Sept. 15, 1931. C. STOLLBERG 1,823,068

METHOD OF SPOTWELDING KEYS TO TEARING STRIP CANS

Filed Jan. 30, 1926

Fig. 1

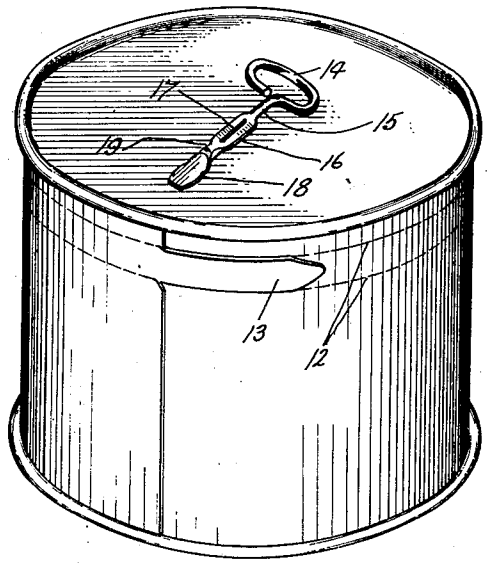



Fig. 2

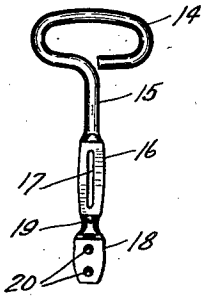



Fig. 3

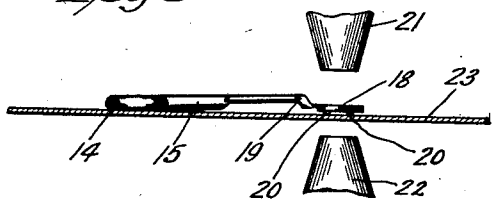
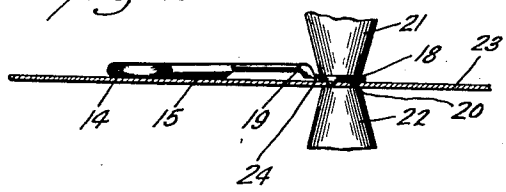



Fig. 4




INVENTOR.
Charles Stollberg
BY Munday, Clarke & Carpenter
ATTORNEY

Patented Sept. 15, 1931 1,823,068

# UNITED STATES PATENT OFFICE

CHARLES STOLLBERG, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY

## METHOD OF SPOTWELDING KEYS TO TEARING STRIP CANS

Application filed January 30, 1926. Serial No. 84,933.

This invention relates to the attachment of keys to tearing strip cans, which are opened by tearing away a strip like part of the can set off by score lines and winding the strip upon the key.

One of the objects of my present invention resides in providing an improved method and key construction together with means for attaching it to the can, upon the construction shown in my pending application, No. 727,640 filed July 23, 1924, by the provision of two points of attachment of the flattened portion of the key to the can, thereby overcoming certain difficulties experienced in commercial use.

One of the objects of my invention resides in providing a new method, and also a new device, for attaching keys to tearing strip cans more securely and in a more uniform and accurately located position whereby the detachment of the key from the can at the desired point or at the score line, is assured, irrespective of whether or not the key is of substantially precise and regular construction.

Yet another object of my invention resides in the improved method and device of end for attaching keys to tearing strip cans which permits the easy separation of the key from the can for use by the consumer as an opening device and without danger of impairing or damaging the face of the can.

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.

In the drawings in which like reference characters designate corresponding parts throughout the several figures,

Fig. 1 is a perspective view of the can and key attached thereto in accordance with my present invention.

Fig. 2 is an enlarged under side view of a key.

Fig. 3 is a view illustrating the arrangement of the parts just prior to the attachment of the key; and

Fig. 4 is a similar view showing the arrangement of the parts at the instant of attachment.

For the purpose of illustrating my invention I have shown can body 11 provided with encircling score lines 12, which score lines set off a tearing strip between them which terminates in a tongue 13.

The key shown in Fig. 2 consists of a piece of wire bent to provide a handle part 14 and body part or stem 15, which is flattened somewhat at 16 and slotted at 17 in the flattened portion 16 to receive the tongue 13 of the tearing strip can. The end of the key, preferably the end beyond the slot, is compressed or flattened still further at 18, this end being off-set at 19 from the body or stem of the key.

It will be noticed that the side of the flattened end 18 which comes in direct contact with the can body surface when it is secured thereto, has two small spot mounts or tits 20 spaced apart so that one of them is located near either end of the flattened part 18 along the longitudinal center line thereof. These tits 20 are for the purpose of obtaining a very secure spot weld between the flattened part 18 and the metal of the can at these two points 20. In my aforementioned pending application I show only one of these tits. While the one tit construction works out very satisfactorily under ordinary normal conditions, I have found in further experimentation and extensive and actual manufacturing practice (since filing my said application), that in the forming of the key in an automatic key forming machine the tit is formed at varying positions upon the flattened part 18, sometimes in the center, which is the most desirable and normally intended point, sometimes at the extreme forward end of the flattened part 18 and sometimes very near the off-set part 19, with the unfortunate result in the latter two cases that the spot weld when thus too far off the center of the intersection of the longitudinal and transverse center lines of the flattened part 18, is not as secure and durable and the leverage necessary to break off the key at the intended point of severance is impaired so that the key does not break off where it is intended to break, but does

break at the point of spot welding and sometimes without breaking, even tears along with it a piece of the can body itself. This haphazard positioning of the spot weld tit at varying positions is due to the fact that it is difficult, if not impossible, to obtain keys from an automatic key forming machine which are all of uniform size and length. It is especially difficult to get a loop or handle part 14 of uniform shape, size and width, and since it is this loop part which is used as a gauging means for forming the flattened and slotted parts of the key and particularly for determining the positioning of the spot weld tits, it will become at once apparent that when two, instead of one tit, are employed on the flattened end of the key at least one of them will always be in favorable welding position, even though the gauging loop in different keys varies to an appreciable extent.

The normal and preferable position of the two tits 20 is as shown in Fig. 2 of the drawings and when thus positioned the tits 20 provide a very strong and durable attachment of the key to the can body at whatever point of the can body surface it is desired to secure the same.

Referring to Fig. 3, reference characters 21 and 22 indicate the electrodes of a spot welding apparatus. The key is placed upon the can part 23 (which in the present preferred illustration is the can end) so that the side of the flattened part 18 which carries the tits 20 rests in engagement therewith. When the electrodes are brought to welding position as shown in Fig. 4 the flattened portion 18 of the key is welded to the can end. Between the flattened part 18 and the off-set part 19 there is provided a weakened or scored portion 24 so that when the handle or loop part of the key is lifted up the key breaks at the scored point 24 and is ready for engagement with the tongue 13 for the opening of the can.

A further very important feature of my invention and an advantage of the two point contact resides in the fact that with the two points as distinguished from the one point contact, all danger of tearing the face of the can when the key is pulled upwardly to detach it from the can, is obviated. This is due to the fact that by means of the spaced tits 20, when the operator grasps the handle 14 of the key and pulls upwardly, the tit 20 nearest the handle is always located adjacent the score line 24, and also due to the fact that the other tit 20 is spaced a pre-determined distance from the first tit 20, it provides a two point contact which prevents the free end of the key from tipping downwardly as it would if there were only a single point of contact; and since the flattened portion 18 is not tipped downwardly, the upward pull on the handle 14 causes severance at the score line 24 of the key.

If the part 18 of the key should tip downward the extreme end of the key would bear down on the sheet metal part of the can to which the key is attached, and said sheet metal becomes the fulcrum for the breaking of the key, and if said fulcrum is too close to the weld the key will tear out a portion of the tin to which it is welded rather than break at the line 24 as intended, in which case the closure is perforate and not tight.

If, during handling or shipment of packed and sealed cans, a key secured by a single tit should accidentally be caught and bent up it might result in the spoilage of the contents of the can.

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:

1. A slotted key designed to be attached to a tin can by welding said key having a shank, a flattened part at one end, and a handle at the other end, there being a weakened portion adjacent to the flattened part, said flattened part being provided with a plurality of spot-weld tits along the length of the key, said handle serving as a gauging means for forming the flattened and slotted portions of the key and determining the position of the spot-weld tits.

2. A key designed to be attached to a tin can by welding, said key having a shank, a flattened part at one end and a handle at the other end, there being a weakened portion adjacent to the flattened part, said flattened part being provided with a plurality of spot-weld tits spaced apart along the length of the key, whereby one of said tits is insured a favorable welding position.

3. A key designed to be attached to a tin can by welding, said key having a shank, a flattened part at one end and a handle at the other end, there being a weakened portion adjacent to the flattened part, said flattened part being provided with a plurality of spot-weld tits spaced apart along the length of the key, the first of said tits being adjacent the weakened portion and the other of said tits being spaced from the first tit toward the extremity of the shank sufficiently to prevent the breaking of the tin of the can in the operation of detaching the key.

4. A key designed to be attached to a tin can by welding, said key having a shank, a flattened part at one end and a handle at the other end, there being a weakened portion adjacent to the flattened part, said flattened part being provided with a spot-weld tit adjacent

said weakened part, and a fulcrum adapted to contact with the surface of the can and arranged adjacent the extremity of the shank of the key and spaced from said tit sufficiently to prevent the breaking of the tin of the can in the operation of detaching the key.

CHARLES STOLLBERG.