

June 17, 1924.

D. J. RICHARDSON
SELF LOCKING CONTAINER
Filed Sept. 13, 1922

1,497,879

Fig. 1

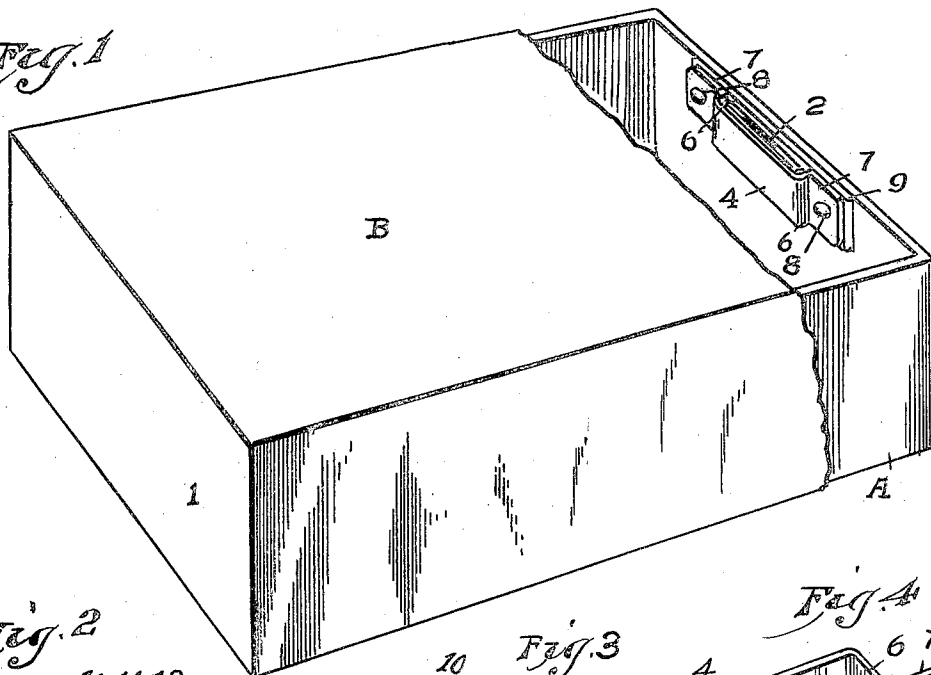


Fig. 2

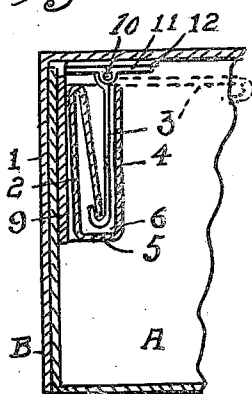


Fig. 3

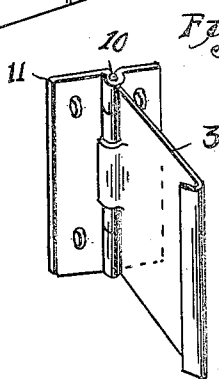


Fig. 4

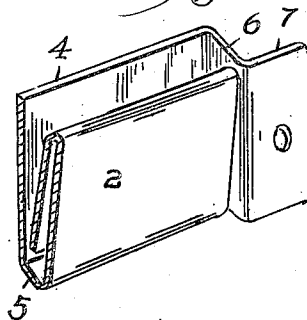
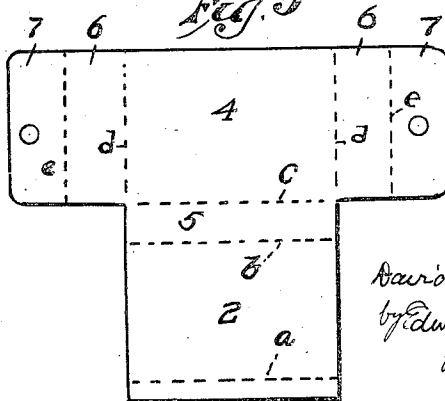


Fig. 5



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UNITED STATES PATENT OFFICE.

DAVID J. RICHARDSON, OF PITTSBURGH, PENNSYLVANIA.

SELF-LOCKING CONTAINER.

Application filed September 13, 1922. Serial No. 587,913.

To all whom it may concern:

Be it known that I, DAVID J. RICHARDSON, a citizen of the United States, and residing in the city of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered new, useful, and Improved Self-Locking Containers, of which the following is a specification.

My invention consists in new and useful improvements in self-locking containers for the mailing or otherwise shipping of goods and articles of value.

More particularly, my invention relates to self-locking containers which must be mutilated before access may be had to their interiors, so that their contents may not be tampered with by unauthorized persons without at once advertising the fact by the mutilated condition of the container.

One of the objects which I have in view is the provision of efficient locking means which, when the goods or articles are placed in the box and the lid is put on, will automatically lock the container shut in such a manner that it cannot be opened and access had to its contents without seriously mutilating the container and permanently destroying the locking means.

For the accomplishment of this purpose I provide a container which is comprised of two main elements, a box of suitable dimensions to properly contain the goods or articles to be shipped, and a lid provided with a continuous, depending perimetral flange which fits down over the walls of the box. To the inner face of the end walls of the box, and also, if desired, of the side walls of the box, and near their top I firmly attach spring metal hook members with their relatively long hook ends disposed toward the interior of the box and extending toward its bottom. Preferably surrounding the ends and the front of each of said hook members is a sheet metal guard which prevents tampering with the hook member, and also acts as a guide for the coacting hook members of the lid. The lid is provided with an equal number of spring metal hook members adapted to be engaged with the hook members of the box when the lid is in place, said lid hook members being attached firmly to the top of the box and depending in such a manner that when

the lid is pushed down onto the box, the lid hook members will be inserted down between the box hook members and their guides, compressing the two coacting hook members until their hook ends spring into locking engagement.

I show a new and improved combined box hook member, and guard and guide structure which may be advantageously cut and bent up from sheet metal.

Heretofore when the lid is placed on a self-locking container, it is automatically locked in place, and the container or lid must be mutilated before the container can be opened.

The result is that when the manufacturer delivers an order of self-locking containers to a customer the lids and boxes must be packed separately, or the locking means are supplied separately and must be installed by the customer before he uses the containers. The one method increases shipping bulk and thus adds to the freight charges, while the other method imposes duties upon the customer which he is frequently not equipped to perform properly. It would be of the greatest advantage for the manufacturer to ship the containers with the lids fitted on the boxes but unlocked, and the smaller sizes of containers nested in the larger sizes.

Therefore, a second object which I have in view is the provision of means whereby, when desired, the hook members may be prevented from interengaging and locking together when the lid is placed on the box.

I accomplish this purpose by mounting one of each pair of coacting hook members in such a way that it may be moved to one side, so as not to interengage with the other hook member when the lid is placed on the box.

My preferred method of accomplishing this end is by hinging the lid hook members to the lid so that they may be turned up flat against the lid to clear the box hook members when the lid is placed on the box.

Other novel features of construction and arrangement of parts will appear from the following description.

In the accompanying drawings, which are, however, merely intended to illustrate the principles of my invention without limit-

ing the scope of the latter to the exact construction shown, Fig. 1 is a perspective of a self-locking container embodying the principles of my invention, the lid being partially broken away to show one of the box hook members and its guide; Fig. 2 is a broken sectional view of the container showing the coacting and interlocked hook members of the box and lid; Fig. 3 is an enlarged perspective of one of the lid hook members turned at an angle to its position in Fig. 2; Fig. 4 is a broken perspective of one of the box hook members and guide structures, and Fig. 5 is a plan view of the metal blank which is bent up to form the same.

The following is a description of the drawings.

The container proper is composed of two main elements, the box A and the lid B, the latter being provided with a continuous, depending perimetral flange 1 which fits down over the side and end walls of the box A when the lid is in place.

The inner faces of the end walls of the box A, and also the side walls thereof if so desired, are provided near their top edges with spring metal locking hooks 2 with their relatively long hooked ends turned down and facing the interior of the box.

Depending from the top of the lid B are a corresponding number of lid hook members 3 having their relatively short hooked ends lowermost and faced outwardly toward the edges of the lid.

When the lid is placed on the box the pairs of box and lid hook members spring into interlocking engagement, as shown in Fig. 2.

To properly direct the hook members into interlocking engagement, I provide the guides 4, one of which is parallel with each of the box hook members and sufficiently spaced inwardly therefrom to compress the coacting hook members together as the lid hook member is forced down between the guide and the box hook member, such compression causing their hooked ends to spring into the interlocking engagement shown in Fig. 2 when the lid is forced into place on the box.

I prefer to form the box hook members 2 integral with their guides 4 by cutting or stamping a blank substantially as shown in Fig. 5, the dotted line *a* indicating the bend which forms the lip of the hook member 2 while the dotted lines *b* and *c* show the lines of bends which form the bottom 5 of the combined structure which connects the hook member 2 with the guide 4. The dotted lines *d* and *e* show the lines of bends which form the end walls 6, and the ears 7 which are pierced for rivets 8 by means of which the combined structure may be riveted to the wall of the box, or, as shown in the

drawings, to a wooden or other cleat 9 which may be glued or otherwise secured to the wall of the box.

To enable the lid hook members 3 to be swung aside, as shown in dotted lines in Fig. 2, so as not to engage with the box hook member 2 when the lid is put in place, I hinge the shank of the hook member 3, as at 10, to a base-plate 11 which is riveted or otherwise secured to the lid. In the drawings I have shown the base-plate 11 riveted to a wooden or other cleat 12 which is glued or otherwise secured to the lid.

By swinging the lid hook members 3 up out of the way, as shown in dotted lines in Fig. 2, the lid is prevented from being locked into place when put on the box, thus enabling the box to be delivered by the manufacturer to a customer, with the lid on, and with smaller sizes of containers nested inside. The hinge connection 10 is preferably sufficiently tight and stiff to hold the hook members up against the lid when they are turned up.

If desired an inner box may be used to contain the goods or articles to be shipped, but the same is not necessary, as access may not be had to the locking members when the container has been closed and locked, without mutilating the container so seriously as to advertise the fact that it has been tampered with to all by whom it is seen.

The inclosing of the box hook members 2 by the guides 4, the bottoms 5, and the end walls 6 prevents the contents of the container from coming into contact with or interfering with the action of the hook members in locking the container. It also adapts the container for use in shipping loose or bulk goods such as whole or ground coffee and the like.

The guide also insures efficient interengagement between the coacting hook members, holding them in proper alinement and resilient contact and engagement.

What I desire to claim is:—

1. In a self-locking container for the purpose described, the combination of a box, a lid provided with a depending flange adapted to fit the exterior wall of the box when the lid is placed in position, and automatic locking means for securing said lid in place, said locking means comprising a resilient metal hook attached to the wall of the box and depending therein with its hooked end facing away from the wall of the box, a second hook member attached to the lid and depending therein with its hooked end in a position reverse to that of the hooked end of the first mentioned hook, and a transversely disposed guide attached to the wall of the box and extending in front of the first mentioned hook, said guide being engaged by the second named hook as the lid is placed down on the box and acting to force and

lock the said second named hook into spring engagement with the first named hook.

2. In a self-locking container for the purpose described, the combination of a box, a lid provided with a depending flange adapted to fit the exterior wall of the box when the lid is placed in position, and automatic locking means for securing said lid in place, said locking means comprising a resilient metal hook attached to the wall of the box and depending therein with its hooked end facing away from the wall of the box, a second hook member attached to the lid and depending therein with its hooked end in a position reverse to that of the hooked end of the first mentioned hook, and a transversely disposed guide attached to the wall of the box and extending in front of the first mentioned hook, said guide being engaged by the second named hook as the lid is placed down on the box and acting to force and lock the said second named hook into spring engagement with the first named hook, said second named hook being pivotally attached to the lid so that it may be swung aside to prevent its engagement with the first named hook when the lid is placed in position for the purpose described.

3. In a self-locking container for the purpose described, the combination of a box, a lid provided with a depending flange adapted to fit the exterior of the box, and automatic locking means for securing the lid on the box member and comprising a resilient hook member mounted on the inner wall of the box and extending upwardly and inwardly thereof, a second hook member depending from the lid and faced toward the flange of the latter, said second named hook member being adapted to be brought into interlocking engagement with the first named hook member when the lid is placed on the box, and an inclosure surrounding the first

named hook member, said inclosure being open at the top for the insertion of the second named hook member.

4. In a self-locking container for the purposes described, the combination of a box, a lid provided with a depending flange adapted to fit the exterior of the box, and automatic locking means for securing the lid on the box member and comprising a resilient hook member mounted on the inner wall of the box and extending upwardly and inwardly thereof, a second hook member depending from the lid and faced toward the flange of the latter, said second named hook member being adapted to be brought into interlocking engagement with the first named hook member when the lid is placed on the box, and means whereby the second named hook member may be moved aside to avoid engagement with the first named hook member.

5. In a self-locking container for the purposes described, the combination of a box, a lid provided with a depending flange adapted to fit the exterior of the box, and automatic locking means for securing the lid on the box member and comprising a resilient hook member mounted on the inner wall of the box and extending upwardly and inwardly thereof, a second hook member depending from the lid and faced toward the flange of the latter, said second named hook member being adapted to be brought into interlocking engagement with the first named hook member when the lid is placed on the box, the second named hook member being pivoted to the lid so that it may be swung aside to avoid engagement with the first named hook member.

Signed at Pittsburgh, Pa., this 11th day of Sept., 1922.

DAVID J. RICHARDSON.