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FASTENING MEANS FOR FIBERBOARD AND CORRUGATED CARTONS

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2 Sheets-Sheet 1

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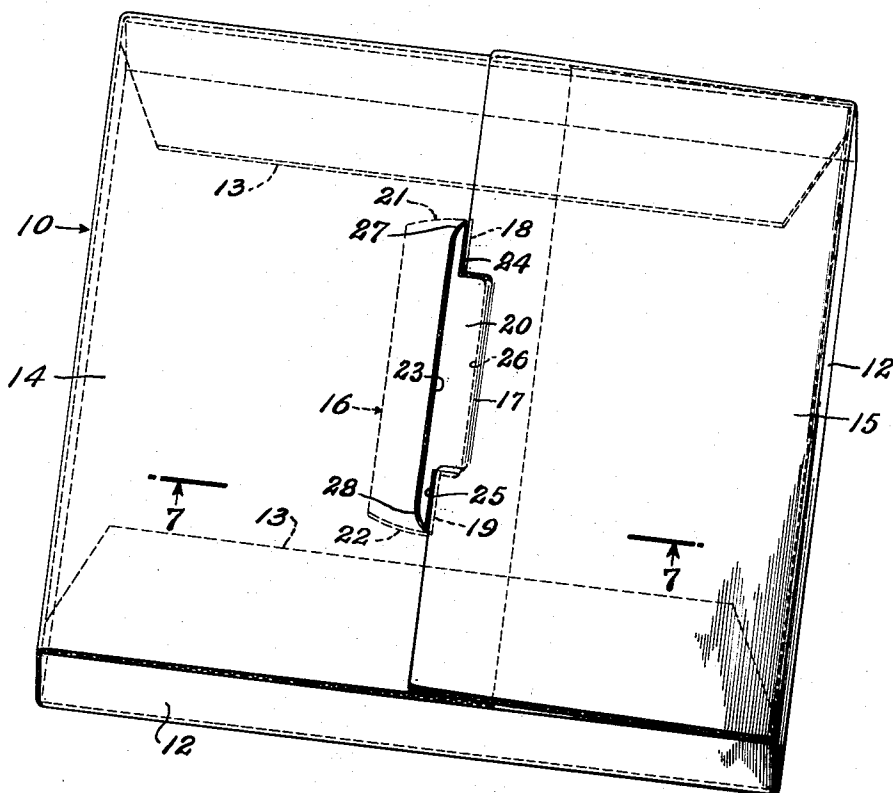
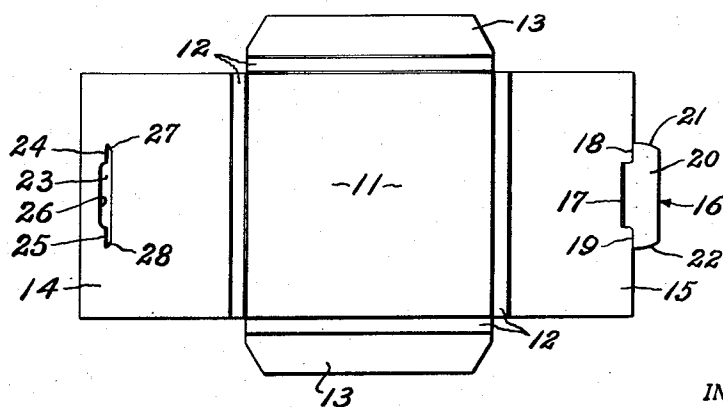


Fig. 2



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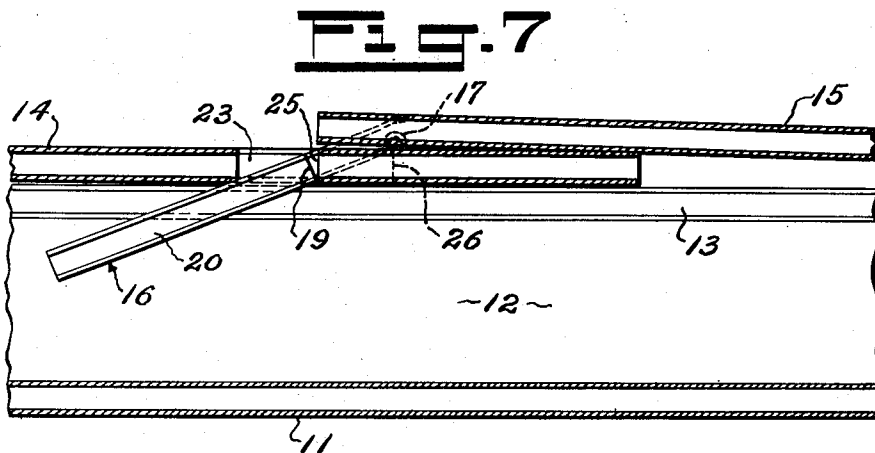
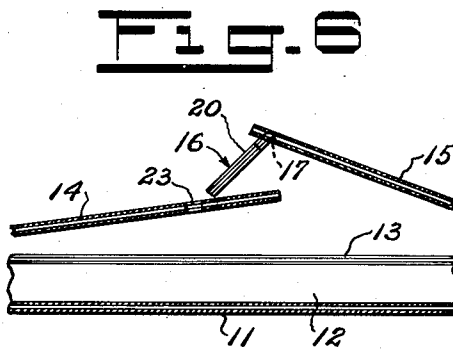
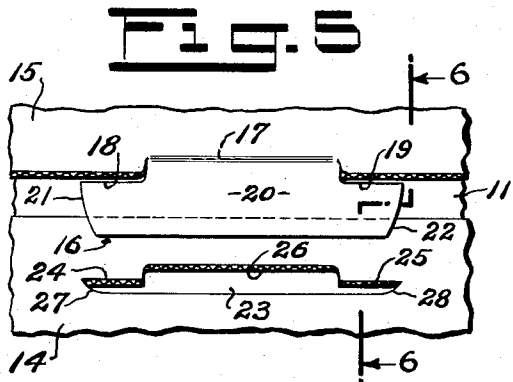
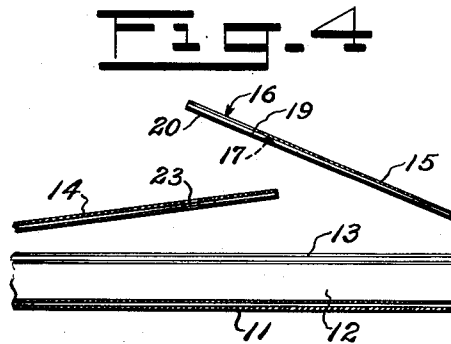
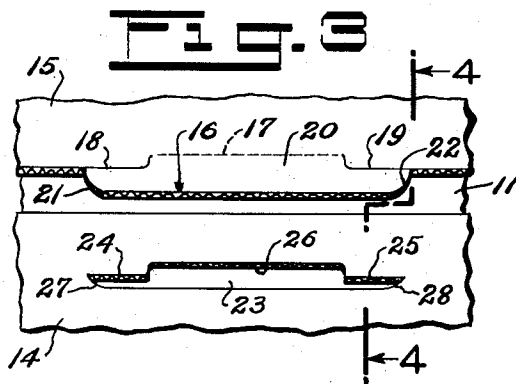
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FASTENING MEANS FOR FIBERBOARD AND CORRUGATED CARTONS

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1 Claim. (Cl. 229—35)

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This invention relates to a quick closing slip-locked fastening means for containers, and more particularly to an improved tongue-and-slot construction whereby overlapping flaps of stiff thick material, such as plain or corrugated paper-board or fiber board, may be releasably fastened together.

One object of this invention is to provide a fastening means of the above nature wherein the holding effect will be provided by reason of the fact that the substantially parallel edge portions of the tongue and the slot are in direct abutment providing a large bearing area which will minimize deformation of the fastening means under stress.

Another object is to provide a fastening means of the above nature in which one edge of the slot is cut back to accommodate the stem of the tongue, whereby bending of the tongue may be localized at its base and to insure the proper locking of said tongue.

Another object is to provide a fastening means of the above nature the parts of which may be quickly and easily interengaged, and which will provide reliable securement for the flaps.

A further object is to provide a device of the above nature which will be simple in construction, inexpensive to manufacture, easily interlocked, compact, ornamental in appearance, and very efficient and durable in use.

With these and other objects in view, there has been illustrated on the accompanying drawings one form in which the invention may conveniently be embodied in practice.

In the drawings,

Fig. 1 represents an oblique top view of a container having the improved fastening means embodied therein.

Fig. 2 is a development view on a smaller scale showing the container in unfolded condition.

Fig. 3 is a fragmentary top view showing the fastening means as it would appear when the container flaps are approaching their closed overlapping position.

Fig. 4 is a cross-sectional view of the same taken on the broken line 4—4 of Fig. 3.

Fig. 5 is a view similar to Fig. 3, but showing the tongue bent downwardly in readiness to enter the slot.

Fig. 6 is a cross-sectional view similar to Fig. 4 taken on the broken line 6—6 of Fig. 5.

Fig. 7 is a cross-sectional view taken on the line 7—7 of Fig. 1, but on an enlarged scale, showing the tongue fully engaged in the slot in fastened position.

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Referring now to the drawings in which like reference numerals denote corresponding parts throughout the several views, the numeral 10 indicates a container which is cut from a sheet of thick stiff material such as corrugated fiber-board so as to provide a rectangular bottom 11, four side walls 12 connected to the respective edges of said bottom, a pair of short opposite side flaps 13, which are adapted to overlies the bottom 11, and a pair of relatively long flaps 14, 15 which are adapted to overlap each other so as to confine said side flaps.

The container 10 may be made from any sheet material which has a substantial degree of stiffness and thickness, such as plain or corrugated fiber-board, paper board, or chip board.

The overlapping flap 15 is so cut as to provide a central tongue 16 in the shape of a broad T, the stem or base of said T being integrally and swingably connected with the main portion of the flap 15 at a score line 17 located behind and parallel to the locking edge of said tongue.

The remainder of the tongue 16 is separated from the flap 15 merely by a pair of angular slits 18, 19, offset from said score line 17, the outer portions of said slits forming continuations of the end edge of the flap 15. Thus, the tongue 16 comprises a broad stem 20 disposed inwardly of the edge of the flap 15, and a pair of laterally extending wings 21, 22 which are disposed outside the borders of the flap 15 and which are tapered and rounded on their end edges.

In order to receive the tongue 16, the underlapping flap 14 is provided with a slot 23 in the shape of a broad T, which is so formed as to provide a pair of shoulders 24, 25 substantially equal in extent and position to the inner edges of the wings 21, 22. A broad notch 26 occurs between the shoulders 24, 25, said notch being of sufficient length and width to accommodate the stem 20 of the tongue 16 when the latter is inserted through the slot 23.

It will be observed that the narrowest dimension of the slot 23 is such as to confine the tongue 16 with the wings 21, 22 in edge-to-edge abutting relationship to the shoulders 24, 25 when said tongue is inserted in the slot, as shown in Fig. 7. This action is assisted by providing inwardly curved formations 27, 28 at the opposite ends of the slot 23, as indicated in Fig. 3.

These formations 27, 28 engage the tapered and rounded edges of the wings 21, 22 of the tongue 16 during the insertion of said tongue, and serve to compress, guide, and force said wings into locking position with a snap action, so that the rear

edges of said wings will lie in close abutment with the shoulders 24 and 25 of the slot 23.

The greatest dimension of the slot 23 may be made equal to the greatest dimension of the tongue 16, but preferably will be slightly shorter than the corresponding dimension of said tongue, inasmuch as the extreme corners of the wings 21, 22 will yield slightly so as to permit said wings to come into proper edge-to-edge abutting relationship with the shoulders 24, 25.

Thus, it will be seen that the tongue 16 and the slot 23 furnish a reliable means for fastening together the thick container flaps 14 and 15 with no major deformation or bending of the parts, excepting at the location of the score line 17. However, slight crushing may occur at the lower corner of the outer edge of the slot 23 due to engagement with the tongue 16, this being unobjectionable as it permits said tongue to lie more nearly in alignment with the flap 15.

Operation

In use, the flaps 14 and 15 may be fastened together by first bending the tongue 16 downwardly as shown in Figs. 5 and 6 and then pressing said flaps downwardly so as to cause the tongue 16 to enter the slot 23 until the rear edges of the wings 21, 22 snap into abutting relationship with the shoulders 24, 25.

When fastened in this manner, the flaps 14, 15 will be securely held together or locked, but may be released whenever desired without damage to the parts, merely by producing a slight relative edgewise movement between the flaps 14, 15 so as to cause the wings 21, 22 to snap out of engagement with the shoulders 24, 25. The flaps may also be pressed toward each other and the tongue lifted out by inserting the user's finger under the flap 15 and pulling in an upward direction. Such action in releasing the fastening means will have no injurious effect upon the parts, and the fastening means will retain its efficiency even in the event that it is desired to refasten the container.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that this form is shown for the purpose of illustration only, and the invention is not to be limited to the specific disclosure, but may be modified and em-

bodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claim.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

In a box constructed of relatively thick stiff sheetboard material, and having underlying and overlapping flaps, means for fastening said flaps together to form a closure for said box, comprising a T-shaped tongue extending from said overlapping flap, said tongue including a narrow central stem and a pair of lateral wings having their outer ends converging toward the free end of said tongue, said underlying flap having a T-shaped slot comprising a narrow central portion directed toward the free edge of said underlying flap and adapted to fit about the stem of said tongue, said slot having a pair of lateral wing portions to receive and embrace the lateral wings of said tongue, the edges of the wing portions of said slot being straight and parallel to each other, the edge of said slot opposite the narrow central portion having its extremities converging toward the opposed adjacent edge of the T-shaped slot, the inner edges of said tongue wings being in line with and abutting the free edge of said overlapping flap, said stem terminating in a weakened hinge line offset inwardly from the free edge of said overlapping flap, the rear edges of said wings being adapted to abut the straight outer edges of the wing portions of said T-shaped slot with a snap action when said tongue is inserted into said slot, and serving to lock said closure without the need of employing sealing tape.

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