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SHOELACE PACKAGING

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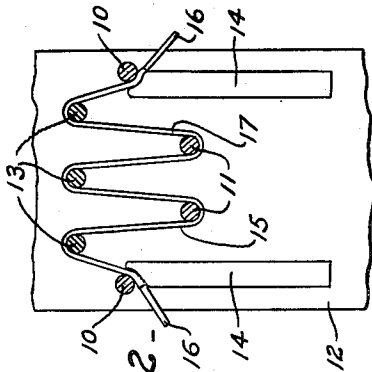


FIG. 2-

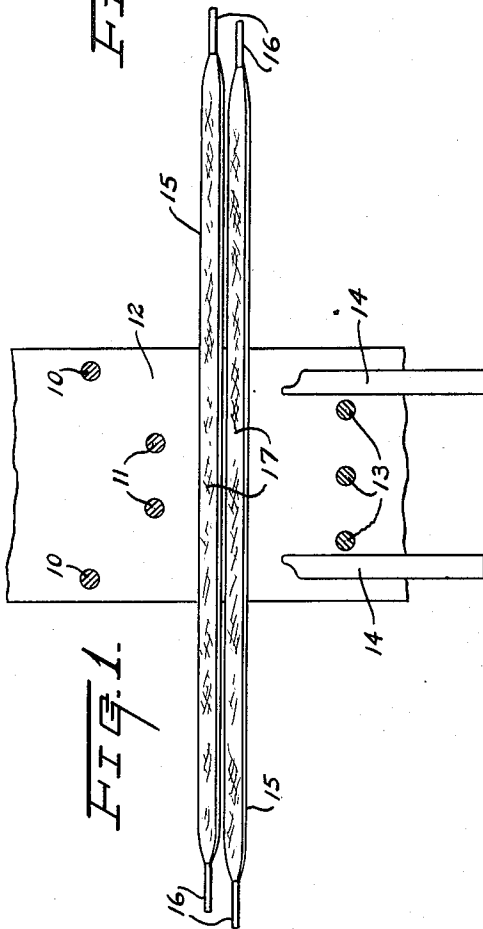


FIG. 1.

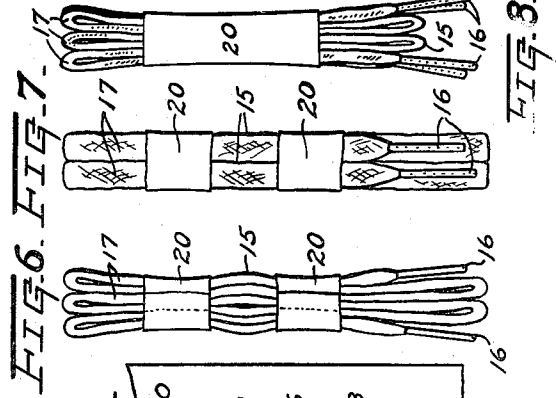


FIG. 6. FIG. 7.

FIG. 3.

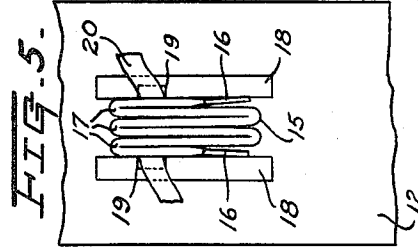


FIG. 5.

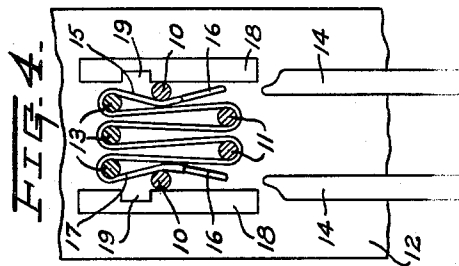


FIG. 4.

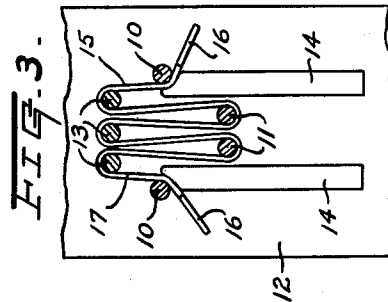


FIG. 3.

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SHOELACE PACKAGING

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9 Claims. (Cl. 28—72)

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The invention relates generally to improvements in the art of packaging shoelaces for handling, storage, shipment and merchandising purposes, and relates more particularly to an improved method of producing a shoelace package.

Shoelaces formed of flat and round lace stock of various length and each having a metal or plastic lacing tip secured to each of its opposite ends, have heretofore been produced and packed in pairs primarily by hand or with the aid of crude lace winding implements; so that the final packages were not uniformly neat and alike, and at least one of the tips of each lace was invariably hidden inside of the package, thus making it impossible to finally inspect each pack without opening or taking off the wrapper. Then too, the second tip of one or both of the pair of laces packed with the prior methods, would frequently be concealed beneath the wrapping band, thus also hindering final inspection; and the previous lace assembling, folding and packing methods were also too cumbersome and slow to enable packing of the successive pairs at speeds commensurate with the lace production machines.

It is, therefore, a primary object of my present invention to provide a method of packing one or more shoe laces in a manner whereby all of the lace tips will be exposed externally of the folds of the intervening lace portions, thus making all tips visible for inspection and eliminating the most objectionable feature of the prior lace packing methods.

Another object of this invention is to provide an improved shoe lace folding and packing method whereby the lace tips will always be definitely positioned in the final packs and uniform intermediate folds will result.

A further object of the present invention is to provide a simple and effective method of producing improved shoe lace packages having uniformly neat appearance, shape and size, and wherein all of the lace tips are disposed in predetermined definite locations so as to avoid concealment thereof within the folds or retainer bands of the packages.

Still another object of the invention is to provide readily manipulatable instrumentalities for effecting neat and uniform packaging of one or more strandlike articles such as shoelaces, for handling, storage, shipment and merchandising purposes.

An additional object of my invention is to provide a simplified system of producing highly attractive and similar successive packages each containing a pair of flat shoelaces disposed edge to

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edge and terminating at predetermined localities with respect to the opposite sides of each package.

A further object of the present invention is to provide an improved shoelace package containing a pair of uniformly and neatly folded laces disposed edge to edge and having the lace tips located entirely outside of the folds and closely adjacent to the adjoining end folds of the series.

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

A clear conception of the several steps involved in my new shoelace packing method, and of the general construction and operation of one type of apparatus for effecting commercial exploitation of the method to produce the improved packages, may be had by referring to the drawing accompanying and forming a part of this specification and wherein like reference characters designate the same or similar parts in the various views.

Fig. 1 is a diagrammatic illustration of my improved lace folding apparatus illustrating a pair of flat laces disposed edge to edge and stretched out longitudinally ready for folding and packing;

Fig. 2 is a similar illustration of the initial lace folding step being effected by the device of Fig. 1, showing how the folds are simultaneously formed of equal length while the tips are clamped in predetermined position;

Fig. 3 is another similar illustration showing the manner in which the series of folds are initially brought together while the lace tips are still clamped in the predetermined position;

Fig. 4 is still another similar illustration showing the lace folds brought together as in Fig. 3, but with the end tips released and forced toward the adjacent end folds;

Fig. 5 is a further illustration depicting the final fold gathering step and a mode of applying a final pack retainer band;

Fig. 6 is an enlarged edge view of one of the improved final packages with two retainer bands applied and showing the final disposition of the lace tips on both sides;

Fig. 7 is a similarly enlarged side view of the same final package also showing the final disposition of the lace end tips on the exposed side; and

Fig. 8 is a view similar to Fig. 6 of a modified final package having the lace tips projecting beyond the folds.

While the invention has been illustrated and described herein as having been specifically applied for the purpose of packaging relatively short and flat shoe laces in pairs, it is not my desire

or intent to unnecessarily restrict the scope or to limit the utility of the improved features by virtue of this specific disclosure; and it is also contemplated that various descriptive terms used herein be given the broadest possible interpretation consistent with the novelty of the improvement, and that the words "vertical" and "horizontal" are merely used to define relative positions of parts.

In accordance with my present improved method of packaging strandlike articles such as shoelaces having opposite end tips, I first longitudinally stretch or extend one or more of the articles and thereafter simultaneously indent the same laterally from opposite sides so as to produce a succession of folds and with the tips located externally of the adjacent end folds. I thereafter gather the folds without displacing the tips relative to the end folds and finally apply one or more retainer bands to complete each package. The end tips of the strands are thus maintained externally of the package preferably beyond the retainer bands, so that the tips are always visible for inspection and the successive packages have substantially prismatic uniform shape and size and can be conveniently packed and neatly arranged on counters, in dispensing and vending machines, or otherwise, for merchandising and display purposes. One simple type of apparatus for carrying on the successive steps of the improved method, and views showing several typical final shoe lace packages are shown more or less diagrammatically in the drawing.

Referring specifically to Figs. 1 to 7 inclusive, the apparatus shown by way of illustration, comprises in general four upper pins 10, 11 carried by and movable horizontally but not vertically relative to a support 12; three lower pins 13 movable vertically midway between the pins 10, 11 and also being movable horizontally relative to the support 12; and a pair of vertically movable and retractable lace end holding devices or clamps 14 each of which is cooperable with one of the upper outer pins 10 to retain the lace tips in predetermined positions after they have slid into such positions. The pins 10, 11, 13 are employed primarily for the purpose of initially and uniformly folding one or more elongated shoelaces 15 having opposite end tips 16 and intervening strand portions 17, and should be of sufficient length to cooperate properly with several laces 15 disposed side by side therebetween.

When carrying on the folding and end tip positioning steps of my improved method, the pair of flat laces 15 is first disposed side by side as in Fig. 1 with the tips 16 located approximately adjacent to each other and the adjacent edges of the strand portions 17 in substantial edge to edge engagement and lying in a common plane. The lower pins 13 may then be moved upwardly or the upper pins 10, 11 may be moved downwardly to the position shown in Fig. 2, to cause these two sets of pins to simultaneously indent the lace portions 17 and to produce a succession of rather widely separated folds. During such relative movement of the upper and lower pins, the clamps 14 will cooperate with the outer pins 10 so as to permit the laces to slide until the ends are arrested and to thereafter hold the laces 15 directly adjacent to the end tips 16 in order to properly and definitely position these tips within the lengths of the adjoining end folds. With the pins 10, 11, 13 and the clamps 14 thus positioned, these elements may be moved

inwardly or horizontally relative to the support 12 so as to position the successive lace folds closer together as in Fig. 3.

The improved packaging device is also provided with a pair of inwardly movable opposite side plates 18 as shown in Fig. 4, and these plates 18 may be moved horizontally toward the pins and folded lace assemblage so as to engage the outer pins 10 while the clamps 14 are withdrawn. Each of these plates 18 may be provided with a recess 19 therein adjacent to the contacted pins 10; and after the clamps 14 have been removed, all of the folding pins 10, 11, 13 may be withdrawn from the folded laces 15 and the plates 18 may be moved inwardly still farther as in Fig. 5 to press the adjacent folds into snug engagement with each other without disturbing the positions of the tips 16 relative to the extreme ends of the adjacent folds. While thus confined between the side plates 18, a clamping band 20 may be applied to the lace assemblage and adhesively united to retain the laces 15 in neatly folded condition, and the package may then be removed from the apparatus and finally completed as in Figs. 6 and 7 by the application of a second retainer band 20 or by embracing it with an advertising or identifying band.

In the final packs of Figs. 6 and 7 the folds formed by the simultaneous indentation of both of the opposite sides of both laces 15 are all of equal length, and by utilizing the clamps 14 cooperating with the pins 10 to positively position and hold the lace tips 16, these tips will always be disposed within the lengths of the folds and will never project outwardly beyond the ends of the packages regardless of the irregular stretching of the lace stock. The successive steps of my improved method may be carried on positively with simple apparatus such as shown to produce uniform successive final packages, and the pins 10, 11, 13, clamps 14 and plates 18 may be moved in any suitable manner to perform the several steps, either manually or automatically.

While the lace tips 16 of the packages specifically illustrated in Figs. 6 and 7, are located entirely within the lengths of the adjacent end folds, it is not necessary to so position the tips 16 in order to permit effective inspection of the same in the final packages. The tips 16 may also be definitely positioned externally of the final packs as in Fig. 8, wherein all of these tips are located outside of the lace folds and project outwardly beyond the adjacent end folds. The same type of apparatus may obviously be utilized to produce these modified packages, and in both cases the clamps 14 will coact with the pins 10 to definitely position the lace tips 16 with respect to the final packages while the relatively movable pins 11, 13 will cooperate to produce successive folds of equal and uniform lengths so that neat final packages having visible tips 16 will always result.

From the foregoing detailed description, it will be apparent that my present invention provides a simple yet effective method of producing successive identical packages each containing one or more neatly folded laces 15 and having all of the lace tips 16 disposed externally and constantly visible for inspection. These individual packages can be compactly arranged in rows within boxes or cartons of minimum width without destroying the aesthetic appearance of the packs, and the improved packaging system may obviously be exploited methodically either manually or automatically to rapidly and effectively produce the successive packages and to permit convenient in-

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 spection of the final packs. The method may also be conveniently applied to laces of different lengths and cross-section, and entirely obviates the difficulties heretofore encountered with concealed lace tips 16. The mechanism for producing the improved packages may also be disposed either vertically as shown, or horizontally, or in any other desired position.

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 It should be understood that it is not desired to limit the invention to the exact steps of the method or to the precise construction of the apparatus and final packs, for various modifications within the scope of the appended claims may occur to persons skilled in the art.

I claim:

1. The method of packaging a pair of shoe-laces, which comprises, disposing a pair of the laces with the corresponding end tips located adjacent to each other, simultaneously oppositely transversely indenting the portions of the laces between the end tips to produce a series of folds therein, and gathering the folds and applying a retaining band about the medial portions thereof.

2. The method of packaging a pair of shoe laces, which comprises, disposing a pair of the laces side by side with the corresponding end tips located adjacent to each other, simultaneously indenting the portions of the laces between the end tips from their opposite sides to produce a series of equal length folds therein and to cause the tips to assume definite positions, and finally gathering the folds and applying a retaining band about the medial portions thereof.

3. The method of packaging a pair of flat shoe-laces, which comprises, disposing the flat laces edge to edge with the corresponding end tips located closely adjacent to each other and the intervening flat lace portions extended, simultaneously indenting the extended flat lace portions to produce a series of equal length folds therein and to cause the tips to lie externally of the adjacent end folds, pressing the folds against each other, and finally applying a retainer about the medial portions of the folds remote from the tips.

4. The method of packaging a pair of flat shoelaces, which comprises, disposing the laces edge to edge in a common plane with the corresponding end tips located closely adjacent to each other, simultaneously indenting the medial portions of the laces from their opposite sides while holding the tips in definite positions to produce a succession of equal length folds in the laces and to cause the tips to lie outwardly beyond the adjacent end folds, and finally gathering the folds and applying a retainer thereto.

5. The method of packaging an end tipped shoelace, which comprises, extending a portion of the lace between the end tips, simultaneously transversely indenting the opposite sides of the extended lace to cause the intervening lace por-

tion to assume a series of equal length folds with the end tips disposed externally thereof, and banding the folds remote from the lacetips.

6. The method of packaging end tipped shoe-laces, which comprises, extending the portion of each lace between the end tips thereof, holding both tips and transversely indenting the opposite sides of the extended lace to produce a succession of folds and to cause the tips to assume definite positions relative to corresponding ends of all of the intervening folds, and finally gathering the folds and applying a retainer thereto.

7. The method of packaging end tipped shoe-laces, which comprises, rectilineally extending the portion of each lace between the end tips thereof, firmly holding both tips against lateral displacement and transversely indenting the opposite sides of the extended intervening lace portion to produce a succession of folds and to cause the tips to assume definite positions relative to the corresponding ends of all of the folds, and banding the folds remote from the tips.

8. The method of packaging end tipped shoe-laces, which comprises, extending the portion of each lace between its end tips and clamping the lace adjacent to each tip, transversely indenting the opposite sides of the extended lace portion to produce a succession of uniform folds having the tips disposed externally of and in like positions relative to the adjacent end folds of the series, and finally banding the folds remote from the lace tips.

9. The method of packaging end tipped shoe-laces, which comprises, extending the portion of each lace between its end tips, indenting the opposite sides of the extended lace equal amounts to produce a succession of equal length folds in the lace and to cause the tips to lie externally of the end folds, and subsequently gathering the folds and applying retainers thereto.

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