Feb. 23, 1937. S. SMITH 2,071,663

COVER FASTENER

Filed June 3, 1935

Fig. 1

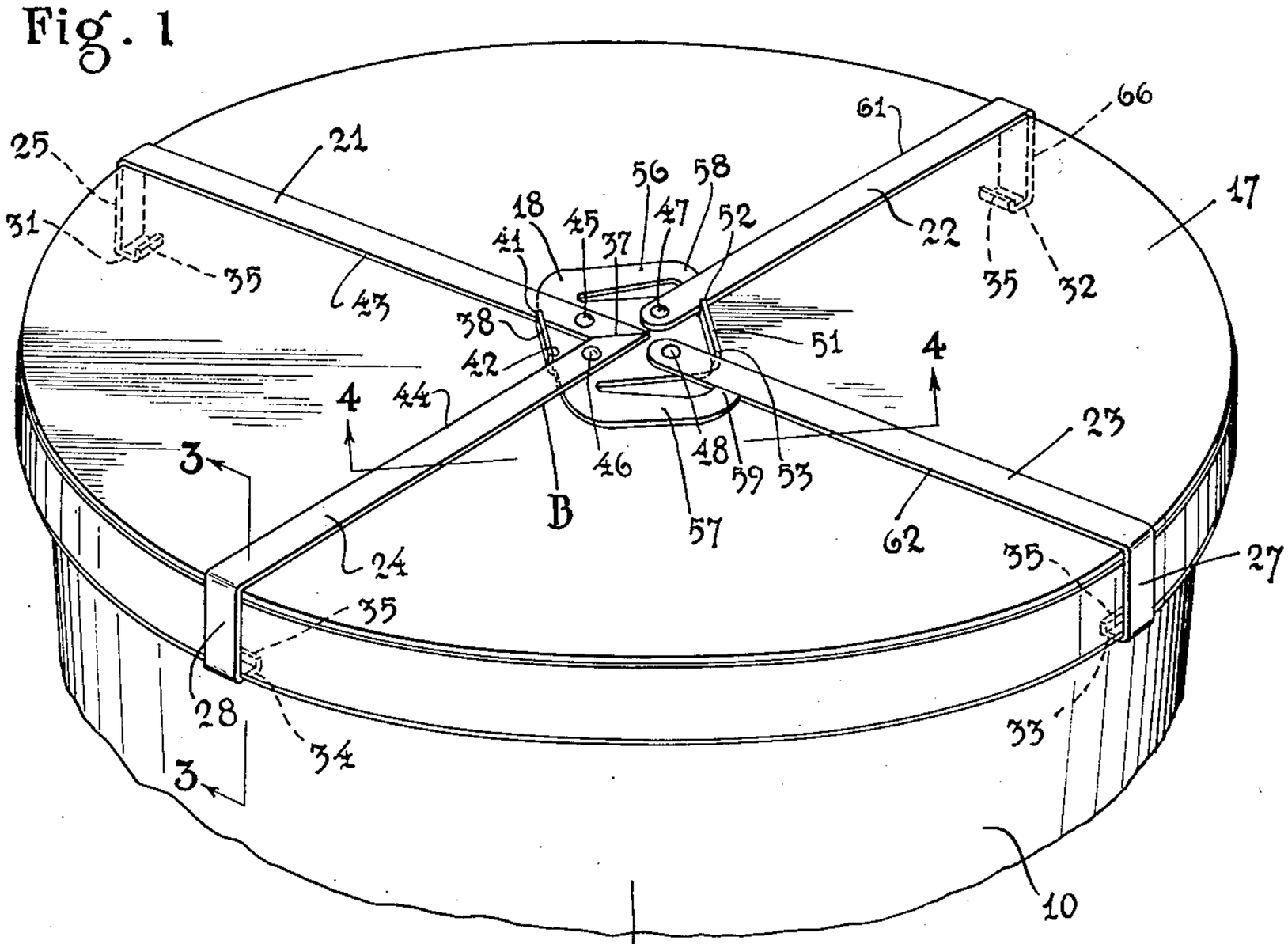
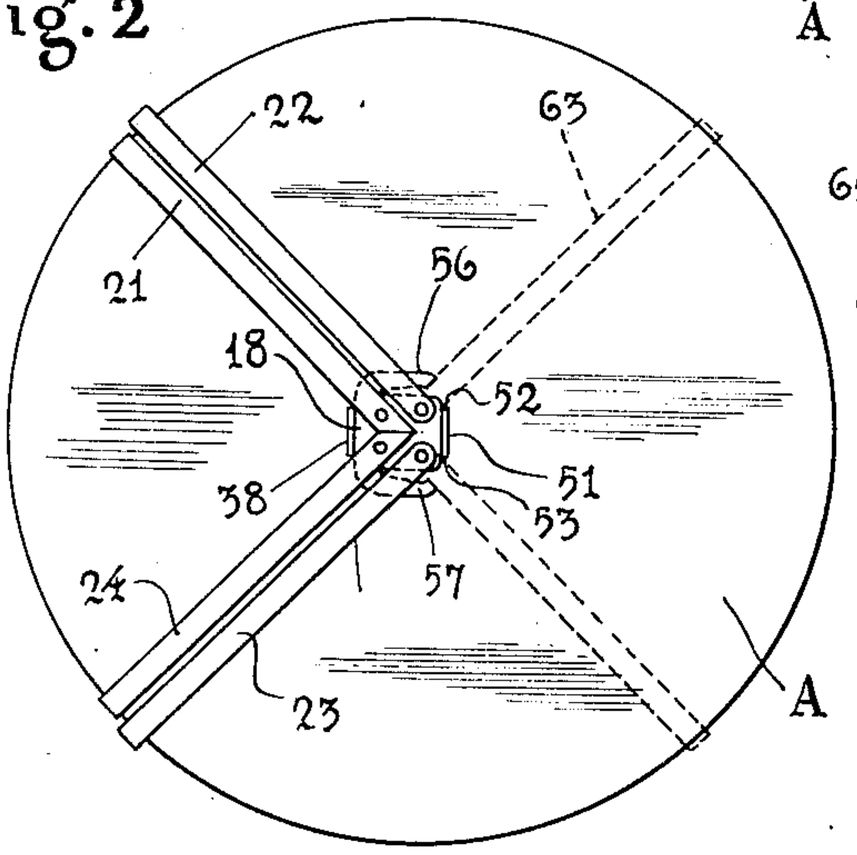


Fig. 2



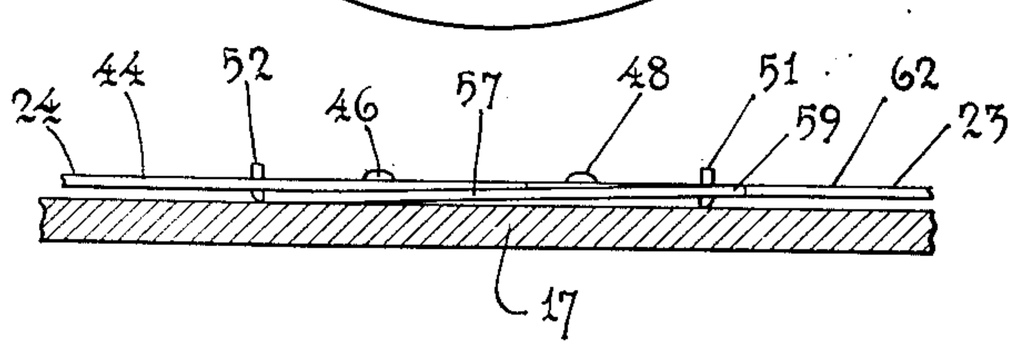


Fig. 4

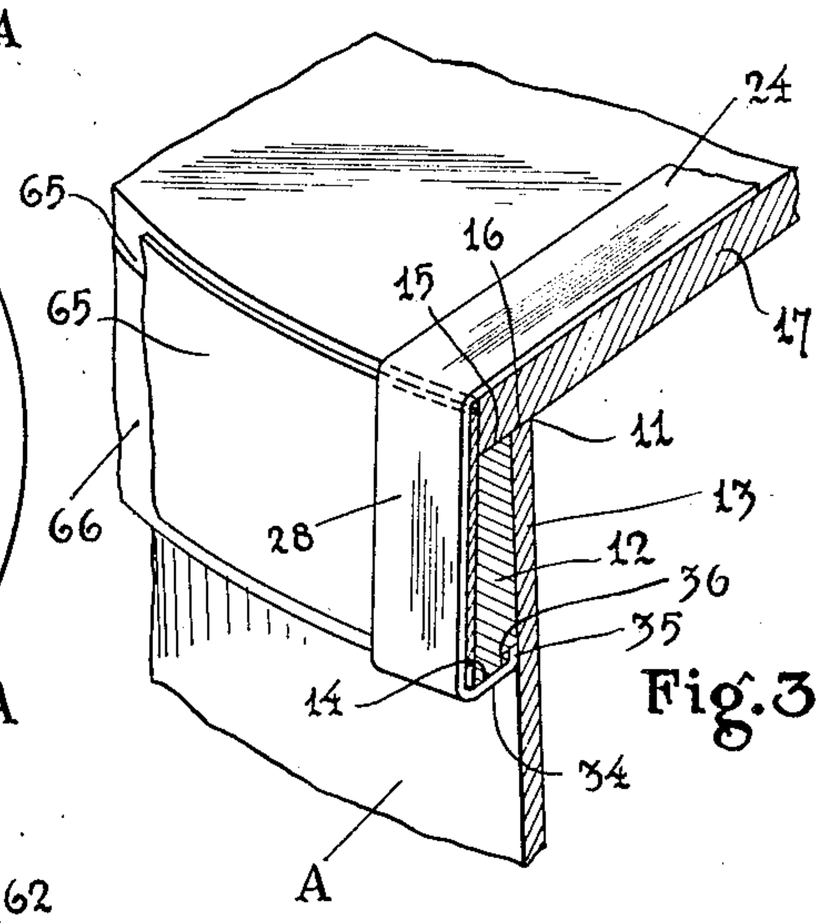


Fig. 3

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UNITED STATES PATENT OFFICE

2,071,663

COVER FASTENER

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Application June 3, 1935, Serial No. 24,657

16 Claims. (Cl. 229—5.7)

My invention relates to cover fasteners and has for an object to provide a fastener which is normally completely free from the container or cover and which may be quickly and readily applied to the container and cover when it is desired to close the container.

An object of the invention resides in constructing the container with a rim having a downwardly facing shoulder and in constructing the fastener with fingers for engagement with said shoulder to hold the cover applied to the container.

Another object of the invention resides in constructing the fastener with a plurality of radially extending arms overlying the upper surface of the cover and having downwardly extending reaches overlying the rim of the container and further having inwardly projecting fingers for engagement with the shoulder of the rim.

An object of the invention resides in providing a mounting plate to which all of the arms are attached.

A feature of the invention resides in pivoting one or more of the arms to the mounting plate so that when the said pivoted arms are swung about their pivots, the fingers thereof are brought to position such that the same may be readily disengaged from the shoulder.

Another object of the invention resides in pivoting said pivoted arms eccentrically with respect to the rim of the container so that the fingers are automatically brought out of engagement with the shoulders upon swinging of the arms.

An object of the invention resides in providing stops on the mounting plate for engagement with the pivoted arms to limit the movement of said arms in one direction.

Another object of the invention resides in immovably securing two of the arms to the mounting plate and in the specific construction for securing said arms thereto.

A still further object of the invention resides in providing latches on the mounting plate for engagement with said swinging arms to restrain swinging movement thereof when the arms are in closing position.

A feature of the invention resides in constructing the mounting plate from resilient material and in striking out the latches therefrom, which latches may be bent into the plane of movement of said arms to engage the same and restrain said arms from movement.

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 the upper portion of a container and a cover therefor showing an embodiment of my invention applied thereto.

Fig. 2 is a plan view of the structure shown in Fig. 1 and drawn to a smaller scale showing the pivoted arms of the fastener in altered position.

Fig. 3 is a fragmentary sectional detail view taken on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary sectional detail view taken on line 4—4 of Fig. 1.

In the use of containers and particularly containers constructed of paper or similar materials, it is most desirable that the container be free from metallic parts upon the interior thereof, particularly where the container is used for butter or other edible products. The present invention provides an extremely simple and practical fastener for a container of such type which requires no metal parts disposed upon the interior of the container and which can be quickly and readily applied to the container to hold the cover attached thereto.

For the purpose of illustration, I have shown a part only of a container A, the body of which is indicated by the reference numeral 10. This container is open at the top as indicated at 11 in Fig. 3 and is formed with a hoop 12 encircling the upper end 13 thereof. The body 10 of the container is preferably tapered and the hoop 12 is correspondingly tapered to fit the same. The hoop 12 serves as a rim for the open upper end 13 of the body 10 of the container and stiffens and reinforces the same. At the same time the hoop provides a downwardly facing shoulder 14 by means of which the cover is attached to the container as will be hereinafter more fully described. The upper edge 15 of the hoop 12 and the upper edge 16 of the portion 13 of body 10 of the container lie in the same common plane which is at right-angles to the axis of the container.

For closing the upper end of the container, a cover 17 is employed. This cover consists of a flat disc of paper, ply-wood or some other suitable material which rests freely upon the edges 15 and 16 of the hoop 12 and body 10 and which forms a closure for the open end 11 of said container. The cover 17 is held applied to the container by means of my improved fastener which I have designated in its entirety by the reference numeral B and which is best shown in Fig. 1. This fastener will now be described in detail.

The fastener B comprises a mounting plate 18 and four arms 21, 22, 23 and 24 which are at-

tached to said mounting plate and which extend radially outwardly therefrom. These arms are preferably constructed of band or strap material and are formed at their outer ends with depending reaches 25, 26, 27 and 28. The lower ends of these reaches are constructed with inwardly projecting fingers 31, 32, 33 and 34 which engage the shoulder 14 on the hoop or rim 12 and prevent upward movement of the cover 17. To insure the cover against displacement after the fastener has been applied, lugs 35 are formed on the fingers 31, 32, 33 and 34, which lugs extend upwardly from said fingers and are adapted to engage in a circumferential groove 36 formed in the shoulder 14 of hoop 12 situated in proximity to the outer surface of the body 10 of the container.

The inner ends of the two arms 21 and 24 are beveled as designated at 37 and the beveled portions thereof contact with one another. At one edge of the mounting plate 18 is provided an upturned lug 38 having abutments 41 and 42 which engage the edges 43 and 44 of the arms 21 and 24. Two rivets 45 and 46 pass through the arms 21 and 24 and the mounting plate 18 and hold the said arms attached to the mounting plate. These rivets are disposed intermediate the localities of contact of the beveled portions 37 of arms 21 and 24 and the locality of engagement of the shoulders 41 and 42 therewith. By means of this construction the arms are held immovably attached to the mounting plate 18 in radial diverging relation.

The two arms 22 and 23 are pivoted to the mounting plate 18 by means of two rivets 47 and 48. These rivets are preferably eccentric with respect to the center of the hoop 12 for a purpose to be presently described in detail and are so arranged that the arms 22 and 23 may swing from the positions shown in Fig. 2 to the position shown in Fig. 1 and vice versa. For the purpose of limiting the movement of the arms 22 and 23 a lug 51 is employed which is bent up from the body of the mounting plate 18. This lug is formed with shoulders 52 and 53 which engage the edges 54 and 55 of the arms 22 and 23. The lug 51 is of such proportions that when the arms 22 and 23 engage the shoulders thereof, the said arms are substantially in alignment with the arms 21 and 24. In such position, the fingers 31 and 32, 33 and 34 become substantially equally spaced about the periphery of the hoop or rim 12.

For holding the arms 22 and 23 in the position shown in Fig. 1, two latches 56 and 57 are provided which are struck out of the metal from which the mounting plate 18 is constructed. Mounting plate 18 is preferably formed of resilient material and the two latches 56 and 57 are bent so that the ends 58 and 59 thereof are adapted to engage the edges 61 and 62 of the arms 22 and 23. When the said latches are in the position shown in Fig. 1, arms 22 and 23 are held from movement. In such position the latches 56 and 57 are raised above the elevation of the upper surface of the cover 17, as shown in Fig. 4. When it is desired to removed the cover the latches 57 may be pressed downwardly until the same engage the upper surface of cover 17. In such position the ends 58 and 59 of said latches are free from the edges 61 and 62 of the arms 22 and 23 and the said arms may be swung over the latches 56 and 57 and moved toward the position shown in Fig. 2. When the arms are in such position, the fingers 32 and 33 are free from the shoulder 14 of hoop 12 and the fastener may be removed.

The use of the invention is as follows: Arms 22 and 23 are first swung into the position shown in Fig. 2. After the cover 17 has been placed upon the upper edges 15 and 16 of the hoop 12 and body 10 of container A, the fastener is applied by sliding the fingers 31 and 34 of arms 21 and 24 under the shoulder 14 of hoop 12. Due to the spring in the arms and due to the fact that the fastener may be applied in slightly inclined position, the lugs 35 readily slide under the shoulder 14 and into the groove 36. When the parts are thus disposed as shown in Fig. 2, either of the arms 21 or 23 may be next swung into its final position. It will be assumed that arm 22 is first moved. When this arm reaches the position shown in dotted lines at 63 in Fig. 2, said arm engages the shoulder 54 of lug 51. As soon as the arm reaches this position the end 58 of latch 56 springs upwardly and engages the edge 61 of said arm and holds said arm in position. During the swinging of the arm 22, the lug 35 of finger 32 slides beneath the shoulder 14. This is made possible through the natural resiliency of the metal from which the arm 22 is constructed and also due to the fact that the distance between the arm 22 and the finger 34 is slightly greater than the distance between the upper surface of the cover 17 and the shoulder 14 of hoop 12. When the arm 22 reaches the position shown in dotted lines at 163 in Fig. 2, the lug 35 snaps into the groove 36 and the arm 22 is then properly applied. Arm 23 is next moved in the same manner until the edge 55 thereof engages shoulder 53 on lug 51. The end 59 of latch 57 then springs up and engages edge 62 of said arm, holding the said arm in the same manner as the other arm. The fastener is then properly applied and the cover 17 is rigidly held attached to the container.

For the shipment of certain commodities to foreign countries, it becomes necessary to air-seal the package in which the commodity is contained. The present invention permits of sealing the container to exclude the entrance of air thereto. This is accomplished by running a gummed paper tape 65 about the outer surface 66 of the hoop 12 and the outer edge 67 of the cover 17 before the fastener is applied. The manner of applying the tape is best shown in Fig. 3. After the tape has been affixed, the fastener B is applied in the manner previously described. It will readily become apparent that when the tape 65 is used that the container is perfectly sealed and that the contents thereof protected from the atmosphere.

My invention is highly meritorious in that a fastener is provided for securing the cover to the container which has no metal parts projecting into the interior of the container. The fastener is completely free from the container, permitting the filling of the container with the desired commodity without hindrance. The fastener when desired for use is readily and quickly applied. Whenever desired, the fastener may be removed to permit of inspection of the contents of the container. Thereafter the same fastener may again be reapplied. Fasteners constructed in accordance with my invention may be used repeatedly and the cost per shipment of the commodity is hence greatly reduced. My invention is exceedingly simple in construction and may be manufactured at a nominal cost.

Changes in the specific form of my invention, as herein disclosed, 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 the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, four arms arranged substantially radially, two of said arms being immovably attached to said mounting plate, means for pivoting the others of said arms to the mounting plate, said last-named arms being swingable from positions substantially in continuation of said immovable arms to positions substantially parallel therewith, means on said arms and container for holding the cover applied to the container, said means being disengageable upon swinging of said last named arms.

2. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, four arms arranged substantially radially, two of said arms being immovably attached to said mounting plate, means for pivoting the other of said arms to the mounting plate, said last-named arms being swingable from positions substantially in continuation of said immovable arms to positions substantially parallel therewith, means on said arms and container for holding the cover applied to the container, said means being disengageable upon swinging of said pivoted arms, and means on said mounting plate for engaging said swingable arms to hold the same from movement.

3. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, a plurality of arms secured to said mounting plate, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into and out of engagement with said fastening means upon swinging of said pivoted arm, and means on said plate for engagement with said pivoted arm to hold said complemental fastening means in engagement with said fastening means.

4. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, a plurality of arms secured to said mounting plate, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into and out of engagement with said fastening means upon swinging of said pivoted arm, and a latch formed on said mounting plate and engaging said arm for holding said complemental fastening means in engagement with said fastening means.

5. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, a plurality of arms secured to said mounting plate, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into and out of engagement with said fastening means upon swinging of the pivoted arm, said mounting plate being constructed of resilient material and a latch struck out of said mounting plate and having the end thereof projecting into the plane of movement of said pivoted arm to hold the complemental fastening means in engagement with the fastening means, said latch being movable out of the plane of the pivoted arm to clear said arm when the arm is being swung about its pivot.

6. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, a plurality of arms secured to said mounting plate, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into and out of engagement with said fastening means upon swinging of the pivoted arm, and a stop formed on said mounting plate for limiting the movement of said arm in one direction when the complemental fastening means becomes engaged with the fastening means.

7. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, a plurality of arms secured to said mounting plate, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into and out of engagement with said fastening means upon swinging of the pivoted arm, a stop formed on said mounting plate for limiting the movement of said arm in one direction when the complemental fastening means becomes engaged with the fastening means, and a latch for engagement with the arm to restrain movement thereof in the other direction when said complemental fastening means becomes disengaged with said fastening means.

8. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, a plurality of arms secured to said mounting plate, at different localities thereon and being all at their localities of attachment in the same plane, one of said arms being pivoted to said plate, fastening means on the container, and complemental fastening means on each arm, said complemental fastening means on the pivoted arm being movable into a position to free the fastener from the container.

9. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising an intermediate part, a plurality of arms issuing outwardly from said intermediate part, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into a position to free the fastener from the container, and means on said intermediate part for engagement with said pivoted arm to hold said complemental fastening means in engagement with said fastening means.

10. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in

place, said fastener comprising an intermediate part, a plurality of arms issuing outwardly from said intermediate part, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into a position to free the fastener from the container, and a latch formed on said intermediate part and engaging said pivoted arm for holding said complemental fastening means in engagement with said fastening means.

11. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising an intermediate part, a plurality of arms issuing outwardly from said intermediate part, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into a position to free the fastener from the container, said intermediate part being constructed of resilient material, and a latch struck out of said intermediate part and having the end thereof projecting into the plane of movement of said pivoted arm to hold the complemental fastening means in engagement with the fastening means, said latch being movable out of the plane of the pivoted arm to clear said arm when the arm is being swung about its pivot.

12. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising an intermediate part, a plurality of arms issuing outwardly from said intermediate part, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into a position to free the fastener from the container, a stop formed on said intermediate part for limiting the movement of said arm in one direction when the complemental fastening means becomes engaged with the fastening means.

13. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising an intermediate part, a plurality of arms issuing outwardly from said intermediate part, one of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arm being movable into a position to free the fastener from the container, a stop formed on said intermediate part for limiting the movement of said arm in one direction when the complemental fastening means becomes engaged with the fastening means, and a latch for engagement with said arms to restrain movement thereof in the other direction.

14. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising an intermediate part, a plurality of arms issuing outwardly from said intermediate part, two of said arms being pivoted thereto, fastening means on the container and complemental fastening means on each of the arms, said complemental fastening means on the pivoted arms being movable into a position to free the fastener from the container, a lug on said intermediate portion issuing upwardly between said pivoted arms, and serving to limit the movement of both of the pivoted arms toward one another.

15. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate substantially rectangular in form, four arms issuing outwardly from said mounting plate near the corners thereof, two of the arms being pivoted to the mounting plate, spring latches along two opposite edges of the mounting plate for engagement with the pivoted arms to restrain movement thereof in one direction, and means along the included edge nearest the pivoted arms for engagement with said arms to limit movement of said arms in the opposite direction.

16. In combination with a container open at the top, a cover for closing the open end of the container, a fastener for holding the cover in place, said fastener comprising a mounting plate, a plurality of arms attached to said mounting plate, fastening means acting between all of said arms and said container for holding the cover attached to the container, two of said arms diverging and having contacting portions near the centers thereof, shoulders formed on said mounting plate and extending upwardly therefrom and engaging said denoted arms at the facing edges thereof, and attaching means for securing the denoted arms to said plate, said attaching means being disposed between the points of contact of said denoted arms and said shoulders, another of said arms being pivoted to the mounting plate and operating upon swinging movement to disengage the fastening means.

SWAN SMITH.