Nov. 7, 1944. P. C. CLOVIS 2,362,354

SPLASH DAMPENER FOR BEVERAGE CONTAINERS

Filed March 21, 1942

Fig. 1.

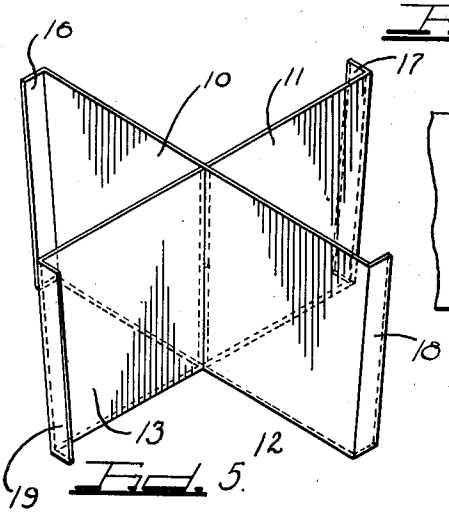


Fig. 1a.

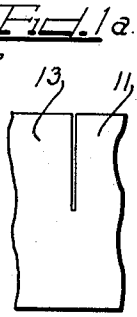


Fig. 2.

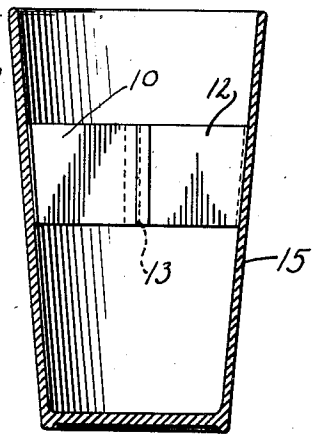
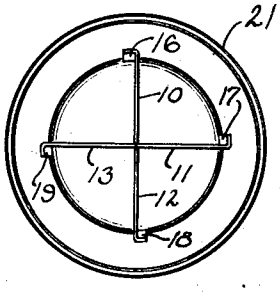


Fig. 5.

Fig. 3.



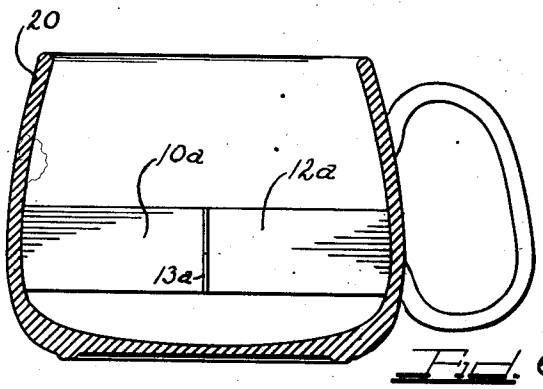


Fig. 4.

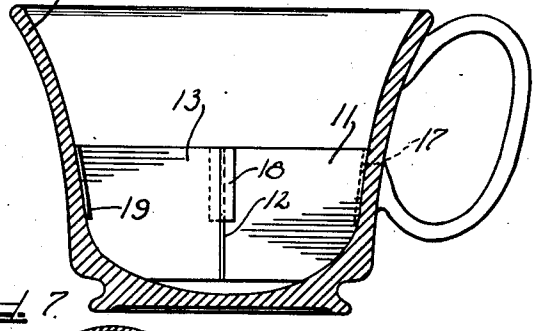


Fig. 6.

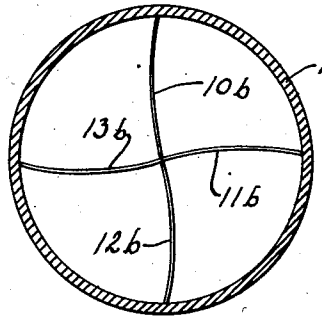
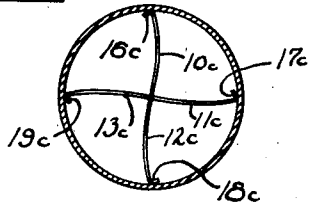


Fig. 7.



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SPLASH DAMPENER FOR BEVERAGE CONTAINERS

Paul C. Clovis, Kenilworth, Ill.

Application March 21, 1942, Serial No. 435,616

2 Claims. (Cl. 65—13)

This invention relates to a device adapted to prevent liquid from spilling out of a cup due to the surging of the liquid therein.

As is well known, considerable difficulty is experienced in serving beverages in railroad diners and the like since abrupt stopping and starting of the train and movement thereof through lateral play between the rails causes a surging of the beverage within its container with the result that the liquid spills out of the container into the saucer, on the table cloth, and at times upon the clothing of the patron.

It is an important object of the present invention to provide means for effectively damping the surging of a liquid within a container.

It is another object of the invention to provide damping means which may be inserted within a beverage container with great facility and which may be manufactured with extremely low cost.

Still another object of the invention is to provide damping means of the above character which in no way interferes with the stirring of the beverage and which in no way interferes with the normal process of drinking.

Another object of the invention is to provide damping means of the above character which may be conveniently constructed and assembled from sheet material such as paper, sheet metal, or a plastic.

A still further object of the invention is to provide a damper of the above character which is so constructed and arranged as to effectively engage the inner surface of a container upon the mere insertion thereof in the container, this being the case even though the container is so formed that the walls thereof diverge outwardly and upwardly.

Many other objects and advantages of the invention will become apparent from the following specification and accompanying drawing, in which:

Figure 1 represents a perspective view of an article embodying my invention;

Figure 1a represents a fragmentary elevational view of one of the members shown in Figure 1;

Figure 2 represents a cross-sectional view showing the adaptation of my invention to a drinking glass;

Figure 3 represents a cross-sectional view of a damper embodying my invention as applied to a beverage container having upwardly converging walls;

Figure 4 represents a cross-sectional view showing the application of my invention to a beverage container having upwardly diverging walls;

Figure 5 represents a top plan view of an assembly such as that shown in Figure 4;

Figure 6 represents a top plan view of the application of a damper embodying my invention to a beverage container in a manner whereby the damper is securely held in a given position within the container; and

Figure 7 is a plan view of a modified form of the invention.

It will be understood that the embodiment shown herein is for illustrative purposes only and may be changed or modified without departing from the spirit and scope of the invention as set forth in the appended claims.

Referring to the drawing and particularly to Figure 1, it will be seen that my invention contemplates generally the provision of a plurality of damping members, four being indicated herein at 10, 11, 12, and 13, respectively. These damping members preferably are constructed and arranged to extend radially from the center of the beverage container in which they are positioned for abutment with the inner surface thereof.

These damping members may be secured together in any suitable manner but, preferably, in order to reduce manufacturing costs and facilitate the assembly thereof, opposed damping members such as those indicated at 10 and 12 may constitute a single piece of sheet material which is slit transversely along a line intermediate of and equidistant from the ends thereof for a distance about half way across the respective sheet. With such a construction, it will be understood that two such sheets may be assembled together to provide a radial damping construction by sliding the slotted portions of the respective sheets together as shown clearly in Figure 1.

It will be understood, of course, that the height to which the damping members are constructed may be varied depending upon the nature of the beverage container and the violence of the shock to which the container will be subjected so long as the height of the damping members is sufficient to provide the desired damping effect. Furthermore, the actual position of the damping member within the beverage container may be varied depending upon the nature of the container and the violence of the shock to which it will be subjected. In this regard, attention is directed to Figure 2 wherein a drinking glass 15, having upwardly diverging walls, is shown. In such a container the depth is such that the possibilities of surging and spilling of the beverage

are greatest when the container is more than half full. Thereafter, the possibilities of spilling due to surging are greatly reduced since the walls are of sufficient depth to themselves dampen any movement of the beverage upwardly thereon. Thus it will be seen that the damping construction is disposed at the height in the container below which the possibilities of spilling are reduced to a minimum by the walls thereof.

To the end that the friction surface by which the ends of the damping members **10**, **11**, **12**, and **13** engage the inner surface of a wall which converges outwardly and upwardly, there may be provided feet **16**, **17**, **18**, and **19** which constitute angularly disposed flanges at the outer ends of the respective damping members. With such a construction, it will be seen that the necessity for relying upon the frictional engagement of the relatively thin ends of the damping members is avoided, and there is presented a greatly increased surface for holding the damping members within the container.

In those beverage container constructions, such as that shown in Figure 3, wherein the inner surface of the container converges inwardly and upwardly, or in those uses where straws are provided for drinking purposes, the aforementioned friction abutment between the inner surface of the container and the outer ends of the damping elements is not necessary; thus, the damping assembly may be constructed to afford a sliding fit with the adjacent portion of the inner surface of the container whereby it may be rotated therein to provide for stirring and the like.

In Figure 3 there is shown a beverage container **20** having walls which converge upwardly. With such a construction, the damping assembly, as stated above, need have no frictional engagement with the inner surface of the container and may be inserted through the relatively small opening therein by a slight flexing or bowing of the damping sections to reduce their length whereupon they may be released to afford a secure, interlocking engagement with the container as shown in Figure 3. In this construction the damping elements, three of which are shown at **10***a*, **12***a*, and **13***a*, may be in length slightly less than the diameter of the container at the point aligned with the respective point on the end edge of the damping member and, furthermore, the flanges described above may be dispensed with, thereby providing for stirring. Furthermore, it will be seen that, in constructions such as shown in Figures 2 and 3, the spoon may be inserted, through one of the compartments provided, into the space beneath the damping device whereupon the liquid may be stirred.

In a construction such as that shown in Figures 4 and 5, that is, wherein the walls of the container **21** diverge upwardly, it is preferable that the damping assembly of the character shown in Figure 1 be utilized, it being understood, however, that the contour of the edge of each of the damping elements is preferably shaped to conform to the configuration of the inner surface of the particular container being used.

It will be understood that the forming of the damping elements to conform to the configuration of the inner surface of the container being used may be avoided by disposing the damping assembly a distance above the curvature at the bottom of a cup, and to this end the construction shown in Figure 6 may be utilized for maintaining the damping device in assembled relationship with the cup throughout a drinking operation.

As stated previously, it is contemplated that the damping device disclosed herein be constructed from sheet material such as paper, thin metal, or a plastic, under which circumstances it will be flexible so that it may be inserted in a container having a relatively small opening, such as that shown in Figure 3, and so that, if the damping elements have a length greater than the respective diameter of the container in which they are to be used, as shown at **10***b*, **11***b*, **12***b*, and **13***b* in Figure 6, these elements may be flexed into a bowed formation, such as that shown in Figure 6, whereby the end edges thereof are forced against the inner surface of the cup to retain the desired assembled relationship.

It has been found that the damping element need not extend downwardly into abutting relationship with the bottom of the cup to effectively dampen the surging of the liquid within the container and, furthermore, it has been found that varying numbers of the damping elements may be provided to attain the end desired so long as these elements are so disposed that they occupy planes lying in non-parallel relationship so that surging of the beverage within the container in all directions is effectively dampened.

A highly efficient construction is that shown in Figure 7 wherein the damping elements **10***c*, **11***c*, **12***c*, and **13***c* are provided with end flanges **16***c*, **17***c*, **18***c*, and **19***c* for providing increased frictional engagement with the inner surface of the container, this frictional engagement being further augmented due to the pressure exerted by the bowed construction of the damping elements.

If desired, a heavier material may be used for constructing the damping device, in which event it will retain its position by gravity during the drinking operation and may be used as a stirrer merely by having rotary movement imparted thereto.

I claim as my invention:

1. As an article of manufacture, a surge damper for a beverage container including plate-like wall members having a length on the order of the diameter of a container in which they are adapted to be disposed in a substantially vertical position, means for affording friction engagement between the ends of the members and the inner surface of a container including flanges disposed along the edges of said members and at an angle thereto, said flanges being adapted for face-to-face engagement with the inner surface of the container.

2. The combination with a beverage container of means for damping the surging of liquid therein, said means including plate-like members disposable vertically therein and formed from flexible material, said members being in length greater than the respective diameter of the container and being constructed and arranged to be distorted into bowed configuration whereby the edges thereof abut the inside surface of the container with pressure engagement when said means is inserted in the container in a position substantially vertical relative thereto and friction surfaces at the edges of said members including flanges disposed along said edges and at an angle thereto, said flanges being adapted for face-to-face engagement with the inner surface of the container.

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