April 23, 1963 J. R. CHAPMAN ET AL 3,086,650

PACKAGE MARKING SYSTEM

Filed April 9, 1959 2 Sheets-Sheet 1

Fig. 1.

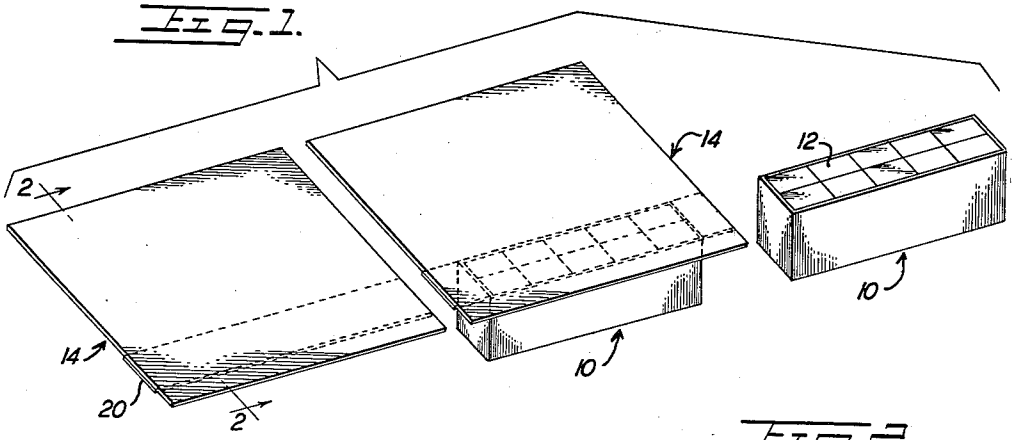


Fig. 2.



Fig. 3.

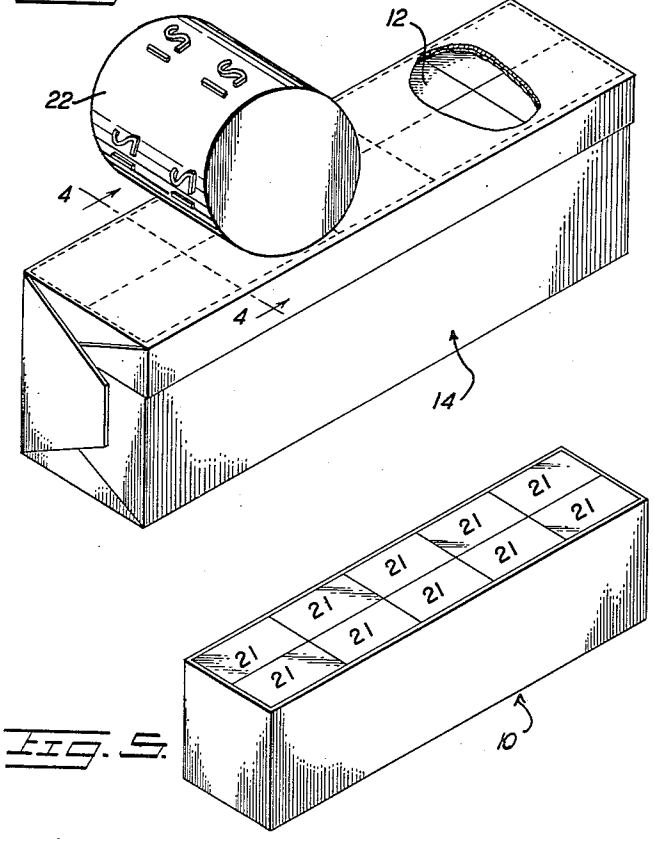


Fig. 4.

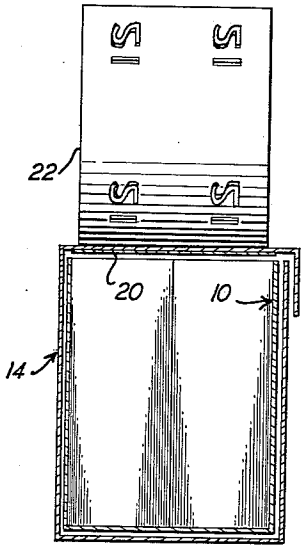


Fig. 5.

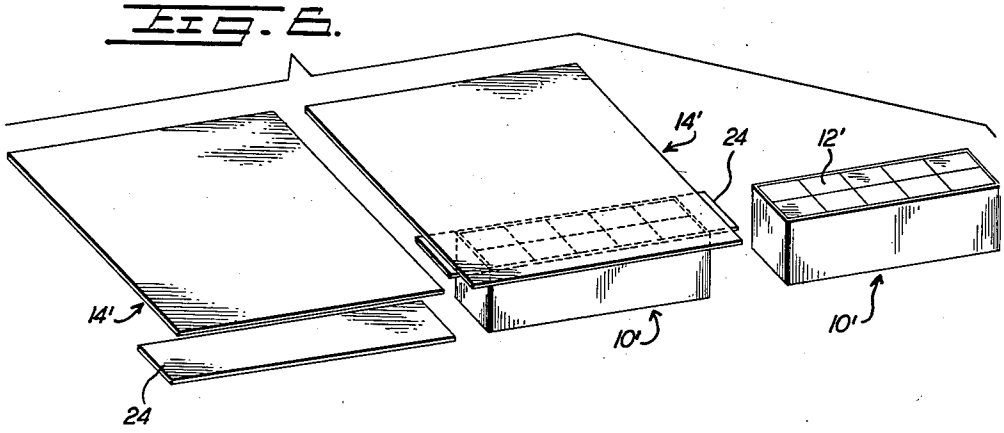
INVENTORS.
JAMES RICHARD CHAPMAN
MAURICE FRANCIS NAGLE
by their attorneys
Glenn and Jackson

April 23, 1963 J. R. CHAPMAN ET AL 3,086,650

PACKAGE MARKING SYSTEM

Filed April 9, 1959 2 Sheets-Sheet 2

Fig. 6.



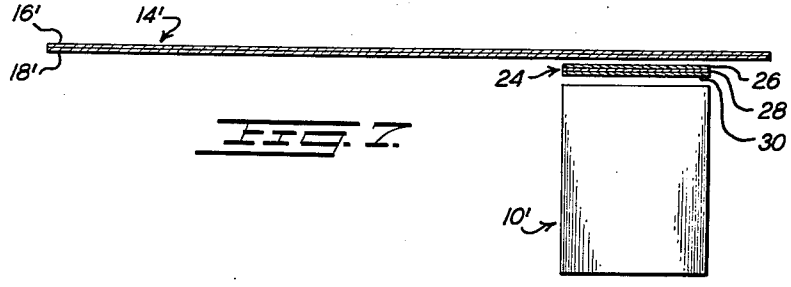


Fig. 7.

INVENTORS.
JAMES RICHARD CHAPMAN
MAURICE FRANCIS NAGLE
by their attorneys
Glenn and Jackson

United States Patent Office 3,086,650 Patented Apr. 23, 1963

3,086,650
PACKAGE MARKING SYSTEM

James Richard Chapman, Bon Air, and Maurice Francis Nagle, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Apr. 9, 1959, Ser. No. 805,211
4 Claims. (Cl. 206—65)

This invention relates to packages and packaging methods for articles such as cigarettes and the like and more particularly to a package and method for applying indicia such as a state cigarette tax emblem to individual packages contained within a larger package or carton. The invention will be illustrated and described in connection with a package and packaging method for use in connection with the application of cigarette tax emblems or indicia to individual cigarette packages, but it will be understood that the method and package of the invention are applicable to other uses.

In the tobacco industry, paper or paper-foil overwraps are widely used for wrapping cartons of cigarettes for export use, each carton containing a plurality of individual packages of cigarettes. However the use of such paper or paper-foil overwraps for cigarette cartons intended for domestic use within the United States has been limited by the fact that in most of the States of the United States, it would be necessary for the individual cigarette distributors or jobbers to destroy the protective overwrap some time before distribution to retail dealers in order to affix an ink tax stamp emblem by machine or hand to the individual cigarette packages contained within the overwrapped carton. This fact has tended to seriously curtail the use of paper or paper-foil overwraps on cigarette cartons within the United States.

Accordingly, it is an object of this invention to provide a package and packaging method, particularly useful in connection with the packaging of cigarettes and the like, which permits the application of indicia, such as tax stamp emblems, to individual packages within a larger overwrapped package without removing the overwrap from the larger package.

It is another object of this invention to provide a package and packaging method, particularly useful for cigarettes and the like, which permits indicia to be applied at local distribution points to overwrapped articles contained in the package, without removing the articles from the package.

It is still another object of this invention to provide a method of packaging, particularly useful for cigarettes and the like, which makes practical the use of an overwrap on nationally distributed cartons requiring the application of different types of localized indicia to the contents of the carton.

In achievement of these objectives, there is provided in accordance with one embodiment of this invention a carton for cigarettes or the like adapted to receive a plurality of smaller packages, such as individual cigarette packages, including a cardboard carton shell which is open along the bottom side thereof and enclosed in a paper or paper-foil overwrap having a heat transfer ink positioned on the surface of the paper which covers the open bottom side of the carton. A heated roller or other suitable heated impression means is passed over the bottom of the overwrapped carton at a local distribution point such as the individual cigarette jobber, to cause an imprint of the desired indicia, such as a state cigarette tax emblem, to the bottoms of the individual cigarette packages contained within the overwrapped carton without removing the overwrapping.

In a modified embodiment, the ink is carried by a heat transfer coating on a paper base which may be a separate strip member disposed between the inner surface of the overwrap and the bottom surface of the packages to be marked. Alternatively, the heat transfer coating may be carried by the paper surface of the overwrap. A heated roller or mandrel having the state tax emblem thereon is rolled over the outer surface of the overwrap to cause the heat transfer coating and the ink carried thereby to be transferred to the bottom surface of the individual cigarette or like packages.

For a better understanding of the invention, reference is now made to the accompanying drawings which show, for purposes of illustration only, certain present preferred embodiments of the invention. In the drawings:

FIG. 1 is a perspective view of a sheet of overwrap material bearing a layer of heat transfer ink, and a carton to be overwrapped, showing the relation of the location of the heat-transfer ink to the open bottom of the carton;

FIG. 2 is a view in transverse section along line 2—2 of FIG. 1;

FIG. 3 is a perspective view showing the use of a heated roller in contact with the outer surface of the overwrapped carton to cause transfer of the desired indicia to the bottom surface of the individual packages within the carton;

FIG. 4 is a view in transverse section taken along line 4—4 of FIG. 3;

FIG. 5 is a perspective view of the carton of FIGS. 1–3 with the overwrap removed and showing the indicia applied to the bottom surface of the individual packages within the carton;

FIG. 6 is a perspective view illustrating a modified package and packaging method using a separate strip having a heat transferable coating which carries a layer of ink; and

FIG. 7 is a view in vertical section of the modified package of FIG. 6, showing the relative positions of the overwrap, the coated strip and the carton being overwrapped.

Referring now to the drawings, there is shown in FIG. 1 a cardboard carton shell generally indicated at 10 which is closed along each of its sides except the bottom side of the carton, the carton shell being shown in inverted position so that the open bottom of the carton can be seen. A plurality of cigarette packages 12 are positioned wtihin carton shell 10, ten such packages arranged in two rows being shown within the carton shell. Each of the cigarette packages 12 usually includes an outer covering of cellophane, and is disposed with its bottom surface facing the open bottom of carton shell 10.

Carton shell 10 is entirely wrapped with a sheet of overwrap material generally indicated at 14. As best seen in FIG. 2, overwrap sheet 14 is a two-ply lamination including a ply 16 of metal foil material, such as aluminum foil, for example, on the outer surface of the overwrap, a ply of paper 18 on the inner surface of the overwrap, and an adhesive (usually glue or wax) between the plies. Alternatively, overwrap sheet 14 may consist only of a sheet of paper.

A marking material in the form of a layer 20 of heat transfer ink is positioned on the inner surface of paper layer 18 of paper-foil overwrap 14. Where the overwrap does not include a foil layer, but only a layer of paper, the heat transfer ink is on the surface of the paper layer facing the bottoms of the cigarette packages.

A working example of a heat transfer ink formulation which can be applied at an application rate of two pounds per ream, on the paper side of a laminated overwrap sheet 14 of aluminum foil, wax, glassine, and will transfer legibly to the cellophane (MD–31) cover of a cig-

arette pack, at 275° F. under 20 p.s.i. pressure with a one-half second dwell time in the heat sealer, is as follows:

	Percent
Ethyl cellulose, 7 cps. N-type	20.17
Paraffin wax (148–150° F. M.P.)	0.63
Plasticizer (Dow #5)	14.16
Toluol	50.83
Ethyl alcohol (95%)	12.71
Aviation oil blue (Calco pigments)	1.50
	100.00

The width of layer **20** of heat transfer ink is made of a dimension substantially equal to the transverse width of carton shell **10** so as to overlie both rows of cigarette packages **12** positioned within the carton. If desired, instead of using a single layer **20** to overlie both rows of packages within the carton, two individual layers, each overlying one of the rows, may be used. Overwrap **14** is wrapped around the carton in any suitable manner, as, for example, in the manner shown in FIG. 3, as long as the portion of the overwrap containing the heat transfer ink **20** overlies the open bottom portion of the carton, with the heat transfer ink on the surface of the paper lamination facing the bottoms of the cigarette packages.

When carton **10**, overwrapped as shown in FIG. 3, reaches a local distributor or jobber in any one of the States of the United States requiring the positioning of a tax emblem on the individual cigarette packages contained within carton **10**, a heated roller such as that indicated at **22** in FIG. 3 is rolled over the outer surface of the overwrap along the bottom side of the carton having the heat transfer ink positioned on the inner surface of the overwrap. The heated roller **22** is provided with raised surfaces, such as the number "21" which is assumed to be the desired tax emblem. Roller **22** may be connected to a tax meter. The raised numbers applied with the heat and pressure of the roller, cause the heat transfer ink from layer **20** to be transferred to the bottom surfaces of packages **12** within carton **10** without removing the overwrap from the carton. When the overwrap is finally removed from the carton by the retailer or ultimate purchaser, each cigarette package within carton **10** will have the desired indicia printed on the bottom surface of the package, as best seen in the view of FIG. 5.

In a modified embodiment of the invention shown in FIGS. 6 and 7, instead of using a heat transfer ink carried by the paper surface of the overwrap, the indicia is transferred to the cigarette packages by a marking material in the form of a heat transfer coating which serves as a carrier for a conventional printing ink. The heat transfer coating may, for example, be similar to that sold by Dennison Manufacturing Co., of Framingham, Massachusetts, under the registered trademark "Therimage."

There is shown in FIGS. 6 and 7 a cardboard carton shell **10'** which is similar to carton shell **10** described in connection with the embodiment of FIGS. 1–5. Carton shell **10'** is closed along each of its sides except the bottom side of the carton shell, the carton shell being shown in inverted position in the views of FIGS. 6 and 7. A plurality of cigarette packages **12'** are positioned within carton shell **10'**, ten such packages arranged in two rows being shown within the carton. An overwrapping generally indicated at **14'** is wrapped around the carton shell in any suitable manner, as, for example, the manner shown in FIG. 3 for the embodiment of FIGS. 1–5. Overwrap **14'** may be made of a two-ply lamination of aluminum or other metal foil **16'** and paper **18'**, as shown, or may consist of only a paper layer. Interposed between the inner surface of overwrap **14'** and the bottom surfaces of cigarette packages **12'** is a strip generally indicated at **24** having a width substantially equal to the transverse width of the two rows of cigarette packages

shown in carton shell **10'**. The strip **24** includes a paper base portion **26** which serves as a carrier for a heat transferable coating **28** which faces the bottoms of cigarette packages **12'**. Coating **28** carries on its surface which faces the bottoms of the cigarette packages a layer **30** of a conventional printing ink.

When carton **10'** reaches a local distributor or jobber, the tax indicia may be transferred onto the bottoms of cigarette packages **12'** by rolling a heated roller provided with raised surfaces corresponding to the tax indicia, such as roller **22** shown in FIG. 3, over the outer surface of the overwrap along the bottom side of the carton. The heat and pressure from the roller will cause a clear separation of the heat transfer coating **28** from paper base **26** onto the bottoms of the cigarette packages, the coating **28** carrying the ink layer **30** along with it. The transfer of coating **28** and ink layer **30** conform to the shape of the raised portions of the heated roller used to effect the transfer, since the raised portions of the roller have the shape of the desired tax indicia.

Instead of having the heat transfer coating **28** and ink layer **30** carried by a separate paper base **26** as shown in FIGS. 6 and 7, coating **28** carrying ink layer **30** may instead be directly positioned on the paper surface **18'** of overwrap **14'**.

It can be seen from the foregoing that there are provided in accordance with this invention packages and packaging methods which have great utility in that they permit the application of local indicia or other types of information to individual packages contained within a nationally distributed overwrapped carton. The packages and packaging methods of the invention are particularly useful in connection with the application of tax emblems to individual cigarette packages contained within an overwrapped carton of cigarettes since the overwrapped cartons may be nationally distributed by the cigarette factory and the tax emblems required on the individual cigarette packages by 42 of the 48 States of the United States may be applied by the local jobbers or distributors without opening the overwrapped carton. This permits the overwrapped carton to arrive at the local retailer with the overwrapping intact and with the tax emblems stamped or printed on the bottom surface of the packages contained within the carton.

While present preferred embodiments of the invention and methods of practicing the same have been illustrated and described, it will be recognized that the invention is not limited thereto, and may be variously embodied and practiced within the scope of the following claims.

We claim:

1. In a package assembly, the combination comprising shell means having an opening on one side, package means for cigarettes or the like positioned within said shell means, said package means including surface means disposed in said opening on said one side, a heat transfer material being disposed in said opening and forming an overlay adjacent said surface means to facilitate transfer of indicia thereto, and overwrapping material enclosing said shell means and said heat transfer material to form a closed package assembly, said overwrapping material having a flexible portion superimposed relative to said heat transfer material whereby said heat transfer material may be activated against said surface means while the package assembly remains closed.

2. In a package assembly, the combination comprising a carton having an opening on one side, a plurality of individual packages for cigarettes or the like positioned in said carton, each of said packages having a marking receivable surface exposed by said opening on said one side, heat transfer marking material disposed in said opening and forming an overlay adjacent said surfaces to facilitate transfer of markings thereto, and overwrapping material completely enclosing said carton and said heat transfer marking material to form a closed package assembly, said

overwrapping material having a heat receivable portion superimposed on said heat transfer marking material whereby a transfer of markings from said heat transfer marking material to said surfaces is accomplished exteriorly of said overwrapping material with the closed package assembly intact.

3. The combination as recited in claim 2 wherein said heat transfer marking material comprises a heat transfer ink.

4. The combination as recited in claim 2 wherein said heat transfer marking material comprises a heat transfer coating having an ink printed thereon.

References Cited in the file of this patent

UNITED STATES PATENTS

26,127	Richards	Nov. 15, 1859
1,168,787	Cohn	Jan. 18, 1916
1,367,077	Nevenschwander	Feb. 1, 1921
1,397,444	Mohr	Nov. 15, 1921
1,569,208	Sevigne	Jan. 12, 1926
1,685,645	Robbins	Sept. 25, 1928
2,138,350	McChesney	Nov. 29, 1938
2,547,602	Schmitt	Apr. 3, 1951
2,887,051	Maunder	May 19, 1959
2,895,272	Krukonis	July 21, 1959