Feb. 29, 1944. H. M. KILPATRICK 2,342,671

STAPLE STRIP PACKAGE

Filed June 16, 1942

Fig. 1.

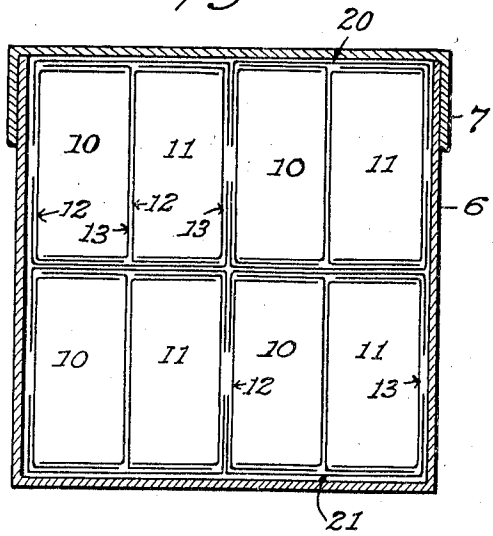


Fig. 2.

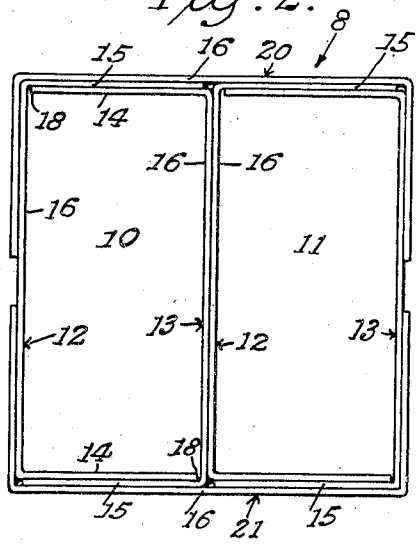


Fig. 3.

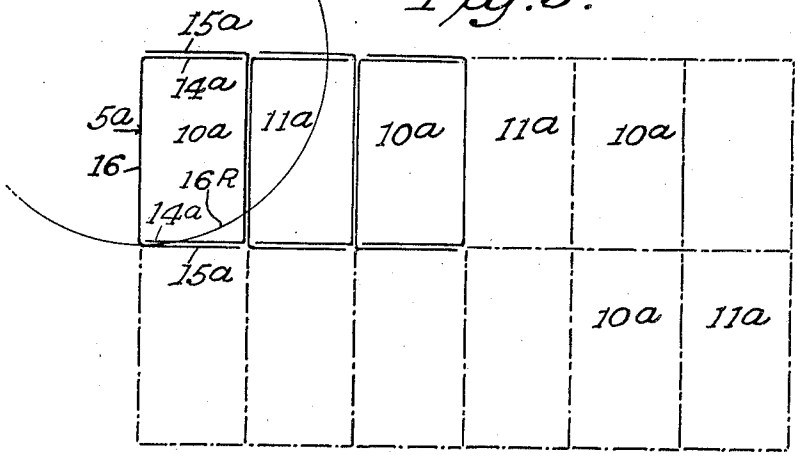
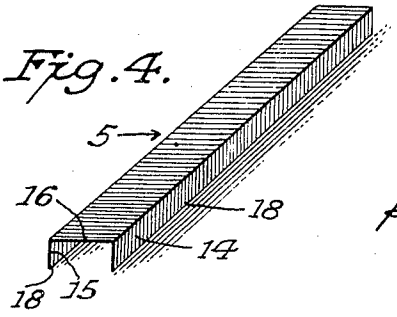


Fig. 4.



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2,342,671

STAPLE STRIP PACKAGE

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Application June 16, 1942, Serial No. 447,249

15 Claims. (Cl. 1—56)

This invention relates to packaging nestable strips or sticks and relates more particularly to trough-shaped strips or sticks of frozen staples of the general type shown in United States Patent No. 1,792,235, and to assemblies of such sticks in packages.

Objects of the invention are to modify said sticks in a way to save staple material and to allow the sticks to be more compactly packaged, and to provide a very compact assembly of such sticks, thereby saving storage and shipping space and cost, and cost of containers for the assemblies.

Additional objects of the invention are to effect simplicity and efficiency in such assemblies and packages and to provide an extremely simple assembly of this kind which is economical of space and material and easy and reliable in operation, and economical to manufacture and assemble.

Still other objects of the invention will appear as the description proceeds; and while herein details of the invention are described in the specification and some of the claims, the invention as described in some of the broader claims is not limited to these; and many and various changes may be made without departing from the scope of the invention as claimed in the broader claims.

The inventive features for the accomplishment of these and other objects are shown herein in connection with a package which briefly stated, includes a plurality of staple stick assemblies, each assembly comprising pairs of sticks nested together to form nests, the nests being arranged side-by-side and received within other sticks thereby to provide compact assemblies.

In the accompanying drawing showing, by way of example one of many possible embodiments of the invention,

Fig. 1 shows a transverse sectional view on an enlarged scale taken through the end portion of a container of assemblies of the staple-sticks, the staple sticks being shown in end elevation;

Fig. 2 is an end elevation of one of the assemblies shown on a still larger scale;

Fig. 3 is an end elevation of an assembly of nests of sticks that have not been modified as in Fig. 1, this elevation showing that the assembly of unmodified sticks must occupy 50% more space than an assembly of the same number of sticks as in Fig. 1;

Fig. 4 is a perspective view of a stick as in Figs. 1 and 2.

My improved staple-strip assembly comprises staple strips generally denoted by reference numeral 5 (Fig. 3) shown in a package comprising an elongated rectangular container 6 of substantially square cross section and having a cover 7, although cross sections other than square may be used. A plurality of layers of elongated frozen staple assemblies 8 of substantially square cross sectional outline are shown longitudinally disposed in said container one above the other and engaging flat against walls of the container.

Each assembly 8 (Fig. 2) comprises a pair of inner staple nests 10, 11, each nest comprising a pair of parallel trough-shaped frozen-staple sticks 12, 13, each stick comprising opposite side wall or leg parts 14, 15, (Fig. 3) and a bridge part 16, the leg parts 14, 15 of one stick 12 being placed flat against inner and outer faces of the respective leg parts 15, 14 of the other stick 13 with their free edge portions 18 adjacent to the plane of the bridge part 16 of such other stick.

Said nests 10, 11 are placed with the outer face of one bridge part 16 of one nest 10 engaged against the outer face of a bridge part 16 of the nest 11, leaving pairs of faces of leg parts 15 of said pairs of nests exposed and adjacent substantially in the same plane.

Staple sticks 20 and 21 respectively embrace said pairs of adjacent faces 15 with the inner face of the bridge part 16 of such stick 20 or 21 against said pair of faces 15, and the inner face of the leg parts 14, 15 against outer bridge parts 16 of said pair of nests 10, 11.

Staple sticks 5a (Fig. 3), similar to those heretofore on the market have their leg portions 14a, 15a slightly wider relative to their bridge portions 16 than are the leg portions 14, 15 to the bridge portion 16 of the sticks 5. For this reason, the staple stick 5a is not wide enough to embrace two nests 10a, 11a, as shown by the arc 16R having the bridge portion 16 of Fig. 3 as its radius. Thus it is not possible to nest the sticks 5a as in Fig. 2.

By making the leg portions 14, 15 about three sixty-fourths of an inch narrower relative to the wide portion 16 of the stick, some staple wire is saved, but the staples are less likely to bend when passing through many thicknesses of tough paper and are otherwise practically fully as efficient as before, and may be used in the stapling machines now in use and on the market. In addition, by making the leg portions 14, 15 thus narrow, it is possible to assemble them as in Figs. 1 and 2, which is quite an improvement over the best possible method of assembling the sticks 5a of Fig. 3. As shown in Fig. 3 the package of two dozen of the old staple sticks must occupy about 50% more space than the same number of sticks assembled as in Figs. 1 and 2, the new assembly thus effecting saving in shipping and storing costs and in metal without any decrease in efficiency. Also the assembly method of Fig. 3 requires about 30 to 40% more cardboard, depending on the length of the box or container.

The invention claimed is:

1. A staple-strip assembly comprising a pair of

staple nests, each nest comprising a nested pair of parallel trough-shaped frozen-staple sticks, each stick comprising opposite leg parts and a bridge part, said nests being placed in side-by-side contact, with outer faces of leg parts of said pair of nests adjacent; and a staple stick embracing a pair of the adjacent faces.

2. A staple strip assembly comprising a pair of inner staple nests comprising a pair of parallel trough-shaped frozen-staple sticks, each stick comprising opposite leg parts and a bridge part, the leg parts of one stick being placed flat against outer and inner faces of the respective leg parts of the other; said nests being placed with the outer face of one bridge part of one nest engaged against the outer face of a bridge part of the other nest, leaving pairs of faces of leg parts of said pair of nests adjacent; and a staple stick embracing each of said pairs of adjacent faces with the inner face of the bridge part of such stick against said pairs of faces.

3. A staple strip assembly comprising a plurality of staple nests; and a staple stick embracing said nests.

4. A staple strip assembly comprising a pair of staple nests disposed side-by-side, each pair comprising two staple sticks; and a staple stick embracing said pairs.

5. A trough-shaped staple stick, comprising opposite leg parts and a bridge part, each wall part being less than half the width of the bridge part, whereby a number of said sticks may be assembled into a staple stick assembly comprising a pair of inner staple nests, the leg parts of one stick of each nest being placed flat against leg parts of the other stick of such nest; said nests being placed side-by-side with leg parts of said pair of nests adjacent in the same plane, and a staple stick embracing each of the pairs of adjacent leg parts.

6. An assembly of members, each member comprising opposite side wall parts, said assembly comprising a plurality of nests of members; and a member embracing said nests.

7. An assembly comprising a pair of nests each nest comprising a pair of parallel trough-shaped sticks, each stick comprising opposite wall parts and a bridge part, the wall parts of one stick being placed flat against outer and inner faces of the respective wall parts of the other; said nests being placed with the outer face of one bridge part of one nest engaged against the outer face of a bridge part of the other nest, leaving pairs of faces of wall parts of said pair of nests adjacent; and a stick embracing each of said pairs of adjacent faces with the inner face of the bridge part of such stick against said pairs of faces.

8. A staple-strip package comprising a plurality of frozen staple assemblies of substantially square cross sectional outline engaging flat against each other; each assembly comprising a pair of inner staple nests comprising a pair of trough-shaped frozen-staple sticks, each stick comprising opposite leg parts and a bridge part, the leg parts of one stick of said pair being placed flat against outer and inner faces of the respective leg parts of the other stick of the pair with their free edge portions adjacent to the plane of the bridge part of such other stick; said nests being placed side-by-side with the outer face of one bridge part of one nest engaged against the outer face of a bridge part of the other nest, leaving pairs of faces of leg parts of said pair of nests exposed and adjacent each pair of adjacent faces being substantially in the same plane; and a staple stick embracing each of said pairs of adjacent faces with the inner face of the bridge part of such stick against said pair of faces and the inner face of its leg part against outer bridge parts of said pair.

9. A staple-strip package comprising an elongated rectangular container of substantially rectangular cross section; a plurality of layers of elongated frozen staple assemblies of substantially square cross sectional outline longitudinally disposed in said container one above the other and engaging flat against walls of the container; each assembly comprising a pair of inner staple nests comprising a pair of parallel trough-shaped frozen-staple sticks, each stick comprising opposite leg parts and a bridge part, the leg parts of one stick being placed flat against outer and inner faces of the respective leg parts of the other with their free edge portions adjacent to the plane of the bridge part of such other stick; said nests being placed with the outer face of one bridge part of one nest engaged against the outer face of a web part of the other nest, leaving pairs of faces of leg parts of said pair of nests exposed and adjacent substantially in the same plane; and a staple stick embracing each of said pairs of adjacent faces with the inner face of the bridge part of such stick against said pairs of faces and the inner face of its leg part against outer bridge parts of said pair.

10. An assembly comprising substantially parallel strips, each comprising parallel wall parts and a bridge part connecting the wall parts; some of the strips being nested together and in parts disposed between wall parts of another strip.

11. An assembly comprising substantially parallel staple strips of the same cross-sectional size and shape, each comprising parallel leg parts and a bridge part connecting the leg parts; some of the strips being nested together and in part disposed against a bridge part and between leg parts of another strip.

12. An assembly comprising substantially longitudinally parallel staple strips, each comprising parallel leg parts and a bridge part connecting the leg parts; some of the strips being nested together, at least three bridge parts being at least in part disposed between leg parts of another strip.

13. An assembly comprising axially parallel staple strips of the same cross-section, each comprising parallel leg parts and a bridge part connecting the leg parts; some of the strips being nested together, the bridge parts of two nested strips and at least another bridge part being at least in part disposed between leg parts of two additional strips; at least two leg parts being engaged with a bridge part of each of said additional strips.

14. An assembly comprising axially parallel staple strips, each comprising parallel leg parts and a bridge part connecting the leg parts; the leg parts of two strips being disposed between leg parts of a third strip and disposed flat against the bridge part of such third strip.

15. An assembly comprising axially parallel staple strips, each comprising parallel wall parts and a bridge part connecting the wall parts; wall parts and a part of the bridge parts of two strips being disposed between wall parts of a third strip.

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