to separate or draw the gripped cup from the ones above it and they then move apart sufficiently to permit the upper part of the separated cup, which is of relatively large diameter, to pass between the gripper jaws.

To effect the movements of the gripper jaws, jaw operating mechanism is provided and as this is the same for each jaw, a description of one will suffice for both. The numeral 21 indicates a rotatable jaw-mov-

ing, or jaw actuating member, in the present instance a crank arm of a power shaft 22, the shaft being journaled in the brackets 6 and 7 and having fastened thereto a spur gear 23. On the crank arm 21 is a crank pin 24 engaging a slot 25 in an extension 26 of the gripper jaw, the crank pin 24 being thereby loosely articulated with said jaw, so that the crank 21 is slidably pivotally connected to the gripper jaw through the instrumentality of the pin 24 which latter engages the slot 25 and may slide therein.

In the embodiment illustrated the cup drawing mechanism includes means for rendering the grippers resiliently resistant to receding movement therebetween when a cup is being drawn, and this means cooperates resiliently to transmit thrust from the jaw actuating members 21 to the grippers. To this end, between the gripper jaws and the crank pins 24 are disposed the resilient devices, as the helical springs 27, these springs being housed in extensions 26 and tending to urge the jaws and crank pins apart.

To support the jaws and coordinate and stabilize their movements relatively stationary guide members, as the pivots or pins 28, are employed, these pins being stationary with respect to the cup seat and loosely engaging slots 29 in the jaw extensions, or jaw guiding connections 26.

Each gripper jaw is cooperatively associated with a stabilizing device and jaw-moving member, as above described, and the spur gears 23 are operatively connected to rotate in opposite directions, through the instrumentality of the idlers 30 and 31. A crank and handle 32 are applied to one of the shafts 22 for the purpose of operating the device, which operation may be briefly described as follows:

The cover 11, which may be sealed or locked in place in any suitable way, is removed and a nest or stack of conical paper cups inserted through the ring 10' so as to extend through the seat opening in the plate 5. The mouths of the cups will be of such a diameter as to rest upon the edges of the seat opening without passing therethrough under gravitative influence alone. The cover 11 is then replaced and locked if desired, whereupon the device is ready for dispensing operations. By turning the handle 32 in one direction the crank arms 21 will cause the grippers 18 to move in an endless loop path toward and from the central axial line of the stack or column of cups and also toward and from the seat in the plate 5. The soft frictional gripping surfaces formed by the rubber faces of the gripper jaws will grasp the lowermost cup at a distance above its apex, and the arrangement of the operating parts, especially the connection between the crank arms 21 and the grippers, is such

that when the gripper jaws meet the cup, the next adjacent rotary movement of the crank arms 21 tends to compress the spring 27 by a sliding movement of the crank pin 24 in the slot 25, this compression enduring for several minutes of arc, during which the cups will be elastically and frictionally gripped by cooperation of the jaws with a firm pressure sufficient to draw the lowermost cup through the opening in its seat, the disposition of the springs 27 being such as to prevent crushing of the cup. The lowermost cup having been separated from its fellows and drawn from the opening in its seat, as illustrated in Figs. 2 and 3, the gripper jaws begin to separate and the cup gravitates lower and lower and finally the jaws separate sufficiently to permit even the wide mouth of the cup to freely pass into the opening 3 and the container 4 or other receptacle.

As illustrated, the gripping surfaces of the jaws 18 are of substantial area so as to grip the cup effectively by frictional contact therewith, the springs 27 being operative resiliently to press the soft resilient frictional faces of the jaws against the outer side wall of the lowermost cup on its withdrawing movement. The gripping frictional faces of the jaws are inclined to the longitudinal axis of the conical cup to comport with the inclination of the cup surface, and the power from the jaw-moving or jaw actuating member 21, is transmitted resiliently through the springs 27 to the gripper jaws to effect the gripping of the cup. Each spring 27 is bodily movable with its gripper jaw both longitudinally of the cup path during cup drawing as well as with the gripper as the latter moves in respect to the guide pin 28, which pin serves as a stationary fulcrum. The extensions 26 serve as connections between the gripper jaws and the stationary axes 28, permitting movement of the jaws toward and from the supporting seat for the jaws to withdraw a cup and return for another cup. It will be noted that in the illustrated construction, the gripper extensions 26 and the pins 28 cooperate to dispose the cup contacting planes of the grippers in planes inclining toward each other in directions away from the cup support, or seat, during cup drawing. The pins 28, being at the outer sides of the cup path, allow passage of the cups therebetween. As the gripper surfaces approach the cup, they will be so disposed as to press against and closely conform to the cup surface so as to obtain an effective close frictional gripping contact with the cup. When drawing movement of the grippers follows, the frictional surfaces remain pressed against the cup until it is detached, notwithstanding the cup wall may yield somewhat to the gripping, the springs 27 cooperating as potentializers

to cause the grippers to make further relative approaching movements when required. When the drawing mechanism is actuated in the absence of cups the frictional grip surfaces may approach each other closer than when gripping a cup, and simultaneously with their approaching movement they also move away from the cup support, or seat. The gripped wall of the cup may yield somewhat under the gripping pressure but the springs 27 act as potentializers to cause the soft friction faces to follow the yielding wall and thus make a further relative approaching movement. This further approaching movement may occur also during cup drawing when the wall of the drawn cup may further yield, being relieved of the bracing effect of other cups of the stack of cups. It will be seen therefore that the construction provides for drawing movement of the gripper faces simultaneously with relative approaching movement thereof. By this, not only are the grippers kept in contact with the gripped cup, but should a cup of the column be slightly out of correct longitudinal alignment or of somewhat smaller diameter the gripper faces will nevertheless be brought into contact therewith with resilient effect so as to cause it to assume effective gripping relation to the grippers.

The housing for the spring 27 consists of an enlargement or transversely extending piece 35 bored from the end 36 to receive the coil spring 27, one end of which spring abuts the end of the bore in the enlargement, and the other, of which encircles a follower-block 37 and lies against a shoulder 38 thereof. The block 37 lies in the bore and is pressed against the crank pin 24 by the spring 27.

Thus by the above described construction are accomplished, among others, the objects hereinbefore referred to.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which as a matter of language might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an apparatus of the character described, in combination, an open seat through which an article is adapted to ex-

tend, and means adapted to grip the article and draw the same through the opening in said seat including a gripper jaw, a rotatable jaw-moving member slidably pivotally connected to said jaw, and a jaw-stabilizing device.

2. In an apparatus of the character described, in combination, an open seat through which an article is adapted to extend, and means adapted to grip the article and draw the same through the opening in said seat including a slotted gripper jaw, a rotatable member having a crank pin engaging the slot in said jaw, a spring tending to urge said jaw and pin apart, and a jaw-stabilizing device.

3. In an apparatus of the character described, in combination, an open seat through which an article is adapted to extend, and means adapted to grip the article and draw it through the opening in said seat including a gripper jaw, a rotatable jaw-moving member slidably pivotally connected to said jaw, and a jaw-stabilizing device including a guide member and a jaw-extension cooperating with said member.

4. In an apparatus of the character described, in combination, an open seat through which an article is adapted to extend, means adapted to grip the article and draw it through the opening in said seat including a pair of gripper jaws, a pair of jaw-moving gears slidably pivotally connected, one to each jaw, each jaw having a slotted extension, stationary pins engaging said extensions, respectively, and means adapted to simultaneously operate said gears.

5. In an apparatus of the character described, in combination, a seat for a paper cup, a pair of gripper jaws, and means adapted to cause said jaws to grip the cup therebetween and withdraw the same from said seat including resilient means adapted to urge said jaws toward each other during a portion of their withdrawing movement.

6. In an apparatus of the character described, in combination, a seat for a paper cup, a pair of gripper jaws, and means adapted to cause said jaws to grip the cup therebetween and withdraw the same from said seat including a rotatable jaw-moving member, and a spring interposed between said jaw moving member and one of said gripper jaws.

7. In an apparatus of the character described, in combination, a frame including a seat for a paper cup, a pair of gripper jaws, and means adapted to cause said jaws to grip the cup therebetween and withdraw the same from said seat including a rotatable member loosely articulated with one of said jaws and a guide on said frame cooperating with said last mentioned jaw.

8. In an apparatus of the character described, in combination, a frame including a

seat for a paper cup, a pair of gripper jaws, and means adapted to cause said jaws to grip the cup therebetween and withdraw the same from said seat including a jaw extension having a plurality of slots, a pin on the frame loosely engaging one of said slots, and a crank engaging the other slot.

9. In an apparatus of the character described, in combination, a frame including a seat for a paper cup, a pair of gripper jaws, and means adapted to cause said jaws to grip the cup therebetween and withdraw the same from said seat including a jaw extension having a plurality of slots, a pin on the frame loosely engaging one of said slots, and a crank engaging the other slot, said last mentioned slot being between the pin on the frame and the jaw of said extension.

10. In an apparatus of the character described, in combination, a seat adapted to support a stack of paper cups, cup drawing gripper jaws movable toward and from the axial line of the lowermost cup and toward and from said seat, pivots stationary with respect to said seat around which said jaws move toward and from the lowermost cup, connections between said pivots and said jaws permitting movement of said jaws toward and from said seat, and means adapted to actuate said connections for imparting said movements to said jaws, including springs through which power from said actuating means is transmitted to said jaws to effect the gripping of the cup.

11. In an apparatus of the character described, in combination, a seat adapted to support a stack of paper cups, cup drawing gripper jaws movable toward and from the axial line of the lowermost cup and toward and from said seat, pivots stationary with respect to said seat around which said jaws move toward and from the lowermost cup, connections between said pivots and said jaws permitting movement of said jaws toward and from said seat, and springs operative to press said jaws against the cup as the cup is withdrawn.

12. In an apparatus of the character described, in combination, an open seat through which an article is adapted to extend, and means adapted to grip the article and draw it through the opening in said seat including a gripper jaw, a rotatable jaw-moving member slidably pivotally connected to said jaw, a power transmitting spring between said jaw-moving member and said jaw, and a jaw-stabilizing device including a guide member and a jaw-extension cooperating with said member.

13. In an apparatus of the character described, in combination, an open seat through which an article is adapted to extend, means adapted to grip the article and draw it through the opening in said seat including a pair of gripper jaws, a pair of

jaw-moving gears slidably pivotally connected, one to each jaw, power transmitting springs between said gears and jaws, respectively, each jaw having a slotted extension, stationary pins engaging said extensions, respectively, and means adapted to simultaneously operate said gears.

14. A dispenser for cups of the character described including, in combination a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces supported for movement on opposite sides of the cup path, and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of the cup and simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said column.

15. A dispenser for cups of the character described including, in combination a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces supported for movement on opposite sides of the cup path, and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of the cup and simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said column and dispose the cup contacting planes of said faces in planes inclining toward each other in directions away from said support during cup drawing.

16. A dispenser for cups of the character described including, in combination a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces supported for movement on opposite sides of the cup path, and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of the cup and, simultaneously with the cup approaching movements, simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said column and to dispose the cup contacting planes of said faces in planes inclining toward each other in directions away from said support during cup drawing.

17. A dispenser for cups of the character described including, in combination a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces supported for movement on opposite sides of the cup path, and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of the cup and, simultaneously with the cup approaching movements, simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said column and to dispose the cup contacting planes of said faces in planes inclining toward each other in directions away from said support during cup draw-

ing, and including means adapted to cause the cup resiliently to be pressed between said faces during cup drawing movement.

18. A dispenser for cups of the character described including, in combination a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces supported for movement on opposite sides of the cup path, and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of the cup and, simultaneously with the cup approaching movements, simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said column and to dispose the cup contacting planes of said faces in planes inclining toward each other in directions away from said support during cup drawing and including means adapted to cause the cup resiliently to be pressed between said faces during cup drawing movement, said pressing means including resilient devices, bodily movable with the grippers toward and from the cup, adapted resiliently to transmit thrust from the gripper actuating mechanism to said faces.

19. In combination, in a dispenser for cups of the character described, cup drawing mechanism including cup grippers having cup drawing movement and soft, frictional, cup gripping faces.

20. In combination, in a dispenser for cups of the character described, cup drawing mechanism including cup grippers having cup drawing movement and cup gripping faces of soft, frictional, resilient material.

21. In combination, in a dispenser for cups of the character described, cup drawing mechanism including cup grippers having cup drawing movement and soft, frictional, cup gripping faces, and means for actuating said grippers including means for potentializing the grippers for relative approaching movement with effective cup gripping during drawing of the gripped cup.

22. In combination, in a dispenser for cups of the character described, cup drawing mechanism including cup grippers having cup drawing movement and cup gripping faces of soft, frictional, resilient material, and means for actuating said grippers including means for potentializing the grippers for relative approaching movement with effective cup gripping during drawing of the gripped cup.

23. In combination, in a dispenser for cups of the character described, an open seat adapted to support a column of nested cups with the end cup exposed in position to be gripped, said seat having one or more recesses permitting transverse flexing of the cup wall as it is drawn through the opening, and cup drawing mechanism including cup grippers having cup drawing move-

ment and soft, frictional, cup gripping faces adapted to contact and frictionally grip the exposed cup and draw the same from said column.

5 24. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair of cup grippers supported for movement on opposite sides of the cup path, and means
10 adapted to cause movements of said grippers toward the outer surface of the lateral wall of a cup and simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said column
15 and dispose the cup contacting planes of said grippers in planes inclining toward each other in directions away from said support during cup drawing.

25. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair of cup grippers supported for movement on opposite sides of the cup path, and means adapted to cause movements of said grippers
20 toward the outer surface of the lateral wall of a cup and, simultaneously with the cup approaching movements, simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said
30 column.

26. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair of cup grippers supported for movement
35 on opposite sides of the cup path, and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of a cup and simultaneous movement thereof from said support thereby to grasp
40 a cup and draw the same from said column, including resilient means, bodily movable with the grippers toward and from the cup, adapted resiliently to transmit thrust from the gripper actuating mechanism to said
45 grippers.

27. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair of cup grippers supported for movement on opposite sides of the cup path, and means
50 adapted to cause movements of said grippers toward the outer surface of the lateral wall of a cup and, simultaneously with the cup approaching movements, simultaneous movement thereof from said support
55 thereby to grasp a cup and draw the same from said column including resilient means, bodily movable with the grippers toward and from the cup, adapted resiliently to transmit thrust from the gripper actuating mechanism to said grippers
60

28. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair
65 of cup grippers supported for movement

on opposite sides of the cup path, and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of a cup and, simultaneously with the cup approaching movements, simultaneous
70 movement thereof from said support thereby to grasp a cup and draw the same from said column including means adapted to cause the cup resiliently to be pressed between the grippers during cup drawing
75 movement, said pressing means including resilient devices, bodily movable with said grippers toward and from the cup, adapted resiliently to transmit thrust from the gripper actuating mechanism to said grippers.
80

29. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces, supported for movement on opposite sides of the cup path,
85 and means adapted to cause movements of said grippers toward the outer surface of the lateral wall of a cup and, simultaneously with the cup approaching movements, simultaneous movement thereof from said
90 support thereby to grasp a cup and draw the same from said column.

30. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces, supported for movement on opposite sides of the cup path, and means
95 adapted to cause movements of said grippers toward the outer surface of the lateral wall of a cup and simultaneous movement thereof from said support thereby to grasp a cup and draw the same from said column including resilient means, bodily movable with
100 the grippers toward and from the cup, adapted resiliently to transmit thrust from the gripper actuating mechanism to said faces.
105

31. A dispenser for cups of the character described including, in combination, a support for a column of nested cups, a pair of cup grippers having soft, frictional, cup gripping faces, supported for movement on opposite sides of the cup path, and means
110 adapted to cause movements of said grippers toward the outer surface of the lateral wall of a cup and, simultaneously with the cup approaching movements, simultaneous movement thereof from said support
115 thereby to grasp a cup and draw the same from said column and dispose the cup contacting planes of said faces in planes inclining toward each other in directions away from said support during cup drawing
120 including resilient means, bodily movable with the grippers toward and from the cup, adapted resiliently to transmit thrust from the gripper actuating mechanism to said faces.
125
130

32. In combination, in a dispenser for cups of the character described, cup drawing mechanism including a gripper jaw, supported for movement in a loop path lying partly at the outside and partly inside the cup path including a portion in a plane parallel to the longitudinal axis of the cup, a gripper actuating member, and a spring, bodily movable with said jaw, adapted resiliently to transmit pressure from said actuating member to said jaw.

33. In combination, in a dispenser for cups of the character described, cup drawing mechanism including a gripper jaw faced with soft rubber, supported for movement in a loop path lying partly at the outside and partly inside the cup path in a plane parallel to the longitudinal axis of the cup, a gripper actuating member, and a spring, bodily movable with said jaw, adapted resiliently to transmit pressure from said actuating member to said jaw.

34. In combination, in a dispenser for cups of the character described, a cup drawing mechanism including a gripper jaw faced with soft rubber, supported for movement in a loop path lying partly at the outside and partly inside the cup path including a portion in a plane parallel to the longitudinal axis of the cup, a gripper actuating member, and a spring, bodily movable with said jaw, adapted resiliently to transmit pressure from said actuating member to said jaw, and resiliently to resist separation between said gripper and a cup during withdrawal of a cup.

35. In combination, in a dispenser for cups of the character described, cup drawing mechanism including a gripper jaw, supported for movement in a loop path lying partly at the outside and partly inside the cup path including a portion in a plane parallel to the longitudinal axis of the cup, a gripper actuating member, the support for said jaw including a stationary fulcrum, a

jaw extension, and operative connections between said fulcrum and extension to guide said jaw in said path upon operation of said actuating member.

36. In combination, in a dispenser for cups of the character described, cup drawing mechanism including a gripper jaw, supported for movement in a loop path lying partly at the outside and partly inside the cup path including a portion in a plane parallel to the longitudinal axis of the cup, the support for said jaw including a stationary fulcrum, a jaw extension, operative connections between said fulcrum and extension to guide said jaw in said path, a crank operatively connected to said extension to actuate said gripper, and a spring carried by said extension and interposed between the same and said crank.

37. In combination, in a dispenser for cups of the character described, cup drawing mechanism including a gripper jaw, supported for movement in a loop path lying partly at the outside and partly inside the cup path including a portion in a plane parallel to the longitudinal axis of the cup, a gripper actuating member, the support for said jaw including a stationary fulcrum, a jaw extension, and operative connections between said fulcrum and extension to guide said jaw in said path upon operation of said actuating member, including a fulcrum pin and a slot in said extension engaged by said pin.

38. In combination, in a dispenser for cups of the character described, cup gripping and drawing mechanism including a cup gripper having cup drawing movement and a soft, frictional cup gripping face.

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

HAROLD CARLE.

Witnesses:

J. H. PATERSON,
E. L. BEEDLEMAN.