

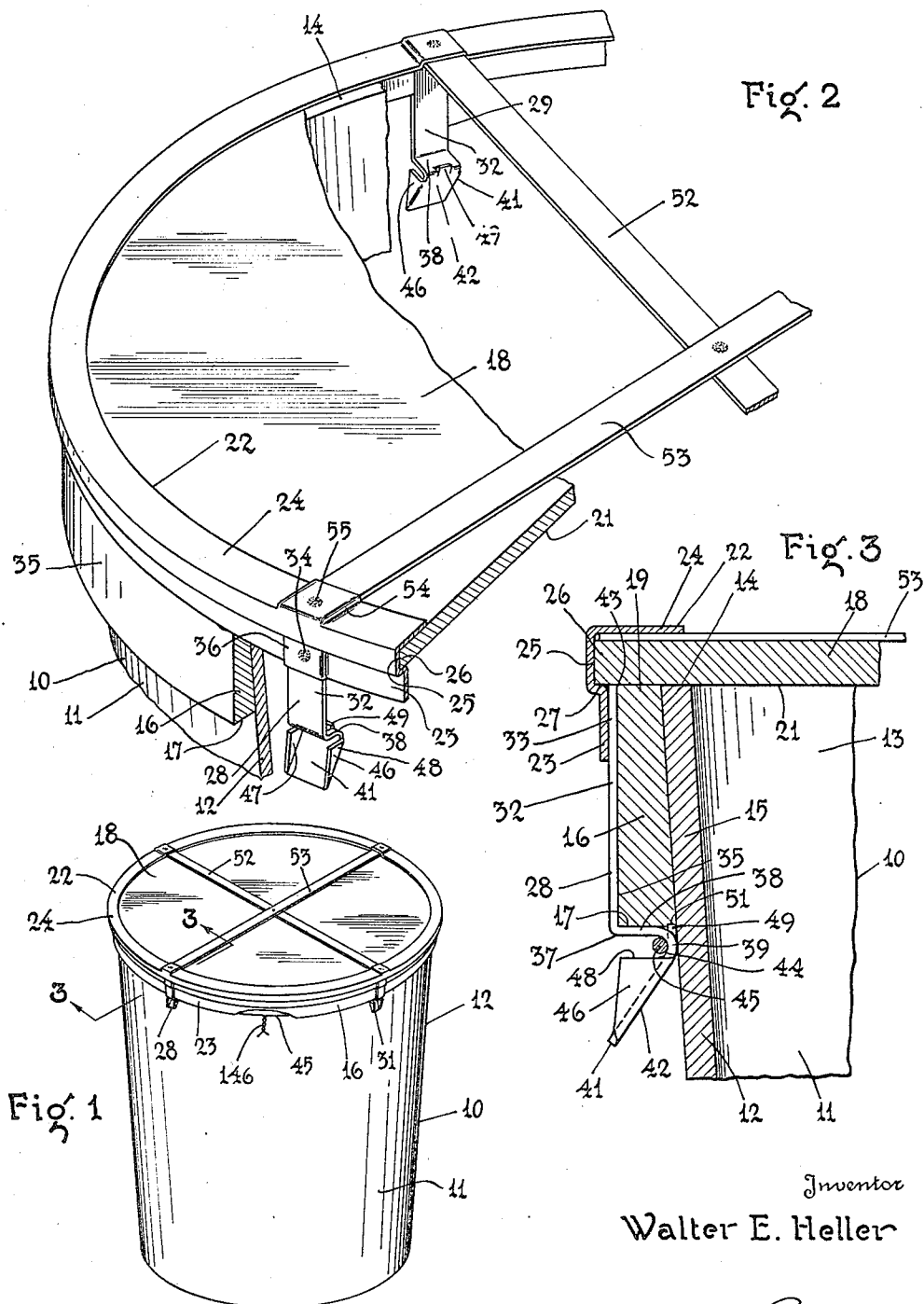
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CONTAINER

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CONTAINER

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My invention relates to containers open at the top and particularly to the construction for closing the same.

An object of the invention resides in utilizing for the cover of the container, a disc of paper or equivalent material and in providing in conjunction therewith a retaining ring angular in cross-section and having a side flange encircling said container at its upper end and a top flange extending inwardly from said side flange and overlying the marginal portion of said cover.

Another object of the invention resides in forming the side flange with a channel in which the edge of the cover is received and by means of which the retaining ring is held attached to the cover.

A still further object of the invention resides in providing fasteners for holding the cover in closing position, said fasteners being attached to the retaining ring.

Another object of the invention resides in constructing the container with a rim having a downwardly facing shoulder and in constructing the fasteners with fingers for engagement with the shoulder.

A feature of the invention resides in constructing the fingers with cams for directing the fingers over the rim, said cams forming in conjunction with the fingers, bights in which a wire may be placed for securing the fasteners in fastening position.

An object of the invention resides in providing keepers on the cams for preventing the wire from pulling out of the bights.

A still further object of the invention resides in constructing the fasteners from sheet metal.

A feature of the invention resides in the specific construction of the fasteners.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a perspective view of a container illustrating an embodiment of my invention.

Fig. 2 is a perspective view of a portion of the structure shown in Fig. 1 and drawn to a larger scale and with parts broken away to illustrate the construction of the fastener.

Fig. 3 is a fragmentary cross-sectional view taken on line 3—3 of Fig. 1 and drawn to a larger scale.

In the construction of closures for containers and particularly where paper is used, one practice has been to form a flange on the cover constructed of paper and integral therewith. Such construction involves considerable expense in manufacture. In addition the flanges soon spread out resulting in an ill-fitting cover. Furthermore, where a paper flange is formed on the cover con-

siderable difficulty is involved in providing a successful fastener for attaching the cover to the container. The present invention overcomes all of these disadvantages by utilizing a construction providing a metal edging for the cover which takes the place of the integral flange and to which the fasteners for securing the cover to the container may be readily attached.

For the purpose of illustrating my invention, I have shown in the drawing a container which is indicated in its entirety by the reference numeral 10. This container is constructed of paper or any other suitable material of similar nature and is provided with a body portion 11 having a circumferential wall 12 and a bottom, not shown. The container 10 is open at its upper end as indicated at 13 leaving the upper edge 14 of the marginal portion 15 of wall 12 free and exposed. Encircling the upper marginal portion 15 of the wall 12 adjacent the free edge 14 is a hoop 16 which may also be constructed of paper and which is wound upon said marginal portion and attached thereto by glue or a similar adhesive. The hoop 16 constitutes a rim for the container 10 and is formed at its lowermost portion with a downwardly facing shoulder 17 which is utilized for the attachment of the cover to the container, and is further formed at its uppermost portion with an upper edge 19 disposed in the plane of the edge 14.

For closing the open upper end 13 of the container 10 a cover 18 is employed which is constructed of paper, ply wood or any other similar suitable material. This cover is of a diameter slightly greater than the outer diameter of the hoop 16 and rests upon the upper marginal edge 19 of said hoop and upon the free edge 14 of the wall 12 of container 11 with the marginal portion 26 of said cover extending outwardly beyond the hoop. By means of my invention, the cover 18 is held properly attached to the container and with the under surface 21 thereof in contact with the edges 19 and 14 of the hoop 16 and wall 12 to form a tight seal for the open end 13 of said container.

In conjunction with the cover 18 I employ a retaining ring 22 constructed of metal, which ring is angular in cross-section. Ring 22 is provided with a side flange 23 and a top flange 24. Said ring may be constructed by rolling a strip of metal between suitable shaped rolls and the ends of the strip secured together by welding, soldering, riveting or otherwise. The ring 22 encircles the top 18 and the flange 24 rests directly upon the same, as best shown in Fig. 2. In the side flange 23 is formed a channel 25 in which the marginal edge 26 of the cover 18 is received. By means of this construction an inwardly extending shoulder 27 is formed in the side flange 23, which serves to hold the top 18 against the

top flange 24 and which further serves to hold the ring 22 rigidly and tightly applied to the cover 18. In attaching the ring 22 to the cover 18 the same may be accomplished in different 5 ways. Where the shoulder 27 is constructed fairly small, the cover 18 may be sprung into place in the channel 25. Where the shoulder 22 has appreciable radial extent, the cover 18 is placed into channel 25 before the ends of the ring are secured together and the same there- 10 after secured to one another, as previously described.

Operating in conjunction with ring 22 are a number of fasteners 28, 29, 31 etc. In the drawing I have shown four such fasteners, though it 15 can readily be comprehended that any number of fasteners may be used, if desired. All of these fasteners being identical in construction, only the fastener 28 will be described which is shown in detail in Figs. 2 and 3. 20

Fastener 28 is constructed from sheet metal and is punched and bent to form the various parts thereof. This fastener comprises an elongated body portion 32 which is attached at its 25 upper end 33 to the side flange 23 of ring 22. This is accomplished by welding the said body portion 32 to the said flange as indicated at 34. The body portion 32 extends downwardly from the side flange 23 and overlies the outer surface 30 35 of hoop 16. In order to cause the flange 23 of ring 22 to lie snugly against the surface 35 of hoop 16, the said flange is offset as indicated at 36 to form a groove in which the body portion 32 of fastener 28 is received.

The metal from which the fastener 28 is constructed is bent at the lower end of body portion 32 as indicated at 37 to form an inwardly directed finger 38 adapted to engage the shoulder 17 of hoop 16. This finger restrains the fastener 40 from upward movement when properly engaged with said shoulder. The metal from which the fastener is constructed is further bent at the inner end of the finger 38 as designated at 39 to form a downwardly and outwardly inclined cam 41 which issues from the inner end of said finger. 45 This cam is so shaped that when the cover 18 and the ring 22 are applied to the container, the inclined surface 42 of said cam engages the outer corner 43 of the hoop 16 and forces the body portion 32 of fastener 28 outwardly and away 50 from the said hoop. This causes the finger 28 to clear the hoop and permits of moving the cover downwardly into closing position. The fastener 28 is preferably constructed of a resilient material and when so formed, finger 38 readily springs into position beneath the shoulder 17 when the cover has reached its closing position. When so disposed the finger 38 re- 55 strains upward movement of the cover until the said finger is disengaged from shoulder 17. The cam 41 also serves as a finger piece by means of which the finger 38 of the fastener may be disengaged from the shoulder 17 of hoop 16. 60

In the formation of the cam 41 the metal of the fastener is bent with a generous radius at the locality designated by the reference numeral 65 39 which forms a bight 44 between the finger 38 and the cam 41. A tie wire 45 (Fig. 1) may be wrapped about the container 10 immediately below the rim thereof and the said wire placed within the bights 44 of the various fasteners. The ends of this tie wire may then be twisted together as designated at 46 to hold the wire 70 tightly applied to the container. By means of this construction the fasteners are securely held 75

applied to the container and removal of the cover 18 from the container is entirely prevented except upon the removal of the wire 45.

In order to prevent the wire 45 from pulling out of the bight 44 when undue force is applied 5 tending to remove cover 18, two wings 46 and 47 are bent out from the sides of the cam 41 as shown in Fig. 2. These wings are constructed with edges 48 which are spaced from and lie 10 parallel with the finger 38. These wings serve as keepers which engage the wire 45 and prevent disengagement of the said wire from the bight 44. With the fastener constructed in this manner it becomes impossible to pull the wire 45 out 15 of the bight by the straightening of the parts of the fastener and the cover is hence securely held attached to the container regardless of the usage the container receives.

For the purpose of causing the finger 38 to positively engage the shoulder 17 of hoop 16, a 20 lug 49 is struck out of the material of the finger 38 which lug is formed with a sharp edge 51 projecting slightly above the upper surface of said finger. This lug is adapted to engage and bite into the shoulder 17 whereby the finger 38 25 functions in a manner to hold the cover securely applied to the container.

For the purpose of resisting the stresses to which the container may be subjected, two reinforcing strips 52 and 53 are employed which are 30 constructed of metal and which extend across the cover 18. The top flange 24 of retaining ring 22 is offset as indicated at 54 to receive these strips which are disposed beneath said flanges and are welded thereto by welds 55. It 35 will be noted that the strips 52 and 53 are attached to the ring 22 in proximity to the fasteners 28, 29, 30 and 31 etc., so that the ring 22 is partially relieved of the stress transmitted through said fasteners. The said strips also as- 40 sist in sustaining the weight of another container placed upon the cover 18.

In the use of the invention, it is merely necessary to place the cover 18 above the container 45 with the various cams 41 resting upon the corner 43 of the hoop 16. It is unnecessary to place the cover at any precise position with respect to the container. By applying downward pressure upon the cover the cams 41 spread the body portions 32 of the fasteners outwardly, allowing the 50 fingers 38 to pass along the outer surface of the hoop and to a position where the same may snap under the hoop and engage the shoulder 17. When the structure is so positioned the cover is properly applied and with ordinary usage will 55 remain in place without further provision. With the cover so attached the contents of the container may be readily inspected. This is accomplished by engaging the finger beneath the cams 41 and 42 of the fasteners and spreading 60 the same outwardly. The cover then is readily removed. When it becomes desirable to permanently secure the cover in place, the wire 45 may be applied and inserted in the bights 44 65 of the various fasteners. The ends 46 of said wire are then twisted together and the operation is completed. If desired, a metal seal may be attached to the wire 45 in the customary manner though the same need only be used where shipping provisions require it. 70

The invention is highly advantageous in that an extremely simple and practical construction is provided whereby a cover may be readily ap- 75 plied to a container open at the top. With my invention the cover may be constructed from

sheet material cut in circular form to the desired dimensions and without the necessity of bending or forming the cover to provide a sealing flange. The retaining ring used with my invention serves to maintain the cover in proper form and also forms a guard for the raw edge of the same. With my invention the fasteners are attached to the retaining ring whereby the same are securely connected to the cover without the use of rivets or other structures passing through the cover. My improved fasteners are readily applied to the container and when properly applied, serve to securely hold the cover attached thereto. By means of the keepers used with my invention, the tie wire employed for holding the fastener in position cannot be pulled out of the bights in which the same is lodged. Due to the formation of the lugs on the engaging fingers of the fasteners the said fasteners readily bite into the shoulder of the hoop which they engage, thereby holding the cover firmly attached to the container. The strips applied to the retaining ring, in addition to assisting in supporting a superimposed container, also serve to relieve the retaining ring from a part of the stress occasioned through the fasteners.

Changes in the specific form of my invention, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In combination with a container open at its upper end, and provided at such end with a rim having a downwardly facing shoulder, a cover for the open end of the container, a retaining ring angular in cross-section and having a side flange encircling said rim above said shoulder, said ring having a top flange overlying the marginal portion of said cover, a plurality of fasteners attached to said ring, means on said fasteners for engaging said shoulder, and straps overlying said cover and attached to said top flange in proximity to said fasteners.

2. In combination with a container open at the upper end and provided at such end with means having a downwardly facing shoulder, a cover for the open end of the container, a fastener having an elongated body portion extending downwardly from said cover, a finger extending inwardly from said body portion at its lower end for engagement with said shoulder, a cam inclined downwardly and away from the inner end of the finger and forming a bight for the reception of a tie wire, and a wing extending outwardly from said cam, said wing having an edge extending in spaced substantially parallel relation with respect to the finger for holding the wire within the bight.

3. In combination with a container open at the upper end and provided at such end with means having a downwardly facing shoulder, a cover for the open end of the container, a fastener constructed of sheet metal and having an elongated body portion extending downwardly from said cover, said fastener being bent to form a finger extending inwardly from the lower end of said body portion for engagement with said shoulder and being further bent to provide a cam inclined downwardly and away from the inner end of the finger and forming a bight at the last-named bend for the reception of a tie wire, said cam being bent at its lateral edges to form wings extending outwardly therefrom, said

wings having edges extending in spaced substantially parallel relation with respect to the finger for holding the wire within the bight.

4. In combination with a container open at the upper end and provided at such end with means having a downwardly facing shoulder, a cover for the open end of the container, a fastener constructed of sheet metal and having an elongated body portion extending downwardly from said cover, said fastener being bent to form a finger extending inwardly from the lower end of said body portion for engagement with said shoulder and being further bent to provide a cam inclined downwardly and away from the inner end of the finger and forming a bight at the last-named bend for the reception of a tie wire, and a lug struck out of the material of said finger at the last-named bend, said lug having an upwardly facing corner adapted to engage said shoulder.

5. In combination with a container open at the upper end and provided at such end with a rim having a downwardly facing shoulder, a cover for the open end of the container, a retaining ring angular in cross-section and having a side flange encircling said rim above said shoulder, said ring having a top flange extending inwardly from said side flange and overlying the marginal portion of the cover, a fastener constructed of sheet metal and having an elongated body portion attached at its upper end to the side flange of said ring and depending therefrom, said fastener being bent to form a finger extending inwardly from the lower end of said body portion for engagement with said shoulder and being further bent to provide a cam inclined downwardly and away from the inner end of the finger and forming a bight at the last-named bend for the reception of a tie wire, said cam being bent at its lateral edges to form wings extending outwardly therefrom, said wings having edges extending in spaced substantially parallel relation with respect to the finger for holding the wire within the bight, and a lug struck out of the material of said finger at the last-named bend, said lug having an upwardly facing corner adapted to engage said shoulder.

6. In combination with a container open at the upper end and provided at such end with means having a downwardly facing shoulder, a cover for the open end of the container, a fastener constructed of sheet metal and having a body portion, said body portion being bent to form a finger extending inwardly from the lowermost part of said body portion for engagement with said shoulder and being further bent to provide a downwardly extending portion, and a lug struck out of the material of said finger at said last-named bend, said lug having an upwardly facing corner adapted to engage said shoulder.

7. In combination with a container open at the upper end and provided at such end with means having a downwardly facing shoulder, a cover for the open end of the container, a fastener having a body portion, a finger extending inwardly from the lowermost part of said body portion for engagement with said shoulder, a member extending downwardly from said finger, and a wing extending outwardly from said member, said wing having an edge extending in spaced relation with respect to said finger and forming therewith a groove for the reception of a tie wire.