

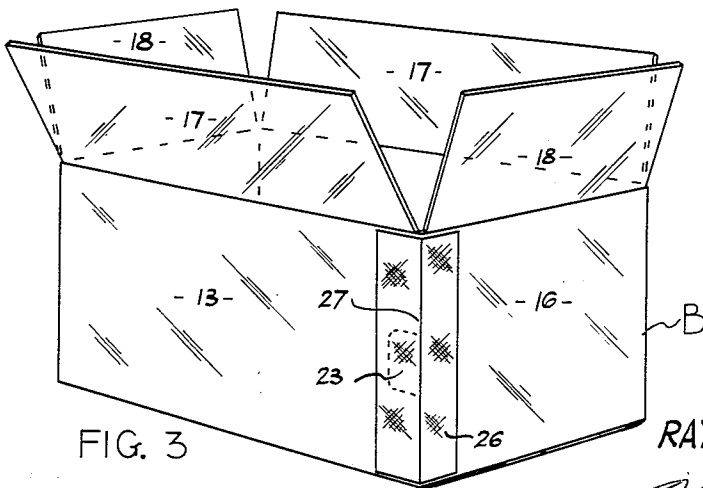
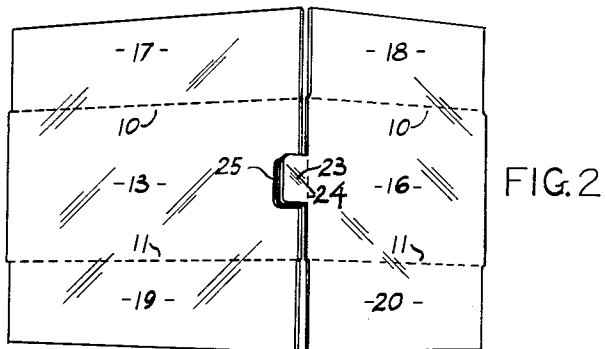
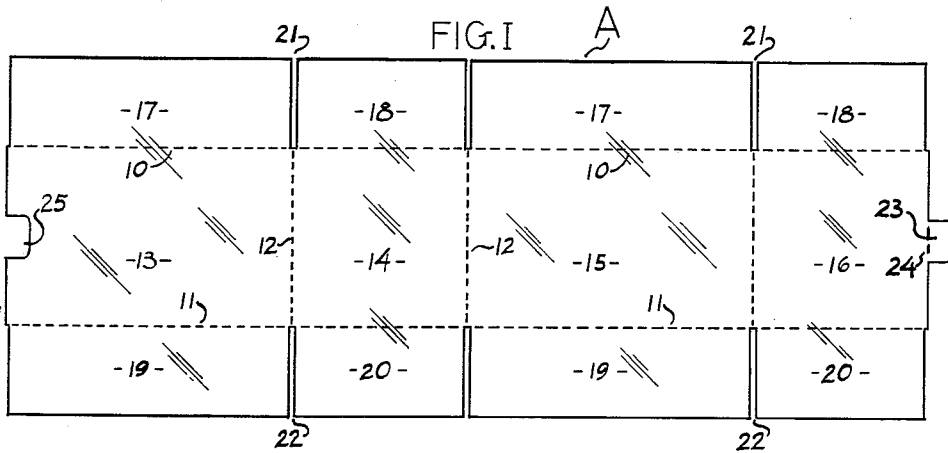
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R. E. WOLFE

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ALIGNING DEVICE FOR MANUFACTURER'S TAPE JOINTS OF CONTAINERS

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INVENTOR:  
RAYMOND E. WOLFE

By *William H. ...*  
ATTORNEY

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**ALIGNING DEVICE FOR MANUFACTURER'S  
TAPE JOINTS OF CONTAINERS**

Raymond E. Wolfe, Beaver Falls, Pa., assignor to Crown  
Zellerbach Corporation, San Francisco, Calif., a cor-  
poration of Nevada

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1 Claim. (Cl. 229-37)

The invention relates to a simple, effective device for automatically aligning the opposed free side margins of a blank of paperboard or other suitable material for the purpose of forming a tubular container of a plurality of side wall panels preparatory to securing together by a manufacturer's tape joint.

In the conventional method of assembling containers having a plurality of side wall panels, the free side margins of the remote panels to be taped together are subject to misalignment and require considerable attention preparatory and during the application of the tape. Faulty alignment results in joints which must be retaped or in containers which must be discarded. The attention demanded and the failures which may occur from time to time, involve considerable extra expense and loss of time. The novel device of the present invention automatically immobilizes the wall panels in substantially perfect alignment, completely eliminating faulty joints.

More particularly, applicant's novel device comprises the combination of an outward projection or stud foldably hinged to the free side margin of one wall panel of a blank of paperboard or other suitable material and a complementary cutout on the free side margin of the remote opposed wall panel of the blank. The stud is preferably hinged at approximately the mid-height of the free margin of the panel and the complementary cutout positioned likewise in the free margin of the opposed wall panel. It is important that the stud and cutout be located at substantially identical positions with respect to the height of their respective panel margins.

As the opposed wall panels, in the course of assembling the blank, are folded inwardly flatwise over the remaining wall panels of the blank with their free margins in abutment the free edges of the stud are closely engaged in flatwise relation by the boundary of the cutout. This automatically and accurately aligns the respective top and bottom edges of the abutting panels in substantially the same planes. Obviously the novel device maintains the accurate alignment of the panels in their flat relation until they are permanently secured together by a manufacturer's tape joint.

It has been found in practical use that rectangularly shaped studs and similarly shaped complementary cutouts are quite satisfactory and this embodiment of the invention is illustrated by the drawings and described hereinafter in the specification. However, other forms of the invention may be used to advantage if desired. For example, the studs may have inwardly converging or outwardly diverging sides, i.e., trapezoidal in shape. Further, they may be semicircular, arcs of circles and other forms with correspondingly shaped cooperating cutouts which interlock as hereinbefore described to fix the abutting panels in accurate alignment for taping together.

An object of the invention is to provide a device for automatically locking the free side margins of flatwise abutting wall panels in accurate alignment preparatory to securing them together by means of a manufacturer's tape joint.

Another object is to provide a device for accurately aligning the abutting free side margins of container wall panels preparatory to forming a manufacturer's tape joint, the device comprising an outwardly extending foldable

stud on the free margin of one wall panel interlocked in a complementary cutout in the abutting free margin of the other wall panel, the stud and cutout being positioned at substantially identical levels on the vertical dimension of the respective free margins whereby the respective top and bottom edges of the wall panels are automatically positioned in the same plane.

Still another object is to provide a projection on one free side margin of a paperboard flat blank scored to define a plurality of wall panels for forming a tubular container and a complementary cutout on the opposed free side margin, whereby as the opposed panels are folded inwardly flatwise over the remaining panels with their margins in abutment, the said projection engages the cutout flatwise and automatically and accurately aligning the panels, preparatory to permanently securing their abutting margins together by a tape joint.

Another object is to provide a device for locking the free side margins of container wall panels in accurate alignment pending securing them together by a manufacturer's tape joint, the device comprising the combination of a stud on one free margin interlocked flatwise in a complementary cutout in the other free margin, the stud and cutout located at substantially identical vertical levels of their respective side margins, so that the respective top and bottom edges of the wall panels will automatically be held in the same horizontal plane.

The invention will be more clearly understood from the drawings and the following description wherein like numerals and symbols refer to like parts wherever they occur:

FIG. 1 is a plan view of a blank for forming a tubular container showing the stud and complementary cutout on the free side margins of opposed wall panels;

FIG. 2 is a perspective view of the blank in process of assembly with the stud partially engaged by the boundary of the complementary cutout; and

FIG. 3 is a perspective view of the container B assembled with the stud fully enclosed flatwise in the cutout and the abutting wall margins secured together by a manufacturer's tape joint.

The blank A of FIG. 1 is scored horizontally at 10 and 11 and vertically at 12 to define wall panels 13 through 16 and the inner boundaries of top closure flaps 17 and 18 and bottom flaps 19 and 20. The side edges of the top flaps are separated by slots 21 and the bottom flaps by slots 22.

An outward projection or stud 23 is foldably hinged to the free side margin 24 of the wall 16. In the embodiment of the invention illustrated in the drawings, the stud is rectangular in shape and is positioned at substantially the mid-height of the wall 16. A cutout 25 similar in shape to the stud is made in the free side margin of wall 13. The cutout is sufficiently larger than the stud 23 in order to readily receive the stud 23 in flatwise interlocked engagement as the blank is assembled, as will be described hereinafter. The stud and cutout are located at substantially identical levels on the free margins of the respective walls 16 and 13.

The blank A is assembled by folding the wall 13 inwardly about the score 12 and the opposed wall 16 about the score 12 until their free side margins abut. As the walls approach flatwise relation over the walls 14 and 15, the stud partially engages the boundary of the cutout 25, as shown in FIG. 2 and automatically brings into alignment the free side margin. When the walls 13 and 16 lie flatwise, the stud becomes fully engaged by the cutout, automatically immobilizing said walls in perfect alignment. Since these elements of the invention are in identical relation with respect to the top and bottom edges, the top and bottom edges will thus be in the same hori-

zontal planes. The requirement for manual adjustment or retaping due to faulty alignment is eliminated, especially when employing taping equipment.

Tape 26 is next applied to the aligned members. It is preferably of greater width than the length of the stud 23 now positioned in the panel of wall 13, and extends a like distance over the wall 16, as illustrated in FIG. 3. The tape extends the full height of the walls 13 and 16, completing the permanent manufacturer's joint 27.

The device is preferably positioned at the mid-height of the walls in the embodiment of the invention described and illustrated herein. It should be understood however, that it may be positioned at other levels of the vertical dimension of the respective walls, if desired, provided the stud and cutout are at substantially identical levels on their respective wall margins. Furthermore, with containers of unusually high walls, it may be desirable to employ two devices, properly spaced, or even more, to facilitate alignment and the application of the tape.

It is to be understood that the embodiments herein described are illustrative and not restrictive and it is also to be understood that the invention may be susceptible in other modified forms, and that all such modifications which are similar to or equivalent to, come equally within the scope of the claim next appearing.

I claim:

A device for accurately simultaneously and automatically vertically aligning the free abutting side marginal edges of a tubular container during the folding operation prior to the production of a manufacturer's joint, said device including an alignment tab secured to and projecting from a side marginal edge of the container blank, said tab being widest at its juncture with the marginal side edge and of diminished width at its extremity and a tab receiving aperture having a width at least as wide as the tab in the opposite side marginal edge of said blank, said tab and aperture each defined by free side edges, and having points on their side edges at identical levels of the blank, said edges being in slidable contact at said points during the folding operation and serving to automatically align the vertical edge portions of said panels prior to the application of the manufacturer's tape to the finished joint.

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