Jan. 7, 1964 S. W. RABB ETAL 3,116,854

DISPENSING HOLDER AND RECEPTACLE

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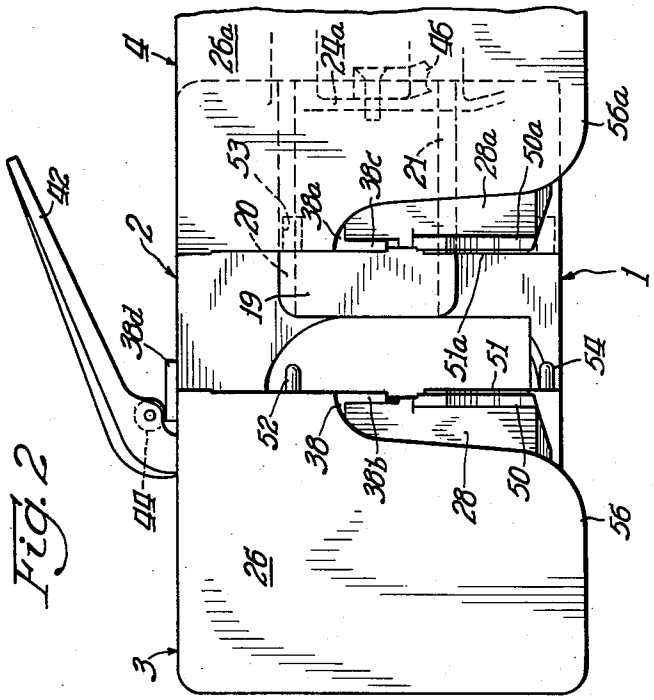


Fig. 2

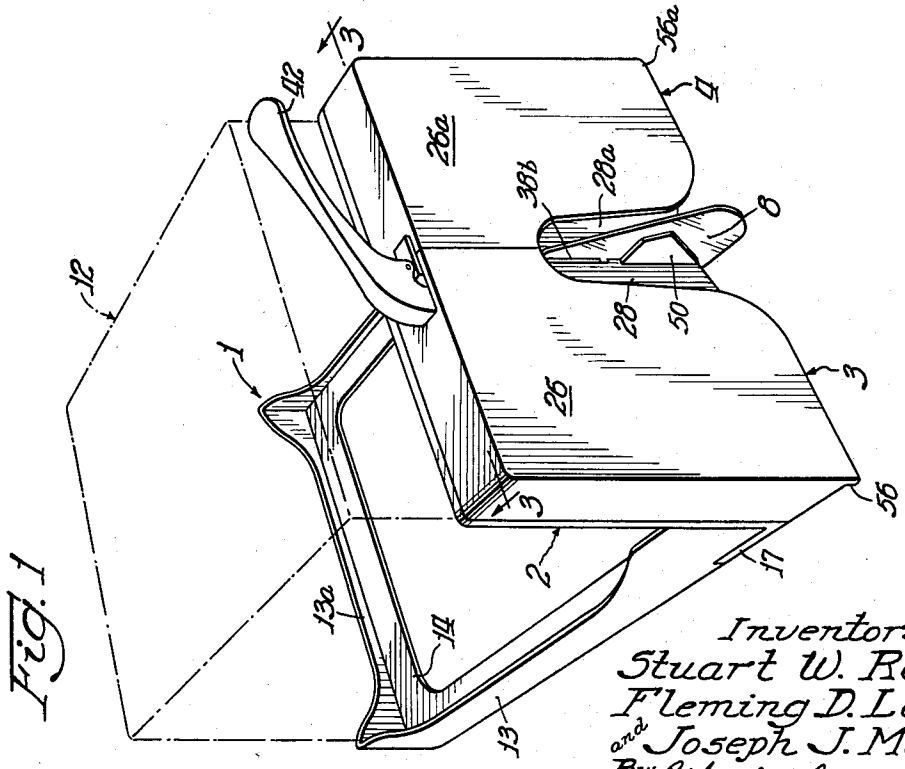


Fig. 1

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Fig. 5

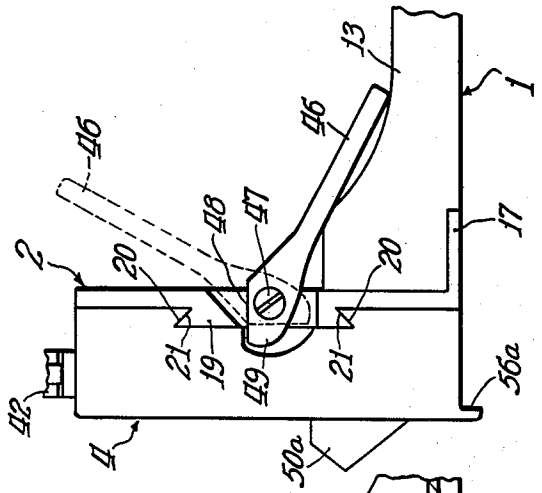


Fig. 4

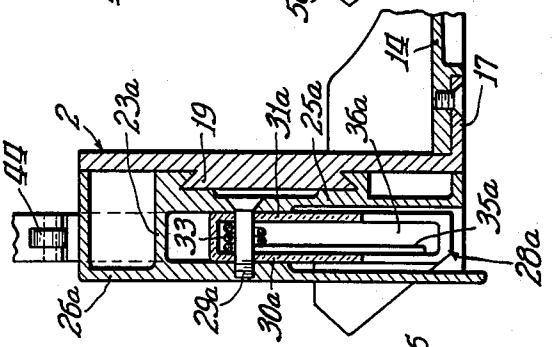
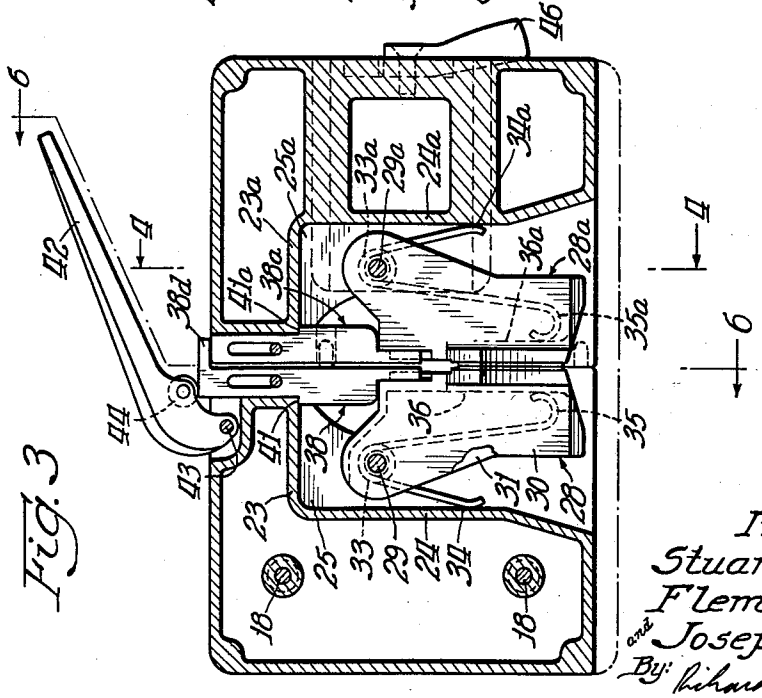


Fig. 3



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Fig. 6

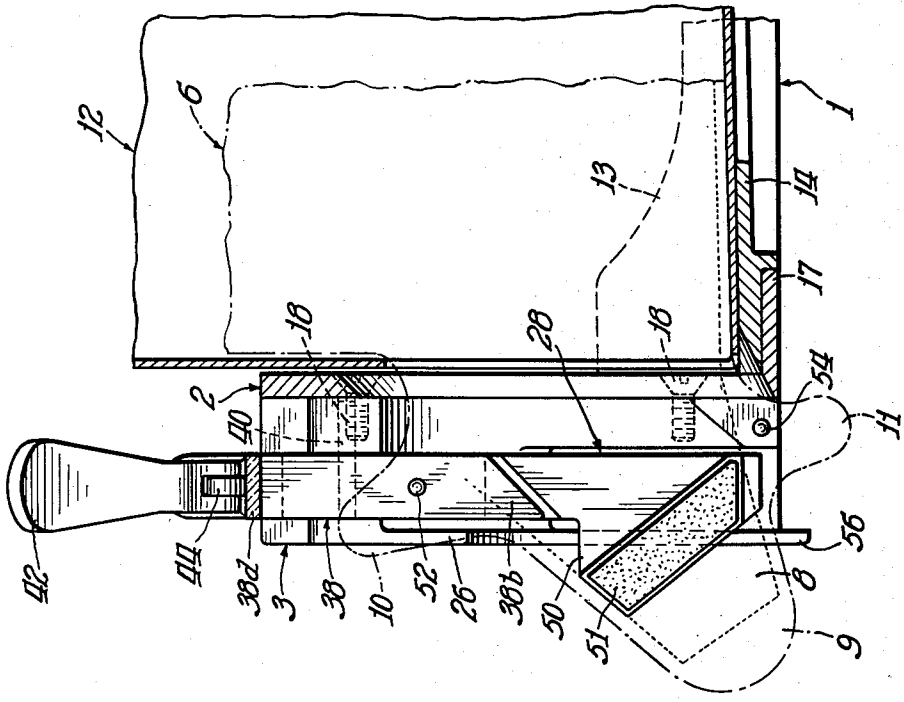


Fig. 7

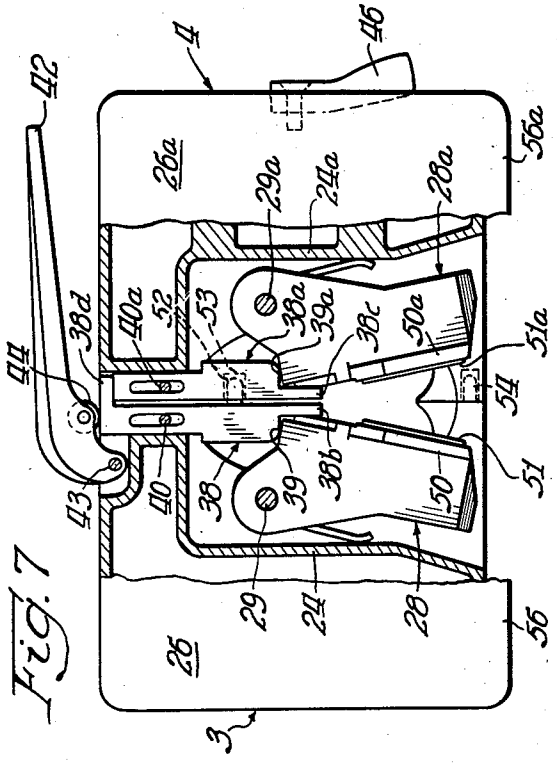
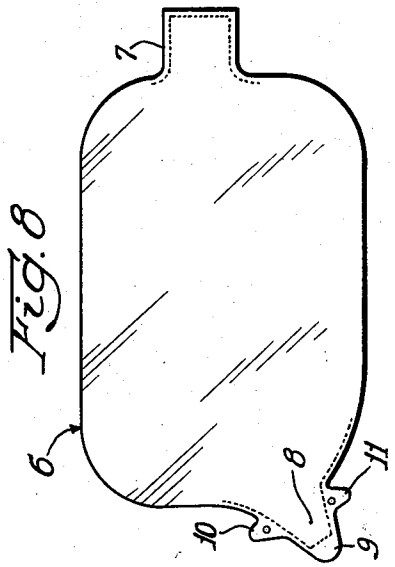


Fig. 8



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3,116,854

DISPENSING HOLDER AND RECEPTACLE

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Filed Apr. 9, 1962, Ser. No. 186,191
14 Claims. (Cl. 222—183)

The present invention relates to liquid dispensing devices and more particularly to a form of liquid dispenser adapted to cooperate with portable receptacles or containers provided with pouring or dispensing outlets of flexible material.

An important object of the invention is to provide a supporting tray or holder constructed to receive a container which is formed or provided with a flexible, tubular outlet from which liquid may flow, such supporting tray including a releasable clamping mechanism to control the flow of liquid from the container.

Another object of the invention is to provide a dispensing tray or holder for a liquid container which has a flexible tubular outlet, such dispensing tray including separable parts for anchoring the tubular outlet of the container in fixed position and additional parts for releasably clamping the tubular outlet to close it and retain it in its closed position.

A further object of the invention is to provide a form of holder for dispensing liquid from a flexible bag contained in a suitable carton or other container, the bag having a tubular outlet member and the holder having a releasable clamping device for receiving the tubular outlet member and normally holding it closed.

A further object is to provide a simple and highly efficient construction of releasable holding and clamping elements to dispense liquid from a receptacle having a flexible, collapsed tubular spout, whereby the tubular spout may readily be fixed in position so that it will remain at all times in the desired relation to the releasable elements to assure proper opening and closing of the spout.

A still further object of the invention is to provide an effective form of flexible envelope and spout therefor, such envelope being particularly designed to cooperate with the novel structure of the dispensing holder.

Additional and more specific objects and advantages of the present invention will become apparent as the description proceeds.

In the drawings:

FIG. 1 is a perspective view of a tray made in accordance with the invention, showing in broken lines a rectangular container fitted within the tray and adapted to receive a plastic receptacle to hold the liquid;

FIG. 2 is a front elevation of the tray shown in FIG. 1, illustrating how one of the holding members may be moved away from its companion member to facilitate placement of the flexible dispensing spout of the plastic receptacle;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 1, looking in the direction of the arrows, and showing the mechanism for spreading the spout-holding jaws to allow liquid to flow from the spout;

FIG. 4 is a vertical sectional view taken along line 4—4 of FIG. 3;

FIG. 5 is a fragmentary side elevation showing the locking lever which secures the movable holding member in operative position;

FIG. 6 is a vertical sectional view on an enlarged scale, taken along line 6—6 of FIG. 3, showing how portions of the flexible receptacle along the margins of the spout are secured to the tray;

FIG. 7 is a vertical sectional view, similar to FIG. 3, but

showing the spout clamping elements in released position to permit liquid to flow through the spout; and

FIG. 8 is a view of a liquid-holding envelope or bag in collapsed condition, such envelope being particularly adapted for the dispensing holder illustrated in the preceding views.

In the packaging and distribution of liquid products, particularly such commodities as milk and non-carbonated beverages for homes and restaurants, it has been recognized that economies could be realized by packaging the liquids in disposable receptacles holding a gallon or more. One expedient is to employ a sturdy inexpensive paperboard container enclosing a flexible lining envelope or bag having a suitable tube or other dispensing opening. Thus, when the receptacle is emptied it can be readily discarded. For relatively small packages the use of a flexible envelope and outer paper board container is feasible, except that the cost of the container has been found not to be competitive with that for other types of packages. The relative cost of the paperboard and flexible envelope compared with the value of the contents tends to decrease as larger unit quantities of liquid are packaged. However, as the packages are made larger, they are often cumbersome to handle if they must be tilted or partly inverted in the process of dispensing small quantities, such as filling drinking glasses of milk, juices or other beverages.

By the use of the present invention a package of a gallon or more of liquid may be prepared, employing a plastic envelope or bag having a closed-end tubular portion or spout formed at a suitable point. This bag is enclosed in a paperboard container having a small pre-cut area to give access to the spout and through which the spout may protrude. To dispense the contents, the paperboard container is fitted into the tray herein disclosed. The closed-end spout is brought through the opening in the paperboard container and secured in fixed relation to an upstanding part of the tray which also includes what may be termed a valve arrangement comprising releasable clamping means to engage opposite sides of the spout. After the spout has been engaged, the closed end of the spout will be cut off and discarded, after which the liquid may be dispensed as desired.

By proportioning the tray so that it is relatively narrow and long, the assembly can be readily received on one of the shelves of a conventional refrigerator and will require only a limited space comparable to that of several ordinary sized containers, such as gallon or half-gallon milk bottles or cartons.

Referring more particularly to the drawings, the dispensing holder in its preferred form comprises an elongated metal base or tray portion 1 having an upstanding metal frame or panel section 2 to which is fixedly secured a jaw supporting part 3 extending over one half the section 2. A second jaw supporting part 4 is carried on the section 2 for quick removal and replacement.

An envelope or bag for which the holder is particularly designed is shown at 6 in FIG. 8. The envelope may conveniently be made in two generally rectangular sections of plastic material, one being laid flat against the other and sealed with heat and pressure around its marginal edges. A filling tube 7 is formed at any desired place on the periphery of the flat, collapsed envelope. A dispensing spout 8 extends outwardly of the envelope, preferably near a corner of the generally rectangular envelope. This spout is formed with its end closed as indicated at 9. At the sides of the spout are formed upper and lower tabs 10 and 11 which serve to hold the spout in the desired position when in place within the holder.

The envelope is preferably placed within a suitable paperboard container, as indicated in broken lines at 12 in FIG. 1. This container in practice is formed as a regular slotted type container, which has a tubular body

portion and upper and lower overlapping flaps to close the open ends of the tube. The lower end of the container is preferably fitted within the upstanding flanges 13, 13 and 13*a* of the base or tray portion. The main panel 14 of the base preferably is cut away as best seen in FIG. 1 in the interest of keeping the weight of the holder down to a minimum.

An appropriate panel of the paperboard container is partiaily cut over a small area to enable the cut portion to be removed readily to give access to the spout of the plastic envelope.

As shown in FIGS. 1 and 6 the upstanding panel section 2 of the holder is L-shaped, having an integral foot portion 17 fitted within a cut-away part of the base 1 so as to be flush with its lower surfaces. The two jaw supporting parts 3 and 4 are secured onto the face of the panel section 2. The part 3 is designed to be permanently secured to the panel 2 and is held by suitable countersunk machine screws 18, 18. See FIG. 6. The jaw supporting part 4 is designed for ready removal and replacement. For this purpose the panel 2 has a forwardly projecting guide block 19 on its front face. This block is preferably integral with the panel 2 and is formed with undercut, angular guide faces 20, 20 extending to the outer edge of the panel (see FIGS. 2, 4 and 5) which cooperate with similarly shaped undercut guide faces 21, 21 formed in the rear side of the part 4.

Each of the parts 3 and 4 are similar, but reversely constructed, and are preferably formed as hollowed-out castings of aluminum or other suitable metal. As best shown in FIGS. 3, 4, 6 and 7, the parts 3 and 4 have similar, but reverse, recesses formed respectively by interior horizontal walls 23, 23*a*; interior vertical walls 24, 24*a* extending transverse to the general planes of the parts 3 and 4; the vertical exterior walls 25, 25*a* on the rear sides of the recesses; and the vertical exterior walls 26, 26*a* forming the front faces of parts 3 and 4.

The spout engaging jaw members, which may also be termed clamping members, indicated at 28 and 28*a*, are preferably hollow, relatively rigid, plastic pieces of irregular shape as best shown in FIGS. 3, 4, 6 and 7. The jaw members as shown herein are elongated vertically of the parts 3 and 4 and are swingably or pivotally mounted respectively at their upper ends on machine bolts 29, 29*a* received in openings in the walls 25, 26 and 25*a*, 26*a*. The bolts pass through front and rear walls of the jaw members indicated at 30, 31 for jaw 28 and at 30*a*, 31*a* for jaw 28*a*. These walls of the jaw members are suitably fitted between the exterior and interior walls of the parts 3 and 4 to provide freedom for swinging of the jaws.

The jaws 28 and 28*a* are preferably urged to swing toward each other by means of coil springs 33 and 33*a* respectively, encircling the pivot bolts and having arms 34, 34*a* bearing against respective wall sections 24 and 24*a*. Opposite the arms 34 and 34*a* are respective arms 35 and 35*a* bearing respectively against the vertical walls 36 and 36*a* of the jaw members.

For the purpose of opening or spreading the jaws there are provided vertically movable blocks or link members 38, 38*a* having lower end portions bearing upon shoulders 39, 39*a* respectively of the jaw members. Extended portions 38*b* and 38*c* of the respective blocks 38 and 38*a* project below the ends bearing on the shoulders and engage flatwise against shallow cut-away portions in the adjacent walls 36 and 36*a* of the jaw members. The upper portions of the blocks 38 and 38*a* are slotted to receive pins 40, 40*a* having their ends fixed to the front and rear walls of the jaw supporting parts 3 and 4 respectively. In order to limit the upward movement of the blocks, shoulders 41, 41*a* are formed on the respective blocks 38, 38*a*. These shoulders bear against the under sides of the respective walls 23, 23*a*. If desired, the lengths of the slots in the blocks 38 and 38*a* may be formed so that the lower ends of the slots engage the pins 40 and 40*a* at the desired upper limit of movement of the blocks.

For the purpose of depressing the blocks 38 and 38*a* simultaneously the block 38*a* is preferably made shorter than black 38 and a horizontally extending arm 38*d* is formed at the upper end of block 38 to extend over and bear against the upper end of block of 38*a*. An operating lever or handle 42, pivoted at 43 on the part 3, has a bearing roller 44 contacting the upper end of the block 38. From an inspection of FIGS. 3 and 7 it will be clear that downward movement of the lever 42 will cause both blocks 38 and 38*a* to move downward and these blocks, in turn, due to the pressure exerted on the shoulders 39, 39*a* of the jaw members will swing such members symmetrically away from each other.

The removable jaw supporting part 4 is held in place by a latch element 46 pivoted at 47 on panel 2. In its raised position, as shown in broken lines in FIG. 5, the edge portion 48 will allow the part 4 to slide freely on its guides; and in lowered position, as shown in full lines, the end portion 49 extends over the outer edge of the part 4 to hold it in its operating position.

In order to hold the jaw holding part 4 firmly against the latch element the shoulders 41 and 41*a* of the blocks 38 and 38*a* are so cut that, when engaged against the respective walls 23 and 23*a*, the jaw members will assume positions slightly beyond the edges of their supporting parts. Thus, when the part 4 is being moved along its guides into its operative position, the jaw members will be in contact before the part 4 reaches its final position. Some degree of force must be applied to bring it into such position that the latch may be engaged behind its outer edge. This construction also has the advantage that when the envelope has been completely emptied of its contents and it is desired to separate the jaw supporting parts, this is effected by merely lifting the latch element 46 and the spring tension exerted on the jaws causes part 4 to move a short distance away from part 3.

As best illustrated in FIG. 6, the clamping sections 50, 50*a* of the jaw members preferably project somewhat outwardly of the front faces of the jaw supporting parts 3 and 4. Narrow plastic pads 51, 51*a* (see FIGS. 6 and 7) are secured at an inclination on the clamping sections so that such pads will extend across the tubular axis of the spout when the spout is in the desired position between the jaws. The arrangement is also such that a short section of the spout rearwardly of the closed end portion 9 will project beyond the pads. Thus, after the spout is in the proper position for dispensing, the end of the spout may be snipped off between the closed portion 9 and the pads.

While the plastic pads 51, 51*a* may be formed from various kinds of plastic material, it is preferred to employ pad material having a surface affinity for the flexible material from which the spout is formed. This tends to cause the sides of the spout to adhere to the pads and facilitates opening the spout when the jaw members are forced apart. It has been found suitable to employ pads formed from relatively thick polyethylene sheet material for use with an envelope and spout of relatively thin polyethylene

For the purpose of positioning the spout accurately with respect to the jaws, anchoring elements are preferably employed which engage the tabs 10 and 11 located on the envelope approximately at the juncture of the spout with the main body of the envelope. In the present instance short pins are employed which are received in holes in the tabs 10 and 11. Such holes may be preformed if desired. As shown in FIGS. 2, 3 and 6, a pin 52 is secured in the block 38 and is received within a recess 53 in the companion block 38*a* after the tab 10 has been impaled upon the pin. Another pin indicated at 54 is secured in the jaw supporting part and projects outwardly of a vertical surface at the lower end of this part. The pin 54 is received in a recess formed in a similar surface of the jaw supporting part 4 after the tab 11 has been impaled upon it.

In the use of the dispensing holder a convenient procedure is to place a filled container assembly on the base of the holder after the spout has been withdrawn from the opening provided by removing the partially cut section of the wall of the outer container, as referred to above. The jaw supporting part 4 may then be moved laterally to a position such as shown in FIG. 2, or it may be removed completely from the holder. If desired, this may be done before placing the filled container on the base. The spout is then secured in position by impaling the tabs 10 and 11 on the respective pins 52 and 54. The spout and anchoring tabs will then appear in the arrangement shown in FIG. 6. The jaw supporting part 4 is then returned to the position shown in FIG. 1 and locked by the latch element 46. The spout is now firmly held between the pads 51 and 51*a* on the clamping jaws and the tubular portion will lie between the upper and lower ends of the pads so that the flow of liquid through the spout will be fully controlled. The closed end of the spout is then cut off and the device is ready to dispense the contents of the container.

The dispenser with the filled container in position may then be placed on a refrigerator shelf for other convenient support with the front wall of the parts 3 and 4 substantially flush with the outer edge of a shelf or other support. To facilitate the placement of the holder there are provided flanges 56, 56*a* extending below the plane of the underside of the holder and formed integrally with the jaw supporting parts 3 and 4. When the main portion of the holder is placed, for example, on a refrigerator shelf the holder may then be pushed rearwardly until the flange portions engage the front of the shelf. The holder is then in a suitable position for dispensing the contents of the container.

It will be noted that the latch 46 has an intermediate holding position. When the latch is raised to release the part 4 from its operative position and the latch then released, it will move to locking position and will come in contact with inner wall 24*a*. The latch must again be raised to clear the wall 24*a* and allow the jaw supporting part to be removed completely from its guides.

It is to be understood that when reference has been made herein to horizontal or vertical movement or positioning of various parts of the device, this is for convenience of description only and without any intent to limit the scope of the invention.

From the foregoing it is apparent that the present invention provides a neat, compact and efficient dispensing holder for the effective utilization of relatively large flexible envelopes for the packaging of liquids within paperboard containers. By reason of the spout construction and the arrangement of the clamping jaws, the envelope is maintained closed until the spout is in place between the jaws. After the spout is opened and dispensing of the contents is begun, it is apparent that the interior of the envelope will at all times be maintained in a completely sanitary condition and free from outside contamination, because the spout is always brought to closed condition as soon as the desired quantity of liquid is obtained and the user's hand is released from the lever 46.

By preparing the spout as well as the envelope in flat, collapsed form, the spout can be brought easily between the jaw holding parts and readily secured in exactly the correct relationship by securing the tabs 10 and 11 on the anchoring pins and subsequently clamping the tabs between the adjacent surfaces of the jaw supporting parts as they are brought together and latched in place.

While the present description sets forth a preferred embodiment of the invention, numerous changes may be made in the mechanism as disclosed without departing from the spirit of the invention, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

What is claimed is:

1. A dispensing holder for liquid contained in an envelope or bag of plastic material of the type formed in a flat collapsed condition with an extended part comprising a flat, collapsed dispensing spout and a flat extended tab portion adjacent the spout, the holder comprising a base portion upon which a major part of the envelope, when filled, may rest, a narrow, upstanding section extending transversely along one edge portion of the base, said section having a tab clamping surface portion extending transversely of the upstanding section and arranged to engage one face of the tab, a first jaw member having a spout engaging surface, said jaw member being swingably mounted on the upstanding section, the upstanding section including a removable part having a second tab clamping surface portion to cooperate with the first mentioned tab clamping surface to hold the tab between them, a second jaw member swingably mounted on the removable part and having a spout engaging surface of cooperating contour with the first jaw member, the axes on which the jaw members swing being disposed across the narrow dimension of the upstanding section, means for securing the removable part in place with its tab clamping surface in operative relation to the tab clamping surface of the first mentioned jaw member, means normally urging the jaw members to swing toward each other, whereby their spout engaging surfaces will apply clamping pressure on a spout disposed between them, and means arranged on the narrow, upstanding section for swinging the jaw members apart to release the pressure on such spout.

2. A dispensing holder as defined in claim 1, in which the tab clamping surfaces for the tab are mounted to move toward and from the spout engaging jaw members, and means associated with the jaw member swinging means for moving the tab clamping surfaces toward the jaw members as they are swung apart.

3. A dispensing holder for liquid contained in an envelope of thin plastic material of the type formed with an extended part comprising a collapsible dispensing spout, the holder comprising a base portion, a first narrow, upstanding, transversely extending section on one edge of the base, said section having swingably mounted thereon a first jaw member having a spout-engaging surface, a second narrow, upstanding, transversely extending section disposed in edge alignment with the first section, a second jaw member swingably mounted on the second section and having a spout-engaging surface conformable to that of the first jaw member, the axis upon which each jaw member is swingable being disposed across the narrow dimension of the upstanding section on which it is carried, the second upstanding section being movable toward and from the first section, means for holding the upstanding sections in close edgewise relation to position the jaws in spout-clamping relation, means normally urging the jaw members to swing toward clamping position, whereby their spout-engaging surfaces will apply clamping pressure on a spout disposed between the jaws, and means for swinging the jaws apart to release pressure on the spout.

4. A dispensing holder for liquid contained in an envelope of thin plastic material of the type formed with an extended part comprising a collapsible dispensing spout, the holder comprising a base portion, a first narrow, upstanding, transversely extending section on one edge of the base, said section having mounted thereon a first jaw member having a spout engaging surface, a second narrow, upstanding, transversely extending section disposed in edge alignment with the first section, a second jaw member swingably mounted on the second upstanding section on an axis disposed across the narrow dimension of such section, said second jaw member having a

spout-engaging surface conformable to that of the first jaw member, said narrow, upstanding sections being relatively movable toward and from each other, means for holding the upstanding sections in close edgewise relation to position the jaws in spout-clamping relation, means normally urging the pivoted jaw member to swing toward clamping position, whereby the spout-engaging surfaces of the jaw members will apply clamping pressure on a spout disposed between them, and means for swinging the second jaw member away from the first jaw member to release pressure on the spout.

5. A dispensing holder for liquid contained in an envelope of thin plastic material of the type formed with an extended part comprising a collapsible dispensing spout, the holder comprising a base portion, a first narrow, upstanding, transversely extending section on one edge of the base, said section having mounted thereon a first jaw member having a spout-engaging surface, a second narrow, upstanding, transversely extending section disposed in edge alignment with the first section, a second jaw member mounted on the second section for movement toward and from the first jaw member and having a spout-engaging surface conformable to that of the first jaw member, said narrow upstanding sections being relatively movable toward and from each other, means for holding the upstanding sections in close edgewise relation to position the jaws in spout-clamping relation, means normally urging the movable jaw member to move toward clamping position, whereby the spout-engaging surfaces of the jaw members will apply clamping pressure on a spout disposed between them, and means for moving the second jaw member away from the first jaw member to release pressure on the spout.

6. A dispensing control device for liquid-retaining envelopes of the type having a collapsed, flattened spout portion formed of flexible material, such spout portion having an extended anchoring portion on each of its flattened edges located at the sides of the axis of flow through the spout, said device including a holder having a portion providing an opening to admit a collapsed spout and allow for its distension, a pair of clamping jaws arranged at opposite sides of the opening, at least one of the clamping jaws being mounted on the holder for movement toward and away from the other jaw, a pair of spaced retaining devices associated with the jaws and arranged one on each side of the opening to engage and hold the respective anchoring portions of a spout of the type discribed which has been placed within the opening, one of the retaining devices being mounted for advancing movement relative to its companion retaining device to enable the spout to flex in the area between such retaining devices, and common actuating means for causing the movable jaw to move to spout-opening position and for advancing the movable retaining device toward spout flexing position.

7. A dispensing control device, as defined in claim 6, in which means are provided for urging the movable jaw to spout-clamping position.

8. A dispensing control device, as defined in claim 6, in which the retaining devices for holding the anchoring portions of the spout comprise impaling pins arranged to engage within openings formed in the anchoring portions.

9. A dispensing control device, as defined in claim 6, in which the clamping jaws are formed with cooperating pad elements of material having a surface affinity for the material of the spout with which the dispensing control device is to be used, whereby portions of the spout tend to cling to such pad elements and flexing of opposite portions of the spout is facilitated when the jaws are spread apart.

10. A dispensing control device, as defined in claim 6, in which the movable clamping jaw is pivotally mounted to swing into and out of clamping relation with its companion jaw.

11. A dispensing control device as defined in claim 10, in which the holder comprises a main portion and an auxiliary detachable support member for the pivoted clamping jaw, and attaching means being included for releasably securing the support member in operative position on the main portion of the holder.

12. A dispensing control device for liquid retaining envelopes of the type having a collapsed, flattened spout formed of thin, flexible material, such spout having an extended anchoring portion on each of its flattened edges, said device including a holder formed with an aperture to admit a collapsed spout and allow for its distension, a pair of elongated, swingable clamping jaws having cooperating spout contacting surfaces, the jaws being mounted near their adjacent ends on parallel pivot means located at opposite sides of the aperture, means for urging the jaws to swing to bring their spout contacting surfaces together, adjacently positioned shoulders on the respective jaws located intermediate the pivot means, movable actuating elements engageable with the jaw shoulders to displace them and cause their spout contacting surfaces to swing apart, a fixed retaining means for one spout anchoring portion arranged on the holder adjacent one side of the aperture formed therein, a second retaining means arranged on one of the movable actuating elements and located adjacent the other side of the aperture from the fixed retaining means, means for moving the actuating elements in unison to displace the jaw shoulders and spread apart the spout contacting surfaces, whereby the second retaining means will advance toward the fixed retaining means to flex the spout in the area between the spaced retaining means at the same time the spout contacting surfaces of the jaws are spread apart.

13. A dispensing control device, as defined in claim 12, in which the holder is formed in two portions, comprising a main portion and an auxiliary portion which is detachable from the main portion, such auxiliary portion having one of the pivoted jaws carried thereon together with the movable actuating element which is arranged to swing such jaw.

14. The combination of a liquid-retaining and dispensing control device, comprising an envelope with a flat, collapsed spout portion formed from thin, flexible sheet material, the spout portion having a discharge end designed to cooperate with clamping jaws, integral projecting, anchoring portions on opposite flattened edges of the spout arranged on a line transverse to the axis of flow through the spout and in closely spaced relation to the discharge end of the spout, the dispensing control device comprising a holder formed with an aperture within which the end portion of the flat spout is positioned, clamping jaw members supported on the holder in operative relation to the spout, at least one of the jaw members being mounted for movement toward and from the other to clamp the spout between them, a jaw actuating element arranged on the holder for movement transverse to the axis of flow through the spout, mechanism operatively connecting such actuating element with the movable jaw member to open the jaw when the actuating element is moved toward the spout axis, a first retaining means on the holder for holding one of the spout anchoring portions, and a second retaining means carried on the jaw actuating element to hold the opposite spout anchoring portion, whereby opening the jaw causes the second retaining means to move toward the first retaining means to flex the spout in the area between the anchoring portions.

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