

Sept. 3, 1935.

C. B. GARWOOD

2,013,382

METHOD OF MAKING MULTIPLE BOTTLES

Filed Nov. 4, 1933

2 Sheets-Sheet 1

Fig. 1.

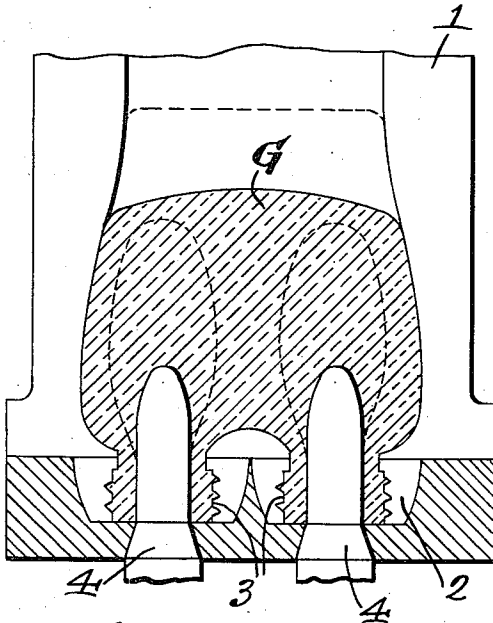


Fig. 2.

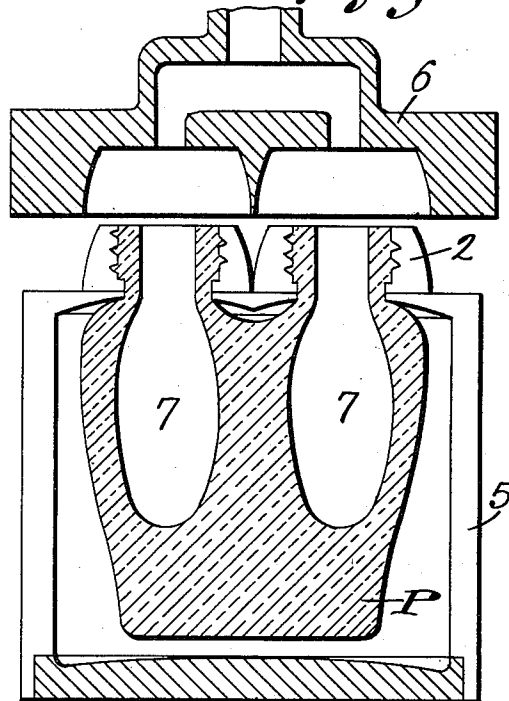


Fig. 3.

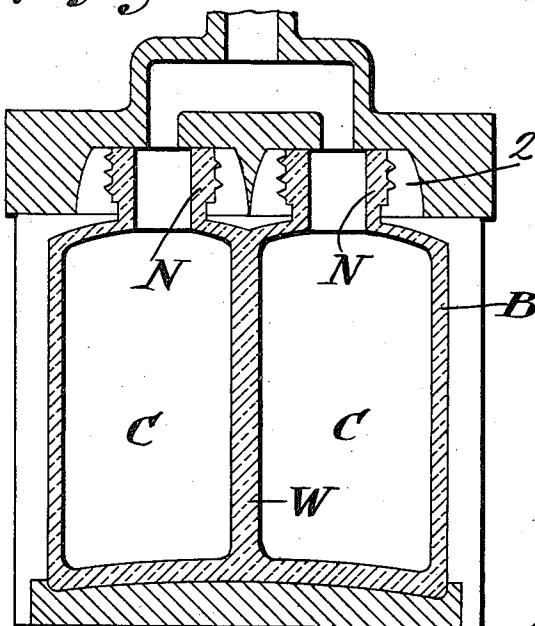
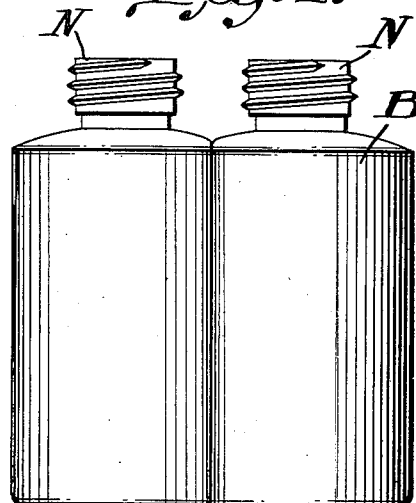


Fig. 4.



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Fig. 5.

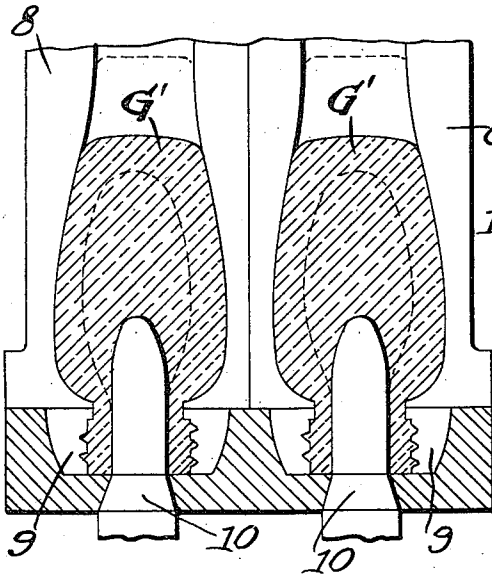


Fig. 6.

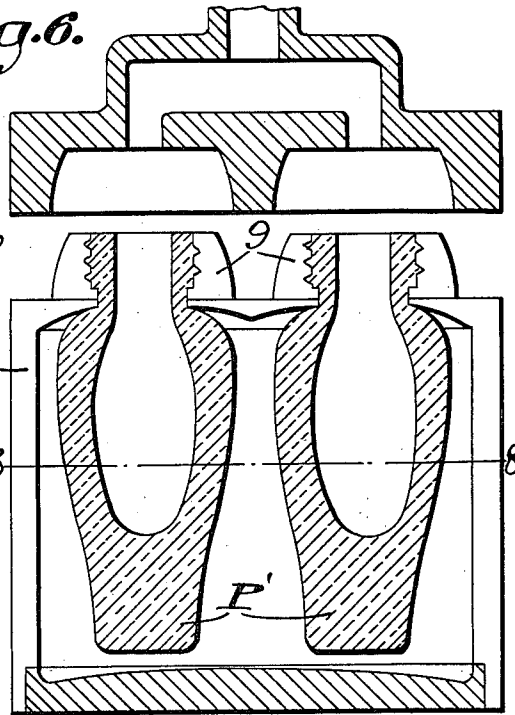


Fig. 7.

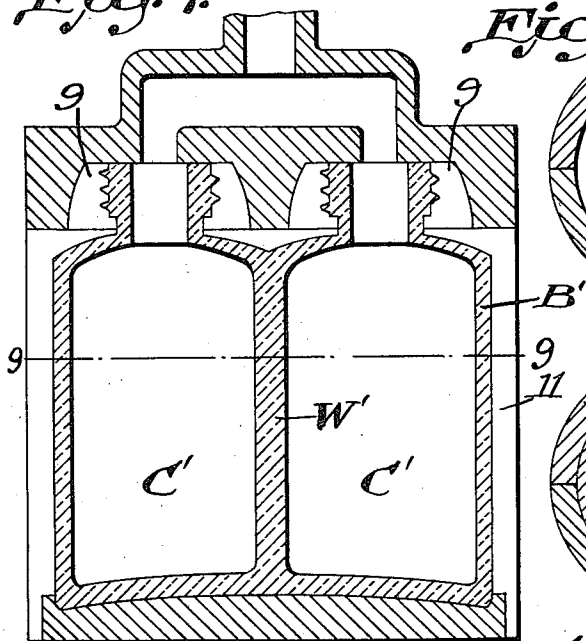


Fig. 8.

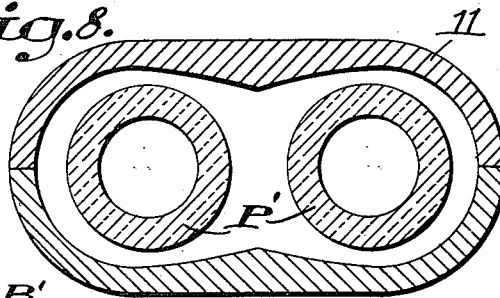
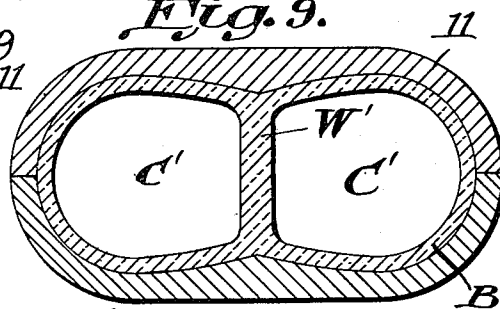


Fig. 9.



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UNITED STATES PATENT OFFICE

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METHOD OF MAKING MULTIPLE BOTTLES

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Application November 4, 1933, Serial No. 696,707

4 Claims. (Cl. 49—80)

This invention relates to a new and improved method of producing multiple bottles or bottles having two or more separate compartments with separate closures.

It is the practice, in packaging some kinds of merchandise, to use two or more separate bottles in a single holder for containing different kinds of preparations. For example, ink eradicators have been placed on the market with two different kinds of fluids contained in separate bottles which are sold as a unit. Preparations for the treatment of the finger nails are similarly marketed and the same holds true with various other kinds of products supplied to the public. In all such cases it has been the practice, as before stated, to use separate bottles but this has its disadvantages. Not only does it require special containers for holding the set of bottles while being shipped and while in use, but frequently one bottle of a set will become lost so that the remainder of the merchandise becomes unuseable.

It is an object of the invention to provide a multiple bottle of glass which has separate compartments, the compartments being provided with individual closures which can be separately removed to afford access to the respective compartments.

It is a further object of the invention to provide a multiple compartment bottle molded in a single piece of glass so that when the respective compartments are filled, there is no danger of losing any part of the complete unit.

It is a further object to provide a one-piece multiple compartment bottle which does not require a special container for holding the units assembled and can, therefore, be packed and sold at lower cost than where the merchandise is formed of two or more separate bottles held within a specially constructed container.

The present method of producing a glass container with a single compartment includes the step of drawing glass by vacuum into a blank mold or by feeding a gob into the mold. A neck ring and plunger are fitted to one end of the mold, and the glass is then forced into the neck ring and about the plunger. The neck ring determines the outside size and shape of the neck and the plunger determines the size and shape of the opening in the neck. When the plunger is removed it leaves a recess in the blank into which air is blown to complete the formation of a parison in the blank mold, and subsequently the final expansion of the parison within the blow mold is effected.

In carrying out the present method it is designed to feed the glass to a blank mold by either of the methods stated. The present method differs from former ones, however, in that the blank mold is provided with a neck ring having two or more openings and each opening is provided with the usual plunger so that the resulting parison is made up of a single blank with spaced necks and with a recess extending within each neck. Then after the withdrawal of the plungers and the expansion of the blank, the parison is deposited in a blow mold of proper design to which air is supplied under pressure. The parison is thus expanded to form a single one-piece bottle having separate non-communicating compartments each of which has its own individual neck.

A modification of the method consists in producing separate blanks each with a single neck and recess and then transferring the separate parisons to a blow mold where they are subjected simultaneously to the action of air under pressure. This results in expanding the parisons until their adjoining portions come together and merge to form a partition, the resultant bottle thus being provided with a number of compartments equal to the number of parisons employed and which compartments are separated by the partition. The entire structure becomes unified so as to become a one-piece container, each compartment being formed with its individual neck.

In order that the several steps of the method may be more clearly understood reference is had to the accompanying drawings wherein

Figure 1 is a section through a portion of a blank mold showing by full lines, the partially formed blank extending into a multiple neck ring, and by dotted lines, the completed parison.

Figure 2 is a similar view showing a parison supported within a blow mold, prior to the withdrawal of the neck ring and the application of the blow head.

Figure 3 is a section through the blow mold showing the fully expanded parison therein.

Figure 4 is an elevation of a multi-compartment bottle produced by the method described.

Figure 5 is a view similar to Figure 1 showing separate blank molds.

Figure 6 is a view of a blow mold showing separate parisons suspended therein prior to the application of the blow head.

Figure 7 is a view showing the parisons following the final blowing operation, the said parisons being merged to produce a one-piece container.

Figure 8 is a section on line 8—8, Figure 6.

Figure 9 is a section on line 9—9, Figure 7.

Referring to the figures by characters of reference 1 designates a blank mold of any suitable construction having a neck ring 2 formed with separate openings 3 into which plungers 4 project. Following the formation of a blank from the glass G deposited in the mold 1, the parison is transferred in any manner to a blow mold 5 the blow head 6 of which is so constructed that air under pressure can be directed simultaneously to the respective recesses 7 in the parison T. Thus the parison will be expanded to produce a finished article as shown in Figure 3, and by having recesses 7 of equal sizes and directing into them equal pressure, the separate compartments C formed in the bottle B will be of equal areas and will be separated by an integral partition or dividing wall W.

As shown particularly in Figure 4 the bottle thus produced will have a neck N for each compartment C and these necks can be provided with individual closures so that either compartment can be opened independently of the other.

While the bottle illustrated contains only two compartments it is to be understood that it will be possible to make a multiple bottle with more than two compartments. Such a modified design is so obvious that detailed illustration thereof is not believed necessary.

In Figure 5 two blank molds have been indicated at 8 and each of these is provided with a neck ring 9 and a plunger 10. One neck ring with two or more openings can be used with the two or more blank molds or, under some conditions, each blank mold would have its own neck ring. In carrying out the method it is merely essential that the required number of blanks or parisons be transferred into a single blow mold 11 after which all of the parisons are subjected simultaneously to the action of air under pressure so as to expand them to their proper shapes. The shaping of the parisons in the blow mold will result in bringing them together along their adjoining portions and those parts which come together will become unified and produce a partition or dividing wall W' separating the respective compartments C' in the bottle B'.

Obviously bottles produced by the method described can be made of attractive designs and can be supplied to customers without requiring the use of holders or containers such as heretofore used where two or more bottles have been sold as a unit. By reducing the operations required in the production of the multiple bottle the cost of production is reduced. Furthermore the amount of glass necessary in the production of one multiple bottle is somewhat less than that necessary where single bottles of the same capacity are produced separately. Thus multiple bottles such as described can be supplied to the trade at lower cost than groups of single bottles and a still further saving can be effected by the elimination of special holders such as required where separate bottles are used.

Importance is attached to the fact that the articles covered by this application can be manu-

factured by the same movements of a bottle making machine as in making an ordinary single bottle.

What is claimed is:

1. The method of producing a multiple compartment container having a separate neck for each compartment, which includes the step of forcing glass into separate neck ring openings to produce a single blank having separate spaced necks projecting therefrom, and separate recesses extending into the respective necks, thereafter shaping the blank into a parison, then transferring the initially shaped parison to a blow mold, and finally directing air under pressure through the separate formed necks into the separate recesses, thereby to give the glass its final shape and form separate compartments in communication with the respective necks.

2. The method of producing a multiple compartment one-piece container having a separate neck for each compartment, which includes the step of forcing a single gob of glass into separate neck ring openings to form a single blank having spaced separate necks each with a recess opening thereinto, thereafter initially blowing the blank to produce a parison, then transferring the initially shaped parison to a blow mold, and finally directing air under pressure simultaneously through all of the formed necks and into all of the recesses thereby to give the glass its final shape and form separate compartments in communication with the respective necks, said compartments being separated by an integral dividing wall.

3. The method of producing a multiple compartment one-piece container having a separate neck for each compartment, which includes the step of forcing a single gob of glass simultaneously into separate neck ring openings, thereby to produce a single blank having separate spaced necks each with a recess extending thereinto, thereafter initially blowing the blank to expand the recesses and produce a parison, then transferring the parison to a blank mold, and finally directing air under pressure through the formed necks and into the respective recesses, thereby to expand the parison to its final shape and form separate compartments in communication with the respective necks, said compartments being separated by an integral dividing wall.

4. The method of producing a multiple compartment one-piece container having a separate neck for each compartment, which includes the step of depositing molten glass in a blank mold and allowing it to flow into position within separate neck ring openings at the bottom of the mold thereby to form a single blank having separate necks each with a recess extending thereinto, thereafter initially blowing the blank to simultaneously enlarge both recesses and produce a parison, then transferring the initially shaped parison to a blow mold, and thereafter directing air under pressure simultaneously through all of the formed necks and into all of the recesses, thereby to give the glass its final shape and form separate non-communicating compartments opening into the respective necks.

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