

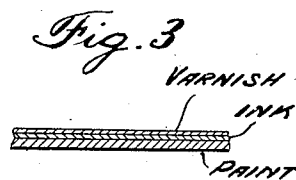
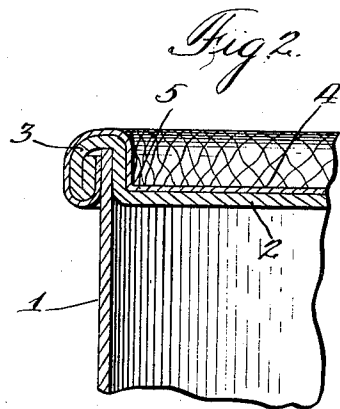
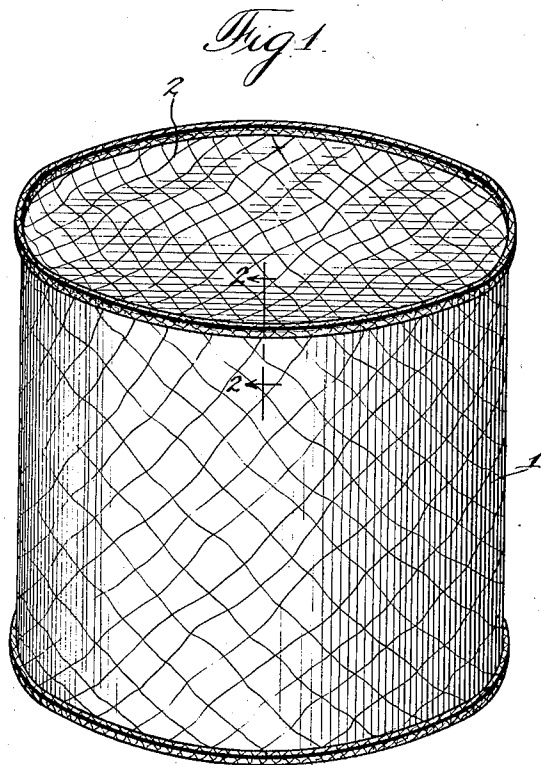
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TAMPERPROOF CONTAINER

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## UNITED STATES PATENT OFFICE

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## TAMPERPROOF CONTAINER

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3 Claims. (Cl. 220—1)

This invention relates to tamper-proof containers and more particularly to sealed containers, such as tin cans, for containing saccharin or other valuable material.

5 Saccharin is usually sealed for shipment in comparatively small tin cans which may be and usually are cylindrical and of relatively small size. However, my invention is not limited to cylindrical cans because cans of other shapes, square, ob-  
10 long, rectangular, etc., are equally adapted to the practice of my invention.

The cans preferably comprise a cylindrical body portion and disc-like ends which are seamed to the cylindrical portions. The seams form a  
15 raised bead around the periphery of the ends of the cans, and the cans are sealed by pressing these seams snugly onto the cylindrical body portion of the can. The beads may be soldered if desired. However, when the cans are used  
20 for saccharin and similar materials, the beads are usually not soldered.

Cans of the above described type, when filled with saccharin or other valuable material, are often tampered with in transit, and it has been  
25 found that the method of tampering with the cans has been to cut the bottom or top out of the can with some very sharp instrument. The end of the can is usually cut very close to the bead whereby the tin or other material of the can is  
30 not distorted. The saccharin is then removed and the can is refilled with some inferior product, and the cut-out section is then very cleverly replaced and soldered in position in such a manner that the tampering therewith cannot be detected  
35 except by the most careful examination. The ends of the cans are usually made of ordinary uncoated tin plate, and as only comparatively low temperatures are required for soldering in the cut-out section, the metal is not discolored or  
40 otherwise disfigured, and the tampering therefore cannot be easily detected.

It is an object of the present invention to provide a container of the type described which will be substantially completely tamper-proof.

45 A further object is the provision of a tamper-proof container in which those portions, which ordinarily may be cut-out and replaced by soldering, are completely coated with a thin layer of material providing a film-like surface which  
50 will be so discolored, distorted or otherwise disfigured by the application of a comparatively low temperature thereto, that any tampering with the container may be easily detected.

Further objects will be apparent from the specification and the appended claims.

In the drawing:

Figure 1 is a perspective view of the usual sealed metal container used for the shipment of saccharin and similar products.

Fig. 2 is a greatly enlarged fragmentary sectional detail taken on a line corresponding to line 2—2 of Fig. 1, and illustrates the usual seam whereby the ends are secured to the body portion of the container.

Fig. 3 is an enlarged sectional view through a suitable lithographic coating comprising paint, ink and varnish.

Referring to the drawing in detail, the particular embodiment illustrated comprises a container having a cylindrical body portion 1 and  
15 disc-like ends 2. The entire container is preferably made of thin tin plate or similar material, and the body portion may be a plain tubular member formed by rolling or bending a sheet plate and seaming the ends together. The  
20 discs 2 forming the ends of the container, are each provided with a raised bead 3 formed thereon, and this bead is pressed snugly around the ends of the cylindrical portion thereby sealing the container.

The end discs 2 have heretofore been formed of ordinary tin plate with no coating or added decoration of any kind thereon. In the present invention, however, the tin plate, of which the  
30 ends 2 are formed, is lithographed or otherwise coated with a suitable material forming a film 4 which adheres strongly thereto, and this material is such that it may be carbonized or otherwise disfigured, discolored or distorted by the application of a comparatively low temperature, preferably not greater than 170°, thereto.

In practicing the instant invention, the tin plate, of which the ends are made, is preferably lithographed or otherwise coated with a suitable  
40 heat sensitive film before the end discs 2 are formed. Therefore, after the discs are formed and sealed onto the body portion of the container, the end plates, including the seams, retain their lithographed coating intact, and any tampering  
45 with the end plates, such as cutting through the sheet metal, even though it be done with an extremely sharp instrument, will disrupt this coating, and any attempt to solder the cut edges together will so discolor or distort or otherwise  
50 disfigure the coating that the tampering is easily detected.

As previously stated, the coating applied to the end plates is preferably a material which is easily discolored or disfigured by low temperatures, and in order that this disfigured coating  
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may not be replaced by ordinary methods, the coating may provide a surface film having a low temperature fusing point and preferably having a somewhat intricate design therein whereby it is substantially impossible to reconstruct either the design or the film after it has been once tampered with.

The designs used are preferably decorative and fusible or disfigurable at low temperatures, and, as soft solder ordinarily used with tin, of which it is usually, at least in part, composed, is fusible at the same or a slightly higher temperature, and it is impossible to tamper with the cans without such tampering being easily detected.

In order to replace a part which has been removed from the container, it is necessary to carefully replace the removed portion so that the cut edges are in alignment before soldering. The application of heat to the cut edges must then be accomplished by applying heat to the lithographed coating as the metal itself is inaccessible. It is necessary, therefore, to apply a somewhat higher temperature to the lithographed surface than would be necessary if the heat could be applied directly to the metal, and this application of heat directly to the outer surface of the film and the necessity for the heat to be conducted through the film to the metal at a sufficiently high temperature to fuse the solder, causes a discoloration or disfiguration of the heat sensitive film over comparatively large areas. In fact, the film is often partially or entirely removed adjacent the cut edge.

It is possible, of course, to prepare lithographic material, such as varnish and ink, which will withstand considerable heat. However, in practicing this invention, the varnish and ink are of the type disfigurable by the application of a temperature thereto not substantially greater than the fusing point of soft solder. The lithograph material may comprise a coating of heat sensitive paint, printing ink and varnish. This may be applied substantially as indicated in Fig. 3.

It has been found that if the lithographic film is white or of some comparatively light color, the contrast of the discolored or disfigured film adjacent the point of heat application is very noticeable.

The end of the container is usually removed by cutting the material closely adjacent the bead 3 and approximately at the point indicated by the reference character 5 (Fig. 2). It is therefore desirable that the surface adjacent the bead, as well as the bead itself, be coated with a film of comparatively light color.

It will be understood that even if the fusing point or disfiguration temperature of the film is somewhat higher than the fusion point of the solder, the tampered part cannot be soldered in place as the film covers the surface of the metal closely adjacent the cut edge and it is impossible to flow solder thereon without first removing the film, and the tampering is then easily detected.

Having thus described this invention, what is claimed and desired to be secured by Letters Patent is:

1. A tamper-proof container for the purpose described comprising a sheet metal can having a tubular portion and disc-like ends seamed to said tubular portion, all accessible surface of the outside of said ends being covered with a close meshed pattern lithographed thereon with lithographing material sensitive to disfigurement by heat approximating the fusing point of soft solder.

2. A tamper-proof container comprising a body portion and end plates secured thereto to make a tight container, at least said end plates having their entire outer surface covered with a coating of heat sensitive paint, a coating of printing ink superimposed thereupon, and a top layer of varnish, the whole constituting a lithographic coating that is heat sensitive at a temperature approximating the lowest fusing point of solder usable for sealing a puncture in said container.

3. A tamper-proof container comprising a body portion and end plates secured thereto to form a tight container, said end plates having their entire outer surface covered with a lithographic coating comprising paint, printing ink, and varnish, said coating being heat sensitive at a temperature approximating the lowest point of solder usable for sealing a puncture in said container.

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