

No. 666,951.

Patented Jan. 29, 1901.

E. L. YEWELL.
BOTTLE CLOSURE DEVICE.

(Application filed Aug. 18, 1900.)

(No Model.)

Fig. 1.

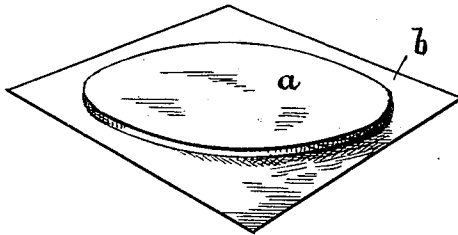


Fig. 2.

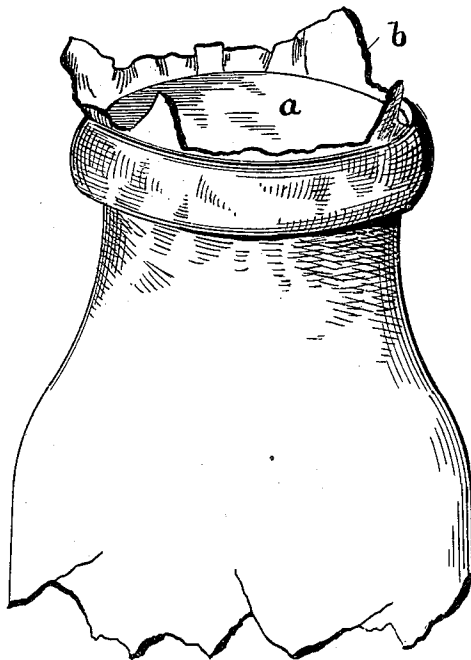
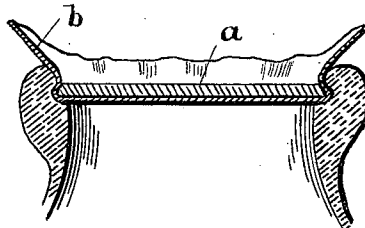


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN L. YEWELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

BOTTLE CLOSURE DEVICE.

SPECIFICATION forming part of Letters Patent No. 666,951, dated January 29, 1901.

Application filed August 18, 1900. Serial No. 27,338. (No model.)

To all whom it may concern:

Be it known that I, EDWIN L. YEWELL, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Bottle Closure Devices, of which the following is a clear and exact description, reference being had therein to the accompanying drawings, in which—

Figure 1 is a perspective view of my closure-disk; Fig. 2, a perspective view of the device attached to a bottle; Fig. 3, a vertical sectional view of Fig. 2.

The invention has reference to that class of closure devices consisting simply of a disk of paper-board of sufficient strength and elasticity to be sprung into an internal annular croze-like groove in the mouth of the bottle and especially adapted for milk-bottles. The need for a simple, sanitary, cheap, and easily-applied closure device of a temporary nature in connection especially with the business of supplying milk at retail in returnable and refillable bottles has recently brought this class of closure devices into very extensive use, it being a well-known fact that in many of the larger cities of the United States many thousands of these disks are used daily. It is also well known that these disk closures are defective in several respects, mainly in that they require a tool of some sort to remove them, and even with a tool are frequently forced into the bottle, thereby splashing or spilling the contents of the bottle and injuring the disk sufficiently to destroy it as a closure device, and thereby prevent its being inserted again by the consumer should he remove only a portion of the contents at a time. A further objection is that in removing the disks with a tool the bottle is frequently chipped around its mouth, and, further, the disks are not always sufficiently liquid-tight to permit the bottle to be shaken to destroy the layer of cream that gathers in the neck of the bottle when the bottle is allowed to stand a few hours. A still further objection to the use of the plain disks is that the milk is liable to contamination if allowed to remain in the bottles any considerable length of time by the dissolving action of the water and acids in the milk on the chemicals in the paper-board. Attempts to obviate the

foregoing objections and other minor disadvantages have been made; but so far as I am aware these attempts have been so unsuccessful, by reason of the increase in the cost and other considerations, that at present it is almost the universal practice to employ simply the disks of plain paper-board, notwithstanding the serious objections thereto.

It is the object of my invention to overcome the objections to the use of this class of devices, and to this end it consists in attaching (preferably by a suitable adhesive substance) to the under side of the paper-board disk usually employed a sheet of paper or other flexible fabric whose margin extends beyond the edge of the disk all around far enough to entirely inclose the edge of the disk when inserted in the holding-groove and project above the rim of the bottle-mouth at one or more points, whereby not only is a packing formed entirely around the edge of the disk, but also is provided one or more pulling-tabs by which the disk may be dislodged from the bottle-mouth without the employment of a tool, without spilling the contents of the bottle, and without injuring the disk, and thereby preventing the consumer replacing it in the groove should he desire to again close the bottle, as more fully hereinafter set forth.

In the drawings, *a* designates the paper-board disk, and *b* the sheet of paper or other flexible fabric pasted or otherwise secured to one side of the disk, the sheet being sufficiently larger than the disk to insure a margin entirely around the disk greater in width than the thickness of the disk, so that when the disk is forced into the bottle-mouth the fabric will form a packing extending entirely around its edge, and thereby render the closure substantially liquid-tight and permit the bottle to be inverted and shaken without leakage of any consequence. As shown, the fabric is square in shape, and I prefer this shape not only on account of economy in manufacture, (since there will be no waste of material,) but because the corner portions afford four desirable pulling-tabs by which the consumer can pry or tilt the disk out of the bottle with ease; but of course the sheet may be shaped otherwise, so long as there is sufficient margin to inclose the edge of the

disk and sufficient material at one or more points projecting above the bottle far enough to afford pulling-tabs.

I prefer to provide several pulling-tabs in order that upon injury to one of the tabs the others may be resorted to. I prefer also to employ paper fabric on account of cheapness. In my experiments I have ascertained that the paper now in use for wrapping butter and known to the trade as "parchment" paper is sufficiently tough and insoluble to answer the purpose fully; but whatever paper is used it is essential that it be sufficiently insoluble or waterproof to withstand the dissolving action of water for a day or so without disintegrating or weakening sufficiently to cause the tabs to be torn off upon attempting to remove the disk. A tough paraffined paper would perhaps be ideal for the purpose; but it cannot be used because of the impossibility of securely attaching it to the disk with a non-injurious paste. It is obvious, however, that where a more permanent closure device is desired than is required for retailing milk—as, for instance, in connection with jelly or preserve jars—I may paraffin or otherwise waterproof the under side of the paper before attaching it to the disk, or in lieu thereof subject the completed article to a paraffin bath; but for the purpose I propose using my device most extensively for I have found the parchmentized paper entirely sufficient, and especially since it is susceptible of being securely attached to the disk with any ordinary non-injurious adhesive substance. In my experiments I have found that although the paper becomes wet all around the edge of the disk its strength is not materially, if at all, decreased, since it is so made that it absorbs but little, if any, water and does not disintegrate or dissolve.

It will be observed that it is essential that the pulling-tabs be at the edge of the disk, as it is only by applying to the disk a tilting or

prying action that it can be removed with ease and without injury or spilling of the contents of the bottle.

It will be further observed that the layer or thickness of insoluble and non-absorbent paper covering the entire inner side of the disk prevents all contamination that results where the milk comes in direct contact with the plain paper-board, and it is also obvious that with my invention I can use paper-board of a quality inferior to that ordinarily employed and in that way economize sufficiently to cover or more than cover the slight expense of the additional sheet of paper and the additional expense of manufacturing my device.

I claim—

1. A new article of manufacture, a closure device for bottles, &c., comprised of an elastic disk having attached to one of its sides a sheet of fabric extending beyond the edge of the disk all around a distance equal at least to the thickness of the disk and having a pulling-tab at its edge, so that the fabric will form a packing for the edge of the disk when the same is sprung into the groove in the bottle and the tab will be at the edge of the disk.

2. An elastic disk having attached to one of its sides a sheet of insoluble paper extending beyond the edge of the disk all around and having at its edge a plurality of pulling-tabs, so that when the disk is sprung into the groove in the bottle the extending paper will form a packing around the edge of the disk and the pulling-tabs will lie at intervals around the edge of the disk.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 17th day of August, 1900.

EDWIN L. YEWELL.

Witnesses:

CHARLES D. DAVIS,
WM. R. DAVIS.