

Nov. 18, 1969

J. M. SEGEL

3,478,870

METHOD AND ARTICLE FOR PACKAGING OBJECTS

Filed Aug 8, 1968

2 Sheets-Sheet 1

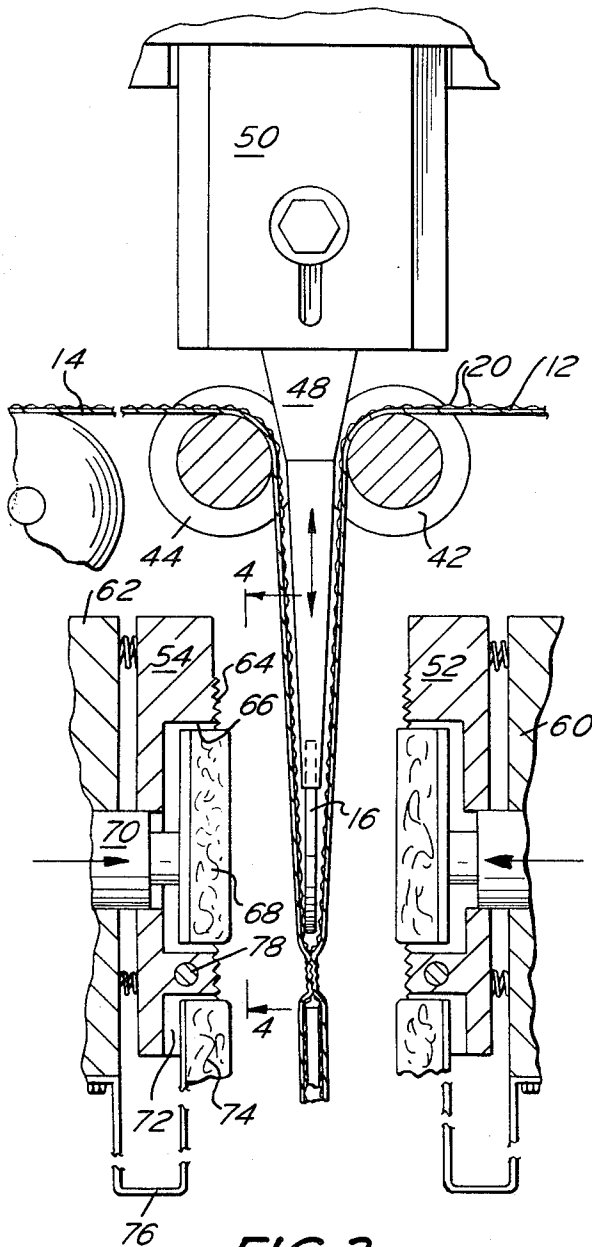


FIG. 3

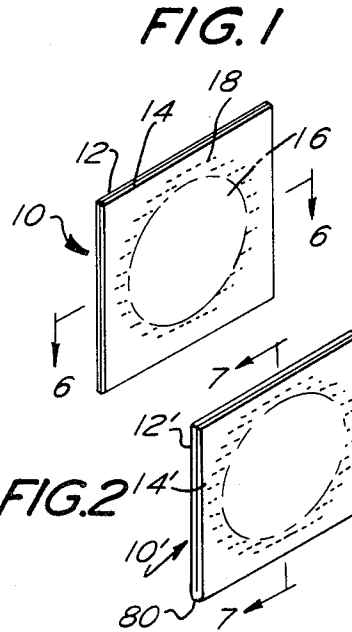


FIG. 2

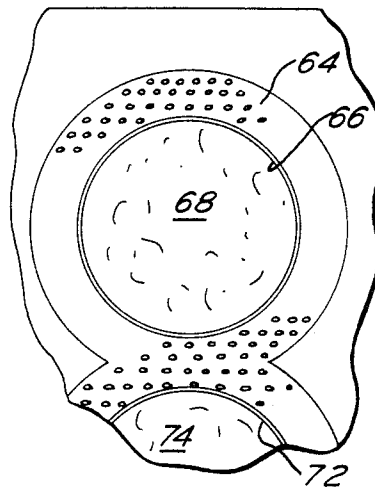


FIG. 4

INVENTOR
JOSEPH M. SEGEL

BY

Seidel & Sonda
ATTORNEYS

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J. M. SEGEL

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FIG. 5

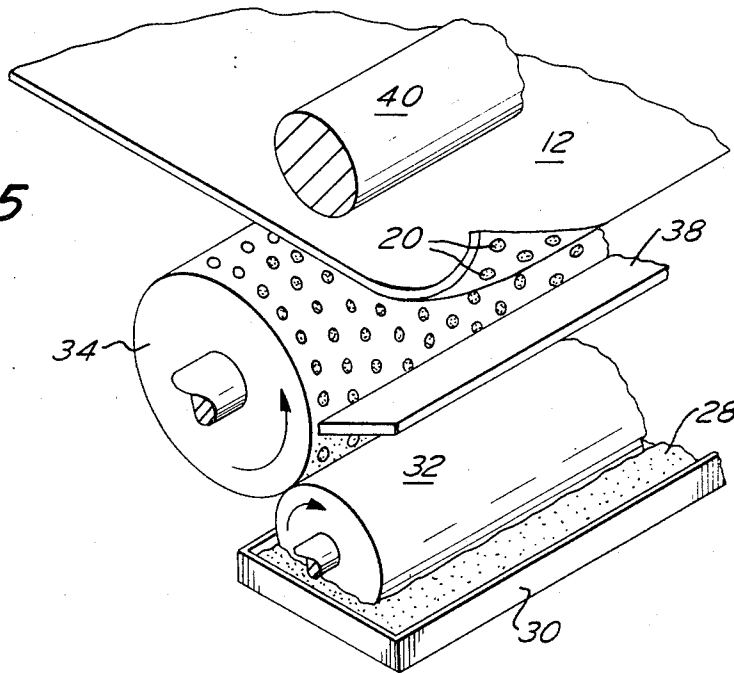


FIG. 6

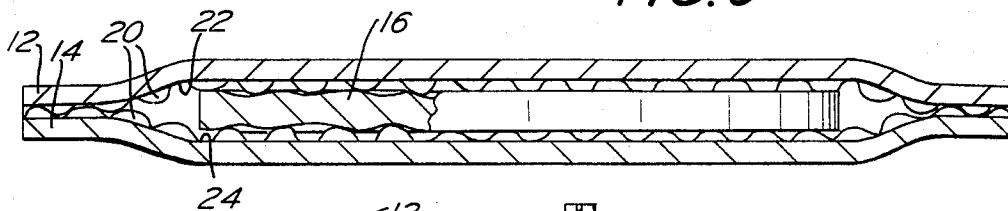


FIG. 8

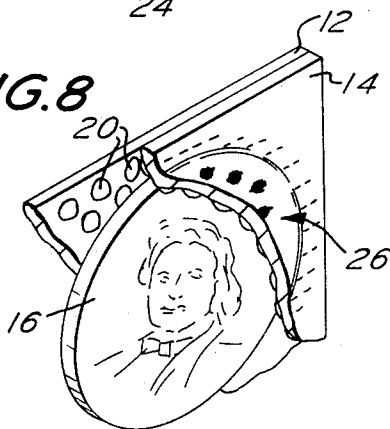
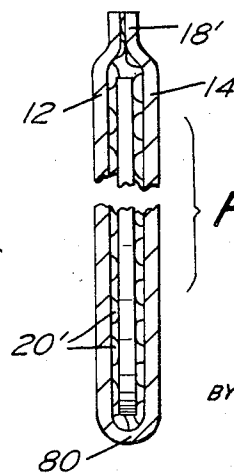


FIG. 7



INVENTOR
JOSEPH M. SEGEL

BY

Seidel & Standa
ATTORNEYS

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3,478,870

METHOD AND ARTICLE FOR PACKAGING OBJECTS

Joseph M. Segel, Philadelphia, Pa., assignor to The
Franklin Mint, Inc., Yeadon, Pa., a corporation of
Pennsylvania

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11 Claims

ABSTRACT OF THE DISCLOSURE

A method is disclosed for packaging objects such as coins or the like between layers of paper in a manner whereby the surface contour of the objects is not ascertainable by tracing through the layers. The article comprises a package formed of layers of sheet material having discrete spaced beads of thermoplastic material on inside faces thereof, the beads providing thermoplastic adhesive for forming the package and preventing tracing through the layers.

This invention relates to a method and article for packaging objects, and more particularly, to a method and article for packaging objects such as coins or the like. Still more particularly, the present invention is directed to a method of packaging coins or the like wherein tracing through the packaging material to determine the surface contour of the packaged coin is precluded, and an article which may be made by such method.

It has been proposed to employ packaged coins, tokens or the like having indicia in relief thereon in games intended to promote the sale of merchandise. In such games, a buyer of merchandise would be given a sealed package containing a coin bearing unknown indicia. Upon opening the package, the coin's indicia would become apparent. The nature of the indicia would determine whether the recipient received a prize, and if so, in what amount. It is, of course, absolutely essential to the purpose of such a game that the indicia not be ascertainable until the package is opened. The present packaging method and article insure this.

Thus it is one object of the present invention to provide a method of packaging coins, tokens or the like so that the surface contour of the packaged article is not ascertainable by tracing through the package.

Another object of the present invention is to provide a package for objects wherein the surface contour of objects within the package is not ascertainable.

Another object of the present invention is to provide a package for objects wherein means which preclude determination of the surface contours of the packaged object also provide an adhesive for making the package.

Other objects will appear hereinafter.

The foregoing and other objects of this invention are realized by a method wherein juxtaposed layers of package-forming material are provided, the layers having a discontinuous raised coating of polymeric material thereon; an object having surface contours thereon is placed between the layers; and the layers are heat-sealed around the periphery of the object by providing sufficient heat and pressure to soften and fuse the polymeric material.

For the purpose of illustrating the invention there are shown in the drawings forms which are presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIGURE 1 is a perspective view showing an article in accordance with the present invention;

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FIGURE 2 is a perspective view showing another form of the article in accordance with the invention;

FIGURE 3 is a cross-sectional view showing an example of an apparatus for performing the present method;

FIGURE 4 is a partial sectional view taken along the line 4—4 in FIGURE 3;

FIGURE 5 is a partial perspective view showing the means for performing a step of the method;

FIGURE 6 is a cross-sectional view taken along the line 6—6 in FIGURE 1;

FIGURE 7 is a partial cross-sectional view taken along the line 7—7 in FIGURE 2; and

FIGURE 8 is a perspective view, partially broken away, showing details of the article.

Referring now to the drawings in detail, wherein like numerals indicate like elements, there is seen in FIGURE 1 a package designated generally by the reference numeral 10. The package 10 comprises oppositely disposed wall-forming layers 12, 14. Received between the layers 12 and 14, and seen in outline in FIGURE 1 is a coin, token or the like 16. The coin, token or the like 16 will hereinafter be referred to for convenience as "coin," it being understood that the element 16 may be any flat token-like member having surface contours or indicia in relief thereon.

The layers 12, 14, in the preferred form of the article, are made of paper. The layers 12, 14 are bonded together around the periphery of the coin 16. The manner in which the layers 12, 14 are bonded will be explained in detail later.

Referring now to FIGURE 6, wherein the package 10 and coin 16 are seen in cross-section, the means forming the bond 18 are apparent.

Discrete spaced beads 20 extend inwardly from juxtaposed inner surfaces 22 and 24 of the layers 12, 14. Beads 20 are disposed in a regular pattern on the juxtaposed inner surfaces 22, 24, and may be said to form a coating substantially covering such inner surfaces. As illustrated in the drawing, beads 20 are in rows and form a discontinuous coating. The beads 20 are formed of thermoplastic polymeric material. The beads 20 may be fused to form the bond 18. Thus, the application of pressure to the respective outer faces of the layers 12, 14 and heat sufficient to melt the beads 20 causes the beads 20 to fuse to form the above-mentioned bond 18.

Referring now to FIGURES 6 and 8, the manner in which the beads 20 prevent determination of the contours of the coin 16 is apparent. Thus, a portion of the beads 20 extend inwardly from the juxtaposed inner surfaces 22, 24 into contact with the coin 16. The beads 20 thus mask the contours of the coin 16. An attempt to trace through the layers 12, 14 to determine the contours of the coin 16 results in a stipled pattern 26 due to the presence of the beads 20. The contours of the coin 16 are effectively masked.

Referring now to FIGURES 3 to 5, representative apparatus for making the present article is shown.

FIGURE 5 illustrates an apparatus for applying beads 20 to the layers 12, 14. Polymeric material 28 in a liquid or semi-liquid state is contained in the vessel 30. The material 28 may be maintained in the desired liquid or semi-liquid state by the application of heat to the vessel 30.

A transfer roller 32 is partially submerged in the material 28, and rotatable in the direction shown by the arrow thereon. A printing roller 34 is provided in surface contact with the transfer roller 32. The printing roller 34 has on its surface indentations 36 corresponding in size and shape to that desired for the beads 20. A doctor blade 38 is supported in known fashion in asso-

ciation with the printing roller 34. A back-up roller 40 is associated with the printing roller 34, and spaced from the printing roller 34 by about the thickness of the layer 12. Thus, the layer 12 can be passed between the printing roller 34 and back-up roller 40. The back-up roller 40 insures proper contact between the layer 12 and printing roller 34.

The transfer roller 32 picks up material 28 from the vessel 30, and transfers it to the printing roller 34. The doctor blade 38 removes the material 28 on the surface of the printing roller 34, leaving material in the indentations 36. The material is transferred from the indentations 36 to the layer 12, whereupon it solidifies to form the beads 20.

In FIGURE 3, there is seen an apparatus for forming the package 10 and inserting the coin 16 therein. The apparatus shown in FIGURE 3 is not per se novel, and is generally similar to the apparatus illustrated and described in detail in Patent 2,245,827; issued June 17, 1941.

Layers 12, 14 having beads 20 thereon are fed over feeding rollers 42. The layers 12, 14 may be supplied to feeding rollers 42, 44 directly from the apparatus shown in FIGURE 5, or may be stored on a storage roll 46, seen in FIGURE 3. A spout 48, mounted on a vertically movable slide extends downwardly between feeding rollers 42, 44.

The layers 12, 14 are fed downwardly on either side of the spout 48 between sealing blocks 52, 54. Sealing blocks 52, 54 are resiliently mounted by means of springs 56, 58 on respective body portions 60, 62.

Referring now to FIGURE 4, the sealing blocks 52 and 54 have on their faces complementary patterns of tapered projections 64. The sealing blocks 52, 54 also include central recesses 66, the above-mentioned projections 64 being disposed about the recesses. Soft pads 68 are yieldingly mounted in the recesses 66 on spring urged guide rods 70. The sealing blocks 52, 54 may be provided with further recesses 72. Additional pads 74, mounted on resilient leaf spring members 76 are received in the further recesses 72.

The area of the sealing blocks 52, 54 defined by the projections 64 may be referred to as sealing jaws. Lower portions of the sealing jaws are provided with heaters 78 for heating the jaws to soften or fuse the beads 20.

In forming packages, the sealing blocks 52, 54 are separated to the positions shown in FIGURE 3. The layers 12, 14 are drawn downwardly, by any well known means, not shown, between the sealing blocks 52, 54. Then the sealing blocks 52, 54 are moved toward each other so that the projections 64 press the layers 12, 14 together to form a sack-like structure having its upper end open. The heaters 76 heat and fuse the beads 20 adjacent the bottom and side portions of the sack-like structure.

The sealing blocks 52, 54 are then parted, and the slide 50 and spout 48 lowered to the position shown in FIGURE 3. In FIGURE 3, a coin 16 is shown at the moment of deposit in the sack-like structure.

The layers 12, 14 may then be indexed downwardly by known means, by a distance equal to the intended height of the package 10. The sealing blocks 52, 54 are then again brought together. The projections 64 on the lower and side portions of the sealing jaws then form the upper or closure portion of the package 10, while simultaneously sealing the bottom and side portions of the next package.

The pads 68 and 74 contact the layers 12, 14 when the sealing blocks 52, 54 are brought together. The pads 68, 72 stabilize the layers 12, 14 during the sealing operation, and also press the layers together to minimize entrapment of air within the package.

Finished packages may be removed in a continuous strip, to later be cut into individual discrete packages.

The above description of the packaging operation was made with reference to an apparatus generally similar to the one shown in Patent 2,245,827. In fact, other known

packaging apparatus can be used, if desired. For example, the apparatus shown in Patent 2,180,966; issued Nov. 21, 1939 could be used.

The apparatus shown in Patent 2,180,966 produces packages formed from a single sheet of material, the juxtaposed layers being separated by a fold line.

Referring to FIGURES 2 and 7, a package 10' formed by such an apparatus is shown. The package 10' includes oppositely disposed wall-forming layers 12', 14', separated by a fold line 80. A bond 18' joins the layers 12', 14' around the peripheral edges of the package, with the exception of the edge defined by the fold line 80. In all other respects, the package 10' is substantially the same as the above-described package 10. Beads 20' of thermoplastics polymeric material join the layers 12', 14', and prevent tracing through the layers to ascertain the surface contours of the coin contained therein.

Beads 20, 20' $\frac{1}{32}$ inch high have been found adequate to prevent tracing through the layers 12, 12', 14, 14'.

It is claimed:

1. A method of packaging objects having surface contours thereon comprising the steps of providing a layer of flexible material having a discontinuous coating of plastic polymeric material, placing a layer of flexible material in juxtaposition with said first-mentioned layer, inserting an object having a surface contour between said layers, and heat-sealing the layers around peripheral portions of the object by applying pressure to the layers and sufficient heat to form a bond between the layers.

2. A method of packaging in accordance with claim 1 wherein said providing step includes applying a discontinuous coating of plastic polymeric material in the form of a plurality of discrete beads on each of the layers, said placing step including positioning the beads on the respective layers juxtaposed before forming the bond between the layers.

3. A method in accordance with claim 1 wherein said providing step includes using a roller having indentations therein in spaced relation corresponding to the desired spacing of the coating, applying melted polymeric material in said indentations, removing excess of the plastic polymeric material from the surface of the roller, and passing at least the first-mentioned layer in surface contact with the roller to transfer plastic polymeric material from the indentations to said first-mentioned layer.

4. A method in accordance with claim 1 wherein said placing step includes unwinding said layers from spools, said inserting step including positioning objects in the form of coins between said layers at spaced points therealong, and cutting the layers along the bond to provide individually packaged coins whose surface contour is spaced from the layers by said discontinuous coating of plastic polymeric material.

5. A package for objects having surface contours thereon comprising oppositely disposed wall-forming layers having juxtaposed inner surfaces thereon, a discontinuous coating of thermoplastic polymeric material substantially covering the inner surface of one of said layers, a portion of said coating being adapted to contact an object in said package to prevent ascertainment of the surface contours of the object by tracing through said one layer, and a heat sealable plastic on one of said layers to form a heat-sealed closure for said package around the periphery of the object.

6. A package in accordance with claim 5, wherein said oppositely disposed wall-forming layers are portions of a single sheet of material, a fold in said sheet separating said oppositely disposed layers.

7. A package in accordance with claim 5, wherein said coating is discrete spaced beads of thermoplastic polymeric material substantially covering the inner surfaces of each of said layers, beads on respective layers being located so that they may be coupled to each other to form said closure.

8. A package in accordance with claim 6, wherein said

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oppositely disposed wall-forming layers are separate discrete layers of paper material.

9. A package in accordance with claim 7, wherein said oppositely disposed wall-forming layers are discrete layers of paper, the beads on the respective layers being in rows.

10. A package in accordance with claim 5, wherein said coating of thermoplastic polymeric material is defined by rows of projections.

11. A package for objects having surface contours thereon comprising oppositely disposed wall-forming layers having juxtaposed inner surfaces thereon, one of said inner surfaces having rows of beads of thermoplastic polymer material substantially covering the inner surface thereof, some of said beads being adapted to contact an object in said package to prevent ascertainment of the surface contours of the object by tracing through said layer having said beads thereon, and a heat-sealable plastic on one of said layers to form a heat-sealed closure for said package around the periphery of the object.

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WILLIAM T. DIXSON, JR., Primary Examiner

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53—28; 101—426; 117—37; 156—291; 161—148;
206—56; 229—9, 92