June 29, 1926. 1,590,807

G. A. BURNES

SEPARATOR FOR MILK AND CREAM

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Fig. 1.

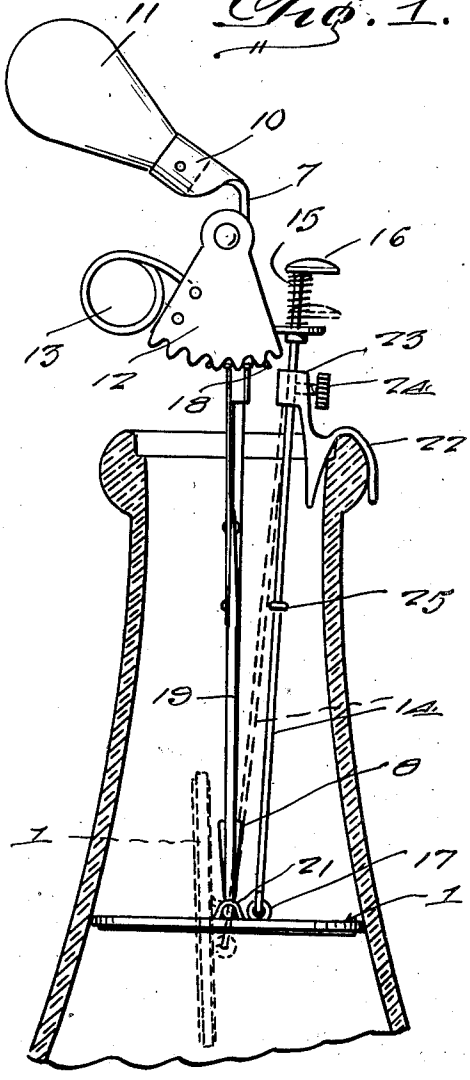
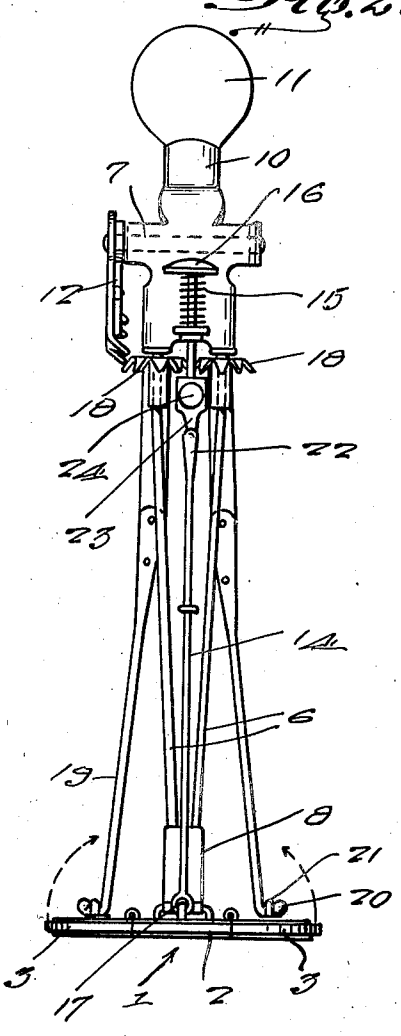


Fig. 2.



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Fig. 3.

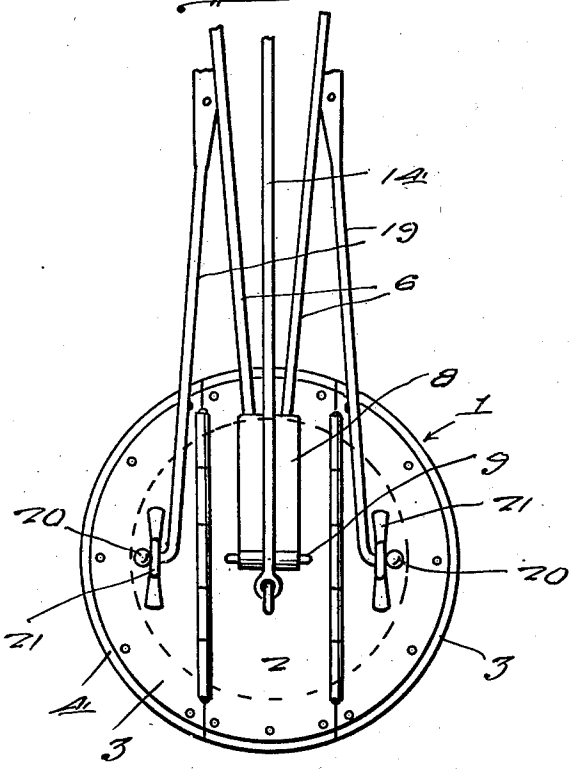


Fig. 4.

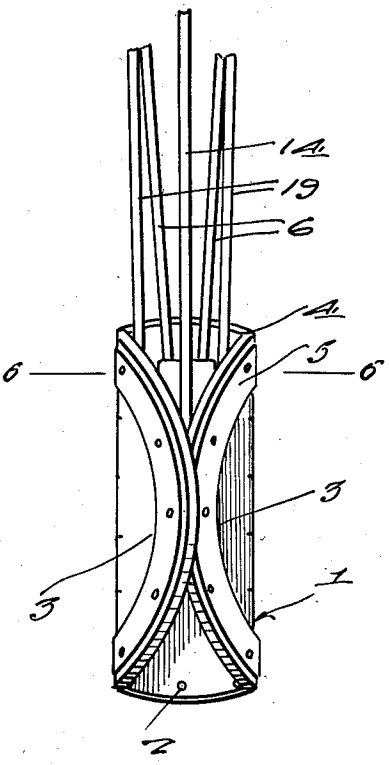
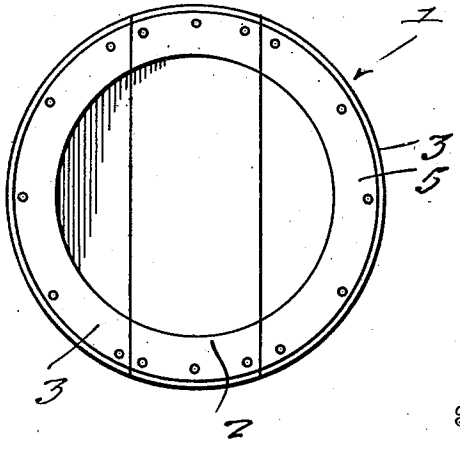


Fig. 5.



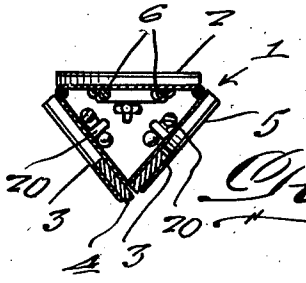


Fig. 6.

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UNITED STATES PATENT OFFICE.

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SEPARATOR FOR MILK AND CREAM.

Application filed June 17, 1925. Serial No. 37,786.

This invention relates to an improved device which has been devised for separating cream from milk, and it has more particular reference to a comparatively small domestic contrivance such as may be inserted into an ordinary milk bottle to provide a partition between the milk and cream and to permit the cream to be poured out without allowing the milk to mix therewith.

Broadly, the device embodies a separator which is intended to be located in the milk bottle to function as the aforesaid partition, this separator being expansible and contractible so that it may be contracted to facilitate insertion and will then be expanded to provide a fluid tight joint with the neck of the bottle when functioning as said partition.

The invention also embodies numerous other structural details resulting in outstanding features and advantages and these will be more particularly pointed out in the following description and appended claims.

In the accompanying drawings forming a part of this application, and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevation of a device constructed in accordance with the invention showing the manner in which it is inserted in the neck of a common milk bottle, the dotted lines indicating certain details in the process of moving to operative position.

Figure 2 is a view taken substantially at right angles to Figure 1 with the device removed from the bottle.

Figure 3 is an enlarged fragmentary elevational view showing the construction of the separator more plainly.

Figure 4 is a view like Figure 3, showing the separator in folded or contracted state.

Figure 5 is a bottom plan view of the separator.

Figure 6 is a detail section taken approximately on the plane of the line 6—6 of Figure 4.

In carrying out the invention I employ an improved separator which is designated generally by the reference character 1. This separator is of disk-like form, and is made up of a central section 2, and a pair of duplicate end sections 3. These sections are preferably in the form of segmental metal plates with a sectional rubber gasket 4 fastened to the bottom thereof by appropriate retaining strips 5 (see Figure 5). The two end sections 3 are hingedly connected to the central section and adapted to fold into the contracted state shown in Figure 6. They are in this relation during the insertion and removal of the device from the bottle.

Appropriate carrying means is provided for association with the separator. The carrying means preferably comprises a pair of spaced downwardly diverging rods 6 which extend up and are connected with a peculiarly shaped plate. At their lower ends, these rods 6 are connected to a head 8, and this is in turn connected at 9 to the center of the intermediate section 2 of the separator. Referring again to the plate 7 it will be seen that it is fashioned to provide an attaching neck 10 fastened to an appropriate handle 11. This plate also provides a mounting for an oscillatory segmental gear 12, which is provided with a finger grip 13 for operating said gear (see Figures 2 and 3). On the front of the plate is an outwardly extending ear through which the stem 14 of a tilting member 14 passes. A coiled spring 15 surrounds this stem, bears against the ear at one end, and against a head 16 at its opposite end which is on the upper end of the tilting member. This tilting member extends downwardly and is pivotally connected at 17 to the central section of the separator. This tilting member is of sufficient length to normally maintain the separator in a horizontal position or at substantially right angles to the rods 6. The coiled spring serves to maintain the separator in this position. It is obvious however, that by pressing downwardly on the member 14, the entire separator may be swung about the pivot 9 so as to swing it against the rod as indicated in dotted lines in Figure 1. In this connection it will be noted that a pair of intermeshing pinions 18 are journaled for rotation upon the upper portions of the rods, and are arranged so that the teeth of the aforesaid segmental gears 12 cooperate therewith to simultaneously rotate said pinions in opposite directions.

At this time I would direct attention to the fact that a pair of arms 19 are secured to and rotate with the pinions 18. These arms extend downwardly and have laterally directed lower ends 20 extending through staples 21 carried by the end sections 3 of the aforesaid separator. The arms, if desired, may be made up of two parts, the up-

per part of thin plate like form and the lower end part in the form of a wire rod.

It is yet to be pointed out that a substantially U-shaped bracket 22 is provided (see Figure 1), with a sleeve 23 slidable upon the aforesaid tilting member 14. A set screw 24 is carried by the sleeve for holding the bracket in various adjusted positions. If desired, a strap 26 is provided on the member 14 for limiting the downward sliding movement of the bracket.

The operation of the device is as follows: When it is desired to separate the cream in a bottle from the milk, it is necessary to insert the device into the bottle as shown in Figure 1, at which time the separator 1 is utilized as a partition, marking the line of division between the cream at the top and the milk below it. Owing to the fluid tight contact of the periphery of the separator with the bottle, the milk may be maintained in the bottle while the cream is poured out into a suitable receptacle. In order to insert the device, the handle 11 is grasped, and the thumb is placed against the spring pressed plunger rod 14, or rather against the finger piece 16 of the prop thereof. Now a downward pressure is exerted upon this rod to swing the entire separator upon the pivot 9 to the approximate right angular position shown in Figure 1. One finger of the same hand may be passed through the finger loop 13, and when the separator is in the right angular position stated, the segmental gear 12 may be operated through the medium of the finger piece, which serves to rotate the pinions and to collapse or fold the outer sections 3 of the separator into the substantial overlapping relation shown in Figure 6. The device may now be easily inserted down into and through the milk without materially disturbing the same. Now the finger piece 16 is released and the segmental gear is moved in the opposite direction to return the separator to the horizontal plane shown, and the device is lifted up into the bottle until the peripheral edges of the separator come into contact with the inner surface of the neck of the bottle. A partition is now provided which serves as a division plate between the cream and the milk, thus allowing the cream to be poured off without disturbing the milk. In order to maintain the device in the position shown in Figure 1, the bracket 22 is hooked over the bead of the neck of the bottle and the set screw 24 is tightened. In removing the device the operation stated is simply reversed.

No doubt a careful consideration of the description in connection with the drawings will enable persons skilled in the art to which the invention relates to obtain a clear understanding of the same, therefore a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described it is to be understood that minor changes, in the size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention, and the scope of the appended claims.

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

1. A separator for milk and cream, comprising a handle, a separator having a central section and a pair of end sections hinged thereon, said central section having a pivotal connection with the handle, a pair of rods rotatable in the handle, each rod having one end pivotally connected to one of said end sections of the separator, means for rotating said pair of rods, and means for moving the central section on its its pivot.

2. A separator for milk and cream, comprising a handle member, a separator having relatively movable end sections pivotally mounted on one end of said handle members, a member slidable relative to the handle, having a pivotal connection with said separator for producing a pivotal movement thereof on the handles, said member having means thereon for engaging the rereptacle for the milk and cream, means rotatably mounted on said handle member and connected with the foldable end portion of the separator for operating said end portion in the rotation thereof, and manually operable means mounted on the handle member for oscillating movement and connected with the rotatable means adapted to operate said means in the manual oscillation of the member.

3. A separator for milk and cream, comprising a handle member, a separator having relatively foldable end sections pivotally mounted on said handle member at one end, operating means for moving said separator on its pivotal connection with the handle member, a rod member pivotally connected with each foldable end section and rotatably mounted in spaced parallel relation in said handle member, intermeshing pinions mounted on said rod members, a gear segment oscillatable on said handle member and intermeshed with one of said pinions adapted to rotate said rod in the oscillation of said gear segment, and means for manually operating said gear segment.

In testimony whereof I affix my signature.

GERTRUDE AMANDA BURNES.