

[54] **PACKAGING OF CIGARETTES**

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229/37 E

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229/15, 28 R, 37 E, 42

[56] **References Cited**

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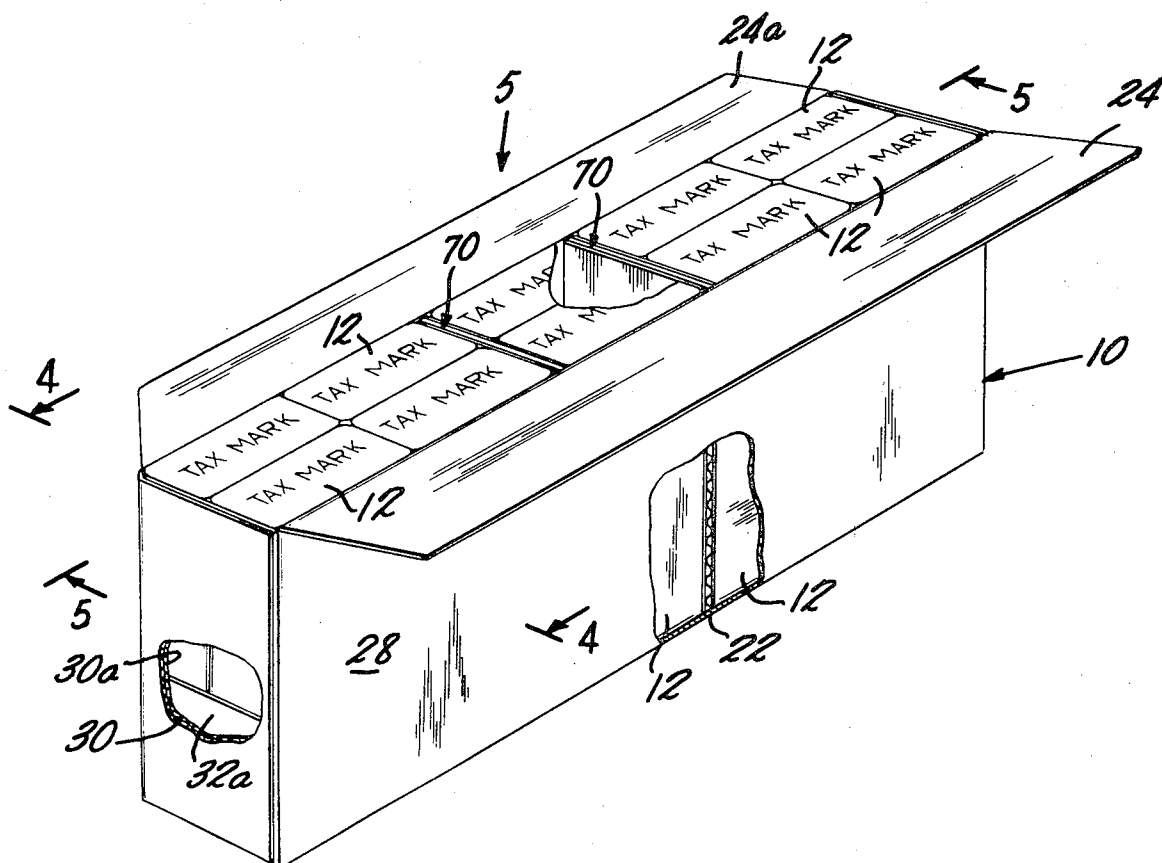
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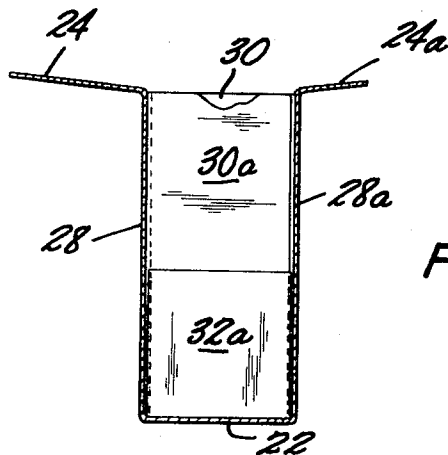
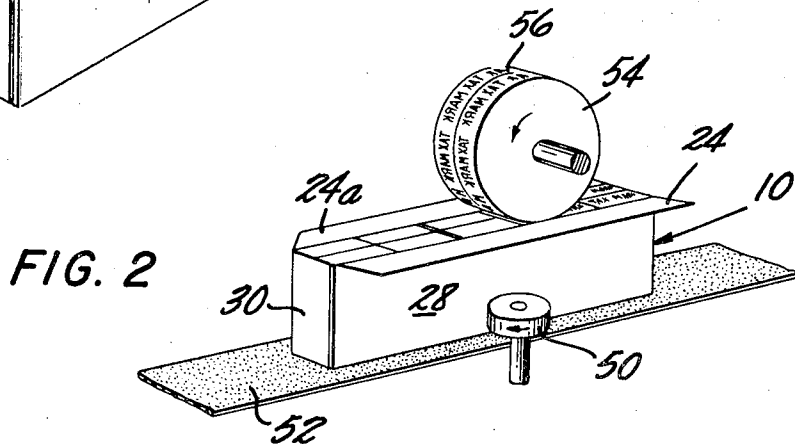
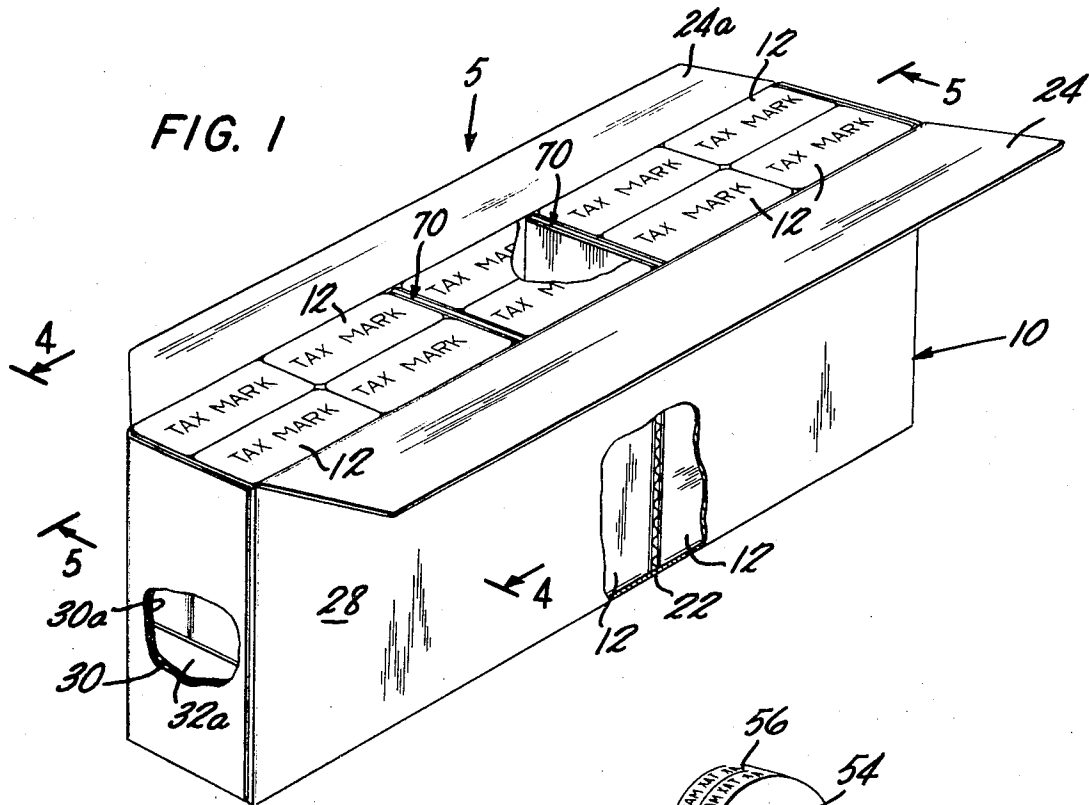
ABSTRACT

Packaging is provided in which smaller than standard-size cigarette packages are packed in a carton designed to permit the cigarette packages to be marked in a tax marking machine for marking standard-size cigarette packages.

7 Claims, 5 Drawing Figures



2 Sheets-Sheet 1



2 Sheets-Sheet 2

FIG. 3

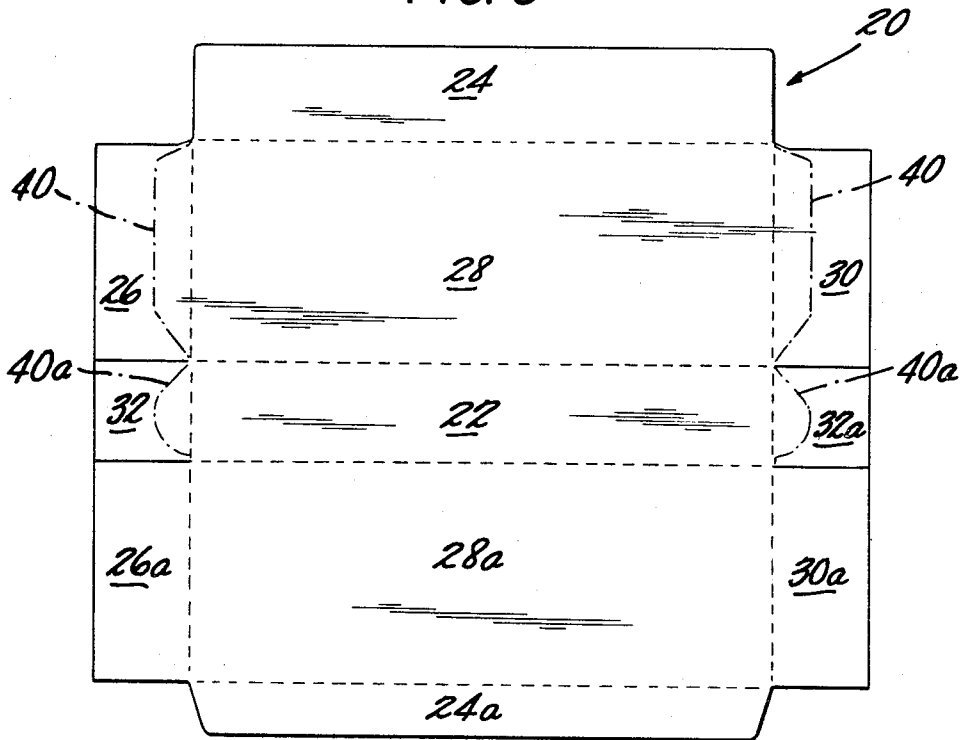
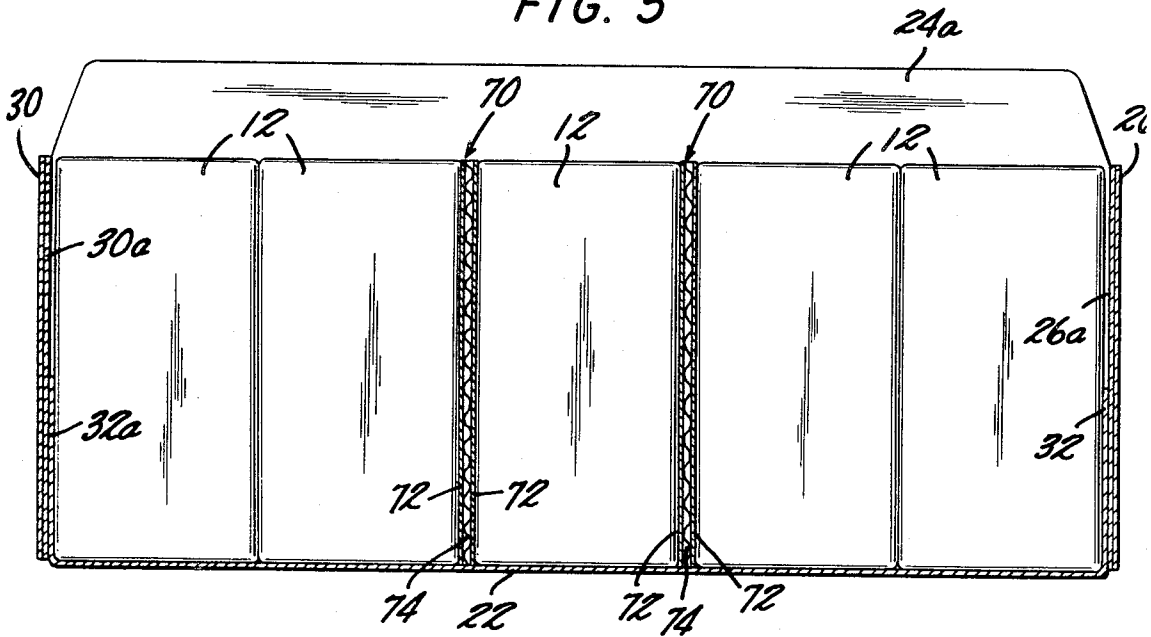


FIG. 5



PACKAGING OF CIGARETTES

BACKGROUND OF THE INVENTION

For many years cigarettes generally have been made with a relatively standard circumferential dimension of about 25 mm. While the overall length of cigarettes have changed from time to time, the industry generally has stayed with the cigarette circumferential dimension of 25 mm. Further, there has developed down through the years a generally standardized cigarette package size as well as carton size for packing cigarette packages in quantities of ten packages each. Accordingly, the dimensions and construction of the standard-size carton have been long established and the tax marking machinery employed by local wholesalers who tax mark the cigarette packages prior to retail sale in compliance with local taxing laws, have been designed to mark cigarettes in a standard-size carton.

Very recently, there has appeared in the cigarette market, a demand for cigarettes that are slightly smaller than standard-size cigarettes, namely, cigarettes having a circumferential dimension of about 23 mm. When such smaller than standard-size cigarettes are packaged in the conventional quantity of 20 cigarettes to a package, the package is somewhat smaller in length and width than a conventional size cigarette package and if such packages are packed in a carton designed for snug reception of a quantity of 10 such packages, overall carton dimensions will be also somewhat less than the standard-size carton. Utilization of existing tax marking machines in conjunction with such smaller sized carton by a local wholesaler for marking purposes would present a problem in respect that the longitudinal dimension of the carton being somewhat smaller than that of a standard-size carton, the tax marking wheel designed for standard-size cartons would not properly mark each of the smaller than standard-size packages of cigarettes arranged in the carton. Such problem would be less acute in respect to proper lateral registration of the tax marking wheel on the smaller than standard-size cigarette packages and in most instances the standard-size tax marking machine is acceptable in respect of the lateral positioning of the marking but not so in regard to longitudinal positioning. Economically, it is not feasible for the wholesaler to employ an additional tax marking machine designed solely for marking smaller than standard-size cigarette packages in a carton of correspondingly smaller than standard-size dimension and made in the same fashion as the conventional standard-size carton.

U.S. Pat. Nos. 3,489,272 and 3,536,246 both describe packaging of smaller than standard-size cigarettes in manners which make it possible to utilize standard-size tax marking machines for marking the smaller than standard-size cigarette packages. According to such patents standard-size cartons are employed and panel inserts are inserted in the cartons to hold the cigarette packages in predetermined positionings, such panels taking up a portion of the lateral and longitudinal space differentials which exist by reason of using the standard-size carton for the smaller than standard-size packages. While the adaptation of standard-size cigarette cartons for use with smaller than standard-size packages of cigarettes as taught in the aforementioned U.S. patents provides a solution to the problem of marking the smaller than standard-size packages with marking machines designed for use with standard-

size packages, there is occasioned by utilization of the larger standard-size carton a shortcoming involving slippage of the carton in transport through the machine with consequent improper marking. When the carton is advanced through the tax marking machine the same is advanced by means of one or more pairs of opposed feed rollers which engage opposite side walls of the carton to move same along a travel path in the machine while concurrently the tax marking wheel impresses tax marking indicia on the ends of the cigarette packages in the carton, and occasionally the carton, because it is not completely filled in its lateral expanse by the packages of cigarettes undergoes deflection of the side walls of the carton which cause the drive rollers to slip preventing or retarding proper transport of the carton through the machine.

SUMMARY OF THE INVENTION

The present invention has for a purpose the provision of packaging smaller than standard-size cigarette packages in a special carton adapted for transport along a travel path through a tax marking machine designed for tax marking standard-size cigarette packages contained in a standard-size carton. According to the invention, the smaller than standard-size cigarette packages are received in an elongated box-like enclosure formed from a single blank of material and having parts thereof which define carton end wall structure at the opposite ends of the carton, a pair of carton side walls, a carton bottom wall and carton top wall structure with the respective parts being joined along fold lines so that the blank can be erected by folding the parts along such fold lines to form the box-like enclosure. In this manner, when two co-extensive rows of smaller than standard-size cigarette packages are received in the enclosure with the packages in each row arranged in side-by-side alignment and paired with a corresponding package in the other row, such two rows will be co-extensive with the lateral expanse of the enclosure and snugly engage the side walls thereof. However the carton is so sized that the longitudinal expanse of the enclosure is not taken up by the two rows of packages thus leaving a portion of the longitudinal expanse of the enclosure unfilled. This is so provided since the smaller than standard-size cigarette packages have to be positioned longitudinally in a particular disposition so that such smaller than standard-size packages can be marked with the same tax marking wheel or unit designed for marking standard-size packages. To take up the unfilled space in the longitudinal expanse of the enclosure as well as to position the packages of cigarettes for marking the same, spacer means are provided in the form of a pair of panels disposed at opposite ends of the middle packages in each row of packages received in the enclosure, such panels being interposed between the said middle packages and the packages adjacent. In addition to serving as means for longitudinally positioning the cigarette packages within the carton enclosure, the panels prevent flexing of the side walls of the carton due to pressure of the feed rollers thereagainst at least in the regions of the disposition of the panels as the carton is being transported through the tax marking machine thereby preventing slippage of the feed roller units and consequent improper tax marking.

Furthermore, the carton is reinforced or stiffened at the end wall structure thereof to similarly prevent any flexure of the end walls of the carton at the time of pas-

sage through the tax marking machine which slippage would impede smooth transit of the carton through the machine. For such purpose the reinforcement or stiffening is provided in form of lateral stiffening means for the end wall structure comprised of a pair of reinforcing tab parts which are integral with opposite ends of the carton bottom wall part and which are folded upwardly therefrom adjacent overlapped end wall parts of the end wall structure, the tab parts being substantially transversely coextensive with the end wall structure and upwardly to a height which includes an appreciable portion of the vertical expanse in which the feed rollers engage the carton sides, the tab parts serving in such manner to prevent flexure of the end wall structure as the same passes between the opposed feed rollers.

The invention, accordingly, comprises the features of construction combination of elements and arrangement of parts, which will be exemplified in the construction hereinafter set forth and the scope of the invention will be indicated in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

A fuller understanding of the nature and objects of the present invention will be had from the following detailed description taken in conjunction with the accompanying drawing showing by way of example, preferred embodiments of the inventive concept and in which:

FIG. 1 is a perspective view of a cigarette carton containing smaller than standard-size packages of cigarettes and providing packaging in accordance with the present invention, portions of the carton being broken away for purposes of clarity, the carton being shown in open condition as it would be preliminary to tax marking of the cigarette packages.

FIG. 2 is a diagrammatic depiction of the manner in which the carton depicted in FIG. 1 is advanced through a tax marking machine designed to mark standard-size cigarette packages wherein tax marking indicia is applied to the end surfaces of the cigarette packages in the carton.

FIG. 3 is a top plan view of the blank from which the carton shown in FIG. 1 is formed.

FIG. 4 is a vertical sectional view as taken along the line IV—IV in FIG. 1.

FIG. 5 is a vertical sectional view as taken along the line V—V in FIG. 1.

Throughout the following description, like reference numerals are used to denote like parts in the drawing.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is concerned with packaging of smaller than standard-size packages of cigarettes in a specially designed carton. The carton is particularly suitable for use in conjunction with tax marking of the smaller than standard-size cigarette packages in a standard tax marking machine designed for tax marking cigarettes contained in a standard-size carton and in which opposed machine feed rollers engage the sides of the carton at a predetermined height above the carton travel path through the machine for advancing the carton through the machine.

The packaging 5 of cigarettes according to the present invention includes a cigarette carton 10 which is shown in erected condition in FIG. 1, the carton 10 being filled with ten smaller than standard-size cigarette packages 12 arranged in two coextensive rows

with the packages in each row extending in side-by-side alignment and being paired with a corresponding package in the other row. The carton 10 is an elongated enclosure structure which can be formed from a carton blank 20 of the form and outline depicted in FIG. 3.

Referring now to FIG. 3, the carton blank 20 is of a construction generally similar to the type well-known in the art being modified in accordance with the present invention in a manner as will be described in greater detail later. The blank 20 can be made from various materials including paper, cardboard, plastic and such other inexpensive materials as suit the intended purpose. The blank includes parts thereon corresponding to the ends, sides, top and bottom of the carton enclosure, the parts being defined in the blank by the score or fold lines shown in dashed lines in FIG. 3. Thus the blank has a part 22 corresponding to the bottom of the carton, a pair of flaps 24, 24a which overlappingly fold together when the carton is erected to comprise the top of the carton, a pair of end wall parts 26, 26a at one end of the blank and integral with the respective side wall parts 28, 28a and another pair of end wall parts 30, 30a at the other end of the blank and made integral with the side wall parts 28, 28a respectively, the end wall parts 26, 26a and 30, 30a together forming the end wall structure at opposite ends of the carton box-like enclosure. The blank further includes reinforcing tabs 32 and 32a at opposite ends of the carton and integral with the carton bottom 22 which reinforcing tabs as will be described later serve to reinforce the carton end wall structure to prevent flexure of the same upon passage through the tax marking machine. The manner of erecting a carton from the blank 20 is understood by those skilled in the art and involves the folding of the respective blank parts along the fold lines (shown in dashed lines) to form the box-like enclosure with the overlapping and securement together of the end wall parts 26, 26a and 30, 30a being done in conventional manner employing to that end a suitable adhesive to hold the overlapped parts secured.

As will appear later on an important feature of the carton of the present invention is the provision of lateral stiffening means in the end wall structure, and accordingly the end wall parts 26 and 30 as well as the reinforcing tabs 32, 32a contribute to such improvement and do so to an extent that can be understood with reference to the depiction in FIG. 3 of the size and shape of similar components as found in a prior art blank, the prior art components being shown in phantom outline at 40 and 40a so that the greatly enlarged size and change in shape of the end wall parts and reinforcing tabs is apparent.

Before further description of the packaging of the smaller than standard-size cigarette packages in the carton provided by the present invention, reference should be made to FIG. 2 for brief description of the manner in which a cigarette tax marking machine operates to tax mark the ends of cigarette packages. As shown in FIG. 2 and as those skilled in the art will appreciate, such machines receive the carton 10 with the flaps 24, 24a at the top of a cigarette carton 10 open in the manner shown in FIG. 2 and at least one pair of feed rollers 50, (only one such roller being shown in FIG. 2), function to advance the carton 10 in transport through the machine along a travel path 52 concurrently with the operation of the tax marking wheel 54

which carries a printing face 56 which prints the required tax marking on the ends of the cigarette packages 12, the operation of the feed rollers 50 and the tax marking wheel 54 being in timed sequence such that if the carton were to slip during the course of feed through the roller unit 50 the tax marking wheel would misregister on the package in the carton as well as possibly fail to mark certain ones of such packages. Following transport through the marking unit the carton is removed and the top flaps 24, 24a resealed. As those skilled in the art will perceive, the present invention is equally applicable to tax marking with machines of the decalomania transfer type which instead of printing indicia on the cigarette package ends function to tax mark by applying a decalomania stamp from a stock thereof to the package end.

When the blank 20 depicted in FIG. 3 is folded in appropriate manner along the respective fold lines and the end wall parts 26, 26a, 30, 30a are secured together adhesively they form the elongated box-like enclosure shown in FIG. 1. In erected condition, the reinforcing tabs 32, 32a extend upwardly from the bottom 22 interiorly of the end wall structure to a height which includes an appreciable portion of the vertical expanse in which the feed rollers 50 of the tax marking machine will engage the side wall parts 28, 28a of the erected carton on passage of the latter through the tax marking machine. Further the end wall structure when in secured overlapped condition is such that the end wall parts 26a, 30a extend from one side wall 28a transversely of the carton box-like enclosure substantially to the other side wall 28. The other end wall parts 26, 30 similarly extend substantially from the other side wall 28 transversely in the direction of the side wall 28a and terminate closely adjacent to such side wall 28a. Together the end wall parts at each end of the box-like enclosure form a relatively rugged end wall component which because it is comprised of two members which are overlapped for substantially their full transverse expanse is less susceptible to flexure than prior art type cartons which have the much smaller end wall parts shown in phantom lines at 40a. Furthermore the presence of the reinforcing tab 32, 32a at the ends of the carton further serve to reinforce the end wall structure to obviate flexure of the same when the carton passes through the feed roller units in the tax marking machine. The extent to which the reinforcing tabs extend upwardly from the carton bottom 22 can be best seen in FIGS. 1, 4 and 5.

After the carton 10 has been erected, the smaller than standard-size cigarette packages 12 are inserted in same in the manner shown in FIG. 1 and in which condition the cigarettes fill the full lateral expanse of the box-like enclosure. However the carton enclosure is dimensioned such that the cigarette packages do not fill the full longitudinal expanse of the same, there being left therein a space for the purpose which will be described shortly. In order to mark the cigarette packages 12 properly and with respect to the longitudinal positioning of the same so that a standard-size tax marking or stamp transfer wheel can be used, the longitudinal space which remains in the carton is filled by placing a pair of panel spacer members 70 in the carton at opposite ends of the middle packages of each of the two rows of cigarette packages therein. The panel members 70 thus function to space the cigarette packages in each row in a manner that permits the standard tax

marking wheel to mark properly the smaller than standard-size packages since the longitudinal positioning of the same in the carton is within the tolerances with which the marking wheel will function. As mentioned earlier herein lateral spacing of the smaller than standard-size packages for marking purposes is not as critical an accordingly no special consideration need be given to any particularly lateral positioning of the cigarettes for passage through the tax marking machine. It has been found that the spacer panels 70 will function to properly position all of the cigarette packages in the carton longitudinally most effectively if the same are located one at each side of the middle package of each row.

The panel members 70 28 be provided in any convenient form as for example they can comprise a pair of spaced apart strips 72 intervened by a continuous or corrugated component 74, corrugated cardboard for example serving ideally for this purpose. Additionally the spacer panels 70 extend the full transverse expanse of the box-like enclosure and are sufficiently rigid to prevent forces applied laterally of the enclosure from flexing inwardly the enclosure side walls 28m 28a at east in the regions of the disposition of the panel members 10, such laterally applied force being that applied to the carton enclosure by the feed rollers in the tax marking machine.

From the foregoing it will be appreciated that the present invention is of advantage in that it provides a specially designed carton and packaging of smaller than standard-size cigarette packages which permits the continued utilization of existing cigarette package marking machinery which has been designed to mark cigarettes in a standard-size carton.

While there is disclosed but one embodiment of cigarette packaging of the present invention it is possible to produce still other embodiments without departing from the scope of the inventive concept herein disclosed, and accordingly it should be understood that all matter contained in the above description, and in the accompanying drawings should be interpreted as illustrative and not in a limited sense.

What is claimed is:

1. Packaging of smaller than standard-size cigarette packages in a carton adapted for transport along a travel path through a tax marking machine designed for tax marking standard-size cigarette packages contained in a standard-size carton and in which opposed machine feed rollers engage opposite sides of said carton at a predetermined height above said travel path for advancing the carton through said machine, comprising in combination

a carton formed from a single blank of material having parts thereof defining carton end wall structure at opposite ends of said carton, a pair of carton side walls, a carton bottom wall and carton top wall structure, said parts being joined along fold lines in said blank with the blank being erected by folding the parts along said fold lines to form an elongated box-like enclosure, the end wall structure at opposite ends of said carton comprising a pair of end parts in said blank integral respectively with an end of one of said side walls, each said pair of end wall parts being folded transversely of said carton side walls in overlapped secured together arrangement, each pair of parts extending transversely from one carton side wall to the other carton side wall,

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a plurality of smaller than standard-size cigarette packages received in said box-like enclosure and arranged upright therein in two co-extensive rows with the packages in each row extending in side-by-side alignment and being paired with a corresponding package in the other row, said end wall structure and said side walls being dimensioned such that the two rows of packages are coextensive with the lateral expanse of said enclosure to snugly engage the side walls thereof, but are coextensive with only a portion of the longitudinal expanse of the same,

spacer means removably disposed at opposite ends of at least one pair of the packages in said rows of packages and filling the remainder of the longitudinal expanse of said enclosure, and

lateral stiffening means associated with said end wall structure for stiffening said end wall structure to prevent flexure of the same on passage of said carton through said feed rollers, said stiffening means extending upwardly from the bottom wall of said carton adjacent said end wall structure to a height which includes an appreciable portion of the vertical expanse in which said feed rollers engage said carton and comprising reinforcing tab parts integral with opposite ends of said carton bottom wall part and folded upwardly therefrom adjacent the

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overlapped end wall parts of said end wall structure, said reinforcing tab parts being substantially transversely coextensive with said end wall structure.

2. The carton of claim 1 in which said reinforcing tab parts are disposed interiorly of said end wall structure.

3. The carton of claim 1 in which said plurality of smaller than standard-size cigarette packages comprises two coextensive rows of five packages each, the spacer means being disposed at the opposite ends of the middle packages in each of said rows.

4. The carton of claim 3 in which said spacer means comprise a pair of panels disposed between the middle packages in each of said rows and the packages adjacent thereto.

5. The carton of claim 4 in which said panels are transversely coextensive with the lateral expanse of said enclosure.

6. The carton of claim 5 in which said panels are sufficiently rigid to prevent forces applied laterally of said enclosure from flexing inwardly the enclosure side walls at least in the regions of the disposition of said panels.

7. The carton of claim 5 in which said panels maintain said packages in predetermined longitudinal position within said enclosure.

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