Dec. 31, 1929. H. MOORE 1,741,474

CUP DISPENSER

Filed Dec. 6, 1926 5 Sheets-Sheet 1

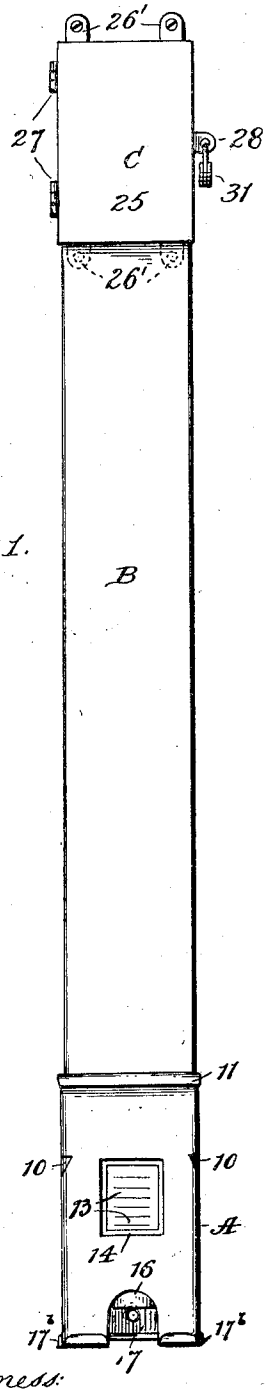


Fig. 1.

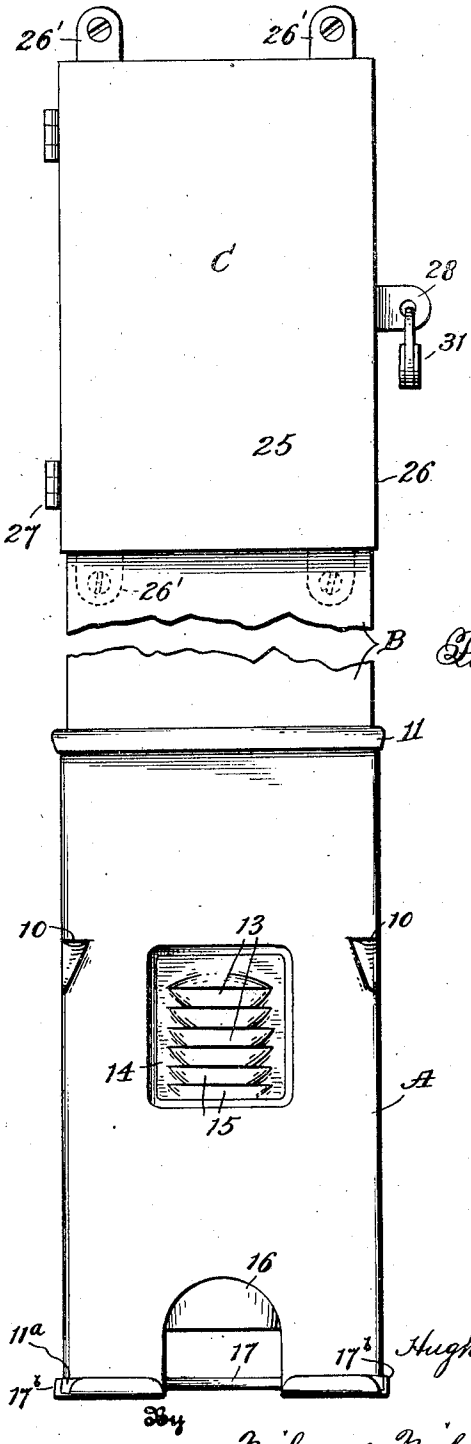


Fig. 2.

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Dec. 31, 1929. H. MOORE 1,741,474

CUP DISPENSER

Filed Dec. 6, 1926 5 Sheets-Sheet 2

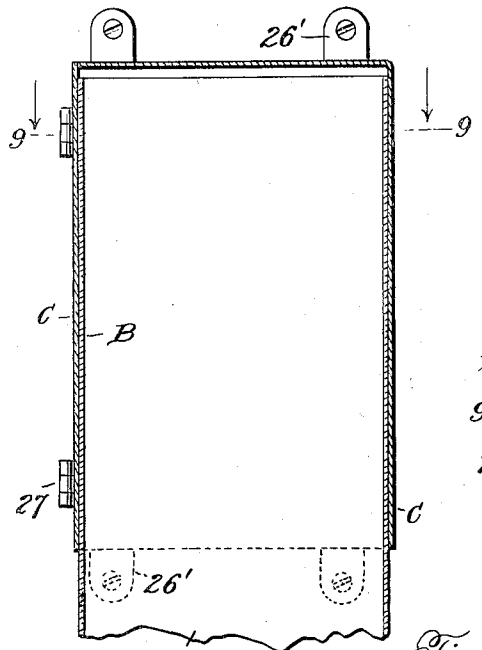


Fig. 3.

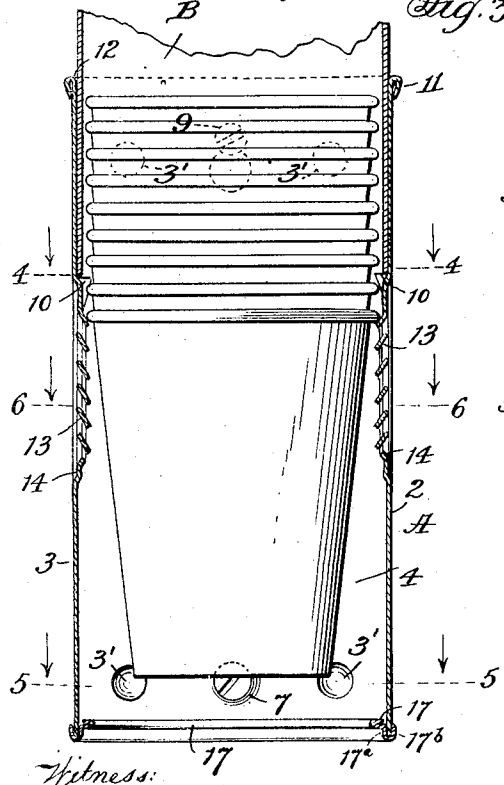


Fig. 4.

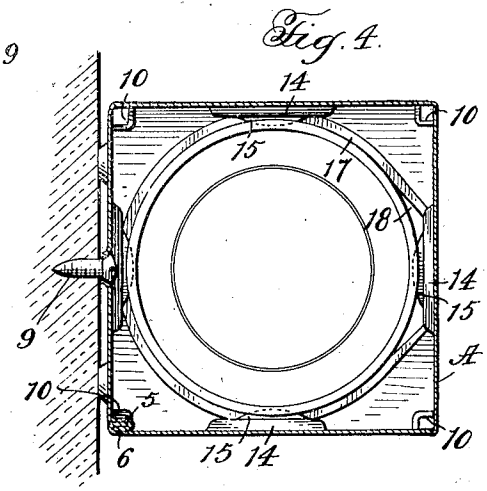
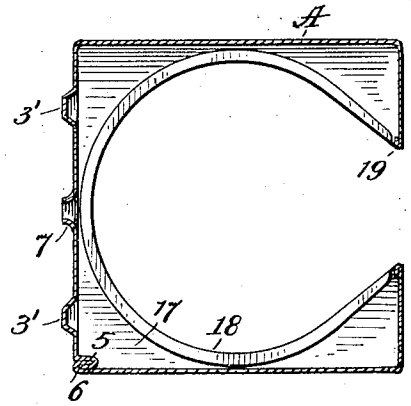


Fig. 5.



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Dec. 31, 1929. H. MOORE 1,741,474

CUP DISPENSER

Filed Dec. 6, 1926 5 Sheets-Sheet 3

Fig. 6.

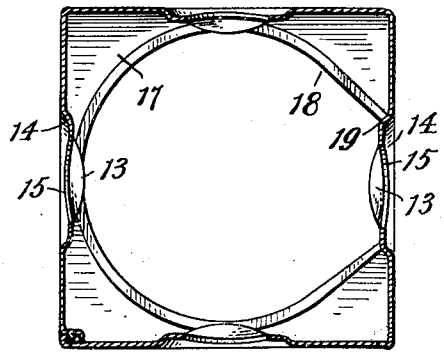


Fig. 9.

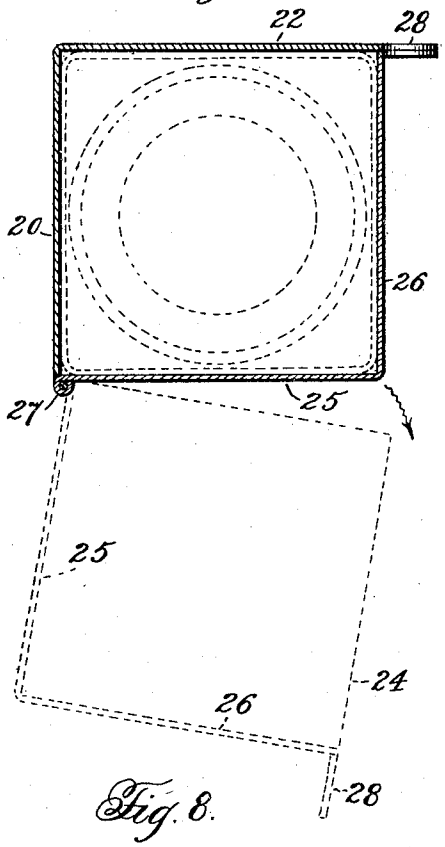


Fig. 7.

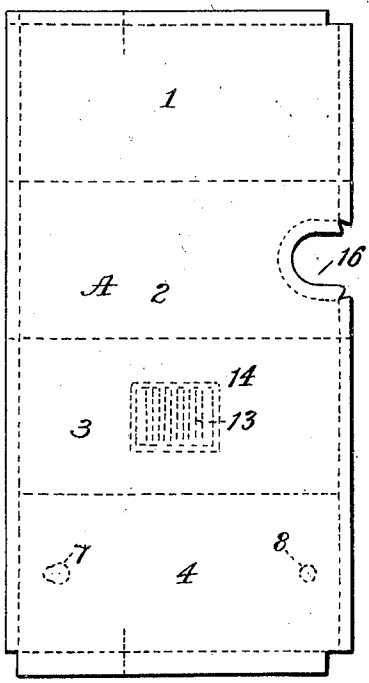
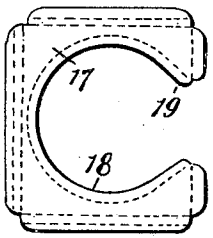


Fig. 8.



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Dec. 31, 1929. H. MOORE 1,741,474

CUP DISPENSER

Filed Dec. 6, 1926 5 Sheets-Sheet 4

Fig. 10.

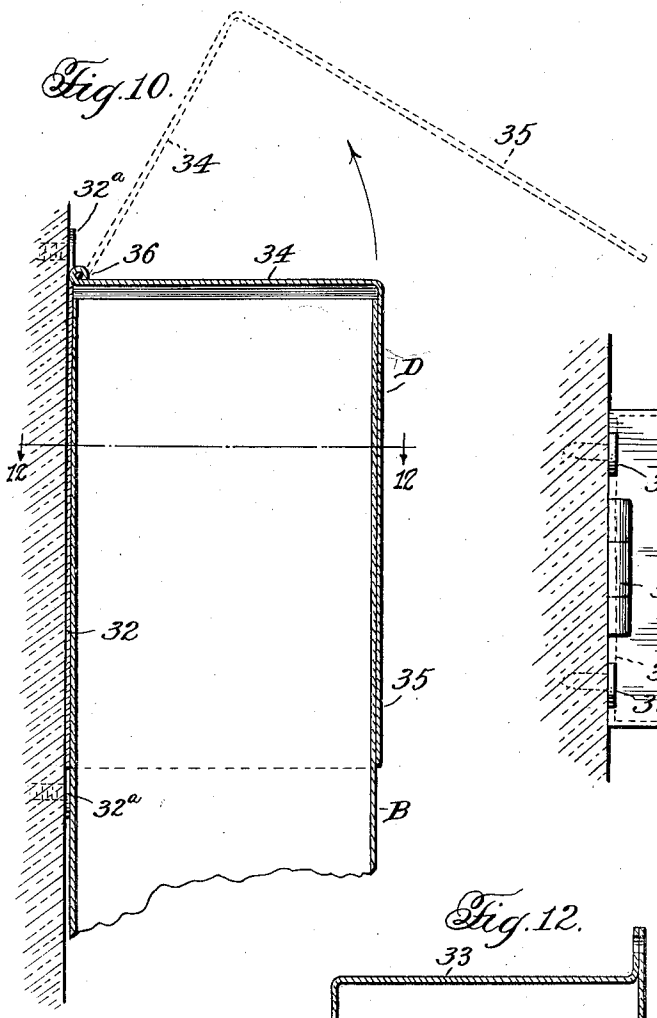


Fig. 11.

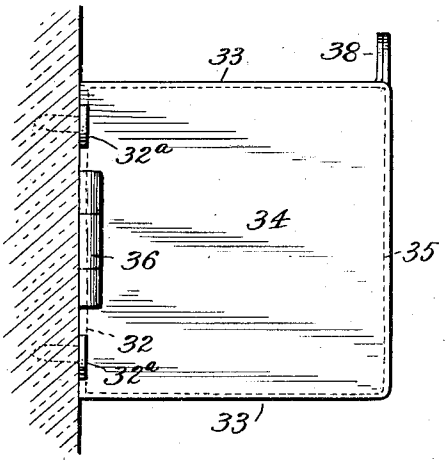


Fig. 4a.

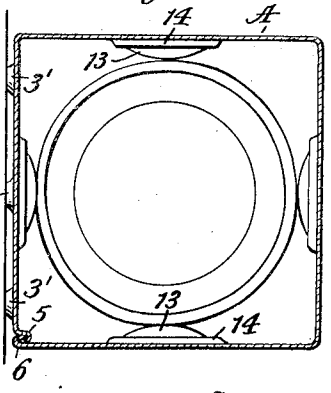
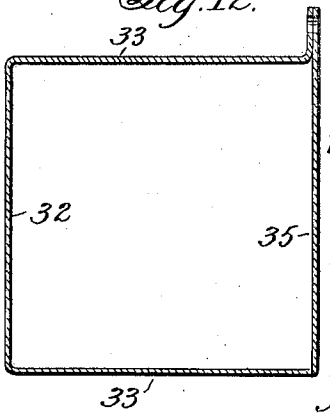


Fig. 12.



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Dec. 31, 1929. H. MOORE 1,741,474

CUP DISPENSER

Filed Dec. 6, 1926 5 Sheets-Sheet 5

Fig. 13.

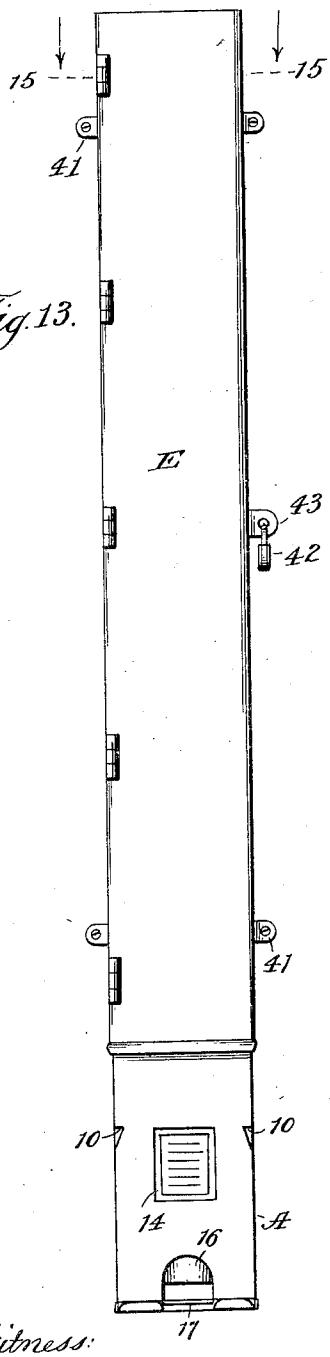


Fig. 14

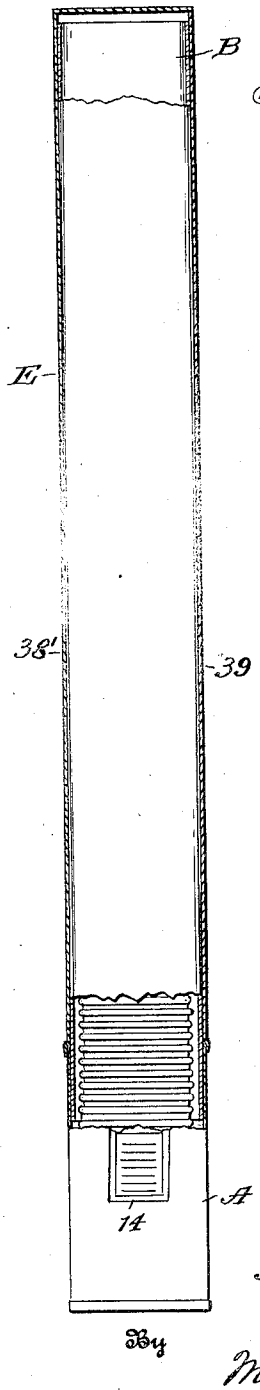
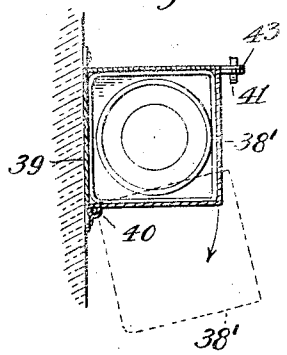


Fig. 15.



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Patented Dec. 31, 1929 1,741,474

UNITED STATES PATENT OFFICE

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CUP DISPENSER

Application filed December 6, 1926. Serial No. 152,885.

This invention relates to improvements in cup dispensers of the type comprising a removable magazine or container of tube like form for a stack of nested cups, and a supporting member or holder with cup retaining and separating means providing for the removal of cups singly from a stack of cups within the container by exerting a downward pull upon the lowermost cup of the stack.

An object of the invention is to provide an improved dispensing device of this general character; to provide an improved supporting member or holder of simple, inexpensive construction adapted to cooperate with and permit of utilizing the commercial cartons for the cups as the magazine or tubular container for the dispensing device, and which will be durable and satisfactory in use and will operate efficiently to retain the stack of cups within the device while permitting of the easy withdrawal of the same one by one therefrom without injury.

A further object of the invention is to provide in an improved dispenser of the kind referred to, improved means of a simple efficient nature for encasing the paper carton container above the holder and locking the same in place in the holder.

The invention, with other objects and advantages thereof, and the particular construction, combination and arrangement of parts comprising the same, will be understood from the hereinafter contained detail description, when considered in connection with the accompanying drawings forming part hereof and illustrating embodiments of the invention.

In the drawings:

Figure 1 is a front elevation of a cup dispenser constructed in accordance with the present invention.

Fig. 2 is a similar view on an enlarged scale, the carton being shown broken away.

Fig. 3 is a longitudinal section.

Fig. 4 is a section on the line 4—4 of Figure 3.

Fig. 4ª is a transverse section similar to Figure 4, one of the cups being shown in plan with its upper portion slightly compressed in passing over the retaining ledges.

Fig. 5 is a transverse section on the line 5—5 Figure 3.

Fig. 6 is a transverse section on the line 6—6 Figure 3.

Fig. 7 is a plan of the sheet metal blank of the main body part of the holder.

Fig. 8 is a plan of the blank of the bottom wall of the holder.

Fig. 9 is a transverse section on the line 9—9 of Figure 3, the movable section of the upper casing being shown in dotted lines in open position.

Fig. 10 is a detail vertical section of a modified form of the upper casing for the cup carton or container tube, the movable section of the casing being shown in dotted lines in partly open position.

Fig. 11 is a top plan view of the upper casing shown in Figure 10.

Fig. 12 is a transverse section on the line 12—12 of Figure 10, the wall of the carton not being shown.

Fig. 13 is a front elevation illustrating a further modified construction of the upper casing for the carton or container.

Fig. 14 is a similar view with parts shown in section.

Fig. 15 is a transverse section on the line 15—15 of Fig. 13.

While specific embodiments of the invention are illustrated in the drawings, it will of course be understood that minor changes and variations in the particular constructions shown, may be made and the invention embodied in other forms, as will appeal to those skilled in the art and falling within the scope of the appended claims, without departing from the spirit of the invention.

Referring to a detailed description of the particular embodiment of the invention illustrated Figures 1 to 9 inclusive of the drawings, A designates the supporting member or holder in the form of a tubular part or casing, square shape in cross section, constructed from a continuous piece of sheet metal illustrated in Figure 7 of the drawings, the blank being bent along the lines indicated forming the wall sections 1, 2, 3, 4, the adjacent edges of the wall sections 1 and 4 being provided with interlocking folds 5, 6. The

supporting member or casing A, which is adapted to be secured in a vertical position to any suitable support, is shown provided in its rear wall 4 with apertures 7, 8, for attaching screws 9 or equivalent fastening members, the upper aperture 7 being in the form of a key hole slot to be first engaged with the upper attaching screw 9, and the lower screw 9 to be afterwards applied. 3' designates support engaging bosses on the wall 3 formed by portions pressed out therefrom.

The supporting member or holder A is adapted to have detachably seated within its upper part and to support therein a paper cup carton B, the interior diameter of the supporting member or holder A corresponding to the diameter of the cup carton B and being provided with shoulders 10 for the lower end of the cup carton B to rest upon. The shoulders 10 are formed by portions struck from the sheet metal walls of the supporting member or holder at the corners thereof, said shoulders being of angular formation, as shown. The supporting member or casing A at its ends is provided with outwardly extending marginal beads or folds 11 and 11a, which serve as reinforcing means and provide smooth finished edges. With the formation of the outwardly extending bead 11, the adjoining wall portions at 12 are slightly flared outwardly, as shown, and this with the smooth marginal edges afforded at the upper end of the supporting member or holder A facilitates the ready introduction of the end portion of the paste board cup carton B into the upper part of the supporting member or holder A. The cup carton B illustrated in the drawings as constituting the magazine or container for a stack of cups is the commercial form of paper carton for marketing paper cups, the closure flaps at the lower end of the carton having been removed.

The type of cup illustrated in the drawings is a well known form of paper cup having an outwardly extending flange at the top. The bottom is slightly above the lower end of the cup, the lateral extending rim flanges of the cups being spaced when the cups are nested.

The supporting member or holder A is provided with cup retaining and separating means comprising transverse relatively narrow rigid flange abutments or ledges 13 disposed in a common plane, diametrically opposite on the inner side of the wall sections 1, 2, 3, 4, centrally thereof, the distance between opposite abutment flanges or ledges 13 being slightly less than the extreme diameter of the cup flanges, said flange abutments or ledges being adapted to engage the flange of the lowermost cup of the stack and thereby support the stack, and to permit the withdrawal of the cups singly, the cup flanges being sufficiently flexible to yield and to be temporarily slightly compressed to permit of the disengagement of the same from the flange abutments or ledges 13 without injury when a downward pull is exerted upon the lowermost cup. As will be understood, when the lowermost cup has been disengaged from the flange abutments or ledges 13, the stack moves downwardly by gravity until the flange of the cup next above engages the abutments or ledges 13. The invention contemplates the use of one or more of the flange abutments or ledges 13 on each of the wall sections 1, 2, 3, 4. Preferably, each of the walls 1, 2, 3, 4, is provided with a series of such flange abutments or ledges 13 each set thereof being arranged in a common plane as illustrated in the drawings. The flange abutments or ledges 13 are formed by portions struck from the walls of the supporting member or holder A and are of arched formation, concave at the underside, sloping downwardly and inwardly from the walls of the holder, having a curvature transversely and in the direction of their length, and gradually decreasing in width from their central portions toward either end. This particular construction and arrangement of the flange abutments or ledges 13, as will be understood, functions to assist in the temporary compression of the flange of the cups and the easy disengagement of the same from the flange abutments or ledges 13 without injury when a downward pull is exerted upon the lowermost cup. The walls 1, 2, 3, and 4 are shown provided with pressed in panel-like portions 14 and the flange abutments or ledges 13 are on said wall portions, the relatively narrow rigid abutment flanges or ledges 13 being thus set in to be engaged by the cup flanges. In the forming of the flange abutments or ledges 13, the inset panel portions 14 are provided with series of transverse slits 15, and segmental portions directly above the slits 15, indicated by the dotted lines in Figure 7 are bent inwardly, stretched or shaped as shown, the inward stretching or bending of said segmental portions above the slits 15 being greatest centrally of their ends.

The supporting member or holder A is of a length to extend well below the lowermost cups held by the retaining means, as illustrated in Figure 1 of the drawings, and is provided in its front wall 2 with an opening or slot 16 extending inwardly from its lower end, said slot being of a size and shape to permit of the insertion of the thumb and finger into the supporting member or casing to grip the lower marginal side edge portion of the lowermost cup.

At its lower end the supporting member or holder A has a wall or plate 17 provided with a circular opening 18 through which the cups can be withdrawn, said bottom wall being also cutaway at the front at 19 coincident with the slot 16 in the front wall 1. The diameter of the circular opening 17 is ap-

proximately equal to the greatest diameter of the cup flanges so that in the withdrawal of the cups, said bottom wall will catch and hold the cup by slight frictional engagement therewith should the cup be released from the hand after being disengaged from the cup retaining ledges 13. The bottom wall or plate 17, which is formed from sheet metal and provided with a peripheral flange 17^a, fits within the end of the main body part of the holder and is secured thereto by extensions 17^b of the flange 17^a folded over the bead 11^a, said bottom plate serving also as stiffening and reinforcing means for the structure. The marginal portion of the bottom plate 17 bounding its opening is folded back, as shown, to provide a smooth edge about the opening.

C designates a casing adapted to be secured to a suitable support and to inclose the upper end of the container tube or carton B and lock the same in position within the holder A, said casing being provided with a door or movable section providing for the insertion of the container tube or carton B into the socket or holder A and within the casing C and its removal therefrom, and means being provided for locking the door or removable section in closed position. Referring particularly to Figures 2, 3 and 9 of the drawings, the casing C, which is square shaped in cross section, is shown as made up of two sections, a rear section comprising a back wall 20 and side wall 22, and a front section comprising top wall 24, side wall 25, and front wall 26. The back wall 20 of the casing has apertured attaching ears 26′ and is secured to the support by screws or equivalent fastening means. The front section of said casing is connected to the back wall 20 of the rear section by hinges 27 to swing horizontally, said front section being adapted to be swung to one side to carry its top wall 24 from over the holder A to permit of the introduction of a container tube or carton B into the holder A or its removal therefrom. Any suitable locking means may be employed to lock the front section of the casing to the rear section thereof and prevent the unauthorized removal of the container tube or carton B from the holder A. In this particular instance the side wall 22 of the rear section and wall 26 of the front section are provided with apertured portions 28 to be engaged by a lock 31. As will be understood while serving for locking the container tube or carton B within the holder A, the casing C also acts as an additional support therefor.

In Figures 10 to 12 of the drawings a modified form of locking casing is shown, in which the movable door or section swings vertically. The casing, designated D, in this instance comprises a rear section having a back wall 32 and side walls 33, and a front section having the top wall 34 and front wall 35, the top wall 34 at its rear edge being connected to the top part of the back wall 32 by hinges 36. The back wall 32 has upper and lower attaching ears 32^a provided with screw apertures for securing the same to the support. The wall 35 of the front section and one of the side walls 33 of the rear section have apertured portions 38 for engagement by a lock (not shown).

The modified construction of locking casing illustrated in Figures 13, 14, 15, is the same as that illustrated in Figures 2, 3, and 9 of the drawings except that the casing, designated E, is of a length to completely enclose that part of the container tube or carton B extending above the supporting member or holder A. 38′, 39 designate respectively the front and rear sections of the casing, the front section 38′ being connected to the rear section by hinges 40. 41 designates attaching ears on the back plate of the rear section 39, and 42 is a lock for engaging apertured portions 43 on the sections 38′ and 39 to secure the front section in closed position.

It will be noted that by the particular construction, hereinbefore described, a supporting member or holder of a simple efficient nature is afforded, that will operate satisfactorily with the original cup cartons as the container tube of the device, and that can be provided at extremely low cost, the main body part of the holder being stamped from a continuous piece of sheet metal. The special cup retaining means stamped from the sheet metal of the walls of the holder is of a character to securely hold the stack of cups while at the same time providing for the ready withdrawal of the same one by one from the stack without injury thereto. The casing fitting over the upper end of the carton provides for efficiently locking the paper carton within the holder, as additional supporting means therefor, and provision is made for completely enclosing the part of the carton that projects above the holder so that while the original paper cartons or packages can be employed as the container tube and the cups dispensed directly therefrom, the paper carton is entirely concealed from view.

What I claim is:

1. A tubular cup dispensing member having on its interior at intervals thereabout rigid transversely extending downwardly and inwardly sloping cup retaining ledges disposed in a common plane, each of said ledges gradually decreasing in width from its central portion towards its ends.

2. A tubular cup dispensing member having on its interior at intervals thereabout in a common plane relatively narrow transversely extending cup retaining ledges, each of said ledges having an upper face that is convex transversely and in the direction of its length.

3. A tubular cup dispensing member having on its interior at intervals thereabout in a

common plane transversely extending downwardly and inwardly sloping ledges, each of said ledges being convex at its upper side in the direction of its length.

4. A tubular cup dispensing member having on its interior disposed diametrically opposite and in a common plane transversely extending convex downwardly and inwardly sloping cup retaining ledges curved transversely and in the direction of their length, said ledges gradually decreasing in width toward either end.

5. A tubular cup dispensing member square shaped in cross section having relatively narrow rigid transversely extending cup retaining ledges disposed diametrically opposite in a common plane on the inner side of its walls centrally of the side edges thereof.

6. A tubular sheet metal cup dispensing member provided with transverse slits, and segmental shaped portions of the wall of said member directly adjoining said slits above the same being bent inwardly therefrom, providing inwardly extending cup retaining ledges gradually decreasing in width toward either end.

7. A tubular sheet metal cup retaining member provided with transverse slits and segmental shaped portions of the wall of said member directly adjoining said slits above the same being bent inwardly therefrom providing inwardly extending cup retaining ledges convex at the upper side.

8. A tubular sheet metal cup retaining member provided with transverse slits and segmental shaped portions of the wall of said member directly adjoining said slits above the same being bent inwardly therefrom providing inwardly extending cup retaining ledges convex at the upper side and gradually decreasing in width toward either end.

9. A tubular sheet metal cup dispensing member provided with transverse slits and segmental shaped portions of the wall of said member directly adjoining said slits above the same being bent inwardly therefrom, providing inwardly extending downwardly sloping cup retaining ledges, said ledges being curved transversely and in the direction of their length.

10. A tubular sheet metal cup dispensing member provided with pressed in parts having transverse slits therein and portions directly adjoining said slits above the same bent inwardly therefrom, providing relatively narrow rigid cup retaining ledges.

11. A tubular sheet metal cup dispensing member square shaped in cross section having pressed in panel-like parts in the walls thereof centrally of their side edges provided with series of transverse slits therein, and portions directly adjoining said slits above the same being bent inwardly providing relatively narrow cup retaining ledges.

12. In a dispensing device, a tubular sheet metal supporting member or holder adapted to have detachably seated within the same and to support therein a container tube, said sheet metal holder having wall portions struck inwardly from the walls thereof and extending longitudinally with edge portions thereof facing upwardly to form seats for the lower end of the container tube to rest upon.

13. A tubular sheet metal cup dispensing member square shape in cross section, adapted to have detachably seated within the same and to support therein a cup carton, said sheet metal member having portions of angular formation struck jointly from adjoining walls at corner portions thereof and forming seats for the lower end of the cup carton to rest upon.

14. In a cup dispensing member, cup retaining means, and a casing part to extend about and to the lower portion of the lowermost cup held by the retaining means, and provided in its side wall with a slot extending from the lower marginal edge thereof, said slot being of a size and shape to permit of the insertion of the thumb and finger to grip a lower marginal side edge portion of the cup, said casing part being provided with a bottom wall having an opening of less size than the interior size of the casing part through which the cups can be withdrawn, said opening being coextensive with the slot in the side wall of the casing part.

15. In a dispensing device, a support, a tubular holder adapted to have detachably seated within the same and to support therein a cup carton, means for attaching said holder to the support, cup retaining and separating means, in combination with a casing secured to said support adapted to fit over the upper end of a carton supported within the holder and hold the same therein, said casing having a movable section adapted to be opened to permit of the insertion of a cup carton into the holder and casing and its removal therefrom, and means for holding said movable section in closed position.

16. In a dispensing device, a support, a tubular holder adapted to have detachably seated within the same and to support therein a cup carton, means for attaching said holder to the support, cup retaining and separating means, in combination with a casing secured to said support adapted to fit over the upper end of a carton seated within the holder and hold the same therein, said casing having a laterally swinging section to be opened to permit of the insertion of a cup carton within the holder and casing and its removal therefrom, and means for holding said laterally swinging section in closed position.

17. In a dispensing device, a support, a tubular holder adapted to have detachably seated within the same to support therein a

cup carton, means for attaching said holder to the support, cup retaining and separating means, in combination with a casing secured to said support adapted to fit over the upper end of a carton seated within the holder and hold the same therein, said casing having a laterally swinging section to be opened to permit of the insertion of a cup carton within the holder and casing and its removal therefrom, and means for locking said laterally swinging section in closed position.

18. In a dispensing device, a support, a tubular holder adapted to have detachably seated within the same and to support therein a cup carton, means for attaching said holder to the support, a cup retaining and separating means, in combination with a casing secured to said support adapted to completely enclose that part of a cup carton extending above the holder when seated therein, and said casing having a movable section adapted to be opened to permit of the insertion of a cup carton within the holder and casing and its removal therefrom, and means for holding said movable section in closed position.

19. A tubular cup dispensing member provided with panel portions disposed inwardly of the inner face of the main wall of the dispensing member and each provided with a series of relatively narrow transversely extending cup retaining ledges.

20. A tubular rigid cup dispensing member having cup retaining and separating portions extending inwardly from the wall thereof at intervals thereabout in a common plane, said cup retaining and separating portions each having a smooth continuous upper convex inwardly and downwardly sloping cup engaging face.

21. A tubular cup dispensing member provided with elongated longitudinally extending straight plate like portions disposed inwardly of and extending parallel with the inner face of the main wall of the dispensing member and each provided with a series of relatively narrow transversely extending cup retaining ledges.

22. A tubular cup dispensing member having on its interior at intervals thereabout rigid relatively narrow transversely disposed cup retaining ledges sloping downwardly and inwardly toward the outlet end of said member, said retaining ledges being segmental shape with their forward edges convexly arcuate.

In testimony whereof I hereunto affix my signature.

HUGH MOORE.