April 19, 1932. C. W. GRIFFIN ET AL 1,854,301

REMOVAL OF FOIL FROM BOTTLES

Filed May 22, 1930

FIG. 1

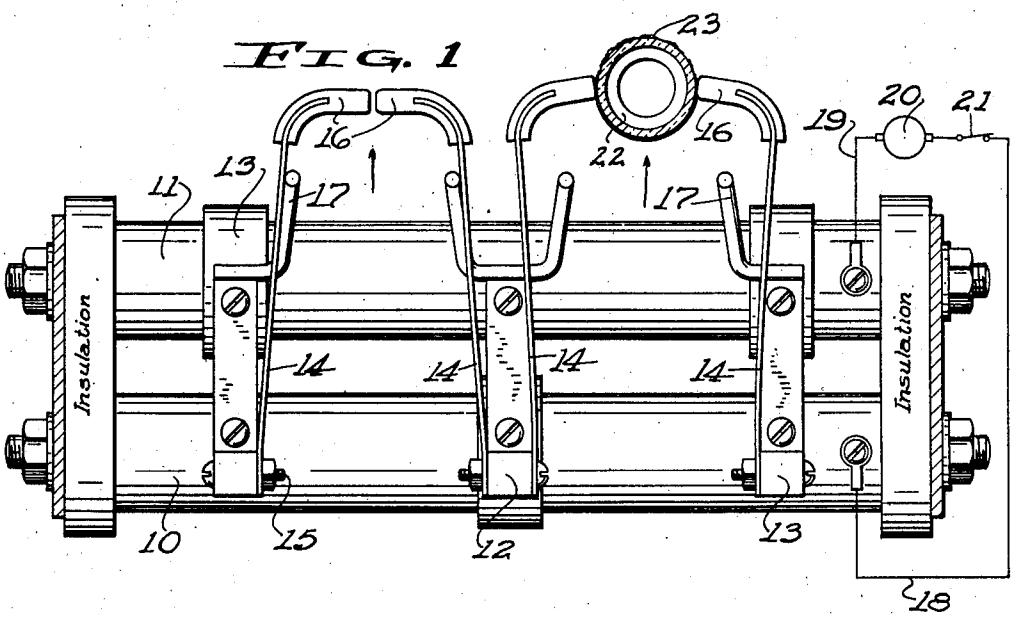
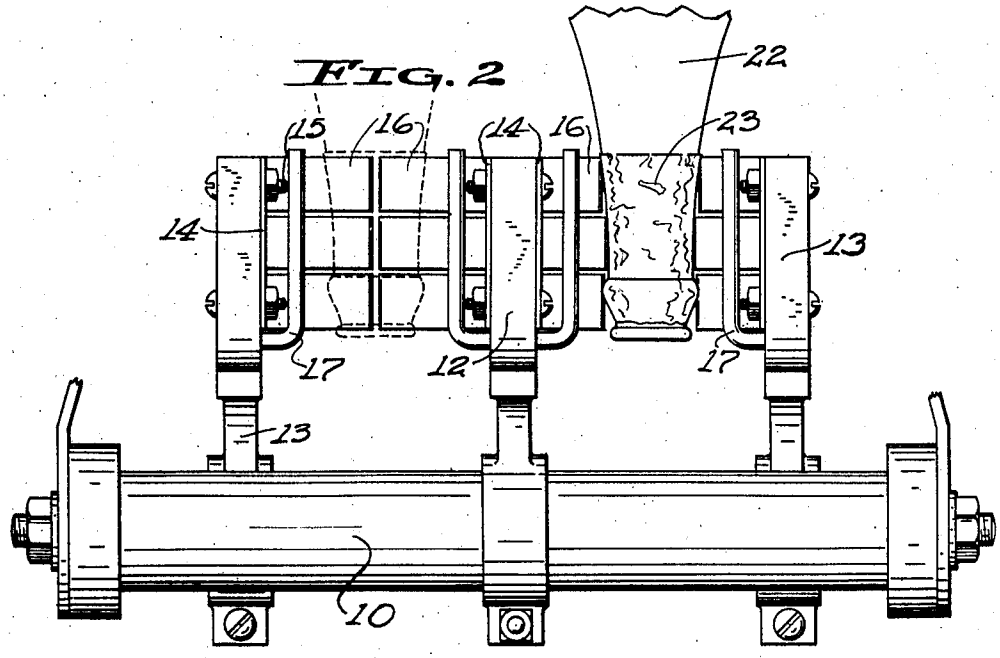


FIG. 2



WITNESSES

Irvin J. Rose

M. E. Downes

INVENTORS

Charles W. Griffin &

Lawrence P. Sing

By R. C. Caldwell

ATTORNEY

Patented Apr. 19, 1932 1,854,301

UNITED STATES PATENT OFFICE

CHARLES W. GRIFFIN, OF LYNWOOD, AND LAWRENCE P. SINZ, OF LOS ANGELES, CALIFORNIA, ASSIGNORS TO GEO. J. MEYER MANUFACTURING COMPANY, OF CUDAHY, WISCONSIN, A CORPORATION OF WISCONSIN

REMOVAL OF FOIL FROM BOTTLES

Application filed May 22, 1930. Serial No. 454,671.

The invention relates to a method of removal of foil from bottles.

It is customary to wrap the necks of certain beverage bottles with foil which is secured thereon with a suitable adhesive. When cleaning these bottles, difficulty has been experienced in removing the foil, because the foil resists the action of the usual soaking solution employed in the washing operation.

In order to overcome this difficulty, it is an object of the present invention to effect the removal or loosening of the foil from the bottles by an electric current passing through the foil, the current either burning off the foil completely or breaking it up into small patches, fragments, or shreds to thereby enable the soaking solution to penetrate beneath the foil and attack the adhesive.

The invention further consists in the method hereinafter set forth and more particularly defined by the annexed claims.

In the accompanying drawings, Fig. 1 is a top plan view of a foil removing apparatus suitable for carrying out the method of the invention, as it appears when operating on a bottle neck, and

Fig. 2 is an elevation of the apparatus of Fig. 1.

In these drawings, representing the device covered in the application of Charles W. Griffin, Daniel Schmid, and Lawrence P. Sinz for means for removing foil from bottles, Serial No. 460,736, filed June 12, 1930, the numerals 10 and 11 designate a pair of suitable metal supports which are insulated from each other. An upstanding metal bracket 12 is carried on the support 10 and a pair of similar brackets 13 are carried on the support 11 at opposite sides of the bracket 12 and laterally spaced therefrom, the brackets being in electrical contact with the respective supports.

Resilient metal blades 14 are conductively secured to the brackets 12 and 13 in any suitable manner, as by bolts 15, and have their free end portions projecting in the same direction. Each of the blades 14 is here shown to include a plurality of spring fingers which have laterally extending electrodes 16 secured to their free ends. The opposite electrodes 16 are spring-urged toward each other but are prevented from touching each other in their nearmost positions by stop arms 17 secured to the brackets 12 and 13 and engageable with the resilient blades 14.

The metal supports 10 and 11 are respectively connected by conductors 18 and 19 with a suitable source of current 20, there being a switch 21 included in the conductor 18. The source of current may furnish either alternating-current or direct-current at a suitable voltage.

In carrying out the method of the invention with this apparatus, a bottle 22, having its neck portion covered with foil 23, is passed between the electrodes 16 in the direction indicated by arrows, with its foil-covered neck portion in engagement with the resiliently-mounted electrodes, the electrodes being urged apart during the passage of the bottle. If desired, the bottle may be rotated during its passage between the electrodes. The conducting foil about the neck of the bottle completes the circuit from the source of current 20, with the result that current of fusing strength flows through the foil, and by an arc or spark discharge either burns the foil off completely or separates it into small patches, fragments, or shreds. These small pieces of foil can be easily removed during the washing operation, since the soaking solution can then readily penetrate beneath the foil and attack the adhesive.

In the event that a sufficiently high voltage is used it is not necessary that the electrodes touch the foil on the bottle neck during the passage of the bottle with respect to the electrodes. Instead of moving the bottle with respect to the electrodes, the bottle may be stationary and the electrodes moved past it.

While the bottle is shown to be in inverted position when passing between the electrodes, it may obviously assume any position desired if the electrodes are suitably arranged.

The passage of the bottle between the electrodes and its rotation may be effected by hand, but in practice, this manipulation of the bottle may be conveniently accomplished by any suitable well-known type of bottle-

conveying means and bottle-rotating means common in the bottle-washing machine art. The method of the invention may be performed by means other than that illustrated in the drawings.

What we claim as new and desire to secure by Letters Patent is:

1. The method of loosening foil from bottles which consists in burning the foil by an electric current flowing through the foil.

2. The method of loosening foil from bottles which consists in subjecting the foil to fusing currents of electricity flowing through the foil.

3. That step in the cleaning of foil-covered bottles which consists in burning the foil by an electric current flowing through the foil.

4. The method of loosening foil from bottles which consists in reducing the foil to fragments by an electric current flowing through the foil.

In testimony whereof, we affix our signatures.

CHARLES W. GRIFFIN.
LAWRENCE P. SINZ.