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E. LIESENFELD
KEY FOR OPENING OF CANS OR THE LIKE EQUIPPED
WITH A TEARING TONGUE
Filed July 12, 1967

3,439,832

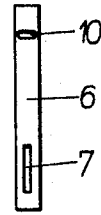
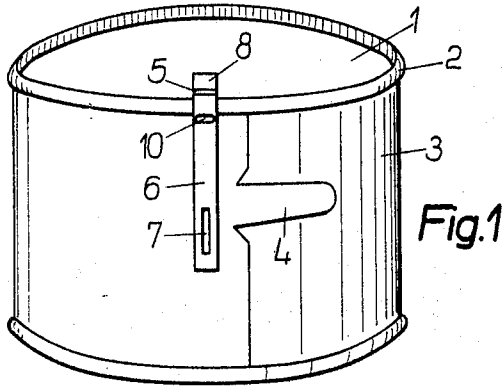


Fig. 5

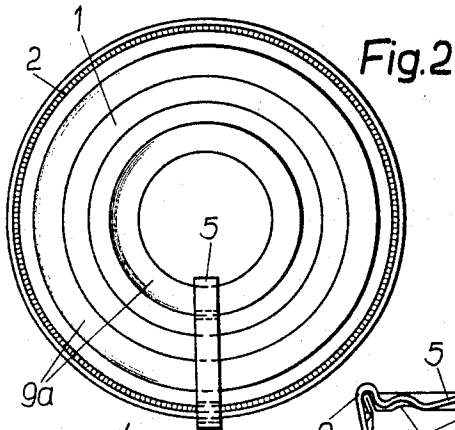


Fig. 2

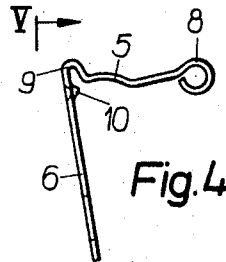


Fig. 4

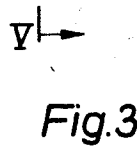


Fig. 3

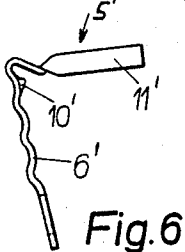
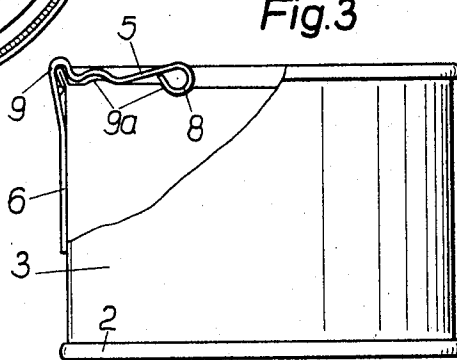


Fig. 6



Inventor
E. Liesenfeld
By *Suzette Montague*
Attorney

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**KEY FOR OPENING OF CANS OR THE LIKE
EQUIPPED WITH A TEARING TONGUE**

Emil Liesenfeld, 1 Dammigstrasse, 5404 Bad
Salzig (Rhine), Germany

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9 Claims 10

ABSTRACT OF THE DISCLOSURE

A key for opening of cans or the like being equipped with a tearing tongue, comprising a band buckled to form two leg portions having substantially equal length and disposed at nearly 90° relative to each other. One of the leg portions has a longitudinal slot and the other of the leg portions serves as handle during rotation of the key. The inner side of the buckle point of the band has a profile complementary to the outer contour of the cross-section of a thickened seam edge portion of the can, and the key is secured to the can self-clampingly prior to its use.

The present invention relates to a key for opening of cans or the like, equipped with a tearing tongue in general, and to such key which has a longitudinal slot for insertion and rolling up of the tearing tongue and which is attached prior to the use thereof to the thickened seam of the can in a rigidly clamping manner.

In Patent No. 1,710,958 to John M. Young, dated Apr. 30, 1929, a similar key is disclosed, which, however, has the drawback, due to its complicated shape, that its mechanical application and securing on the seam of the can cannot be obtained.

The key is not suitable for the joining into larger groups, which can be aligned on a feeding rail, in order to secure the same automatically to the cans by means of a machine equipped with a press ram. Since the shaft of the previously known can opener, which is equipped with the longitudinal slot, is thickened or widened at its free end, the manipulation is also more difficult. The key abuts with this thickening portion the can wall, whereby, at least at the start, the winding of the tearing strip is disturbed.

It is one object of the present invention to provide a key for opening of cans or the like which is equipped with a tearing tongue, which is of essentially simpler structure and which is, therefore, suitable for its securing to the edge of the seam of the can by means of a machine.

It is another object of the present invention to provide a key for opening of cans or the like equipped with a tearing tongue wherein the key comprises a buckled metal band with two about equally long leg portions which are disposed at an angle of slightly less than 90° towards each other and one of the leg portions is equipped with a longitudinal slot and the other of the leg portions serves as handle during rotation of the key, and wherein the inner side of the buckled portion of the key has a profile complementary to the outer contour of the cross-section of the thickened can seam.

Since the can opener in accordance with the present invention comprises substantially a rod buckled nearly at a right angle at about the center, it is thus of the possibly simplest structure. In one of the leg portions merely the longitudinal slot for insertion and for rolling up of the tearing tongue is provided, while the other of the leg portions serves, however, for its entire length as a one-armed lever and increases thereby the effective torque.

In accordance with another embodiment of the present

invention, the leg portion serving as a handle during rotation of the key is widened in the plane in which the two leg portions are disposed. The mentioned widening of the leg portions serving as handle can comprise a leg portion bent to an eye or the leg portion section turned about its longitudinal axis for 90°.

By this arrangement an asymmetry of one of the two leg portions in relation to the other is created, which makes possible the mechanical lining up of can openers, which are disposed in a larger container, on a feed rail by means of an automatically operating feeding device, for instance, a vibrator or stirring apparatus. Simultaneously, by the widening provided on one of the leg portions, it is brought about that the engaging face for the pressure exerting finger is enlarged, so that upon greater application of force, the drawback cannot be created, that the narrow side face of this leg portion cuts painfully into the flesh of the finger.

The leg portion equipped with the longitudinal slot is subjected to a certain torsion strain, so that it is suitably waved once or several times cross-wise to its longitudinal axis, whereby a stiffening of the leg portion can be brought about.

Due to the simple angle shape of the key in accordance with the present invention, the latter can be lined up without any difficulty on a feeding rail of a machine, which applies with pressure by means of a press ram one key after another on the thickened seam edge of the cans fed thereto continuously.

For the assurance of a permanent engagement of the key on the seam of the can, it is furthermore proposed, to arrange an inwardly pressed out projection on the leg portion equipped with the longitudinal slot and disposed below its top point. Suitably this projection is arched and is adjusted to the outer surface of the can casing.

The key can also be manufactured of a suitable band of synthetic material.

With these and other objects in view which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing, in which:

FIG. 1 is a perspective front elevation of a can opener designed in accordance with the present invention, which is rigidly clamped to a can;

FIG. 2 is a top plan view of the can together with the can opener, as shown in FIG. 1;

FIG. 3 is a front elevation, partly in section, of the can together with the key opener mounted thereon;

FIG. 4 is a side elevation of a can opener alone, separated from the can;

FIG. 5 is an elevation of the can opener disclosed in FIG. 4 seen in the direction of the arrow V—V; and

FIG. 6 is a side elevation of another embodiment of the can opener having a cross-wise waved leg portion.

Referring now to the drawing, and in particular to FIGS. 1 to 5, the can comprises, in known manner, a casing 3 of cylindrical shape and two circular covers 1, which are connected with the can casing by means of thickened seam edges 2. The can casing 3 has furthermore the known tearing band, the tearing tongue 4 of which is inserted into a longitudinal slot 7 of the can opener and which is wound thereon upon rotation of the can opener.

The key designed in accordance with the present invention comprises a band of metal or synthetic material of a width, by example, of about 4 mm., which band is bent about for a right angle and has two leg portions of substantially equal length of, by example, a length of about 30 mm. On the inner side of the buckled point 9, the can opener has a profile complementary to the cross-section of the outer contour of the thickened can seam edge 2, so that it surrounds the same rigidly clampingly. As far

as the can cover 1 has stiffening beads 9a, the one leg portion 5 of the can opener has a corresponding profile.

In the neighborhood of the buckled point 9, a cam 10 extends inwardly which simplifies and makes more reliable the rigid clamping of the can opener by pressing on the thickened can seam edge. Since the loose key is buckled slightly less than a right angle, it widens slightly up to a right angle upon pressing the same onto the cam seam edge, whereby both leg portions press resiliently towards the can.

Referring now to FIG. 4 of the drawing, one leg portion 6 of the can opener is disposed straight, while the other leg portion 5 is equipped with an eye 8, which increases the engaging face for the pressure exerting finger.

Referring now to FIG. 6 of the drawing, disclosing another embodiment of the present invention, the leg portion 6' has a plurality of waves, in order to bring about an increased resistance moment for the torsion strain. The other leg portion 5', however, has, on the other hand, a section turned for about 90° about its longitudinal axis, which section 11 serves as handle for operation of the opener.

While I have disclosed two embodiments of the present invention, it is to be understood that these embodiments are given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

I claim:

1. A key for opening of cans or the like being equipped with a tearing tongue which is to be inserted into a longitudinal slot of the key, and having a thickened seam edge portion, comprising
 a band buckled to form two leg portions having substantially equal length and disposed slightly less than 90° relative to each other and having a buckle point therebetween,
 one of said leg portions having a longitudinal slot and the other of said leg portions serving as a handle during rotation of the key,
 the inner side of the buckle point of said band has a profile substantially complementary to the outer contour of the cross-section of a thickened seam edge portion of the can, and
 said key is releasably secured to the can self-clampingly at said buckle point between said two leg portions of said band prior to its use by placing said buckle point on said thickened seam edge portion and press-

ing said band onto the can, whereby said leg portions widen approximately up to a right angle and press resiliently against the side and end of the can, respectively.

2. The key, as set forth in claim 1, wherein said other of said leg portions serving as a handle has a widening part in a plane extending through both of said leg portions.

3. The key, as set forth in claim 2, wherein said widening part of said other of said leg portions comprises a part bent to an eye formation.

4. The key, as set forth in claim 2, wherein said widening part of said other of said leg portions comprises a section turned for about 90° about its longitudinal axis.

5. The key, as set forth in claim 1, wherein said one of said leg portions has at least one wave disposed cross-wise to its longitudinal axis.

6. The key, as set forth in claim 1, wherein said one of said leg portions has a projection inwardly extending below the head portion of said key, and said projection is arched substantially complementary to the cylindrical shape of the can.

7. The key, as set forth in claim 1, wherein said band is made of metal.

8. The key, as set forth in claim 1, wherein said band is made of synthetic material.

9. A key for opening of cans of the like being equipped with a tearing tongue which is to be inserted into a longitudinal slot of the key, comprising

a band buckled to form two leg portions having substantially equal length and disposed slightly less than 90° relative to each other and having a buckle point therebetween,

one of said leg portions having a longitudinal slot and the other of said leg portions serving as a handle during rotation of the key, and

means for releasably securing said key to the can self-clampingly at said buckle point between said two leg portions prior to its use.

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GEORGE T. HALL, *Primary Examiner*.