May 7, 1963 G. K. PARKER 3,088,623

FASTENING AND SEALING MEANS FOR CONTAINERS

Filed July 20, 1961

Fig. 1.

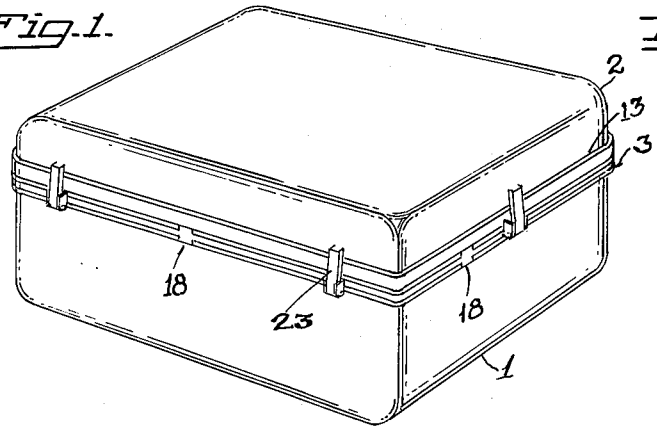


Fig. 4.

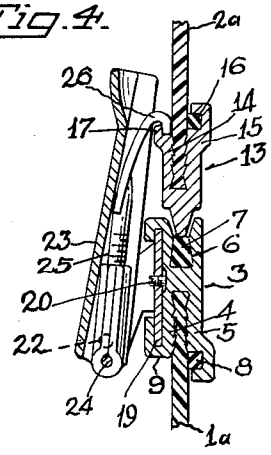


Fig. 2.

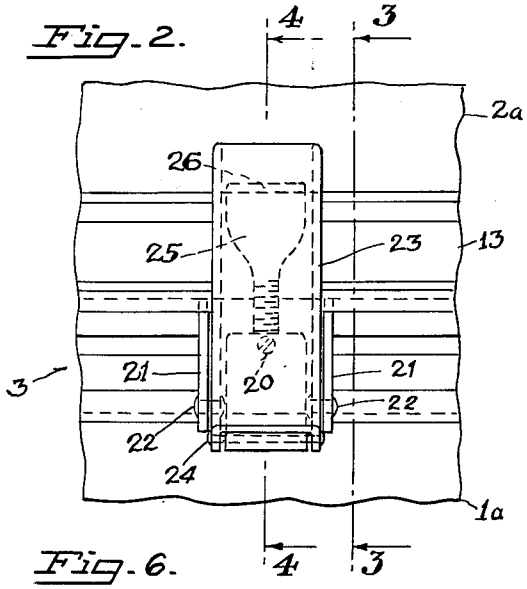


Fig. 3.

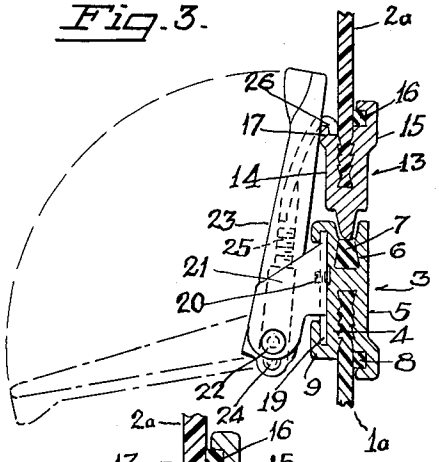


Fig. 6.

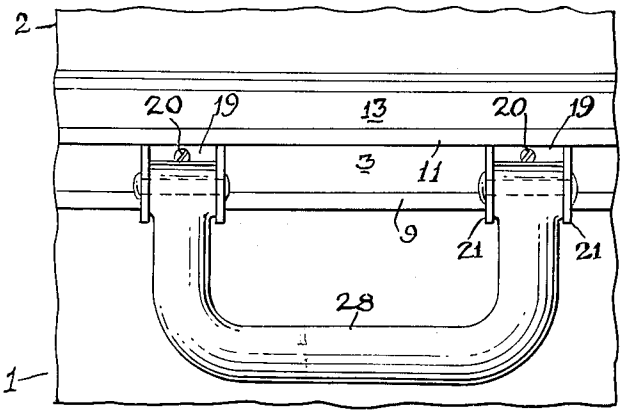
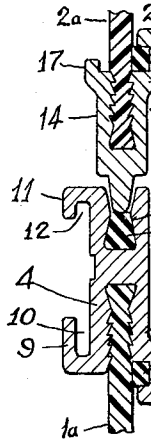


Fig. 5.



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FASTENING AND SEALING MEANS FOR CONTAINERS

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This invention relates to improvements in fastening and sealing means for containers of the type having complementary sections.

The primary object of the present invention is to provide improved means for securely holding two complementary container sections in closed positions with respect to each other so moisture cannot enter.

The present invention contemplates the provision of metal strips on the edges of the upper and lower container sections, such strips having complementary sealing devices which are arranged to be held in contacting relationship with each other by means of a plurality of adjustable clamps. In accordance with my invention, a plurality of clamps are adjustably and removably secured to the metal strip of one of the container sections, such clamps having contractile means engageable with the metal strip secured to the other container section, thereby making it possible to draw the sealing devices of the strips into sealing relationship with respect to each other to exclude moisture from the container.

Other and further objects of the present invention will be pointed out hereinafter or will be indicated in the appended claims or will be obvious to one skilled in the art upon an understanding of the present disclosure. For the purpose of this application, I have elected to show herein certain forms and details of a closure means for containers representative of my invention; it is to be understood, however, that the embodiment of my invention herein shown and described is for purposes of illustration only, and that therefore it is not to be regarded as exhaustive of the variations of the invention in the art.

In the accompanying drawing:

FIG. 1 is a perspective view of a container or case having the fastening and sealing means embodying my invention applied thereto;

FIG. 2 is an enlarged side elevation of the closure means;

FIG. 3 is a sectional view taken on the line 3—3 of FIG. 2;

FIG. 4 is a sectional view taken on the line 4—4 of FIG. 2;

FIG. 5 is a sectional view similar to FIG. 3, except that the clamping device is eliminated; and

FIG. 6 is an elevational view of a handle connected to the container.

The container or case embodying the present invention is preferably made from a suitable plastic material such as polyethylene. The container comprises a lower hollow section 1 and an upper hollow cover section 2 having complementary sides 1*a* and 2*a*, respectively, which are adapted to be arranged so the lower edges of the sides 2*a* of the cover section are positioned directly above and in opposed relationship to the upper edges of the sides 1*a* of the lower section.

Secured to the upper edges of the sides of the lower section 1 is a continuous or perimetric female metal strip or edging 3 having opposed continuous walls or sides 4 and 5 forming a groove within which the upper edge portions of the sides 1*a* are positioned, the said sides being bonded to the walls by a method and means such as that disclosed in my copending patent application entitled "Method of Securing the Sides of a Plastic Container to a Metal Edging," Serial No. 105,203, filed April 24, 1961.

The female strip 3 is formed with a continuous groove 6, which is open from above and which holds a continuous resilient sealing strip or member 7. Supported in a continuous groove formed in the inner wall 5 of the female strip 3 is a continuous resilient pressure strip 8 which exerts an outward pressure on the sides 1*a* of the lower body section. The lower edge of the outer wall 4 of the female strip 3 extends outwardly and upwardly as at 9 to provide a continuous groove 10, and, similarly, the upper edge of the strip 3 extends outwardly and downwardly as at 11 to provide a continuous groove 12. The continuous flanges 9 and 11 are parallel to each other, and the grooves 10 and 12 formed thereby face each other and are substantially the same in width.

Secured to lower edges of the upper cover section 2 is a continuous or perimetric male strip or edging 13 having opposed continuous walls 14 and 15 forming a continuous groove within which the lower edge portions of the sides 2*a* are positioned, the said sides being suitably bonded to such walls by the means described in my said copending patent application. Supported in a continuous groove formed in the inner wall 15 of the strip 13 is a resilient pressure strip 16 which exerts an outward pressure on the sides 2*a* of the lower body section. The pressure strips 8 and 16 exerting outward pressures on the sides 1*a* and 2*a* assist in preventing the detachment thereof from their respectively associated metal strips 3 and 13. The upper edge portion of the outer wall 14 of the strip 13 extends outwardly and upwardly to provide a continuous flange 17, the purpose of which will be presently described. The lower portion of the male strip 13 is substantially V-shaped in cross-section, and when the cover section 2 is superimposed on the lower section 1, the lower edge of the strip 13 is adapted to engage with the resilient sealing strip 7 to exclude air or moisture from the interior of the container or case. The upwardly extending part of the flange 9 and the downwardly extending part of the flange 11 are cut away at each of the four (4) sides of the container to provide suitable opposed grooves or openings 18, permitting adjustable bracket plates 19 to be passed therethrough and then positioned with their upper and lower edge portions slidably extending into the grooves 10 and 12. By passing a bracket plate 19 through opposed openings 18 and then adjusting it to the right or left, such plate will be held against detachment by the flanges 9 and 11. Suitable means is employed to secure a bracket 19 to the metal strip 3. Such securing means may comprise a set screw 20 extending through a threaded opening in each plate 19, which set screw when adjusted inwardly engages with the metal strip 3 to secure such plate in a fixed position on the strip.

Each bracket plate 19 is formed with opposed lateral flanges 21, 21 which extend outwardly and downwardly and are disposed at right angles thereto. Pivotally connected at points between its ends as at 22, 22 to the lower end portions of the flanges 21 is a lever 23 which is substantially U-shaped in cross-section. Pivotally connected at its lower end to a pivot pin 24 carried on the lower end of the lever 23 is a clamping member 25, the other end of such clamping member being formed with a hook 26 which is adapted to hook onto and thereby connect with the flange 17 of the male strip 15. The clamping member 25 preferably comprises two (2) sections which are adjustably connected to one another to permit such clamping member to be lengthened or shortened. The length of each clamping member 25 is such that when its hook 26 is connected to the flanges 17 of the male strip 13 and the lever 23 is swung upwardly from its downwardly extending portion, such clamping member will be pulled downwardly to bring the lower edge of the male strip 13 into firm engagement with the resilient sealing strip 7. There are preferably one or more clamping

devices arranged at each of the four (4) sides of the container, and when each of said devices is adjusted as described above so its lever **23** is in an upwardly swung position, the male and female strips **3** and **13** will be securely held in clamped positions with the cover section **2** securely held on the lower section **1** and the joint between the two (2) strips sealed to prevent moisture from entering the container.

Whenever one of the clamping devices becomes damaged and needs to be replaced, it may be easily removed by first unscrewing its set screw **20** and then sliding its bracket plate **19** to a position where it may be withdrawn through the opposed openings **18** in the flanges **9** and **11**.

In FIG. 6 is shown a U-shaped handle **28** pivotally connected to the pair of flanges **21** of two (2) suitably spaced plates **19** secured in the manner described to the lower female strip **3** attached to the body section **1** of the container or case.

What I claim is:

1. In fastening and sealing means for containers of the type having upper and lower complementary hollow sections formed with opposed edges, a continuous female strip secured over the edges of one of the container sections, a continuous male strip secured over the edges of the other container section and having a continuous outwardly and upwardly disposed flange, the female strip having a continuous groove facing the male strip, a continuous resilient sealing strip supported in the groove of the female strip, the male strip having a lower edge portion adapted to extend into the groove of the female strip and engage with the resilient sealing strip, the female strip having an outwardly and downwardly extending continuous flange and also an outwardly and upwardly extending continuous flange on its outer side, the said flanges forming opposed continuous grooves, a plurality of brackets supported in the opposed grooves and arranged at the sides of the container, and adjustable clamping devices arranged at the sides of the container and releasably connecting the brackets and the flange of the male strip, the clamping devices being adapted to hold the male strip in contacting relationship with the resilient sealing strip.

2. In fastening and sealing means for containers of the type having upper and lower complementary hollow sections formed with opposed edges, a continuous female strip secured over the edges of one of the container sections, a continuous male strip secured over the edges of the other container section, the continuous female strip having an open groove facing the male strip, a continuous resilient sealing strip lodged in the groove of the female strip, the male strip having an edge portion adapted to extend into the groove and engage with the resilient sealing strip, opposed parallel perimetric flanges on one of the strips, brackets detachably mounted on the opposed flanges and arranged at the sides of one of the container sections, longitudinal flange means on the other strip and arranged at the sides of the other container section, and a plurality of adjustable clamping devices arranged at the sides of the container and adapted to connect the brackets and the flange means, the clamping devices being constructed and aranged to hold the male and female strips releasably in positions whereby the male strip engages with the sealing strip.

3. In fastening and sealing means for containers of the type having upper and lower complementary hollow sections, a continuous female strip secured over the edges of one of the container sections, a continuous male strip secured over the edges of the other container sections, the female strip having an open continuous groove facing the male strip, a resilient sealing member lodged in the groove of the female strip, the male strip having an edge portion adapted to extend into the groove and engage with the resilient member, upper and lower parallel continuous flanges extending outwardly and toward each other from one of the strips and forming opposed grooves, a plurality of longitudinally adjustable brackets having bracket plates slidably extending into the opposed grooves of the flanges and arranged for longitudinal adjustment along the flanges, at least one of the brackets being positioned at a side of the container, the brackets being detachable from the strip carrying the parallel flanges, an outwardly and upwardly extending third longitudinal flange on the other strip, and a plurality of clamping devices connected to the brackets and having extensible and contractile members detachably hooked onto the third flange, the clamping devices being adjustable to apply pressure on the strips toward one another.

4. In fastening and sealing means for containers of the type having complementary hollow sections, each section having an open end and a closed end and side walls joined to the closed end, the said container sections being assembled invertedly one upon the other with their respective open ends in opposing relationship, a perimetric female strip secured over the open end of one of the container sections, a perimetric male strip secured over the open end of the other container section, the female strip having an open groove facing the male strip, a resilient sealing strip lodged in the groove of the female strip, the male strip having an edge portion adapted to extend into the groove of the female strip and engage with the resilient strip, a pair of parallel flanges extending outwardly and toward each other from one of the strips and forming opposed grooves, a plurality of brackets having bracket plates extending into the opposed grooves of the parallel flanges, the brackets being positioned at opposite sides of the container, an outwardly extending third flange on the other strip, and a plurality of clamping devices connected to the brackets and having members detachably connected to the said third flange, the clamping devices being adjustable to apply pressure on the strips toward each other.

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