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WRAPPER AND SYSTEM OF PRODUCING SAME

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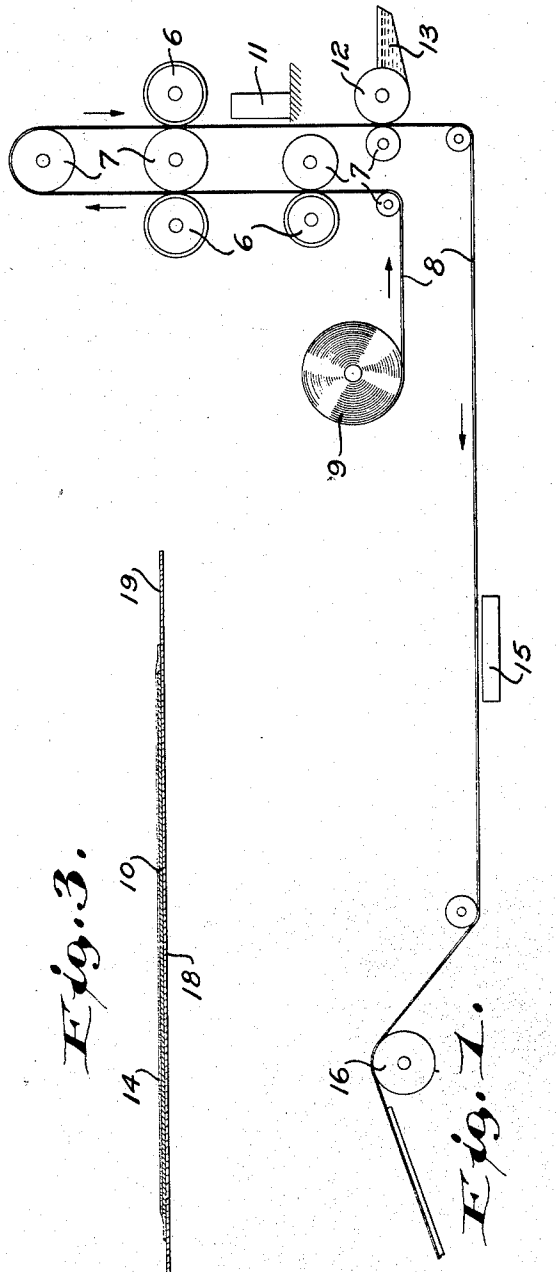


Fig. 1.

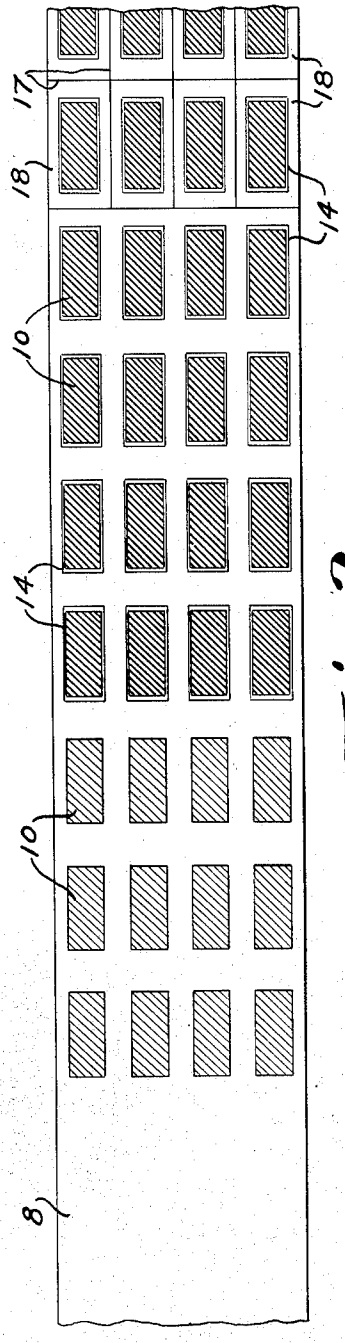


Fig. 2.

Fig. 3.

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WRAPPER AND SYSTEM OF PRODUCING SAME

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1 Claim. (Cl. 91—67.9)

My present invention relates in general to improvements in the art of manufacturing commodity wrappers, and relates more specifically to a new wrapper and to an improved system of producing the same.

It is the desire of practically every manufacturer of commodities such as candy bars and other confections which are ordinarily sold over counters and are usually selected directly by the prospective purchasers, to have such articles most attractively enwrapped so as to quickly and forcibly appeal to the eyes of the trade. In some instances, the wrappers enveloping such articles have heretofore been provided with transparent windows which would permit observation of the enwrapped commodity directly through the transparent zone of the wrapping sheet; but since some substances such as chocolate are subject to discoloration when exposed to strong light for an extended period of time, these prior window wrappings are not suitable for such commodities.

It has heretofore been proposed to obviate such objection by wrapping commodities such as chocolate bars or chocolate-coated candies or confections, in relatively opaque wrappers having decorated areas which in some instances were colored to simulate the general appearance of the enclosed articles, thus endeavoring to make it appear as though the articles themselves were directly visible through the outer wrapping sheets. While this method of displaying goods is quite satisfactory from a theoretical standpoint, it is difficult with the prior modes of applying the decorations to the wrappers, to produce a highly attractive appearance and to simulate the appearance of the concealed articles sufficiently clear and exact, so as to produce the desired visual effect.

Due to the limited profits available to the manufacturers of these commodities and of the wrappers therefor, and because of the large numbers of these wrappers which are used, it is very desirable to form the same from continuous strips or ribbons of rather thin and inexpensive sheet material, which ribbons are rapidly advanced through presses wherein the decorations and printing are applied with quick drying inks, and the printed ribbons are preferably subsequently cut into sections to produce the final wrappers. The quick drying inks which are necessarily used because of the high speed of production, if merely applied and permitted to dry in the ambient atmosphere, rather quickly lose their gloss or lustre and become flat appearing, thereby destroying the desired visual effect of simulating the appearance of the commodity and also making the wrappers relatively unattractive.

In order to preserve the lustre of the printing, it was heretofore proposed to varnish the printed areas with a transparent varnish, but these prior attempts to so preserve the lustre, were carried on in separate machines after the sheets had been cut into individual wrappers. Because of the relatively thin and frail grade paper used in the formation of these wrappers, they could not be handled after being cut into sections by hand or by automatic feeders without considerable waste, and by virtue of the fact that the varnishing was done in a machine other than that in which the printing was accomplished, a considerable portion of the lustre of the ink was lost before the varnish was applied. The handling necessitated by transferring the printed wrappers to the varnishing machines also excessively increased the cost of production, so that this prior method of producing wrappers has been discarded.

Some attempts have also been made to apply the decorations with transparent inks to relatively transparent wrapper sheets, and to place beneath the transparent colored and decorated areas of the outer sheets, relatively opaque but shiny inner wrapper sheets of foil or the like which are intended to directly conceal the articles and to reflect light rays through the transparent decorations and thereby enhance the lustre thereof. While this method of producing an attractive package is highly satisfactory, it requires the use of a relatively costly compound or composite wrapper, and therefore becomes prohibitive in cost for wrapping commodities which are sold at low prices and with limited profits.

I have discovered that if the decorative or printed matter is applied to a relatively thin and inexpensive opaque single wrapper with the aid of quick drying ink or similar coloring material, and the decoration is immediately thereafter coated with a transparent substance such as lacquer, even before the ink has become thoroughly dry or set, the lustre of the colored area will be enhanced, and the general appearance and attractiveness of the final wrapper will be materially improved. In order to insure sufficiently rapid application of the lustre preserving layer, the coating should preferably be applied in the same machine which applies the decorations, and as quickly as possible thereafter. The transparent coating is preferably applied only to

the decorated central area of the wrapper, and should be dried simultaneously with the coloring matter or ink, and if this procedure is followed, the transparent coating will improve and permanently preserve the lustre of the decorations and will not waste coating material nor interfere with the application of glue or other adhesive to the edge portions of the wrapper.

It is therefore an object of my present invention to provide a new and useful decorated wrapper which may be produced at minimum cost, which is relatively opaque and adapted to be used singly, and the docorations whereof have a highly lustrous and attractive appearance.

Another specific object of my invention is to provide an improved method of producing decorated wrappers with the aid of printing ink and transparent coatings applied to the ink in such a manner that the lustre of the ink is permanently preserved, and even materially enhanced.

These and other specific objects of my invention will be more clearly apparent from the following detailed description.

A clear conception of the several steps involved in my improved method of producing wrappers, and of the general construction and mode of operation of the machinery employed in constructing the improved commodity wrappers, may be had by referring to the drawing accompanying and forming a part of this specification wherein like reference characters designate the same or similar parts in the several views.

Fig. 1 is a diagram of a combined printing press and lacquer applying machine for rapidly producing a succession of my improved commodity wrappers;

Fig. 2 is a diagrammatic plan view showing the several steps to which a continuous ribbon of wrapper forming material is subjected in carrying out my improved process; and

Fig. 3 is a materially enlarged and somewhat distorted vertical section taken longitudinally through one of my improved wrappers.

While my invention has been shown and described herein as being more particularly applicable to the production of wrappers for confections such as chocolate bars, it is not the intent to thereby unnecessarily restrict the scope, since the improved method may obviously be more generally applied in the manufacture of other types of commodity wrappers.

Referring to the drawing, the improved printing and coating machine shown in Fig. 1, comprises in general a series of cooperating printing and guide rollers 6, 7 which are successively cooperable with a continuous ribbon 8 of thin stock derived from a supply roll 9, to apply printed and decorative areas 10 to the ribbon; a heater 11 for partially drying the areas 10 as the ribbon 8 is rapidly advanced beyond the last printing roller 6; a transparent coating applying roller 12 coating with a liquid supply basin 13 and cooperable with the ribbon 8 to apply transparent protective coatings 14 only to the decorated and printed areas 10; a final heater and dryer 15 for simultaneously drying both the printing ink and the transparent coating; and cutting mechanism 16 for finally severing the ribbon 8 along lines 17 into a plurality of individual wrappers 18.

The printing rollers 6 may be provided with rubber impression surfaces adapted to apply printing or decorations of several different colors upon the local areas 10 of the ribbon 8, in succession, and some quick drying coloring material is preferably used. The guide rollers 7 are of well known construction and may be positioned at various places along the path of travel of the ribbon 8 so as to insure proper guiding; and the ribbon 8 which is preferably formed of a relatively inexpensive and thin paper stock such as glassine paper, is constantly fed from the supply roll 9 and is advanced past the impression rollers 6 at a high rate of speed. The heater 11 which is disposed just beyond the last printing roller 6 may be of any suitable type adapted to preliminarily, but not necessarily completely dry the areas 10, and the coating roller 12 may be disposed just beyond the preliminary heater 11. The roller 12 is adapted to constantly withdraw the transparent coating material, such as lacquer or varnish, from the supply basin 13, and to apply a relatively thin protective coating 14 over each printed area 10 so that the coating will extend slightly beyond the border or edge portion of each area 10 as clearly shown in Figs. 2 and 3. The final heater and dryer 15 is positioned so as to thoroughly finally dry both the printing and the coating material as the ribbon 8 is advanced rapidly toward the final cutting mechanism 16; and this mechanism may be of any well known type adapted to sever the advancing ribbon 8 into individual wrappers 18 along cut lines 17, so as to provide an uncoated folding marginal portion 19 around the printed and coated area of each of the completed wrappers. While all of the structural elements of the machine have been shown diagrammatically in the drawing, the details of construction thereof is well known to those skilled in the art, and the diagrammatic disclosure will suffice to clearly illustrate the present improvement.

During commercial use of the improved system and while carrying on my improved method, the rollers 7, 8, 12 are constantly revolving to withdraw the ribbon 8 at high speed from the supply roll 9 and to advance the same as indicated by the arrows in Fig. 1, past the impression rollers 6, heater 11, coating roller 12, heater 15, and cutting mechanism 16, in rapid succession. While the ribbon 8 is being acted upon by the printing rollers 6, the printed or decorative areas 10 are applied thereto, and these areas are thereafter quickly and momentarily exposed to the heater 11 so as to initially set but not completely dry the ink or coloring matter. Before the coloring matter is actually dried and becomes dull, the areas 10 are subjected to the coating roller 12 which applies the coated areas 14 and thus completely covers the successive decorative areas 10. The printed and coated areas are thereafter quickly subjected to final drying by the heater 15, whereupon the ribbon may either be severed into individual wrappers 18 by severing mechanism 16, or it may be re-rolled for subsequent cutting. The successive complete wrappers 18 may thus be produced in rapid succession in a single machine, and without manual handling, and the transparent coatings 14 are effectively applied to preserve the gloss and lustre of the coloring material.

From the foregoing detailed description, it will be apparent that my present invention provides an improved process of and apparatus for rapidly and effectively producing a succession of improved wrappers from relatively thin, frail and inexpensive stock and at minimum cost. The decorative areas 10 may be caused to simulate any desired commodity for which the wrappers 18 are to be used, and the prompt application

of the protective coatings, immediately after the printing or decorations have been applied, preserves the gloss and lustre of the coloring material and produces highly attractive completed wrappings. The local application of the decorative and coating materials not only provides uncoated marginal portions 19 which may be folded about the articles during final wrapping without necessitating contacting of the fingers with the coated areas, but also reduces the cost of production by eliminating the use of excessive or wasteful quantities of coating substance, and I have found that my improved process enables production of extremely attractive labels or wrappers, at high speed, and at very moderate cost.

It should be understood that it is not desired to limit this invention to the exact details of construction of the apparatus herein mentioned or described, for various modifications within the scope of the appended claim may occur to persons skilled in the art.

I claim:

The method of continuously producing commodity wrappers from thin inexpensive non-transparent paper at relatively high speed which consists in passing a web of such paper through a printing station to apply with quick drying ink to predetermined spaced portions of said web a colored printed area, partially drying said printed area after the printing operation to dissipate a portion of the solvents of said ink so that the ink is partially but not completely set, and in the same machine and as quickly as possible thereafter coating with a quick drying transparent varnish substantially only the printed area of said web before the ink has completely set to enhance the gloss and lustre of the printed area, and then artificially drying said varnish and ink simultaneously so that the paper web may be immediately subjected to a subsequent operation without sticking.

M. T. HELLER.