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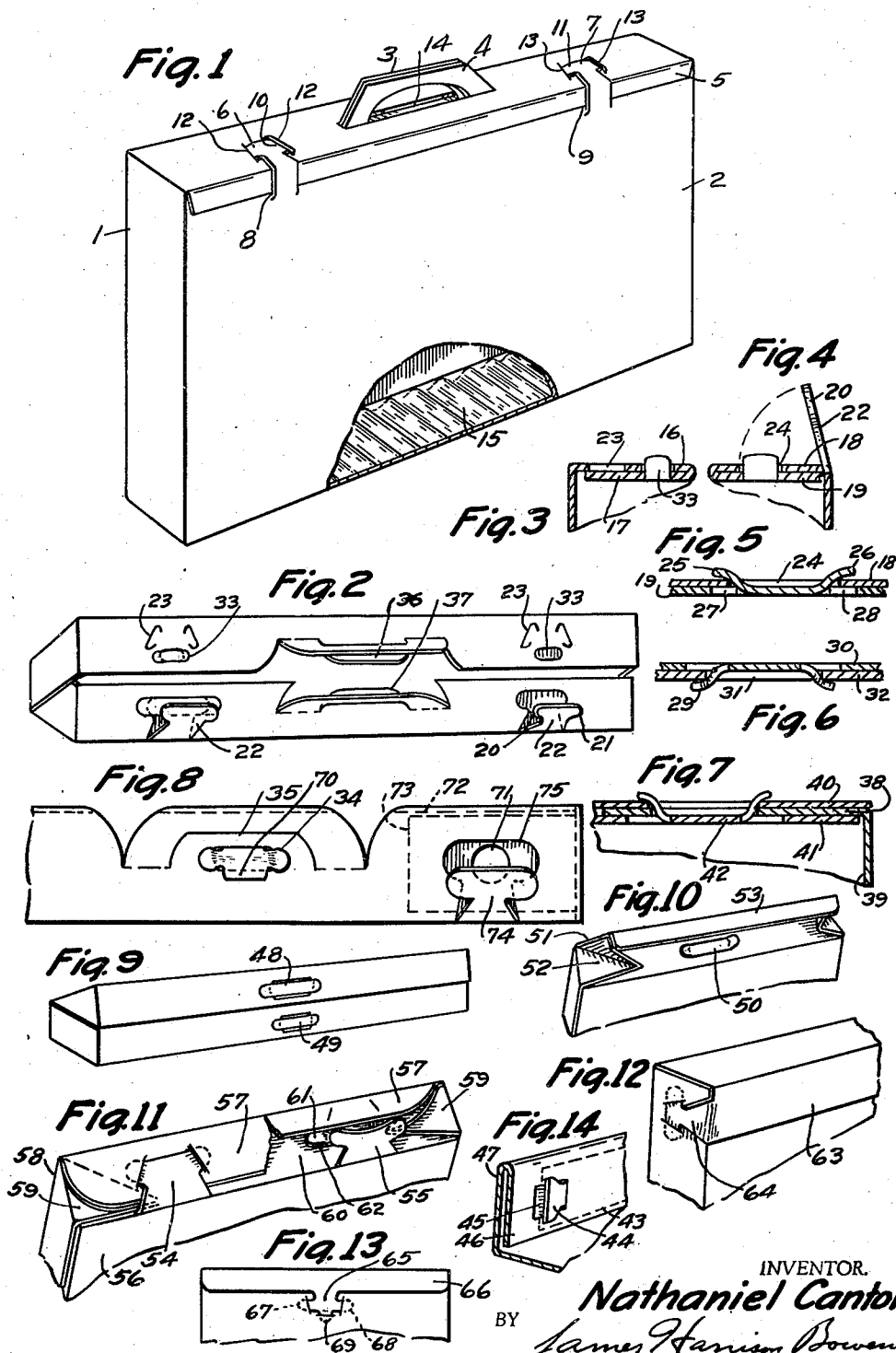
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2,365,863

CARTON

Filed Oct. 11, 1940

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 15

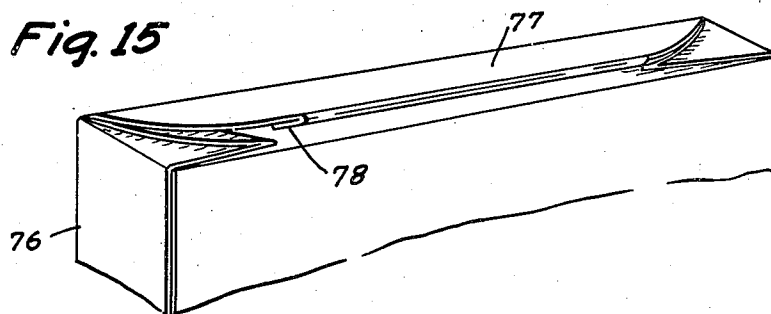


Fig. 16

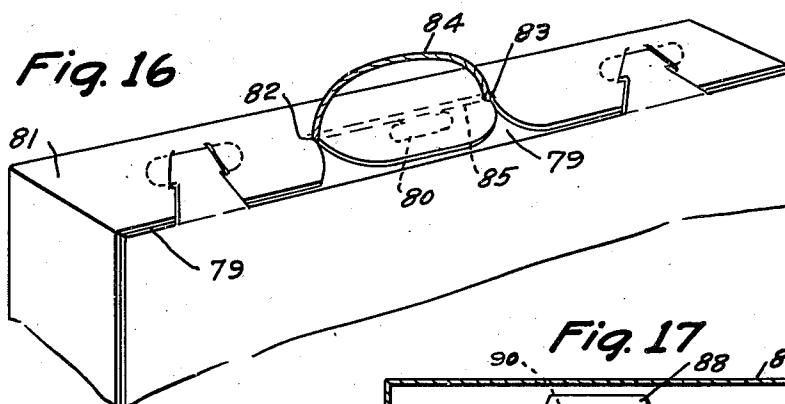


Fig. 17

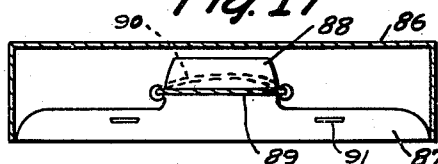


Fig. 18

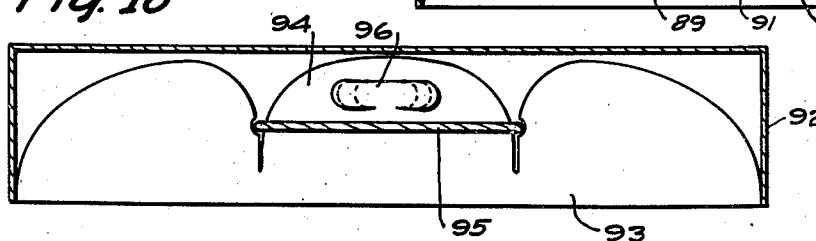


Fig. 19

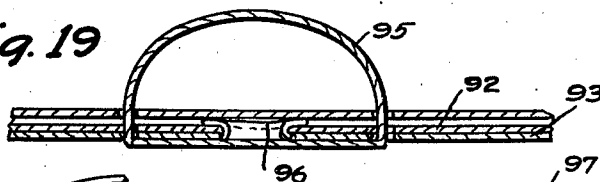


Fig. 20

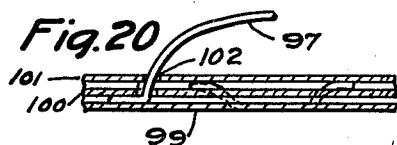
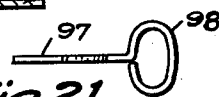


Fig. 21



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CARTON

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2 Claims. (Cl. 229—33)

The purpose of this invention is to provide improvements in the construction of cartons and boxes of the collapsible type by which all wire, metal, or other staples or fasteners may be eliminated; and also by which the two sides of the carton may readily be held together at the open edge.

The invention is, primarily, a carton of the "hand lock" type in which the two halves are in the form of trays, and these are joined together along one edge and open at the opposite edge and the overlapping flanges of both trays are folded under and held in position by locking tabs instead of the staples usually used. In some designs the overlapping flange may have an extension and this may be held by locking tabs at the ends or at the center, or by gummed tape handles that may be gummed to the carton after it is closed.

Cartons of this type are usually stamped and then the end flanges folded under and stapled before the cartons are shipped and as the stapling requires one operation and the folding another it would obviously be better if these two operations could be omitted and the cartons merely stamped and shipped flat; and this is made possible by the improvements described herein because the locking tabs are stamped with the operation that stamps the cartons and these are pressed through openings as the cartons are set up ready for use.

The object of this invention is therefore, to eliminate the folding and stapling operations in the factory in the manufacture of cartons and the like.

Another object is to provide improvements in the locking means of cartons and the like.

A further object is to provide means for reinforcing the bottoms of cartons and the like.

And a still further object is to provide cartons having locking tabs for replacing staples which are of a simple and economical construction.

With these ends in view the invention embodies cartons having double flanges at the open edges with openings in one flange and tabs struck from the other and adapted to be forced through the openings to lock the two flanges together.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

Figure 1 is a view showing a carton with part broken away showing the bottom thereof corrugated.

Figure 2 is a view showing the upper end of a carton of an alternate design in which locking

tabs for the flanges are provided under the holding tabs of the sides.

Figure 3 is a detail showing a section through one of the flanges and also through one of the locking tabs shown in Figure 2.

Figure 4 is a similar section through the opposite flange.

Figure 5 is a typical section through one of the locking tabs.

Figure 6 is a similar section showing a tab in the reverse position with the ends of the tab extending downward.

Figure 7 is a similar section showing an extended end of one side locked between the flanges of a side for reinforcing the corner.

Figure 8 is a view showing a locking tab at the center of a flange of a carton.

Figure 9 shows locking tabs in both sides and illustrates a carton of an alternate design in which a tape handle may be gummed to the carton.

Figure 10 shows a similar design with a locking tab in one side and with a flange on the other.

Figure 11 shows another alternate design in which holding tabs are positioned adjacent the corners of a carton in order to overlap folded under portions at the corners to prevent bulging.

Figure 12 shows holding tabs at the ends of an extending flange with the tabs extending around the corners.

Figure 13 is a similar view showing the holding tab at the center.

Figure 14 shows a locking tab holding the extension of the ends of the sides to the folded under portion of the flanges of the sides.

Figure 15 illustrates an alternate arrangement in which the central part of the overlapping flange of one side is provided with a narrow centrally positioned folded under reinforcing flap.

Figure 16 illustrates the combination of a single flange on one side of the carton and a double flange on the other, with a detachable handle extending through a slit in one flange, and the edge of the other or overlapping flange provided with recesses adapted to fit over the ends of the handle.

Figure 17 is a section through one side of a carton looking toward the open end showing a tongue extending through a handle.

Figure 18 is a similar section showing a similar tongue with friction holding slots and a locking tab.

Figure 19 is a section through the flange of the carton shown in Figure 18 showing the handle and locking tab.

Figure 20 is a similar section showing one end of a wire handle.

Figure 21 shows one of the handle shown in Figure 20.

In the drawings the carton is shown as it may be made wherein numeral 1, indicates one side of the carton, numeral 2, the other side and numerals 3 and 4, the handle.

In the design shown in Figure 1 the side 1 which is of traylike formation is provided that a small flange 5 which extends downward over the base of the side 2, and holding tabs 6 and 7 are slit downward to the points 8 and 9 in the side 2 to accommodate the flange. The tabs 6 and 7 are formed with extensions 10 and 11 that are inserted in slits 12 and 13 when the carton is closed and the handle is inserted through the slit or slits 14. In this design the opposite side or bottom of the carton is corrugated as shown at the point 15, for reinforcing and it will be understood that any other parts of the cartons in this or any of the designs may be similarly corrugated or reinforced by any means.

Cartons of this type are normally formed with two traylike members secured together at the base and with flanges at the upper or open side which generally fold under as illustrated in flanges 3 and 4, in which the flange 16, is formed with a folded under portion 17, and the corresponding flange 18 of the opposite side is formed with a folded under portion 19, and when the carton is closed the parts 18 and 19 slide under the parts 16 and 17 with ears 20 and 21 of tabs 22 inserted in slits 23, of the flange 16, the tabs 22 remaining on the outside similar to the tabs 6 and 7 shown in Figure 1.

The parts 16 and 17, and 18 and 19 are normally stapled together, and as this requires an extra operation openings 24 are provided in the member 18 and extending ends 25 and 26, struck from openings 27 and 28 in the part 19 are forced through the opening 24 as illustrated in Figure 5 and this secures the part 19 to the part 18. The position of these locking tabs may be reversed as illustrated in Figure 6 in which tabs 29 of a member 30, similar to the member 18 are inserted through an opening 31 in a member 32 similar to the member 19. Similar tabs as indicated by the numeral 33 may also be placed in the flange formed by the members 16 and 17 and, as illustrated in Figure 2, these are located so that they will be positioned under the tabs 22 and therefore hidden thereby. Instead of the locking tabs at the sides a central locking tab 34 may be used as illustrated in Figure 8 and this is inserted in a tongue 35 similar to a tongue 36 of the carton illustrated in Figure 2 and it will be noted that when the carton is closed a similar tongue 37, will cover the tab 34, or the tab may be in the flap of the opposite side and in this case the tongue 36 will cover the tongue 37, in which the tab may be located, thereby covering the tab in either design.

In the design shown in Figure 7 the upper flange of either side of the box is reinforced by an extension 38 from a flange 39 forming an end of the carton and this extension is folded in between parts 40 and 41 similar to the parts 16 and 17 and the three parts may be locked together by locking tabs 42. The extension 38, as also illustrated by dotted lines 43 in Figure 14, may be provided with a locking tab 44 that may be inserted through an opening 45 and a folded under part 46 of a flange 47, the parts 46 and 47

corresponding with the parts 16 and 17 shown in Figure 3.

The carton may also be made with plain ends having folded end portions as shown in Figure 9, and these may be held by locking tabs 48 and 49 which may be located at the center as shown or toward the ends where large cartons are used; or a central locking tab 50 may only be used in one side as illustrated in Figure 10, with the flange 51 of the other side folded over and with the corners 52 folded inward when closing the carton. The flange 51 may also be provided with an extension 53 similar to the part 5, shown in Figure 1.

This type of carton may also be combined with the carton shown in Figure 2 in which locking tabs 54 and 55 extend upward from the edge of one side 56 and overlap the flange 57 of the other side 58 with the folded end corners 59 extending in behind the tabs 54 and 55 so that they are held thereby and bulging at the corners is prevented. The flange 60 of the side 56 may also be provided with locking tabs 61 which extend through openings 62 similar to the tabs illustrated in Figure 5.

The overlapping flange 63 similar to the extension 5 may be locked independently by tabs 64 at the ends as illustrated in Figure 12, and these may pass through one or both thicknesses of material as may be desired. This flange may also be held by tabs 65 at the center as illustrated in Figure 13 in which the flange is indicated by the numeral 66, and this may have ears 67 and 68 at the sides, or an additional ear or tab 69 at the center.

The tab 34, shown in Figure 8, may also be formed with an additional flap 70, providing holding means at the side as well as at the ends; and a finger opening 71 may be provided through the folded under part 72 and an extended end 73, similar to the end 38, so that a tab 74, similar to the tab 22, may be pressed out of its opening 75, as these tabs very often stick and it is difficult to force them outward in assembling the cartons.

The carton 76 shown in Figure 15, is similar to the carton shown in Figure 11, except that the forward edge of the flange 77, similar to the flange 57, is formed with a small flap 78, between the curved portions of the ends, thereby reinforcing the central part of the outer edge of the flange.

In Figure 16 the flange 79 is formed with a folded under tab 80 and the flange 81 is of single thickness, and in this design the flange 81 is cut out at 82 and 83 to accommodate the sides of a handle 84, which may be of cord or the like, and this handle is of the detachable type and may be inserted through a slit 85.

Figure 17 is a section cut through one side of a container 86 looking toward the open end and this shows a folded under tab 87 which has a tongue 88 and it will be noted that a handle 89, inserted in a slit 90 will be held by the tongue, the tongue 88 being inserted in the inner part of the handle after the handle is in place. The slit is curved to prevent the handle dropping out in assembling, and it will be noted that in this design the flap 87 is held by staples 91, however this may also be held by tabs similar to those of the other designs.

Figure 18 shows a similar section through the side of a carton 92 with a folded under part 93 having a tongue 94 with a handle 95 similar to the handle 89, and in this design the tongue is

held by a locking tab 96, and Figure 19 shows the tab 96 oppositely arranged so that it extends upward instead of downward, and in either arrangement, the tab is covered by the overlapping flange of the opposite side of the container, similar to the part 81, in Figure 16, the flange having slots similar to the slots 82 and 83 for the ends of the handle.

In Figures 20 and 21 a wire handle 97 is substituted for the cord handle and with loops 98 at the ends this may be inserted and held in the slots similar to the cord handle with the flap 99 similar to the part 93 covering the inner ends of the handle. The flanges 100 and 101 having slots 102 similar to the slots 82 and 83 for the ends of the handle, or the flange 100 may have a slot similar to the slot 90, shown in Figure 17, through which the handle may be inserted.

It will be understood that other changes may be made in the construction without departing from the spirit of the invention. One of which changes may be in the use of holding or locking tabs of any other type, another may be in the use of the locking or holding tabs at any other point or points, and still another may be in the use of this method of holding the parts of folding boxes together without staples in boxes or cartons of

The construction will be readily understood from the foregoing description. In use the tabs may be stamped or struck as the blank is made and this may be sold and shipped flat and when used the flanges may first be folded under and then the locking tabs either as shown in Figure 5 or in Figure 6 may be forced through the opening in the adjoining member and then the corners may be folded and the box set up in the usual manner. It will be noted that normally the locking tabs in the overlapping flanges are hidden when the box is assembled and closed as these are located under the holding tabs or other parts of the overlapping flange; and in the designs shown in Figures 9 to 12 the carton may be used without a handle or a handle may be formed of gummed tape or any handles of this type which are now on the market and which are adapted to be applied to the carton may be used.

These cartons may also be provided with slits as shown in Figure 1, through which the handles may be placed, and these may be located toward one side of the center to provide space for locking tabs, such as shown in Figure 8, or any other form of tab may be used, and these may be located at any other point or points.

For purposes of this description the box or carton will be said to comprise apposed side walls joined by a bottom wall, the side walls having end walls and top walls, the end and top walls of one side portion of the box overlapping corresponding walls of the other side when the box or carton is in closed position. Further, the intumed parts of the top walls will be defined as flanges.

Having thus fully described the invention what I claim as new any desire to secure by Letters Patent, is:

1. In a collapsible carton comprising telescoping box sections integrally united and foldably coupled by a wall portion of the carton, the wall of one box section opposite said coupling wall including at its free edge an intumed flange, the wall part having a coupling tab formed from the material thereof providing in the wall part an aperture, the flange having in alignment with the aperture of said wall part spaced tabs insertable through said aperture to engage the wall part in retaining the flange upon the inner surface of said wall part, the corresponding wall of the other box section having an intumed flange at its free edge, means securing the flange to said wall at a position in alignment with the coupling of the flange with the first named section when the sections are in closed position, and the last named wall having adjacent the coupling means slits for receiving the first named tab in coupling the sections together.

2. In a collapsible carton comprising telescoping box sections integrally united and foldably coupled by a wall portion of the carton, the wall of one box section opposite said coupling wall including at its free edge an intumed flange, the wall part having a coupling tab formed from the material thereof providing in the wall part an aperture, the flange having in alignment with the aperture of said wall part spaced tabs insertable through said aperture to engage the wall part in retaining the flange upon the inner surface of said wall part, the corresponding wall of the other box section having in alignment with the tab of the wall part of the first named box section a pair of slits, and said first named tab being insertable into said slits in coupling the sections together when in overlapped relationship to each other.

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