

[54] PACKAGING TRAY

3,610,412 10/1971 Morse..... 206/65 S

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[51] Int. Cl..... B65d 5/20

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206/149; 229/30

[57] ABSTRACT

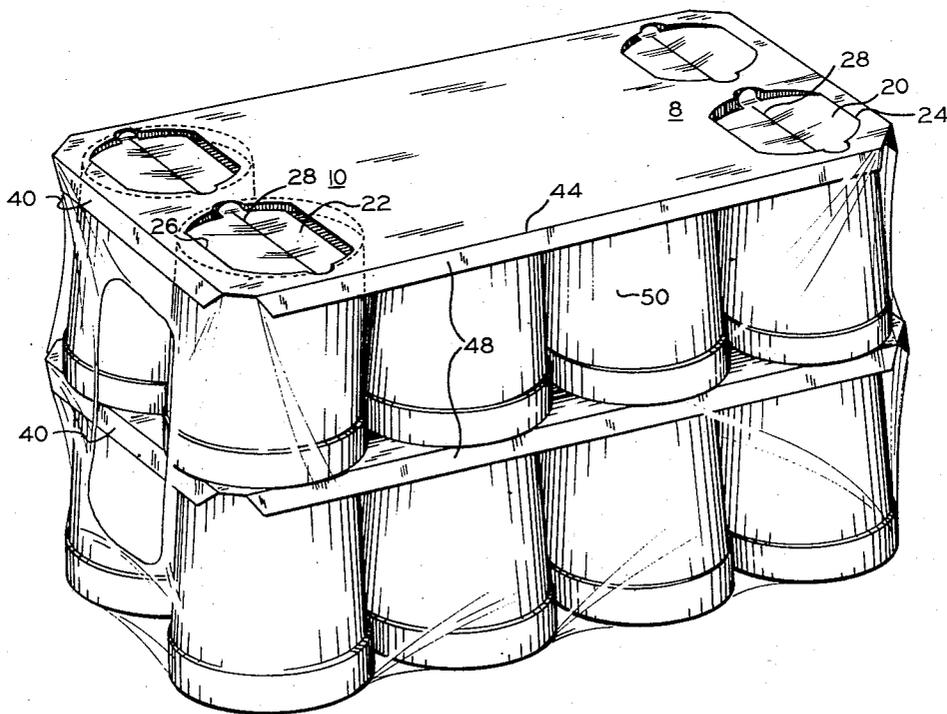
A tray for maintaining a plurality of articles having a recessed portion at preselected locations relative one to the other. The tray has flaps of a configuration for wedging into recesses of associated articles.

[56] References Cited

UNITED STATES PATENTS

2,912,103 11/1959 Hennessey et al. 206/65 C

10 Claims, 4 Drawing Figures



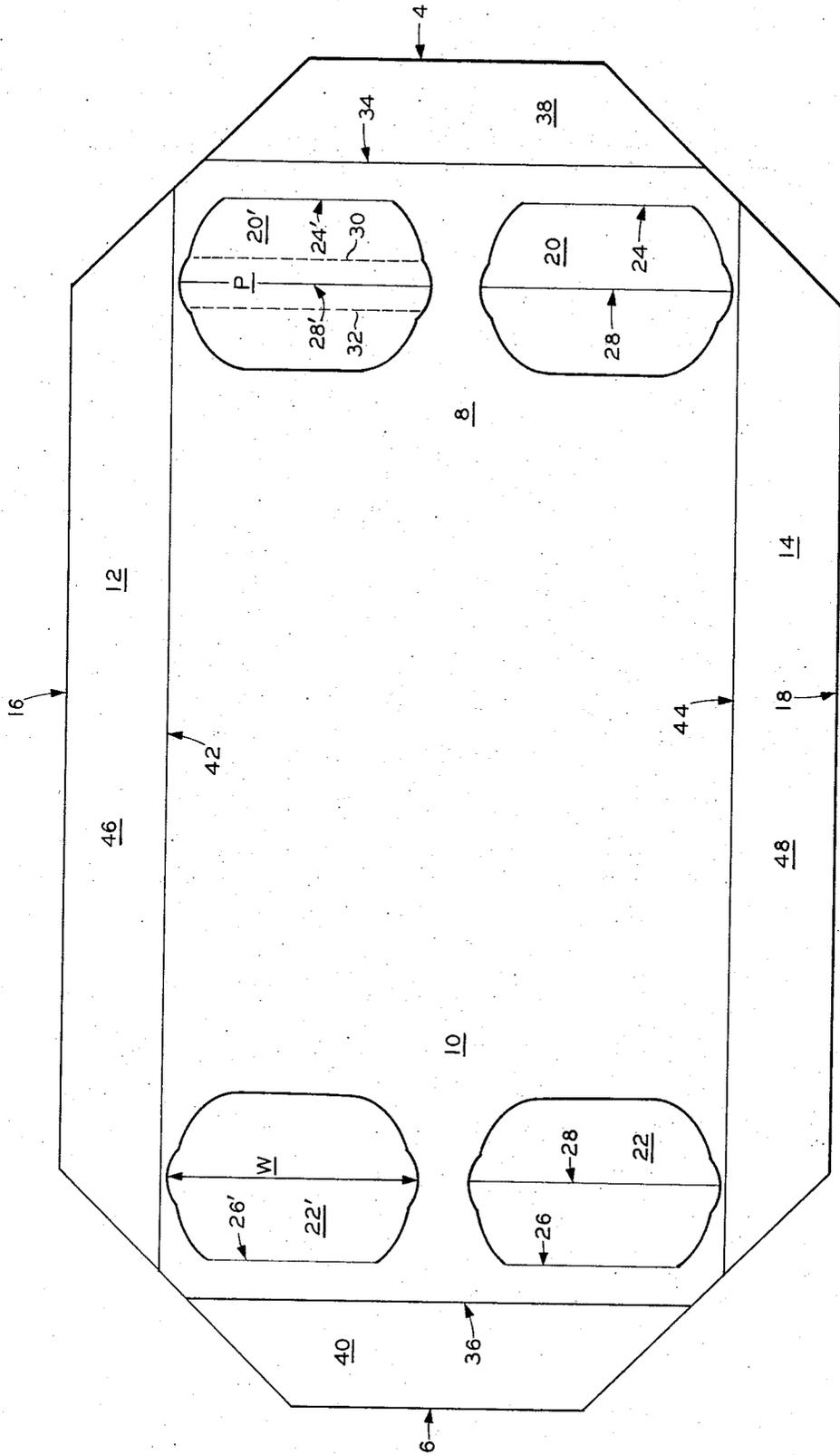


FIG. 1

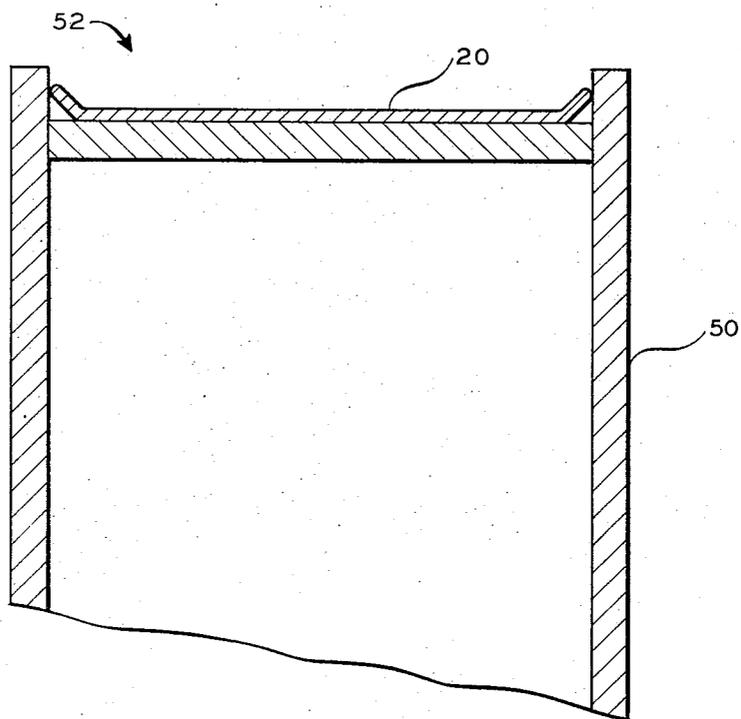


FIG. 2

SHEET 3 OF 3

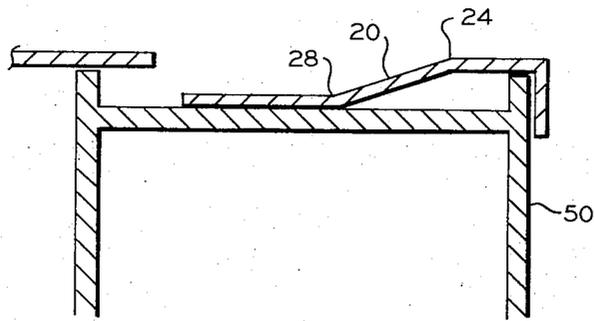


FIG. 3

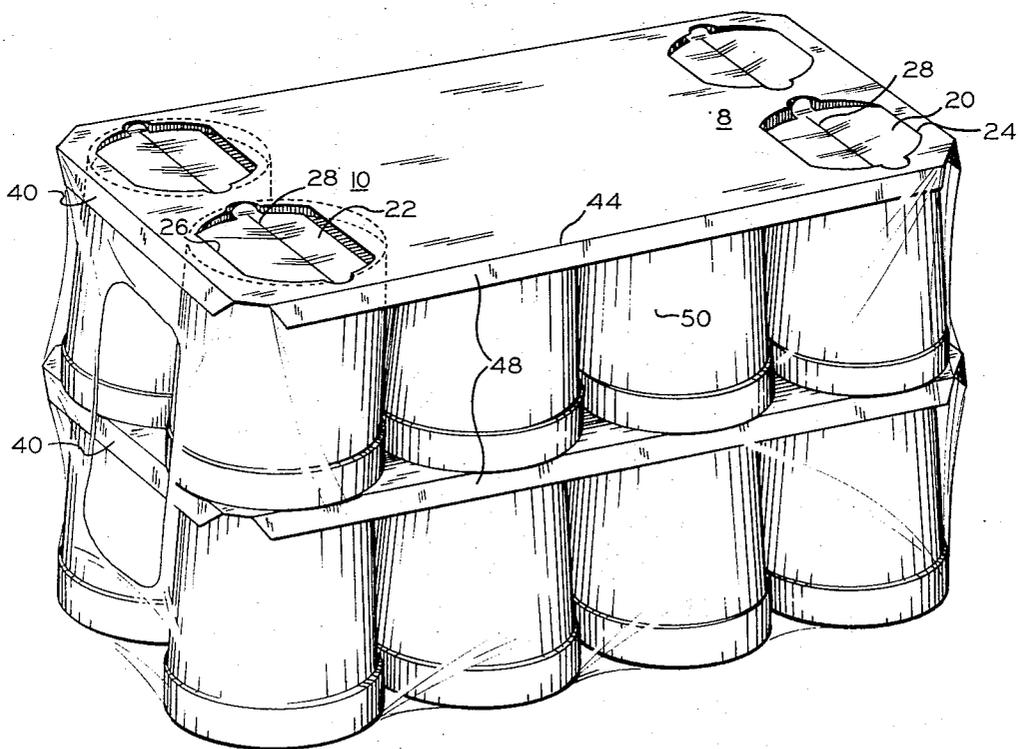


FIG. 4

PACKAGING TRAY

It is desirable to provide a tray for packaging a plurality of articles which have improved strength and greater article holding properties while being maintained of simple construction. This invention therefore resides in a tray for maintaining a plurality of articles having a recessed portion at preselected locations relative one to the other. The tray has flaps of a configuration for wedging into recesses of associated articles.

Other objects, aspects and advantages of the invention will be readily apparent from a reading of the following description, the drawings, and the appended claims.

The drawings are diagrammatic views of the tray of this invention. FIG. 1 shows a plane view of the tray, FIG. 2 shows a portion of the tray and its relationship with an article, FIG. 3 is a cross sectional view at a right angle to FIG. 2, and FIG. 4 is a perspective view of a package utilizing the invention.

The tray is particularly adaptable for use in shrink wrap packaging such as shown in U.S. Pat. No. 3,610,412. The tray of this invention, however, has improved article holding properties. It should be understood, however, that the tray can be used with other packaging or any other function for which it is adapted without departing from this invention. An example of such function would be as a tray for holding articles which combination would be maintained on a shelf.

Referring to FIG. 1, the tray 2 is formed of any suitable material, preferably paperboard, for example, more preferably coated paperboard which will resist moisture.

The tray has first and second ends 4, 6, first and second end portions 8, 10, and first and second side edges 16, 18. Each tray has at least one flap 20, 22, at each end portion 8, 10 of the tray 2. The flaps 20, 22 each have an edge 24, 26 hingedly connected to said tray 2. Each of the flaps 20, 22 have a flap score line 28 extending thereacross generally parallel to the hinged edge 24, 26 of the flap 20, 22.

The width (W) of the flaps 20, 22 as measured along the respective flap score line 28 is greater than the width of other portions of the flap 20, 22. In order to provide additional strength and more firmly hold associated articles, it is preferred that portions of each flap adjacent the flap score line along the entire length of said score line 28 is of a greater width than the other portions of the flap. This portion (P) is on opposed sides of the flap score line and is depicted as the portion between broken lines 30, 32 on flap 20'. It is also preferred that the width (W) of flaps 20, 22 (shown on flap 22') as measured along the flap score line is greater than the width of the recess of the associated articles to be held thereby.

Flaps 20, 20', 22, 22', are preferably hingedly connected at a location spaced from the associated ends 4, 6 of the tray 2 with the flap 20, 20', 22, 22' extending from a hinged connection 24, 24', 26, 26' toward the opposed end of the tray 2. This construction assists in preventing movement of the articles outwardly relative to the center of the tray 2 and to some extent forces the articles toward the center and against one another in some constructions. First and second score lines 34, 36 can be positioned which extend across respective first and second end portions 8, 10 of the tray 2 each at a location between the hinged connection 24, 24', 26, 26' of the respective flaps 20, 20', 22, 22' and the re-

spective adjacent tray end 4, 6. In this construction, folds can be made along the first and second score lines 34, 36 to form first and second flanges 38, 40. After positioning the flaps in the recesses of articles, the flanges 38, 40 can be brought down or up into contact with adjacent articles for additionally supporting and/or protecting the articles.

These first and second score lines 34, 36 are preferably generally parallel to the hinged connection or edge 24, 26 of the flaps 20, 22.

Third and fourth score lines 42, 44 can also be provided each extending along a respective side 12, 14 and spaced a distance annularly from the respective side edges 16, 18 to form third and fourth flanges 46, 48 which can be folded to function as described above with respect to the first and second flanges 38, 40.

It should also be understood that the tray 2 can be formed to have only first and second flanges 38, 40, only third and fourth flanges 46, 48, first, second, third and fourth flanges, or any combination of flanges, and further can be formed without flanges. The configuration of the articles held by the tray and the degree of desired sturdiness, once determined, will lead one skilled in the art to what flange placement, if any, is desired. Where flanges are formed on the tray 2, it may be desirable to have corner portions removed in order to provide a neat uniform flanged tray as shown.

The flaps can be formed by cutting the tray and providing a score line 26, 28, for example, defining the hinged connection.

There can also be a plurality of flaps 20, 20', 22, 22', as shown, one flap on each end portion, or the flaps can be at other locations, which configurations and placements are dictated by the type of articles being maintained by the tray.

FIG. 2 shows a portion of flap 20 positioned at its installed position within the recess of an article 50. This section was taken through the article 50 and through the flap 20 at the flap score line 28 and is a view from the first end 4 of the tray 2. It can be seen in FIG. 2 that the flap 20 of this configuration wedges into the recessed area of the article thereby maintaining said article against movement relative thereto. In this case, for example, the article 50 is a round ice cream container, having a recessed bottom 52.

FIG. 3 shows a portion of flap 20 positioned within the recess of an article 50 as viewed along a section through the middle of the container 50 and at a right angle to the view of FIG. 2.

In one example of use of the tray, several ice cream containers are arranged in rows to form the package, the tray is placed on the bottoms of the containers and the flaps wedged into the recesses of adjacent articles, the flanges are turned down into contact with the articles, another layer of cartons is placed thereover, another tray is similarly positioned with its flaps wedged into the bottoms of the second layer of articles and the flanges turned down. Heat-shrinkable film is then wrapped about the tray-held articles, sealed and heat-shrunk to form a neat, compact package. Such a package is illustrated in FIG. 4.

It will be noted from the foregoing discussion and the drawings that the portion (P) of the flaps forms an angular beam section which is of relatively great strength and is wedged into the article recess which further strengthens the gripping forces of the flap on the container.

Other modifications and alterations of this invention will become apparent to those skilled in the art from the foregoing discussion and accompanying drawing, and it should be understood that this invention is not to be unduly limited thereto.

What is claimed is:

1. A tray for maintaining a plurality of articles at pre-selected locations relative one to the other, each article having a recessed portion, said tray having at least one flap, each flap having an edge connected to said tray along a hinged line of attachment, and each said flap having a portion which is of a width (w) greater than the width of the recessed portions of said articles, each said flap being positioned to be wedged into a respective recessed portion.

2. A tray in accordance with claim 1 wherein said flap has a flap score line extending across said portion thereof.

3. A tray in accordance with claim 1 wherein said flap score line is generally parallel to the hinged line of attachment of said flap.

4. A tray in accordance with claim 1 wherein said tray has first and second ends associated with first and second end portions, each said end portion having at least one said flap and wherein each said hinged line of attachment is spaced from its associated end of said tray with each flap extending from its hinged line of attachment toward the opposed end of said tray.

5. A tray in accordance with claim 4 wherein there are two said flaps associated with each end of said tray.

6. A tray in accordance with claim 1 wherein said tray is cut to form each said flap and wherein a score line defines said hinged line of attachment.

7. A tray in accordance with claim 1 additionally comprising first and second score lines extending across respective first and second end portions associated with respective first and second ends of said tray, each said score line being located between the hinged line of attachment of said at least one flap and its associated tray end, to form respective first and second flanges.

8. A tray in accordance with claim 7 wherein said first and second score lines are generally parallel to the hinged connection of the adjacent at least one flap.

9. A tray in accordance with claim 8 additionally comprising third and fourth score lines each extending along a respective side edge of said tray and spaced inwardly from said respective side edge to form respective third and fourth flanges.

10. A tray in accordance with claim 1 additionally comprising third and fourth score lines each extending along a respective side edge of said tray and spaced inwardly from said respective side edge to form respective third and fourth flanges.

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