

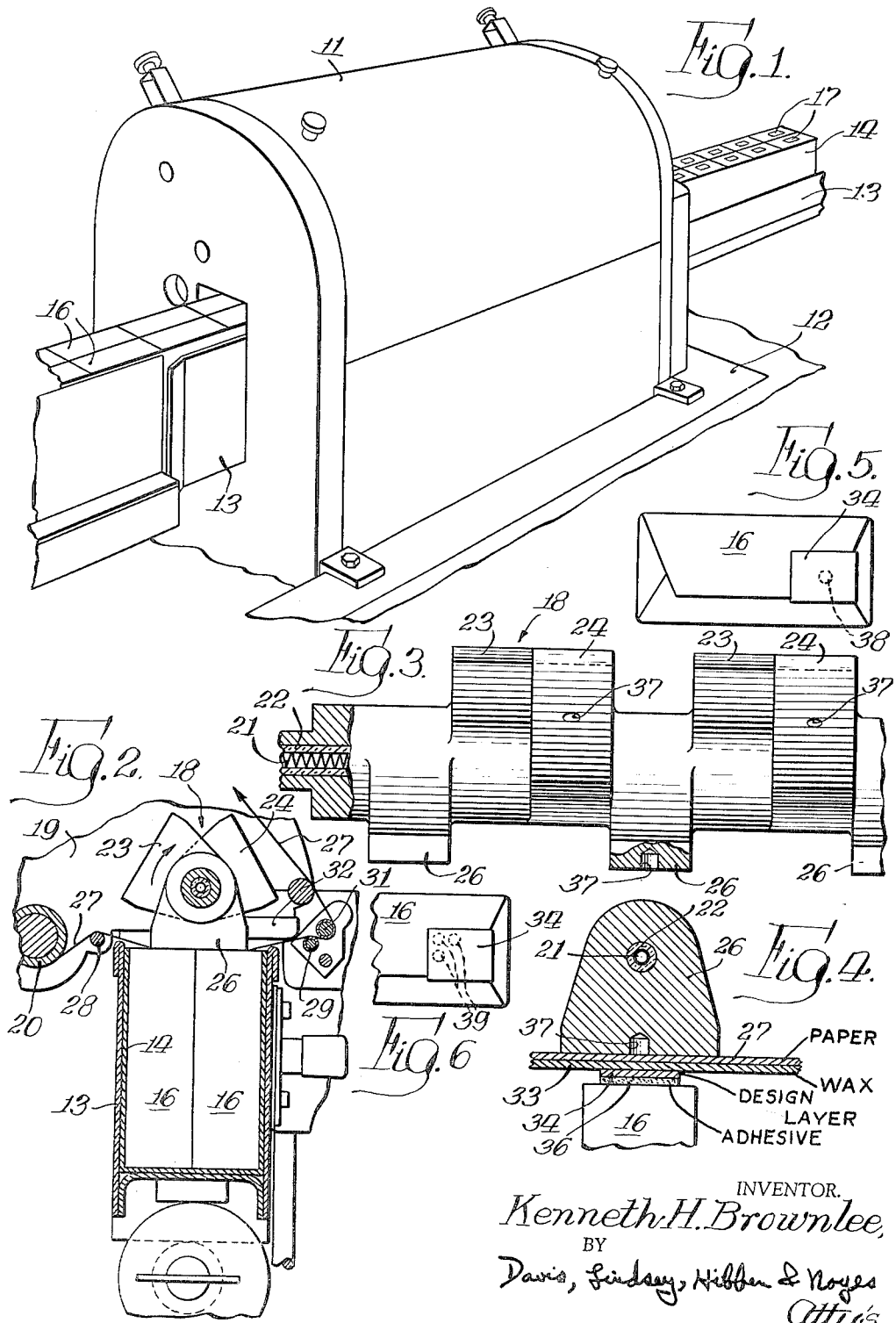
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APPLICATION OF TRANSFERS TO ARTICLES

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APPLICATION OF TRANSFERS TO ARTICLES
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This invention relates to improvements in the application of transfers to articles and more particularly to a novel means for providing a code marking or the like on the applied transfer so as to identify the source of the article bearing the transfer.

Although the invention has other uses in connection with the marking of a wide variety of articles with decalcomania transfers, the invention has particular utility in the application of revenue or tax stamps to cigarette packages or the like as required by various municipal and state regulations. Accordingly, the subsequent description of the invention relates to the latter embodiment but it should be understood that the invention is not limited to this particular field of use.

In accordance with the usual procedure, cigarette packages are distributed to retailers in conventional ten package cartons by various tobacco distributors or wholesalers. In compliance with the regulations of the particular state or municipal governing body, the tobacco distributor or wholesaler is authorized and required to apply a tax stamp to each individual cigarette package before delivery to the retailer. However, for various reasons the governmental bodies and law enforcement agencies desire to have some form of code marking or identification on each cigarette package which will indicate the particular authorized distributor who applied the tax stamp. Such code marking or identification is of great value in combating counterfeiting of tax stamps and is also of assistance in tracking down stolen goods.

In the past various methods of providing the desired code marking have been tried. For example, according to one scheme, printed indicia are applied to the various cigarette packages instead of a transfer or stamp and in such case the printing die is provided with an identification number or symbol assigned to the particular tobacco distributor. Printed code numbers or symbols have also been attempted in connection with the use of transfers or stamps. However, this scheme is generally unsatisfactory because of the usual difficulties accompanying the use of printing ink or the like and because of the fact that the printing rollers or dies tend to wear out and require close mechanical supervision and maintenance. Furthermore, a printed code marking or identification is too readily changed, obliterated, or counterfeited. Attempts have also been made to provide physical indentations or impressions on the tax stamps or the package by means of dimpler wheels or the like. However, the dimpling pins tend to become dull or are easily broken so that the mechanical and maintenance problems involved are also a serious disadvantage of this scheme.

Accordingly, it is a primary object of the present invention to provide a novel and improved means for imparting an identification or code marking to a transfer when applied to an article.

A further object of the invention is to provide novel improvements in a transfer applying machine for accomplishing the foregoing object.

Another object of the invention is to provide a novel method of applying transfers to articles while at the same time imparting a code marking or identification to the applied transfer.

An additional object of the invention is to provide a novel combination of an article and an applied trans-

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fer wherein the transfer bears a code marking or identification.

Other objects and advantages of the invention will become apparent from the subsequent detailed description taken in conjunction with the accompanying drawing, wherein:

FIG. 1 is a perspective view of a machine for applying tax stamps to cigarette packages and embodying the principles of the invention;

FIG. 2 is a fragmentary transverse sectional view of the essential portion of the machine which is pertinent to the present invention;

FIG. 3 is an enlarged fragmentary view of an important element of the machine;

FIG. 4 is an enlarged somewhat schematic view illustrating the manner in which the machine operates to apply a tax stamp while at the same time providing the desired code marking;

FIG. 5 is an end view of a cigarette package having a tax stamp applied thereto in accordance with the present invention; and

FIG. 6 is a fragmentary view similar to FIG. 5 but showing a different type of code marking.

Although tax stamps in the form of water or solvent applied transfers, labels, or stickers have been used heretofore, it is known that a heat applied transfer offers many advantages, particularly where many thousands of individual cigarette packages must have tax stamps applied thereto in a relatively short period of time. Accordingly, the present invention pertains to the use of a heat applied transfer wherein the transfer is carried on a temporary paper backing with a heat softenable coating of wax or the like interposed between the paper and the transfer design. The outermost exposed layer of the transfer design is covered with a heat activatable adhesive. Consequently, when the adhesive coated side of the stamp is placed in contact with a cigarette package the stamp is affixed merely by applying heat and pressure to the outer side of the paper carrier thereby simultaneously softening the wax coating and releasing the stamp from the carrier and also activating the thermoplastic adhesive so that the released stamp is adhered to the package. Various machines are known for use in conjunction with heat applied transfers such as those shown in my earlier U.S. Patents Nos. 2,493,522 and Reissue 24,516, and also in my copending application Serial No. 572,937, filed March 21, 1956.

For purposes of describing the present invention, a machine of the type shown in application Serial No. 572,937 is illustrated in the drawing. Thus, as shown in FIG. 1, the operating parts of the machine are enclosed in an outer casing 11 mounted on a table or support 12 and having an elongated open ended U-shaped feed chute 13. The chute 13 is of suitable dimensions to accommodate cartons 14 containing a plurality of cigarette packages 16 to which the tax stamps are to be applied. As seen in FIG. 1, the individual cartons 14 with their top flaps open to expose the upper ends of the cigarette packages 16 are fed into the chute 13 at the left-hand end of the machine, and as the cartons emerge from the chute at the right-hand end of the machine it will be seen that the cigarette packages have tax stamps 17 applied to their upper ends.

The detailed construction and operation of the machine are not important for an understanding of the present invention and therefore only the pertinent portions of the structure are illustrated in FIGS. 2, 3, and 4. The transfer applying member comprises an elongated iron or platen 18 (FIG. 3) which is rotatably carried between a pair of rocker plates, one being shown at 19, which are supported on a rock shaft 20. The platen 18 includes an electric heating element or coil 21 disposed within an

insulating tube 22 which extends axially through the main body portion of the rotatable platen 18.

The platen 18 is provided with three groups or sets of radially projecting heat conducting portions 23, 24, and 26 having heat and pressure applying surfaces. As will be evident from FIGS. 3 and 4, these groups of heat applying portions are disposed circumferentially around the platen 18 at 120° intervals and are also staggered longitudinally of the platen. By means of suitable operating mechanism, the heated surfaces of the portions 23, 24 and 26 are adapted to be brought into successive contact with the tax stamp transfers as the platen 18 rotates stepwise relative to the supporting rocker plates 19 during each cycle of machine operation. The individual tax stamps are carried on a continuous web or sheet of paper 27 which extends from beneath the shaft 20 and over a roller 28 and thence across the open top of the chute 13 and beneath the heated platen 18 to guide rollers 29 and 31 which are automatically adjustable to maintain tension in the web 27 and to provide the necessary slack in the web when required. From the guide rollers 29—31 the web 27 extends upwardly to suitable web feeding mechanism (not shown). In FIG. 2, the mechanism is shown in transfer applying position wherein a carton 14 containing cigarette packages 16 has been fed into the chute 13 and, by means of a suitable control system (not shown), the rocker plates 19 carrying the rotatable platen 18 have been moved downwardly relative to the shaft 20 so as to bring the projecting iron portions 26 into contact with the upper surface of the web 27. At the same time, a bumper or abutment 32 has affected pivotal movement of the support for the guide rollers 29—31 so as to provide sufficient slack in the web 27 to permit the latter to be pressed downwardly against the upper end surfaces of the cigarette packages 16.

Referring to FIG. 4, wherein the thickness of the various component layers of the web 27 and the stamps carried thereon have been exaggerated for purposes of clarity, it will be seen that the heated surface of the projecting portion 26 of the platen engages the upper surface of the paper web 27 which is coated at its under surface with a heat softenable wax coating 33. The design layer of the individual tax stamp is designated at 34 and the outermost heat activatable or thermoplastic adhesive layer is shown at 36. As the heated portion 26 of the platen is pressed downwardly against the web 27, it will be understood that the wax coating 33 is softened or melted to effect release of the design layer 34 and, at the same time, the adhesive layer 36 is activated or rendered tacky so that the released design layer 34 is securely affixed to the upper end of the cigarette package 16.

Although not fully apparent from the drawing, it should be understood that in any given rotary position of the platen 18, there will be five depending projected heated portions, such as the portions 26, for cooperation with the five pairs of cigarette packages 16 contained in the conventional carton. Thus, a single downward movement of the platen 18 is sufficient to apply tax stamps to the contents of a single carton of cigarettes. Following this operation, the rock plates 19 return the platen 18 to an upwardly spaced position above the chute 13 and the next cigarette carton is fed into operating position beneath the platen. At the same time, the platen 18 is rotated through 120° to bring the next set of heated projecting platen portions into position for applying another predetermined group of transfers from the web 27 to the cigarette packages. After another similar operation involving the third set of projecting platen portions and a third cigarette carton, the web 27 is then moved forwardly by the web feeding mechanism to present a fresh section of the web carrying additional transfers, and the three step cycle is again repeated. Reference should be made to my prior U.S. Patent Reissue No. 24,516 and my aforementioned copending application Serial No. 572,937 for further details of this operation.

In accordance with the present invention, one or more small recess or bores 37 (FIGS. 3 and 4) extend radially inwardly from the outer heat and pressure applying surfaces of the platen portions 23, 24, and 26 so that there is a relatively minor part of the contact area of each heated platen portion which is not in contact or engagement with the upper surface of the web 27. As a result, it will be seen that a corresponding minor area of the tax stamp design layer 34 is not directly heated, with the result that a corresponding minor area at the outermost adhesive coated side 36 of the stamp is insufficiently activated to adhere to the cigarette package 16. The recessed area 37 is preferably within the peripheral confines of the tax stamp 34, and since the wax coating 33 overlying the tax stamp 34 is heated over the major part of its area, the wax 33 is sufficiently softened to effect bodily release of the entire stamp 34 as a unit. At the same time, most of the area of the adhesive layer 36 is heated sufficiently to become tacky and adhere to the cigarette package 16. However, because of the relatively short time of application of heat and pressure during the applying operation, a relatively small area of adhesive conforming to the shape and location of the recess 37 is not sufficiently activated to develop its adhesive properties. As best seen in FIG. 5, the applied tax stamp 34 therefore has a small area, indicated by the dotted circular portion 38, which lies within the peripheral confines of the stamp but is not adhesively bonded to the package 16. In effect, the stamp has a small loose or unattached area in the nature of an unadhered blister. Normally, the unadhered area is not particularly noticeable and there is no disfiguration of the stamp. However, because the area 38 is relatively loose and unadhered, and because the design film 34 is a thin frangible material of a resinous or plastic nature (e.g. cellulose nitrate, ethyl cellulose, cellulose acetate, etc.), it can readily be removed by rubbing with the fingernail or other like abrading action. Thus, a code mark or identification becomes visible whenever desired. In other words, an investigator or anyone desiring to find out which particular tobacco distributor or wholesaler was responsible for the application of the tax stamp to a particular cigarette package need only rub or abrade the surface of the applied stamp to reveal a distinctive marking by reason of the removal of the predetermined unattached portion of the stamp.

It will be appreciated that the recess or aperture 37 in the face of the rotating iron can have any desired configuration such as a circle, square, triangle, etc., and by varying the number, size, and arrangement of such recesses in the faces of the iron it is possible to provide distinctively different code markings for a large number of wholesalers or distributors. Merely by way of illustration, there is shown in FIG. 6 a cigarette package 16 having a tax stamp 34 applied thereto with three circular unattached portions 39 arranged in a triangular fashion at one corner of the stamp.

Although the recess or bore 37 in the face of the iron need not have any special depth, it is generally preferred that the recess or bore be at least about $\frac{1}{16}$ inch deep. Occasionally, the application of heat to the upper surface of the web may be such that the wax in the marked areas is not sufficiently softened to permit release of the entire stamp as a unit. In such instance, the applied stamp will be somewhat disfigured by reason of the fact that the specified portion or portions of the stamp adhere to the paper web 27 leaving permanent perforations in the applied stamp. However, this is generally undesirable and it is preferred to have the stamp released intact from the web with only the relatively non-visible unbonded areas which can be removed by abrasion because of their frangible character.

Thus, it will be seen that the invention provides a unique and highly effective means of applying tax stamps while incorporating a concealed or substantially non-visible identification. It is an important advantage of

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the invention that the technique constitutes an integral part of the applying operation and machine and no separate or auxiliary device is required. As a result, it is difficult or impossible to eliminate the code marking or render it inoperative. There are no parts to wear out and no parts requiring constant maintenance or adjustment. In addition to the function of the invention in providing an identifying marking for the assistance of investigators and law enforcement agencies, the invention also offers the advantage of providing a simple method of cancelling or permanently disfiguring the applied tax stamps in those states or municipalities where cancellation of the applied stamp is required.

Although the invention has been described with particular reference to a certain specific embodiment, it should be understood that various alternatives and modifications may be resorted to without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A method of code marking a decalcomania label comprising applying to a supporting surface an uninterrupted section of frangible material comprising a transfer film having a design and a continuous adhesive layer thereover and sealing a substantial portion of the said section to the said supporting surface to affix the label securely thereto while leaving a preselected minor portion of the said section of frangible material disposed in a coded arrangement substantially unattached to the supporting surface, said unattached portion of the said frangible material being readily removable from the remaining portion of the said section on application of an abrading force to the unattached portion; whereby the said label is code marked without altering the transfer film of the said label.

2. A code marking label structure comprising an interrupted section of a frangible material having substantially a uniform thickness throughout and having a continuous uninterrupted film of a heat activatable adhesive material on one face thereof which is sealably mounted on a supporting surface, said section having a major portion thereof sealably affixed to said supporting

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surface with a minor portion thereof disposed in coded arrangement being substantially unattached to the said supporting surface, said unattached portion being readily removable from the remaining portion of the said section on application of an abrading force to the surface of the said frangible material but being indiscernible prior to removal of unattached portion; whereby the said label provides code markings without visible alterations in the surface of the label prior to the removal of the code marked portion thereof.

3. A code marking label having an indiscernible portion thereof disposed in a predetermined coded arrangement on a supporting surface comprising an uninterrupted section of a frangible material having a substantially uniform thickness throughout and which has on one surface thereof an uninterrupted adhesive coating heat sealable to a supporting surface, a major portion of said coating being heat sealed to a supporting surface and a minor portion thereof disposed in a coded arrangement being substantially unattached to the said supporting surface, said unattached portion of the frangible material being readily removable from the remaining portion of the said section on application of an abrading force to the surface of the said unattached portion and being indiscernible prior to removal of said unattached portion; whereby the label provides code markings without visible alterations in the surface of the label prior to removal of the code marked portion thereof.

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