United States Patent [19]

Davis et al.

[11] **3,876,858**

[45] **Apr. 8, 1975**

[54] **SHRINK-FILM HOLE-BURNING DEVICE**

[75] Inventors: **George M. Davis; Bernard A. Heckle,** both of Rochester, N.Y.

[73] Assignee: **The R. T. French Company,** Rochester, N.Y.

[22] Filed: **Feb. 9, 1973**

[21] Appl. No.: **331,288**

[52] **U.S. Cl.** **219/243;** 30/140; 83/171; 156/513; 156/515; 156/581; 219/221; 219/229

[51] **Int. Cl.** **H05b 1/00;** B26d 7/10

[58] **Field of Search** 219/221, 227, 229, 243; 156/515, 581, 251, 513; 83/15, 16, 170, 171; 30/140

[56] **References Cited**

UNITED STATES PATENTS

2,122,368	6/1938	Engler	219/221 UX
2,615,111	10/1952	Paquette et al.	83/170
3,075,573	1/1963	Piazze	83/171 X
3,187,380	6/1965	Harrison	83/171 X
3,461,567	8/1969	Villers et al.	219/229 X
3,503,097	3/1970	Krupp	219/229 UX

FOREIGN PATENTS OR APPLICATIONS

1,479,878	9/1969	Germany	83/171

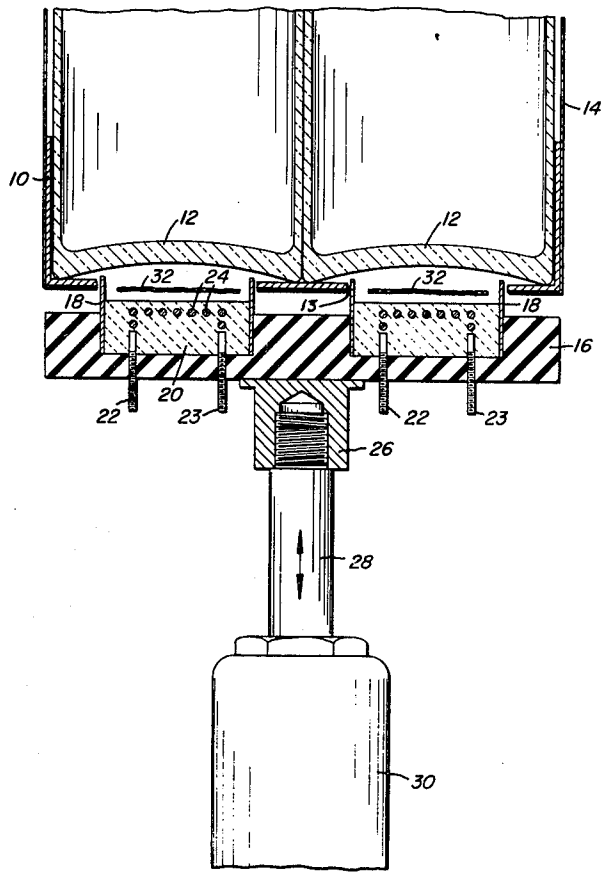
Primary Examiner—A. Bartis

Attorney, Agent, or Firm—Shlesinger, Fitzsimmons & Shlesinger

[57] **ABSTRACT**

In order to be able to price-mark a product container, which is wrapped in heat-shrinkable plastic film, without removing the film from around the container, a film burning element comprising a steel ring with a ceramic heating element in it is brought into contact with the film. The heated ring cuts and burns a circle in the film and simultaneously shrinks the film within the compass of the ring away from the rest of the wrapper so that when the steel ring is withdrawn, the cut-out portion of the wrapper drops away, leaving an area exposed for marking the price on the container, but otherwise leaving the wrapper intact.

1 Claim, 2 Drawing Figures



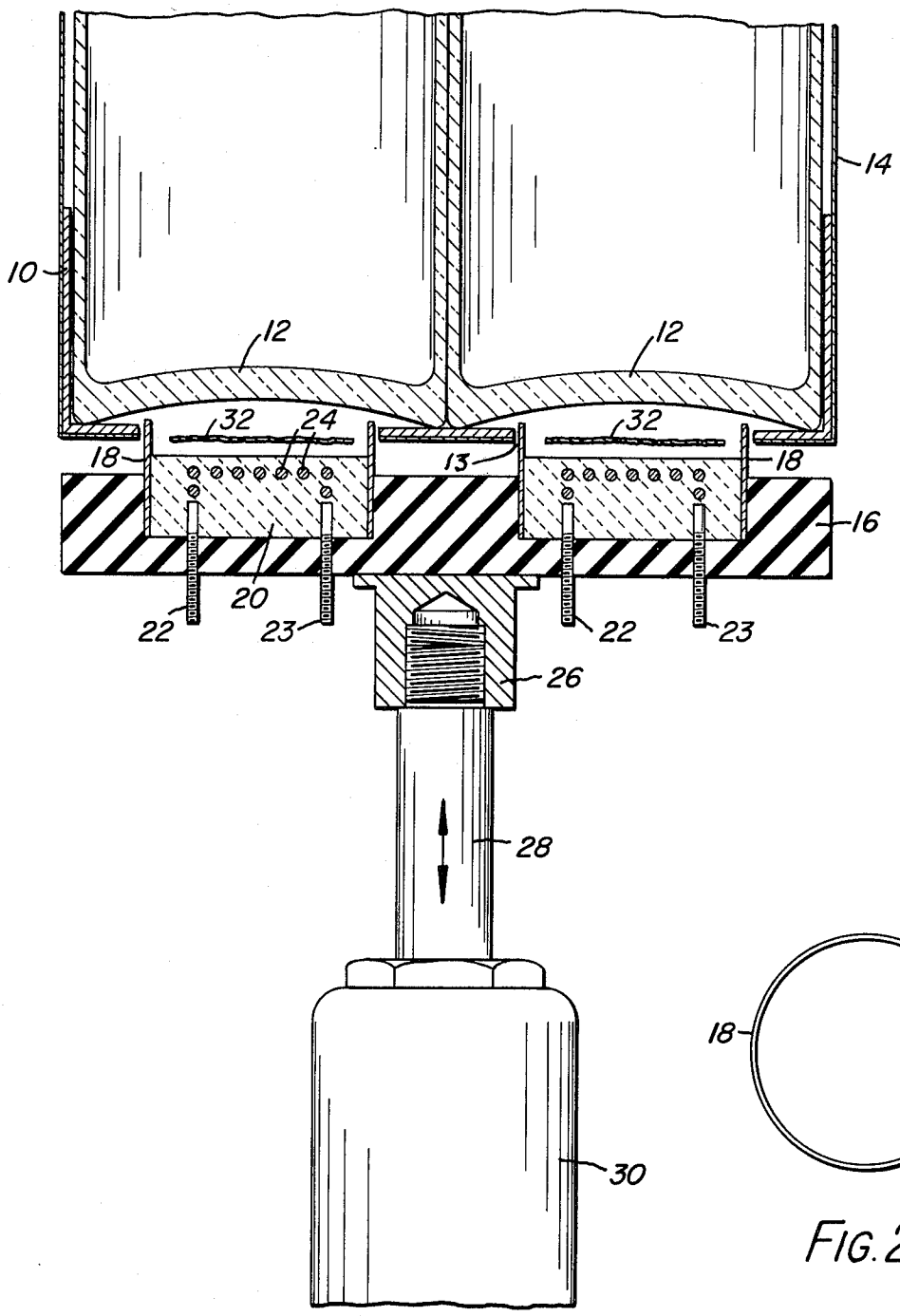


FIG. 1.

FIG. 2.

SHRINK-FILM HOLE-BURNING DEVICE

The present invention relates to the price-marking of packages for sale in supermarkets, drugstores, and the like.

It is the practice when preparing packages for stacking on the shelves of supermarkets, drugstores, etc., for display and sale, to mark the individual packages with the price at which they are to be sold. The prices are stamped on the ends of cans or at convenient locations on pasteboard boxes, where the cashier or check-out employee can readily check the price. However, when the goods, which are to be sold are wrapped in cellophane or other plastic film, difficulties are experienced in marking. Of course, the cellophane wrapping can be removed; but often this is undesirable for sanitary reasons, or from the standpoint of preserving the freshness of the product. Moreover, frequently product containers, such as glass bottles holding condiments, or cosmetics, or other goods, are packaged in multiples in, for instance, a fibreboard tray wrapped in plastic shrink film. It is most undesirable to break such a package when storing it on a shelf for display and sale, among other reasons because the bottles may be intended to be sold, for instance, in pairs, and may get separated, or broken. Yet heretofore it has been virtually impossible to mark such containers without breaking the film wrapper.

A prime object of the present invention is to provide apparatus which will make it possible to price-mark film-wrapped containers without having to break plastic wrapping film.

Another object of this invention is to provide means which will enable the marking of such containers without breaking apart the package, which contains them.

Other objects of the invention are to provide apparatus of this nature, which will be fast in operation, simple, and relatively inexpensive.

Still other objects of the invention will be apparent hereinafter from the specification and from the recital of the appended claims, particularly when read in conjunction with the accompanying drawing.

In the drawing:

FIG. **1** is a fragmentary vertical sectional view showing apparatus constructed according to one embodiment of the present invention for quickly and cleanly cutting through plastic wrapping film to expose on the product containers areas where the prices of the products can be price-marked, without disturbing the package; and

FIG. **2** is a fragmentary plan view of the cutting element for removing the film from the area at which each container is to be marked.

Referring now to the drawing by numrerals of reference, **10** denotes a fibreboard container holding a plurality of bottles **12. 14** designates the shrink film which encloses the tray and the bottles and retains the bottles in the tray. The tray has die-cut holes **13** in its bottom, as shown in FIG. **1,** through which a pricing stamp can be passed to mark the bottles when the covering shrink film is removed.

15 denotes generally apparatus made according to the present invention for cutting away those portions of the film at the bottom of the tray which register with the holes in the tray in order to permit marking the bottoms of the bottles with the price at which they are to be sold. This apparatus comprises a block **16** made of

insulating material and having, in the instance shown, two steel cutting rings **18** embedded therein. These rings are identical, and mounted in each is a ceramic heating element **20.** Embedded in each heating element are two threaded electric terminals **22, 23** for conducting power to the electric heating coils **24** that are also embedded in the ceramic.

The block **16,** in the instance shown, is fastened to the nut **26** that threads onto a piston rod **28** which is secured to a piston (not shown) that is reciprocable by fluid pressure in the air cylinder **30.**

For use, the terminals **22** and **23** are connected to any suitable source of electrical power so as to heat the coils **24** and the ceramic blocks **20** and the steel rings **18** which contain those blocks. In use, the film-wrapped package containing the bottles, that are to be price-marked, is placed over or on the block **16;** and the air cylinder **30** is actuated through valve means not shown so that piston rod **28** drives the heated steel rings upwardly to cut through the shrink film and cut out of it those portions **32** of the film which lie within the compass of the rings **18,** and which register with the holes **13** in the fibreboard tray **10.**

It takes but an instant to cut through the film **14;** and as soon as the piston in the cylinder **30** is actuated to withdraw the cutters from the container, the cut-out portions **32,** which have been heat-shrunk away from the rest of the film wrap, drop away leaving the desired areas on the bottoms of the bottles exposed to permit price-marking the bottles.

Obviously, the number of cutting elements can be increased to suit the number of containers, which are to be price-marked, that are packaged in a single package. Likewise, it is obvious that instead of providing a cutting apparatus with a plurality of cutting rings, a single ring device might be used, where bottles, or other containers are packaged individually.

While the invention has been described in connection with burning elements which are steel rings, it will be obvious that the rings may be made of any shape, viz., square, hexagonal, etc., and of other materials which can be heated sufficiently to cut through plastic wrapping film.

While the invention has been described, therefore, in connection with a specific embodiment thereof, it will be understood that it is capable of further modification, and this application is intended to cover any embodiments of the invention which come within the scope of the invention, or the recital of the appended claims.

Having thus described our invention, what we claim is:

1. Apparatus for burning a hole in the heat-shrinkable film wrapper of a product-container to leave an area exposed for marking the container comprising

a block of insulating material,

a closed cutting ring mounted in said block and having one end protruding from said block to define an edge for engagement with the film wrapper,

a ceramic heating block mounted inside said ring below said edge and in contact with the internal periphery of said ring for heating the ring to a temperature sufficient to burn out of the film wrapper the portion of the wrapper circumscribed by the ring when said ring is in engagement with the wrapper,

an electric heating coil embedded in the heating block,

electric terminals embedded in the first-named block to conduct an electric current to said heating coil, and fluid-pressure operated means for moving said first-named block toward and from the wrapper to move said ring into and out of engagement with the wrapper.

* * * * *