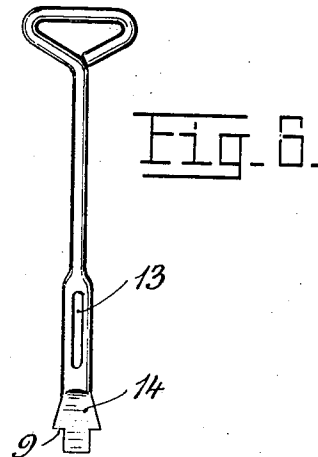
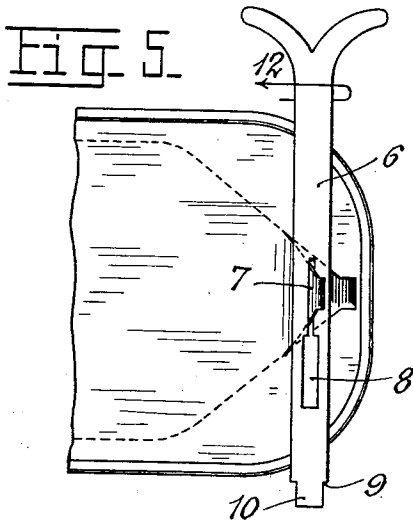
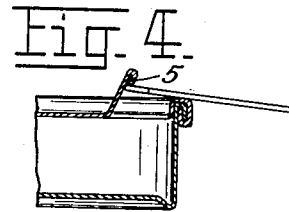
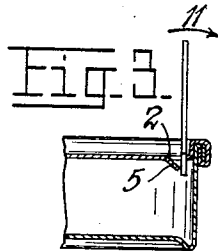
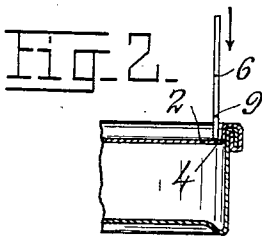
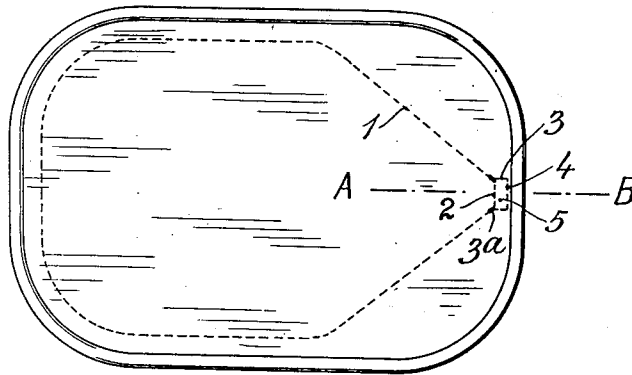


O. LARSEN.
 OPENING DEVICE FOR SHEET METAL CANS AND BOXES.
 APPLICATION FILED MAY 6, 1918.

1,368,038.

Patented Feb. 8, 1921.

Fig. 1.



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UNITED STATES PATENT OFFICE.

OLAF LARSEN, OF STAVANGER, NORWAY.

OPENING DEVICE FOR SHEET-METAL CANS AND BOXES.

1,368,038.

Specification of Letters Patent.

Patented Feb. 8, 1921.

Application filed May 6, 1918. Serial No. 232,857.

To all whom it may concern:

Be it known that I, OLAF LARSEN, citizen of Norway, residing at Stavanger, Norway, have invented a new and useful Improvement in Opening Devices for Sheet-Metal Cans and Boxes; and I do hereby declare the following to be a full, clear, and exact description of the same.

The present invention relates to opening devices for that kind of sheet metal cans and boxes in which the tongue-shaped part of the lid located between the weakening lines upon the same lid forms the opening tongue, said tongue-shaped part, after having been broken up from the remaining lid, serving as a hold for the key.

The invention has for its object to provide for the key a safe hold by bending the tongue end inwardly under the tongue, thus doubling it up after it has been broken out from the remaining lid by means of the key.

To obtain such a double-bending it is of essential importance that only the uttermost end of the tongue is detached and bent downward. To accomplish this result, the weakening lines limiting the sides of the tongue are interrupted near the tongue end by non-weakened or only a little weakened portions, which limit the breaking-up of the tongue end, when the latter is pressed down into the box by means of the key.

The invention is illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of a tin, showing the arrangement of the weakening lines in the lid.

Figs. 2, 3 and 4 are sectional views on the line A—B of Fig. 1, showing different operations during the opening of the tin.

Fig. 5 shows a form of construction of the key to be used and illustrates how it has to be attached to the opening tongue.

Fig. 6 shows another constructional form of the key.

The ordinarily arranged weakening lines —1— of the lid are interrupted by the transversal weakening line —2—. The intersection-points between the lines —1— and —2— are by short weakening lines —3— connected with a weakening line —4— arranged alongside the folding rim of the lid, thus inclosing a rectangular surface —5—. Where the weakening lines —1— and —2— are joining, there is a short bit —3^a—, at which the weakening is not as deep as else-

where, or the weakening lines are totally interrupted.

The flat-iron key —6— (Fig. 5) is provided with a slot, suitably consisting of a narrow and a wide part —7— and —8— respectively. On each of the narrow sides, the key is provided with an offset —9—, and the outer end —10— of the key projecting between these offsets has a width, corresponding to the width of the opening tongue, i. e. equal to the length of the weakening lines —2— and —4— between the lines —3—.

The opening of the tin is carried out in the following way:

The key is placed in a vertical position with its outer edge alongside the weakening line and firmly pressed downward (Fig. 2). Hereby the portion —5— is broken up along the weakening lines —3— and —4— and bent after the line —2— down into the box (Fig. 3), as the non-weakened or only a little weakened portions —3^a— exert a resistance and prevent any further tearing out along the lines —1—. When the offsets —9— of the key meet the remaining edge of the lid located along the weakening lines —3— the intrusion of the key into the box is upheld. Thereafter the key is swung or tilted in the direction of the arrow —11—, whereupon firstly the portion —5— is bent in under the tongue and then the said tongue is bent upward, during which operation the key is supported upon the folding rim of the lid (Fig. 4).

The key now is threaded upon the upwardly bent tongue, the outer bent end of which is put through the wide slot —8—, whereupon the key is thus displaced in such a manner in its longitudinal direction, that the tongue is passed into the narrow slot —7— (Fig. 5). As this slot is too narrow to allow the bent end of the tongue to slide out through it, the key hereby gets an absolutely safe hold. The further opening of the tin is now accomplished in the common way, by turning the key in the direction of the arrow —12—.

The arrangement of the weakening lines, may be varied without departing from the main features of the invention. As for instance: the weakening line —2— may be dispensed with although the presence of this line will make it easier to bend the tongue downward during the opening.

The form of construction of the key may be varied too. Thus Fig. 6 shows a key made of wire, provided with only one slot —13—, which in this case should of course have a width, which allows the bent end of the tongue to be passed through it. The end —14— of the key also in this case should be flat and provided with offsets, as illustrated in Fig. 5.

10 I claim:

1. In a can having its stationary cover provided with weakening lines outlining a removable lid and tongue and also provided with a transverse weakening line at the juncture of the lid and tongue and parallel with the outer edge of tongue, and said weakening lines being interrupted by non-weakened portions at the sides of the juncture of the lid and tongue for limiting the breaking out of the tongue when the latter is depressed.

2. The combination with a can having a tongue struck out therefrom and having its outer portion folded inwardly upon itself to form an abutment, of a key having a slot for arrangement over the inwardly folded portion so as to permit of a sliding of the key across the tongue, and the slot being restricted at one end so that the portions of the key adjacent the sides of this restricted portion will embrace the upper and lower faces of the tongue and the abutment subsequent to the sliding of the key, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OLAF LARSEN.

Witnesses:

CHRISTIAN BORGE,
ALF GEO. HEGE.