July 2, 1929. B. L. HUNTLEY 1,719,329

ICE CREAM CARTON FILLER

Filed Dec. 13, 1926

Fig. 1

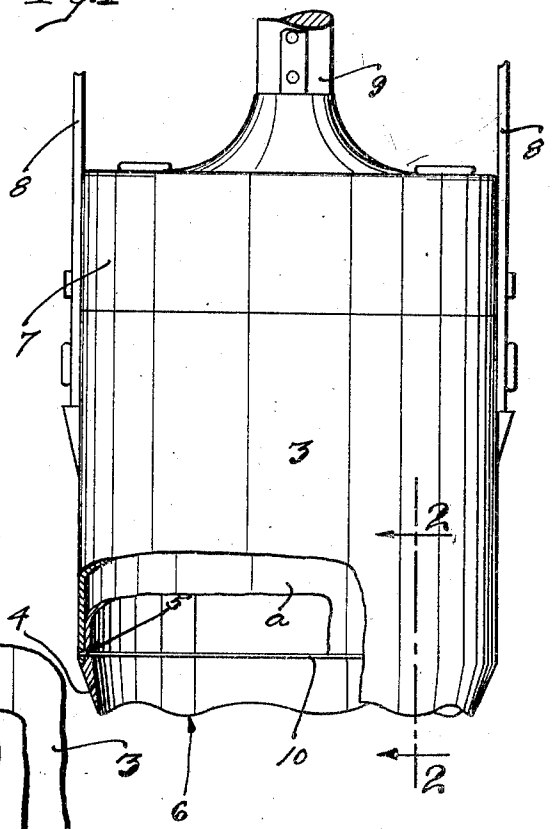
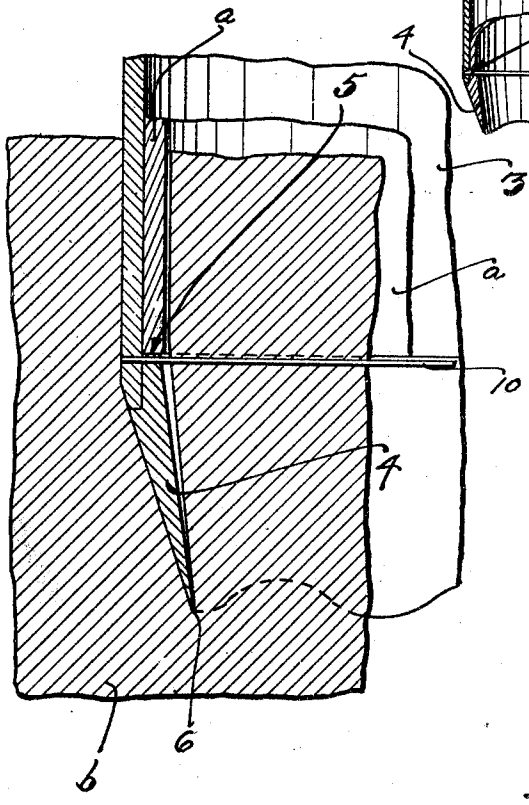


Fig. 2



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UNITED STATES PATENT OFFICE.

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ICE-CREAM-CARTON FILLER.

Application filed December 13, 1926. Serial No. 154,411.

My present invention relates particularly to ice cream carton fillers of the type disclosed and claimed in my pending application Serial Number 116,833, filed June 18, 1926 and is directed to an improvement in the form of the knife-like cutting end.

Generally stated, the invention consists of the novel construction and arrangement of parts hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a view in elevation with some parts broken away and some parts sectioned, showing the carton filler and illustrating the invention as applied thereto; and

Fig. 2 is an enlarged fragmentary section taken on the line 2—2 of Fig. 1.

The character *a* indicates a cylindrical paper carton. A body of ice cream is indicated by the character *b*. The carton *a* is of such size that it may be freely telescoped into a cylindrical metal shell 3 that serves as a carton holder or container. At its lower end or edge the cylindrical container 3 is formed with an annular knife or cutting portion 4 which, as shown and preferred, is made as an element separate from the shell 3 but is permanently and rigidly secured thereto by "sweating" or otherwise so that it practically becomes an integral part thereof. The reduced upper portion of the annular knife 4 is telescoped into the lower end of the shell 3 and forms a ledge or shoulder at 5 on which the lower end of the carton *a* rests. This ledge 5 is not greater, but preferably slightly less in width than the engaging end of the carton *a*.

Both the inner and outer surfaces of the annular knife 4 are conical but the outer surface has a greater angle to the axis of the container than has the inner surface of said knife so that the cutting edge of the knife at 6 will have a diameter that is somewhat less than the interior of the carton *a*. In practice, I have obtained the best results by making the inner surface of the annular knife 4 at the angle of about eight degrees to the axis of the shell or container 3 and making the outer surface of said knife at an angle of approximately twenty degrees to the axis of said container. The importance of this arrangement will be presently noted.

To further increase the efficiency of the knife, its cutting edge 6 is made in the form of a circumferentially extended wave in which the projecting and the re-entrant portions are of approximately the same curve. In practice I have found that a cutting edge of this wave-like form will not cause the container to drift or shift out of its initial axial position while being forced into a body of ice cream; and, moreover, I have found that by very slight rotation in either direction while pressing the container into a body of ice cream will greatly decrease the amount of pressure required to force the container into the ice cream.

The carton filler illustrated being of the type indicated, comprises in addition to the main shell 3, a cap-like head 7 that is displaceably connected to the shell 3 by lever-acting members 8, the exact construction and arrangement of which need not for the purpose of this case be further noted. The numeral 9 indicates an operating handle secured to the head 7. The numeral 10 indicates a cutting wire extended diametrically through the shell 3 just below the ledge or shoulder 5 of the annular knife 4.

In the use of ice cream carton fillers as hitherto designed, it has been found that because of the excessive pressure placed upon the ice cream forced into the paper carton *a*, a greater amount of ice cream figured in ounces would be loaded, for example, in a quart carton than was received by the dealer from the ice cream manufacturer so that it has usually happened that the dealer in selling his ice cream will run short on the amount purchased by him. Moreover, when an attempt is made to force the ice cream into the carton under excessive pressure and frictional contact between the ice cream and container, it has been difficult to completely fill the carton, and if the carton is not completely filled, the purchaser naturally and correctly thinks that he is being given short measure. It has been my purpose in designing the cutting end of the carton container to provide an arrangement that will give both the retailer and the purchaser a fair deal; that is, that will enable the retailer when he has purchased a certain number of gallons of ice cream to correctly dispense

the same in quarts or pints and thereby give to each customer, in units of weight, his proportionate share in a completely filled carton; and in practice I have found that the arrangement herein disclosed and claimed will accomplish just this result.

In the use of the above device the cylinder of cream that is being forced into the carton will be cut of slightly less diameter than the interior of the carton and hence will be moved into the carton under very slight friction. Figure 2 shows the parts in exaggerated dimensions but in practice I have found that the cylindrical body of ice cream under the operation of forcing the same into the carton and of its own weight will settle slightly and expand as it goes upward through the carton and will have slight frictional contact therewith so that when the carton is being filled the cream will actually have contact with the walls thereof and will completely fill the same. Tests show that the ice cream forced into a carton by the use of this device will have substantially the same density and weight per units of measure as is found in the body of ice cream from which it was cut; and this, of course, is fair both to the retailer and to the purchaser. It will, of course, be understood that by rotation of the container the wire 10 will cut off the ice cream immediately adjacent to the end of the carton. The efficiency of this device has been thoroughly demonstrated in the use of this device.

What I claim is:

1. An ice cream carton filler comprising a true cylindrical carton container formed at its receiving end with an annular cutting knife having conical cutting surfaces that diverge from the cutting edge, the outer surface of said knife having a greater angle than the inner surface thereof to the axis of the container.

2. An ice cream carton filler comprising a true cylindrical carton container formed at its receiving end with an annular cutting knife having conical cutting surfaces that diverge from the cutting edge, the outer surface of said knife having a greater angle than the inner surface thereof to the axis of the container, said container having a carton-engaging ledge at the upper extremity of the conical inner surface of said knife and the cutting edge of said knife being of less diameter than said ledge.

In testimony whereof I affix my signature.

BURTON L. HUNTLEY.