

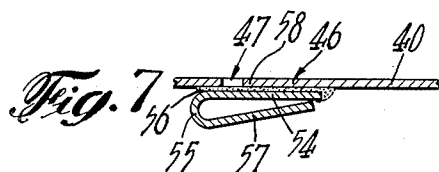
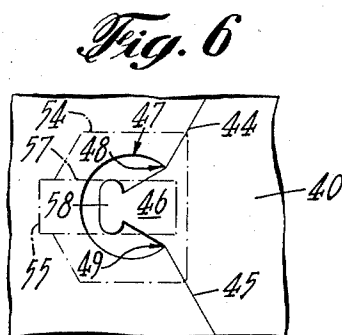
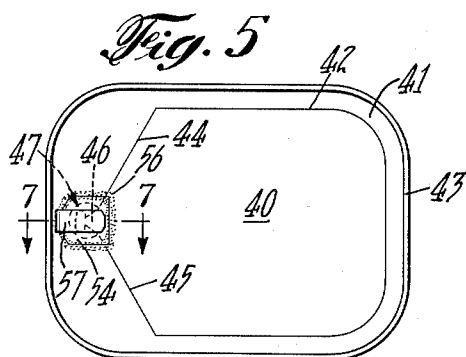
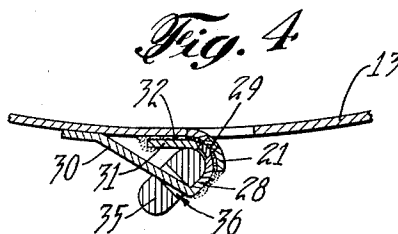
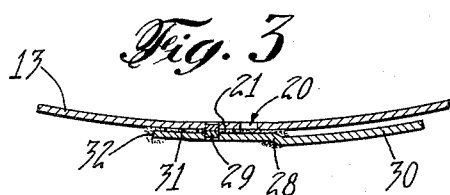
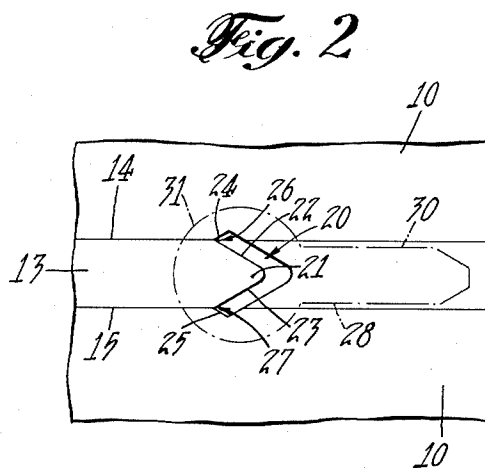
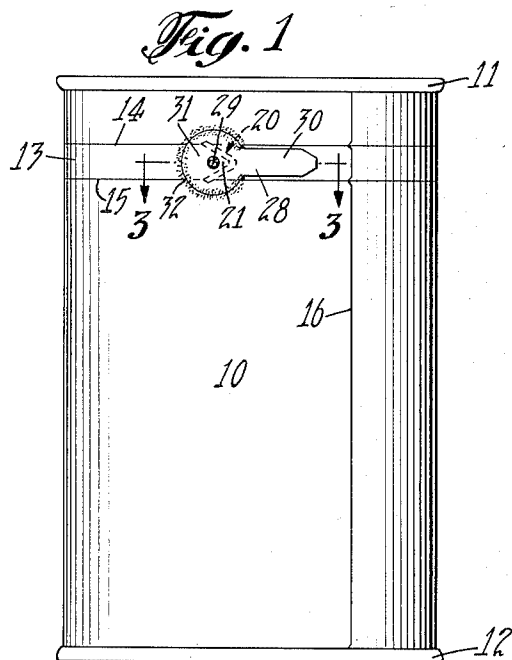
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TEAR OPEN CONTAINER WITH SEPARATE TONGUE

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2,753,075

TEAR OPEN CONTAINER WITH SEPARATE TONGUE

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1 Claim. (Cl. 220—54)

The present invention relates to tear open containers, and has particular reference to a container provided with a separate, external, auxiliary tear starting tongue which is secured to an integral tongue formed in one of the walls of the container and which auxiliary tongue also serves as a sealing patch to cover a cut or aperture setting off the integral tongue.

An object of the invention is to provide a container of the above character in which the integral tearing tongue does not protrude beyond the regular outline of the blank from which the container is formed in order to avoid the necessity of using an oversized blank, thus effecting a saving of scarce material.

Another object of the invention is to provide such a container in which the free sides of the integral tongue are spaced from the surrounding container wall in order to keep the tongue from sticking in or to the wall because of the presence of burrs or rough edges which frequently are formed during the manufacturing operations.

Still another object is to provide a scored, tear open container wherein an aperture which is cut in a wall of the container to set off a tearing tongue integral with the wall, creates notches at the base of the tongue which prevent the tongue from tearing past the score lines and thus insures reliability of operation.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

Figure 1 is a side elevation of a container embodying the present invention;

Fig. 2 is an enlarged fragmentary elevation of a portion of the container shown in Fig. 1, showing the integral tongue formed therein and showing in dot and dash lines the outline of the separate tongue and its position relative to the integral tongue;

Fig. 3 is an enlarged section taken substantially along the line 3—3 in Fig. 1, parts being broken away;

Fig. 4 is a section similar to Fig. 3 but showing how the integral tongue winds off with the auxiliary tongue at the start of the opening operation;

Fig. 5 is a plan view of a modified form of the invention as embodied in the end wall of a sardine type container;

Fig. 6 is a fragmentary elevation, similar to Fig. 2, of the modified form shown in Fig. 5; and

Fig. 7 is an enlarged sectional detail taken substantially along the line 7—7 in Fig. 5, parts being broken away.

As a preferred or exemplary but not limiting embodiment of the present invention, Figure 1 illustrates a hermetically sealed can comprising a cylindrical body 10 having a top and a bottom end member secured thereto in suitable end seams 11 and 12 respectively.

A tearing strip 13 formed as an integral part of the side wall of the body 10 is defined by a pair of spaced and parallel score lines 14, 15 which encircle the upper

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portion of the body 10 and extend in overlapping relationship through a can body side seam 16. The side seam 16 may be of any conventional type but preferably is of the lap seam variety in the area at which it is crossed by the tearing strip 13.

As best seen in Fig. 2, the body wall 10 is cut through and a portion of it is removed to create a substantially V-shaped aperture or opening 20 which extends completely across the tearing strip 13 and sets off a comparatively short integral tongue or tab 21 having equiangular sides or cut edges 22, 23 which run into and terminate at their bases in the score lines 14, 15. The short sides 24, 25 of the aperture 20 preferably extend at acute angles to the adjoining sides 22, 23 of the tongue 21 thus forming notches 26, 27, the vertices of which are disposed adjacent the score lines 14, 15.

In order to make it possible to open the container by tearing out the strip 13 along the score lines 14, 15, a separate, auxiliary tongue member 28 is inseparably and permanently secured to the integral tongue 21 in a spot weld 29 to form a tongue extension having a free end 30 which is easily engageable by any conventional type of can opening key. The welded end of the separate tongue 28 is enlarged to form a sealing patch 31 which completely covers not only the integral tongue 21 but also the V-shaped aperture 20 and extends beyond the periphery of the latter. A thin bonding layer of solder 32 or other suitable sealing material is interposed between the mutually opposed surfaces of the body wall 10 and the patch 31 and extends completely around the aperture 20 to hermetically seal off the same and effectively prevent leakage therethrough. The solder 32 preferably extends between the integral tongue 21 and the patch 31 and thus also serves to more securely attach the separate tongue 28 to the integral tongue 21.

In actual practice the spot weld 29 is preferably made while the body wall blank is still in the flat and holds the separate tongue 28 in place while the solder bond is being made. The free end 30 of the auxiliary tongue 28 is preferably offset or turned slightly outwardly as shown in Fig. 3 in order to prevent the solder 32 from inadvertently spreading beneath it and bonding it to the body wall 10.

To open the container, a conventional can opening key 35 formed with a tongue receiving slot 36 (see Fig. 4) is slipped over the free unsoldered end 30 of the separate auxiliary tongue 28 and is twisted in a clockwise direction (as viewed in Fig. 4) to wind the tongue around the key. This winding action breaks the solder bond 32 between the sealing patch 31 and the rigid body wall 10 and thus peels and separates the patch from the wall. The integral tongue 21, however, is flexible enough to bend outwardly with the separate tongue 28 and consequently remains attached to it and is wound up with it (see Fig. 4). As a result, the tearing strip 13 starts to tear along the score lines 14, 15. Continued turning of the key 35 then completely removes the tearing strip 13 and opens the container.

It will be seen that the fact that the V-shaped aperture 20 creates a free space around the cut edges 22, 23 of the integral tongue 21, adds substantially to the reliability of this opening operation by eliminating the possibility of these cut edges being stuck or wedged against the oppositely disposed cut edges of the body wall 10 because of the presence of burrs which often are produced in metal cutting operations. Furthermore, the notches 26, 27 formed by the aperture 20 insure the proper tearing of the strip 13 by preventing the integral tongue 21 from running or tearing past the score lines 14, 15, as it is being wound up to separate the tearing strip 13 from the can body wall.

Figures 5, 6 and 7 illustrate a slightly modified form of the invention as applied to a rectangular sardine type container. In this construction, a removable tear out

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portion 40 of substantial area is defined in a rectangular end wall 41 of the container by a score line 42 which runs parallel to and is spaced inwardly of the end seam 43, and by two shorter converging score lines 44, 45. The score lines 44, 45 terminate at the base of a flexible integral tongue 46 which is set off in the end wall 41 by a substantially crescent shaped opening 47, the ends of which preferably form acutely angled notches 48, 49 which lead into the short angular score lines 44, 45.

The opening 47 is sealed off by a sealing patch 54 which forms one end of a separate tongue 55 and is secured to the integral tongue 46 and to end wall 41 around the opening 47 in a solder bond 56. The separate tongue 55 also includes a free key engaging portion 57. In this modified form of the invention, the separate tongue 55 need not be spot welded to the integral tongue 46, the solder bond 56 being of sufficient strength to prevent separation of the tongues during the opening operation. In order to increase the areas of the mutually soldered surfaces of the tongues, and thus the strength of the solder bond 56 between them, the integral tongue 46 is formed with an enlarged end or knob 58.

The integral tongue 46 is located closely adjacent to the end seam 43 in order to make the scored removable portion 40 as large as possible. As a result, the separate tongue 55 is preferably bent back upon itself, as best seen in Fig. 7, so that its free, key engaging end 57 is disposed inwardly of the end seam 43. In opening the container, this free end 57 of the separate tongue 55 is lifted by the ultimate consumer and is engaged by an opening key (not shown) which is then twisted to completely tear out the removable portion 40 along the score lines 42, 44, 45 and thus provide access to the contents of the container.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

A sheet metal tear open container having a removable

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portion disposed within and defined by spaced score lines in a wall thereof, said removable wall portion terminating in a short integral tearing tongue cut from and disposed in the plane of said wall, said tongue being of insufficient length for winding engagement thereof with a slotted opening key, an aperture of substantial V-shape in said container wall defining and surrounding said integral tongue to space it entirely away from the cut wall edge to permit the tongue to be lifted out of the plane of the wall without sticking or wedging thereagainst due to metal burrs or rough edges resulting from cutting the tongue from the wall metal, opposite end portions of said aperture constituting spaced notches having their respective vertices disposed coincident with said score lines, and a separate auxiliary tongue overlying and permanently secured at its inner end to said integral tongue to constitute an elongated extension of the latter engageable at its outer free end with said opening key, said inner auxiliary tongue end being enlarged to constitute a sealing patch overlying the exterior surface of said wall, the peripheral edge of said patch traversing said score lines and surrounding said aperture in spaced relation thereto, said peripheral patch edge being bonded to said removable portion and to said exterior wall surface to completely cover and seal said aperture, said auxiliary tongue being liftable by said key out of the plane of the container wall without sticking or wedging so as to initiate rupture of the wall along said score lines, said notches preventing said integral tongue from tearing past said score lines during such rupturing operation.

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