Nov. 4, 1958 F. P. KROENERT 2,858,955

MERCHANDISE CAPSULES

Filed Dec. 7, 1955

Fig. 1.

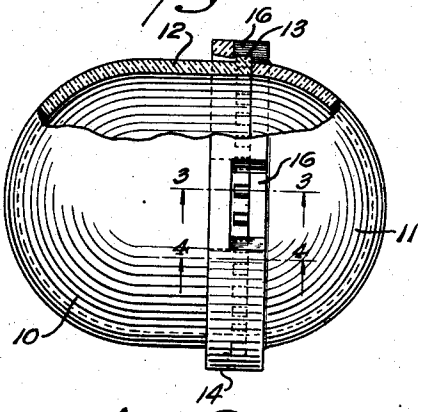


Fig. 3.

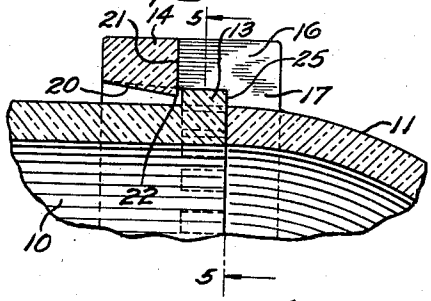


Fig. 4.

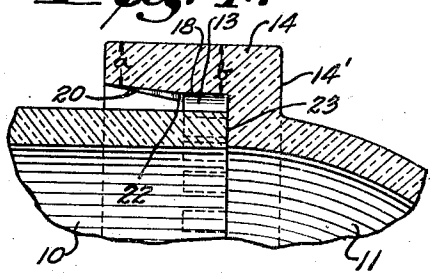


Fig. 2.

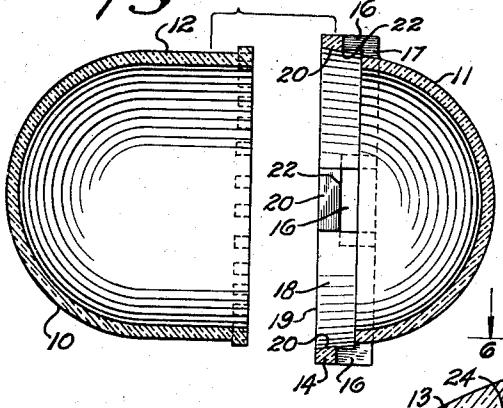


Fig. 5.

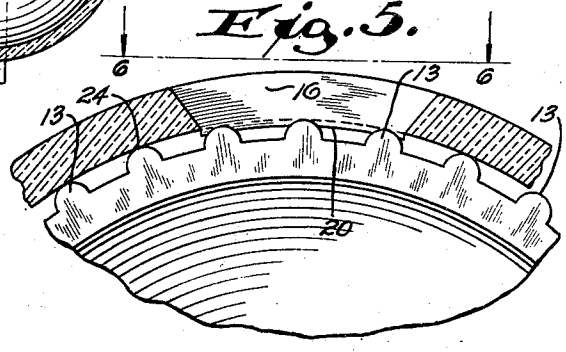
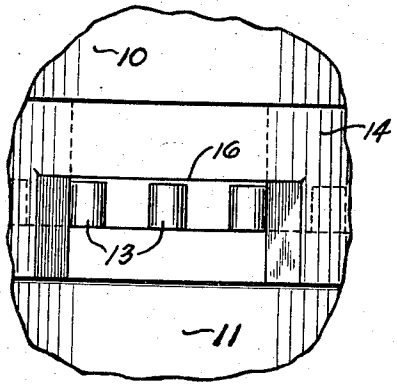


Fig. 6.



INVENTOR.
Fred P. Kroenert
BY
Morsell & Morsell
ATTORNEYS.

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MERCHANDISE CAPSULES

Fred P. Kroenert, Milwaukee, Wis.

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5 Claims. (Cl. 220—4)

This invention relates to improvements in merchandise capsules.

Merchandise capsules of the type having transparent complementary sections which fit together to enclose pieces of candy, gum, novelties or the like, are commonly used in a certain type of vending machine. These capsules are pushed about in the machine when others are being vended, and if the two sections of a capsule should accidentally come apart, it is likely to cause a jamming of the machine and interfere with further vending. Merchandise capsules of the type with which the present invention is concerned must be inexpensive and must be capable of being closed easily and securely by mechanical closing mechanism after they have been filled with merchandise at the factory. Furthermore, the capsules must be so constructed that they are easy for the consumer to open, but must not come apart accidentally in the machine or in transit.

It is a general object of the present invention to provide an improved merchandise capsule formed of a pair of complementary sections wherein the sections can be easily snapped together in a secure manner, while still being easy to open.

A more specific object of the invention is to provide a merchandise capsule wherein no alignment between the two complementary sections is required when the sections are being assembled, and wherein the two sections can be snapped together while disposed at quite an angle with respect to one another, whereby the rollers of closing mechanism can operate in a simple and foolproof manner to perform the closing operation.

A further object of the invention is to provide a merchandise capsule having novel locking mechanism which can be applied at no increase in cost, the improved capsule, however, substantially lowering the cost of filling and closing.

A further object of the invention is to provide an improved merchandise capsule, formed of plastic or the like, having novel locking mechanism which can be molded as integral parts of the sections.

A still further object of the invention is to provide an improved merchandise capsule having one or more openings adjacent the juncture between the sections for the reception of a fingernail or instrument to facilitate opening.

With the above and other objects in view, the invention consists of the improved merchandise capsule, and all of its parts and combinations, as set forth in the claims, and all equivalents thereof.

In the accompanying drawing, illustrating one complete embodiment of the preferred form of the invention, in which the same reference numerals designate the same parts in all the views,

Fig. 1 is a side view of an assembled capsule, part being broken away and shown in section;

Fig. 2 is a longitudinal sectional view through the capsule showing the two sections about to be snapped together;

Fig. 3 is an enlarged fragmentary sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged fragmentary sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary sectional view taken on the line 5—5 of Fig. 3; and

Fig. 6 is a fragmentary plan view of an assembled capsule looking in the direction indicated by the line 6—6 of Fig. 5.

Referring more particularly to the drawing, the improved capsule may be of any desired shape suitable for holding a quantity of small items, such as small candies, gum and novelties. The capsule is formed of a suitable transparent plastic material, preferably polystyrene. The plastic must be relatively rigid, but still have enough resiliency that it will yield slightly under substantial pressure of the fingers. In the preferred embodiment shown in the drawing, the capsule comprises the two sections **10** and **11**, both molded of the same material. It is preferred to have one section larger than the other, and in Fig. 1 the male section **10** constitutes a bowl section and the female section **11** a cover section. The two sections may, however, be of substantially the same size if desired, but filling with merchandise is easier when one section is larger. The cover section **11** is preferably semi-spherical, and the bowl section has a cylindrical part **12** merging into a semi-spherical end. Integrally molded with the bowl section around the exterior of its rim to project therefrom are spaced bosses **13**. These bosses are preferably semi-circular when viewed from their ends, as in Fig. 5, but are rectangular in the section illustrated in Fig. 3.

The female capsule section **11** has an outwardly offset rim portion **14**, there being an annular shoulder **14'** between the main portion and said rim forming an annular seat **23**. As shown best in Figs. 2 and 6, the rim **14** is formed with a plurality of rectangular openings **16**, preferably four in number, and equally spaced, which openings are spaced inwardly from the edge of the rim and extend through the adjoining shoulder portion as shown at **17** in Fig. 3. The inner periphery **18** of the rim is tapered so that the thickness of the rim gradually decreases toward the edge **19**, thickness (*a*) of Fig. 4 being less than thickness (*b*). In addition, the inner periphery of the rim above each opening **16** is so molded as to form a wedge-shaped locking projection **20** of progressively increasing thickness toward the outer margin **21** of the opening **16** so as to provide a locking shoulder **22**, the wedge-shaped cross-section of a locking projection **20** being shown in Fig. 3.

The distance between the annular seat **23** in the female capsule section and the shoulder **22** of the wedge-shaped projection **20** is just slightly greater than the corresponding dimension, i. e., the length, of the bosses **13**. The bosses **13** project from the section **12** such a distance that they frictionally engage the inner periphery **18** of the rim as at **24** in Fig. 5 when the capsule is closed due to the increased thickness at (*b*) Fig. 4. The bosses **13** are circumferentially spaced such a distance apart with respect to the length of the openings **16** that there are always two or three bosses in registration with an opening.

When the cover is snapped into position on the section **10**, the bosses will ride inwardly on the angled surfaces of the wedge-shaped projections **20** and snap into position within the locking shoulders **22**, as shown in Figs. 3 and 4. Due to the use of a multiplicity of bosses all the way around the periphery of the capsule section **10**, no special alignment between the sections **10** and **11** is required

when the capsules are being closed, as two or three bosses will always snap beneath each locking shoulder **22** into registration with an opening **16**.

With the arrangement above described, mechanical closing mechanism, including closing rollers, can be employed without any special supervision, as the parts will always close perfectly and securely. Once closed, the shoulders **22** at the outer margins of the openings **16** prevent disengagement. Thus filling of the capsules is simple, and closing secure.

When the customer, usually a child, receives a capsule from a vending machine, it may be opened by squeezing opposite sides of the body of the section **10** adjacent opposite openings **16** to disengage the bosses from the locking shoulders **22**. It can be more easily opened by inserting the fingernail or an instrument through the portion **17** of one of the openings to engage the ends of one or more bosses as at **25** in Fig. 3. Then by pushing with the nail or instrument on the locations **25**, while simultaneously squeezing opposite side portions of the section **10**, the capsule may be easily opened.

The openings **16** are so spaced apart as to provide a gap within which the material may relieve itself as the bosses are being snapped past the shoulders **22** during opening.

From the above it is apparent that a novel lock has been provided for use on merchandise capsules which can be integrally molded into the capsule at the time of manufacture. It is also apparent that the lock is one which permits easy closing of the sections, while preventing accidental disengagement of the sections, either while in the vending machine, or while in transit. In addition, the novel arrangement is such as to make it easy for the customer to open the capsule.

Various changes and modifications may be made without departing from the spirit of the invention, and all such changes are contemplated as may come within the scope of the claims.

What I claim is:

1. In a merchandise capsule including complementary male and female sections formed of material having resiliency and adapted to enclose merchandise, said male section having a circular rim portion with many circumferentially spaced external bosses of short peripheral extent projecting outwardly from the side of said male section adjacent said rim and completely around said section, and said female section having an outwardly offset circular rim of a size to receive the rim portion and all of the projecting bosses of said male section, said last rim having a circular edge and there being an internal circular seat inwardly of said circular edge connecting the offset rim with the female section, and means including laterally spaced locking shoulders, which are few in number compared to the number of bosses, projecting inwardly from the inner side of said offset rim and located to confine some of said bosses between said seat and said locking shoulders while the rim of said male section engages said seat and while the outermost portions of the other bosses frictionally engage portions of the interior of said offset rim of the female section in areas which are devoid of locking shoulders, said locking shoulders projecting inwardly only a limited distance so that said bosses may snap over the shoulders during assembly and said shoulders being adapted to coact with any of the many bosses regardless of how the sections are disposed circumferentially with respect to one another, and said male section being adapted to flex between any pair of bosses.

2. In a merchandise capsule including complementary male and female sections formed of material having resiliency and adapted to enclose merchandise, said male section having a circular rim portion with many circumferentially spaced external bosses of short peripheral extent projecting outwardly from the side of said male section adjacent said rim and completely around said section, and said female section having an outwardly offset circular rim of a size to receive the rim portion and all of the projecting bosses of said male section, said last rim having a circular edge and there being an internal circular seat inwardly of said circular edge connecting the offset rim with the female section, and means including laterally spaced locking shoulders each of substantially greater length than said bosses and which are few in number compared to the number of bosses, projecting inwardly from the inner side of said offset rim and located to confine some of said bosses between said seat and said locking shoulders while the rim of said male section engages said seat, there being circumferential spaces of substantial length between locking shoulders so that the outermost portions of the other bosses in said spaces frictionally engage the interior of said offset rim of the female section, said locking shoulders projecting inwardly only a limited distance so that said bosses may snap over the shoulders during assembly, said offset rim of the female section having an opening for each locking shoulder extending from the seat part-way down the width of the rim to said shoulder, and said shoulders being adapted to coact with any of the many bosses regardless of how the sections are disposed circumferentially with respect to one another.

3. In a mechandise capsule including complementary male and female sections formed of material having resiliency and adapted to enclose merchandise, said male section having a circular rim portion with many circumferentially spaced external bosses of short peripheral extent projecting outwardly from the side of said male section adjacent said rim and completely around said section, and said female section having an outwardly offset circular rim of a size to receive the rim portion and all of the projecting bosses of said male section, said last rim having a circular edge and there being an internal circular seat inwardly of said circular edge connecting the offset rim with the female section, and means including laterally spaced locking shoulders each of substantially greater length than said bosses and which are few in number compared to the number of bosses, projecting inwardly from the inner side of said offset rim and located to confine some of said bosses between said seat and said locking shoulders while the rim of said male section engages said seat there being circumferential spaces of substantial length between locking shoulders so that the outermost portions of the other bosses in said spaces frictionally engage the interior of said offset rim of the female section, said locking shoulders projecting inwardly only a limited distance so that said bosses may snap over the shoulders during assembly, said offset rim of the female section having an opening for each locking shoulder extending from the seat part-way down the width of the rim to said shoulder, each opening having a portion extending through the seat of sufficient length to permit insertion of a fingernail for external engagement with the bosses through said last-mentioned portions of the openings to aid in opening the capsule, and said shoulders being adapted to coact with any of the many bosses regardless of how the sections are disposed circumferentially with respect to one another.

4. In a mechandise capsule including complementary male and female sections formed of material having resiliency and adapted to enclose merchandise, said male section having a circular rim portion with many circumferentially spaced external bosses of short peripheral extent projecting outwardly from the side of said male section adjacent said rim and completely around said section, and said female section having an outwardly offset circular rim of a size to receive the rim portion and all of the projecting bosses of said male section, said last rim having a circular edge and there being an internal circular seat inwardly of said circular edge connecting the offset rim with the female section, and means including laterally spaced locking shoulders, which are few

in number compared to the number of bosses, projecting inwardly from the inner side of said offset rim and located to confine some of said bosses between said seat and said locking shoulders while the rim of said male section engages said seat there being circumferential spaces between locking shoulder so that the outermost portions of the other bosses in said spaces frictionally engage the interior of said offset rim of the female section, said locking shoulders projecting inwardly only a limited distance so that said bosses may snap over the shoulders during assembly, said shoulders being of such length in a direction circumferentially of the rim as to each be engaged by at least two of said bosses, and said shoulders being adapted to coact with any of the many bosses regardless of how the sections are disposed circumferentially with respect to one another, and each circumferential space between locking shoulders being of substantially greater length than a locking shoulder so that the rim portion at said space is held outwardly from the male section by contact with a multiplicity of bosses.

5. In a merchandise capsule including complementary male and female sections formed of material having resiliency and adapted to enclose merchanise, said male section having a circular rim portion with many circumferentially spaced external bosses of short peripheral extent projecting outwardly from the side of said male section adjacent said rim and completely around said section, and said female section having an outwardly offset circular rim of a size to receive the rim portion and all of the projecting bosses of said male sections, said last rim having a circular edge and there being an internal circular seat inwardly of said circular edge connecting the offset rim with the female section, and means

including laterally spaced locking shoulders, which are few in number compared to the number of bosses, projecting inwardly from the inner side of said offset rim and located to confine some of said bosses between said seat and said locking shoulders while the rim of said male section engages said seat there being circumferential spaces between locking shoulders so that the outermost portions of the other bosses in said spaces frictionally engage the interior of said offset rim of the female section, said locking shoulders projecting inwardly only a limited distance so that said bosses may snap over the shoulders during assembly, said offset rim of the female section having an opening for each locking shoulder of sufficient length to permit insertion of a fingernail, each opening and its adjacent shoulder being of such length in a direction circumferentially of the rim that at least two of said bosses register with each opening, and said shoulders being adapted to coact with any of the many bosses regardless of how the sections are disposed circumferentially with respect to one another, and each circumferential space between locking shoulders being of substantially greater length than a locking shoulder so that the rim portion at said space is held outwardly from the male section by contact with a multiplicity of bosses.

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