

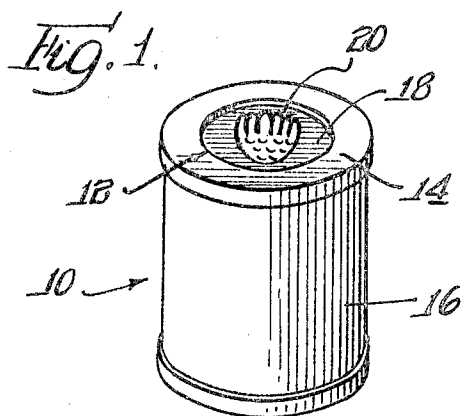
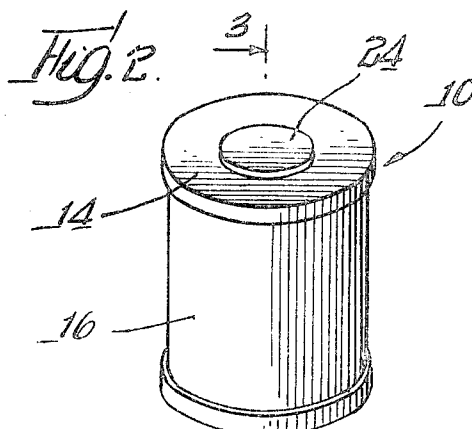
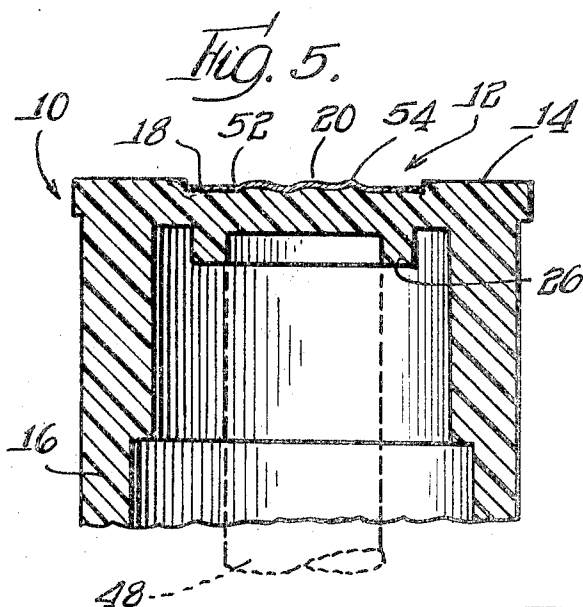
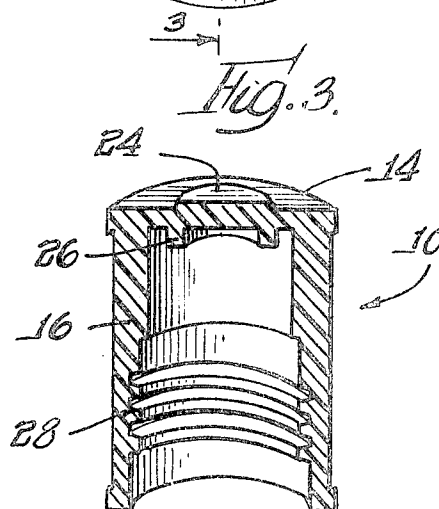
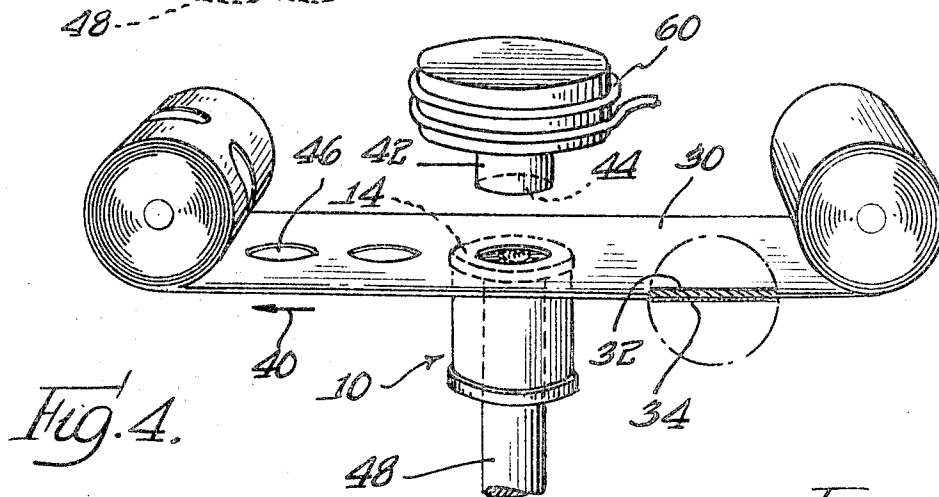
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METHOD OF SECURING A LABEL TO AN ARTICLE

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3,520,751

METHOD OF SECURING A LABEL TO AN ARTICLE

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4 Claims

ABSTRACT OF THE DISCLOSURE

This invention relates to a laminated article of manufacture and a method of making the article wherein a label of metal foil is secured to the article by stamping the foil on the article and contemporaneously therewith shaping material forming the article.

Labels which are merely decorative or which convey information are commonly associated with articles of manufacture. These labels or emblems are usually printed directly on the article or attached to the article with adhesive. The printed labels on an article are quite effective, for conveying information. However, the printed labels have a very plain utilitarian appearance and substantially reduce the aesthetic appeal of the articles on which they are printed.

When a label formed of paper or other substance is secured with adhesive to an article it is usually more pleasing aesthetically than is printing directly on the article. The effectiveness of prior art paper labels is minimized by a close adherence of the label to a surface of the article. The resultant substantially two-dimensional or planar label imparts a quality of printed flatness and a lack of substance. In addition, the label is often moved relative to or torn off the surface of the article to which it is attached.

Therefore, it is an object of this invention to provide a method which overcomes the aforementioned limitations of prior art methods of securing a label or emblem to an article of manufacture. Specifically, it is an object of this invention to provide a method for forming a three-dimensional label and securing the label in intimate contact with an article of manufacture.

Another object of this invention is to provide a method of securing a label to an article while extruding or shaping the article to form a body portion of the label which projects from a background of the label.

Another object of this invention is to provide a method of securely attaching a label to an article so that the label cannot be easily torn from the article or moved relative to the article.

Another object of this invention is to provide a label or emblem which gives an aesthetically pleasing three-dimensional sense of substance.

These and other objects and features of the invention will become more apparent upon a consideration of the following detailed description taken in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view of a container cap or closure having a label or emblem secured to the cap by a method forming the present invention;

FIG. 2 is a perspective view of the cap of FIG. 1 before the label is attached to the cap;

FIG. 3 is a sectional view, taken along the line 3—3 of FIG. 2, illustrating the structure of the cap of FIG. 1 before the label is attached in accordance with the method of the present invention;

FIG. 4 is a schematic illustration showing the secur-

ing of a label to the cap of FIG. 2 in accordance with the present invention; and

FIG. 5 is an enlarged cross-sectional view of a cap illustrating the relationship between the cap and a label secured to the cap in accordance with the present invention.

Referring now to the drawings in greater detail, a cap 10 made of polypropylene, is shown in FIG. 1. The cap 10 includes a metallic label or emblem 12 which is mounted on an end wall 14. The end wall 14 is integrally formed with a side wall 16. The label 12 includes a background portion or section 18 and a raised or projecting central subject or body portion 20. In the illustrated embodiment of the invention the label is formed in bas or low relief with the body portion 20 raised or projecting outwardly from the background portion 18. Of course, the label 12 could be formed in very low or hollow relief with the background in the same plane as the highest areas of the body 20 so that the body 20 projects inwardly from the background 18. The important aspect of the label or emblem 12 is that the outer surface of the label is irregular and has three dimensions, that is, the outer surface of the label 12 intersects a plurality of planes and is not contained in any one flat or curved plane.

The cap 10 is shown in FIGS. 2 and 3 before the label 12 is secured to the cap. From an inspection of FIG. 2 it is apparent that the end wall 14 of the cap is initially formed with an outwardly projecting section or body of material 24 which is positioned centrally of the cap 10. As will be explained in greater detail subsequently, the outwardly projecting body of material 24 facilitates the forming of the raised body portion 20 of the label 12. The end wall 14 is reinforced by a downwardly extending circular ridge or flange 26 which is best seen in FIG. 3. The flange 26 strengthens the end wall and prevents undue warping or breaking of the end wall when the label 12 is mounted on the end wall. Threads 28 are formed in the side wall 16 of the cap for engaging a container with which the cap is associated in a known manner.

The method of securing the label 12 to the end wall 14 is illustrated in FIG. 4. A strip of label material 30, including an upper or outer layer 32 of metal foil and a lower or inner layer 34 of heat activated adhesive, is moved to the left or in the direction of an arrow 40. A die 42 is impressed against the material 30 by a stamping machine of known construction. The die 42 is formed in a known manner with a working surface or face which is a negative of the positive label 12. The die 42 cuts the label 12 out of the strip of material 30, leaving a hole or aperture 46 in the strip of material. To form the label the die is pressed downwardly against both the strip of material 30 and the end wall 14 of the cap 10 which is supported on a suitable member 48. The downward force of the die against the strip of material 30 simultaneously cuts the label 12 from the strip of material and shapes both the label and the end wall 14 of the cap 10.

The downward force of the die 42 shapes or extrudes the end wall 14 while shaping the label 12 to provide support for the background portion 18 and raised body portion 20. The protruding body of material 24 (see FIG. 2) has a volume and shape similar to the volume and shape of the body portion 20 of the label. The protuberance 24 is advantageously positioned on the end wall 14 of the cap 10 to provide material for intimate supporting contact with an entire inner surface of the label 12. This intimate contact between the label and the end wall of the cap 10 results from the simultaneous shaping of the label and extruding of the cap material as the die 42 is impressed against the strip 30 of label mate-

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rial. As is best seen in FIG. 5, this combined shaping of the label and the end wall 14 of the cap results in the cap being in intimate supporting contact with the entire inner surface 52 of the label while an outer surface 54 of the label is formed in low relief.

A heating element 60 (FIG. 4) is connected to the die 42 to activate the adhesive 34 as the die is impressed against the material 30 in the manner previously explained. The heat activated adhesive 34 securely bonds the metal foil 32 to the end wall 14 of the cap. It should be noted that the activation of the adhesive 34 occurs contemporaneously with the shaping of both the label 12 and the end wall 14 of the cap 10 by the die 42. The downward force of the die against the material for shaping the end wall 14 and the label 12 results in heat energy being dissipated in the label 12 and the end wall 14 of the cap. This heat energy assists in the activation of the adhesive 34. The combination of the supporting contact of the end wall 14 and the adhesive 34 prevents the label 12 from being torn off or moved relative to the cap 10. While a heat activated adhesive 34 is used in a preferred embodiment of the invention, it is contemplated that a pressure activated adhesive could also be used for securing the label 12 to the cap 10.

The manner in which the present invention may be practiced and the purpose to which it may be put are evident from the foregoing description. While a cap 10 has been used to illustrate the invention, it will be apparent to those skilled in the art that the labels or emblems 12 can be attached to many articles of manufacture other than the cap 10. To attach the labels 12 to articles of manufacture other than the cap 10 it will be necessary to merely support the article of manufacture, impress a die against the label material and the article of manufacture to shape both the article of manufacture and the label while contemporaneously therewith activating a layer of adhesive on the label material. It will also be apparent to those skilled in the art that the disclosed method can be used to form and secure many different types of labels or emblems. Therefore, while a particular embodiment of the invention has been shown, it should be understood, of course, that the invention is not limited thereto since many modifications may be made; and it is contemplated to cover by the appended claims any such modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A method of securing a label to an article of manufacture comprising the steps of: impressing a strip of self-supporting label material including a layer of heat

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activated adhesive against the article of manufacture with a die formed in accordance with the shape of the label; shaping a portion of the label material with the die during said impressing step to form a label having a body portion projecting from a background; shaping the article of manufacture contemporaneously with the shaping of the portion of said label material during said impressing step to provide intimate contact between a surface of the article of manufacture and the projecting body portion and background of the label; and activating a layer of adhesive located between the label material and the article of manufacture contemporaneously with said impressing step to securely attach the label to the article of manufacture.

2. A method as set forth in claim 1 wherein: said activating step includes heating the label to activate the adhesive with heat transferred from the die.

3. A method as set forth in claim 1 further including: cutting the labels from the strip of label material during said impressing step.

4. A method of securing a label to an article of manufacture comprising steps of: impressing a strip of self-supporting label material including a layer of heat activated adhesive against the article of manufacture with a die formed in accordance with the shape of the label; shaping a portion of the label material with the die during said impressing step to form a label having a body portion projecting from a background; shaping the article of manufacture contemporaneously with the shaping of the portion of said label material during said impressing step to provide intimate contact between a surface of the article of manufacture and the projecting body portion and background of the label; heating the label to activate a layer of adhesive located between the label material and the article of manufacture contemporaneously with said impressing step to securely attach the label to the article of manufacture with heat transferred from the die; and cutting the label from the strip of label material during said impressing step.

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