April 28, 1953 P. A. DIEHL 2,636,662

UTILITY CASE

Filed Nov. 10, 1949 2 SHEETS—SHEET 1

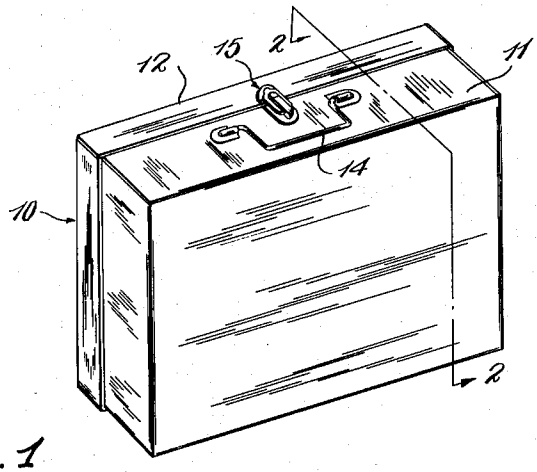



FIG. 1

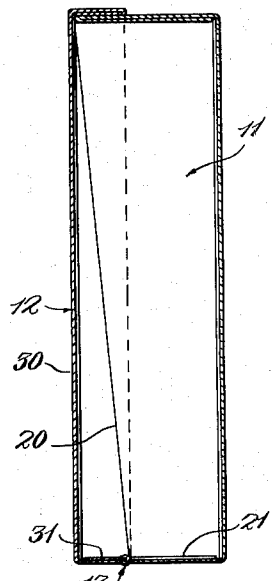



FIG. 2

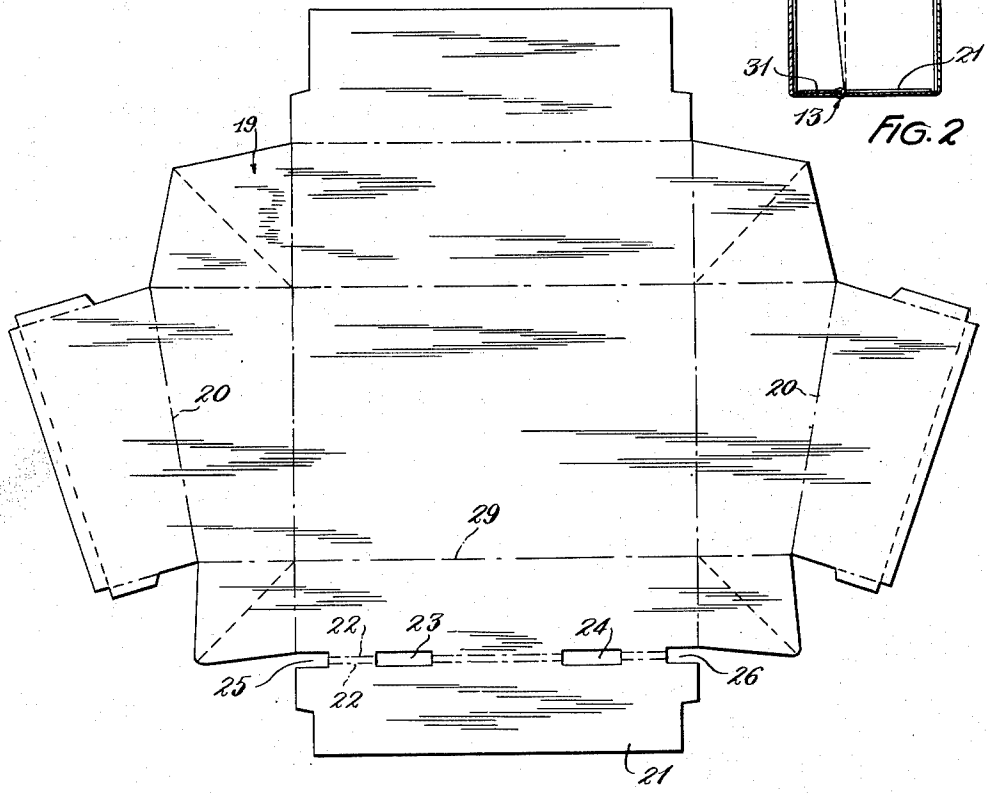



FIG. 3

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UTILITY CASE

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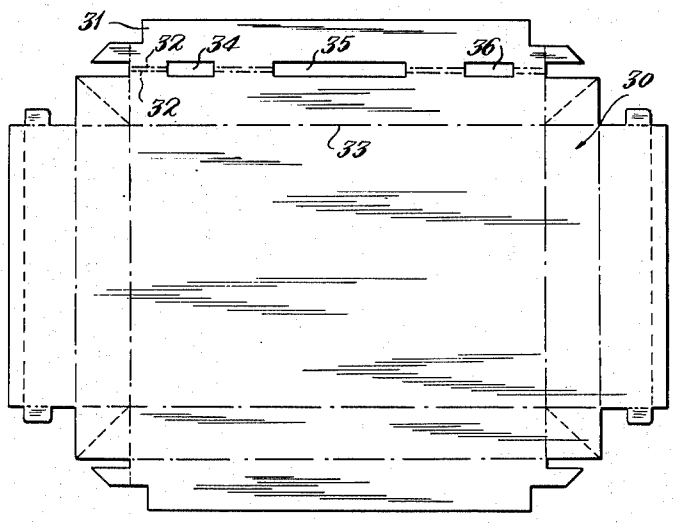



FIG. 4

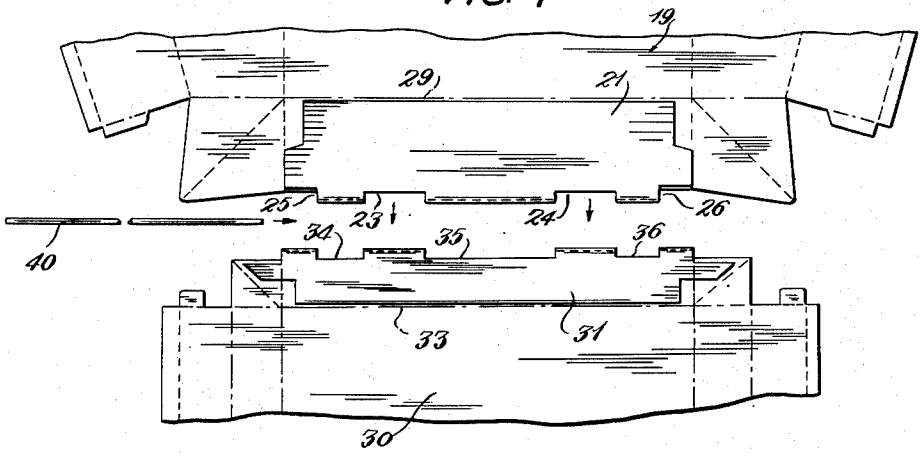



FIG. 5

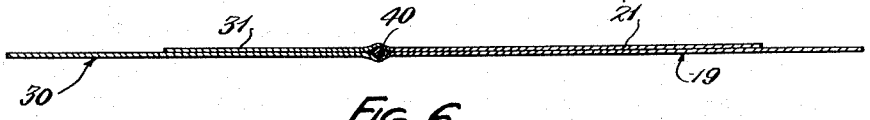



FIG. 6

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# UNITED STATES PATENT OFFICE

2,636,662

## UTILITY CASE

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Application November 10, 1949, Serial No. 126,535

2 Claims. (Cl. 229—44)

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The present invention relates to a utility case and method of manufacture thereof, and more particularly to a utility case formed of semi-rigid foldable sheet material, such as paperboard or fibreboard, and comprising a hinged cover.

The principal object of the present invention is the provision of a new and improved utility case assembly comprising two flat sheets of relatively inexpensive semi-rigid material, such as paperboard, having adjoining edge portions cut and folded so as to provide interfitting hinge structures by which the sheets are hinged together, one sheet being foldable into the case proper and the other sheet being foldable into the cover.

A further object of the present invention is the provision of a new and improved utility case comprising a case proper and cover, each formed of relatively inexpensive sheet material folded and cut in a manner to provide a relatively sturdy hinge construction by which the sheet forming the cover is hinged to the sheet forming the case.

Another object of the invention is the provision of a new and improved method of forming a utility case of two flat sheets of material, such as paperboard, which method includes cutting and folding adjoining edge portions of the two flat sheets and hinging the sheets together, and subsequently folding the sheets to form the case proper and the cover.

The invention resides in certain constructions, combinations and arrangements of parts and certain steps of procedure and further objects and advantages will be apparent to those skilled in the art to which it relates from the following description of the preferred embodiment described with reference to the accompanying drawings forming a part of this specification, and in which:

Fig. 1 is a perspective view of a utility case embodying the invention;

Fig. 2 is a sectional view taken substantially along line 2—2 of Fig. 1;

Fig. 3 is an elevational plan view of a flat paperboard sheet cut and scored to form the case proper;

Fig. 4 is an elevational plan view of a flat sheet of paperboard cut and scored to form the cover;

Fig. 5 is a fragmentary plan view showing two edge portions of the flat paperboard sheets in registration with one another preparatory to being brought together and secured by a hinge or pintle pin; and

Fig. 6 is a fragmentary sectional view of the two sheet members hinged together.

The present invention contemplates a utility

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case comprising a case proper and a cover hinged thereto, which case and cover are formed of relatively inexpensive sheet material, such as paperboard. The cover is hinged to the case by a structure formed by folding edge portions of the sheets upon themselves whereby tubular formations are provided along adjoining edges of the case and cover. Certain sections of the tubular formations at the folded edges are cut away and the cutaway portions of one sheet are adapted to receive the uncut portions of the other whereby alternate sections of the tubular formations are brought into registration and receive a hinge pin extended therethrough. In its preferred form, the invention contemplates cutting and scoring or breaking the flat sheets along lines which facilitate folding the sheets to form the sides of the case proper and its cover, and hinging the flat sheets together so that they may be conveniently stored and handled and subsequently made up into finished cases as needed.

Although the invention may be embodied in various constructions, it is herein shown embodied in a utility case 10 comprising substantially rectangular box or case proper 11 having a lid or cover 12 attached thereto by a hinge structure indicated generally at 13. In its preferred form, the case 10 is made principally of paperboard, although any other suitable foldable sheet material could be employed. Preferably, a wire handle 14 is attached to the case 11 and a conventional snap clasp 15 is provided to secure the cover in its closed position.

The box 11 is formed of a paperboard sheet 19 which is cut in the shape shown in Fig. 3 and which is scored as indicated by the broken lines to provide fold or bend lines by which the sheet may be readily folded to form the sides of the box 11. Preferably, the top edges 20 at opposite sides of the box slope rearwardly toward the box bottom. One end portion 21 of the sheet 19 is scored along two parallel, closely spaced lines 22 by which the end portion may be folded back on the sheet proper, as seen in Fig. 6, and secured thereto as by an adhesive. The two scores 22 cause the sheet to fold in a close loop and when the folded portion is secured to the sheet proper, a tubular section is provided along an edge of the sheet. Elongated openings 23, 24 and recesses 25, 26 are cut in the sheet along the scores 22 and these cuts are preferably formed at the time the sheet is cut from its stock. Thus, when the edge portion 21 of the sheet is folded as described, the openings 23, 24, 25 and 26 provide cutaway sections along the tubular forma-

tion at the edge of the sheet. Preferably, the edge of the folded portion 21 of the sheet extends to approximately the fold line 29 and provides a double thickness for the side of box 11 formed by folding the sheet along line 29.

The cover 12 is formed of a paperboard sheet 30 which is preferably cut in the shape shown in Fig. 4 and which is scored as shown by the broken lines to facilitate folding the sheet to provide sides on the cover which are adapted to telescope over the top edges of three sides of box 11 when the case is closed. An end portion 31 of the sheet 30 is scored along two parallel lines 32 about which the portion 31 may be folded on the sheet 30 as seen in Fig. 6, and secured thereto as by an adhesive, to provide a tubular formation along an edge of the sheet similar to that described with reference to sheet 19. The edge of the folded portion 31 terminates short of fold line 33, as seen in Fig. 5 so that the folded portions 31 form a double thickness for the side formed by folding sheet 30 along line 33. The sheet 30 has elongated cutaway openings 34, 35, 36 along the scores 32 which are preferably formed at the time the sheet is cut from stock. The openings 23, 24, 25, 26 in the sheet 19 are adapted to register with the uncut folded edge portions of the sheet 30 and the cut portions 34, 35, 36 of the sheet 30 are adapted to register with the uncut folded edge portions of the sheet 19 when the two sheets are brought together edgewise as illustrated in Fig. 5. Thus, alternate tubular edge sections of the two sheets provide a hinge through which a wire or pin 40 is extended to hinge the sheets 19, 30 together. The hinged sheets form an ensemble or assembly which can be handled and stored in flat form and subsequently assembled as needed.

The order in which the two sheets are formed into a hinged assembly is not necessarily that described. As an alternative procedure the end portion 21 of sheet 19 may be folded and attached to the sheet 19 and the uncut folded edge portions then inserted through the openings 34, 35, 36 of sheet 30 prior to folding the end portion 31. The wire 40 may then be inserted through the tubular edge portions of the sheet after which end portion 31 of sheet 30 is folded back over the wire and secured to sheet 30 thereby enfolding the wire in tubular sections of the sheet 30. The portion 31 is preferably attached to the sheet 30 by an adhesive and the wire thereby secured in the folded edge.

In the form of utility case shown, the sides of the box 11 and the cover 12 are provided by folding the edge portions of the sheets 19, 30 at right angles to the sheets proper and refolding the folded portions to form double ply sides. The sides are arranged to interlock and retain the folded portions in relatively rigid form. The handle 14 and clasp 15 are preferably attached to the sheets 19, 30 before the sheets are folded and made up into a case. The manner in which the sheets are folded to form the sides of the box and cover is well known in the art, and if desired, other methods of folding the sheets to produce the box and cover could be used.

Utility cases made in accordance with the invention are inexpensive and yet relatively durable and they may be stored and shipped in flat knock-down form thereby economizing on storing and shipping costs. The hinge structure is sturdy and provides free swinging movement of the cover without imposing any appreciable wear or deterioration on the parts thereof.



While the preferred embodiment of the invention has been described in considerable detail I do not wish to be limited to the particular construction shown or the procedures described which may be varied within the scope of the invention and it is my intention to hereby cover all adaptations, modifications and alternative constructions and methods that come within the spirit and scope of the appended claims.

Having thus described my invention, I claim:

1. A knock-down paperboard utility case ensemble comprising two sheets of paperboard, said sheets each having scores forming fold lines which define rectangular areas inset from the edges of said sheets and along which the outer edge sections of said sheets may be readily turned at substantially right angles with said rectangular areas and interconnected to form said sheets into a box and a cover for the box, respectively, one of said edge sections of each of said sheets having a score forming a fold line parallel to and intermediate the score line on which each of said one edge sections is turned and an edge of said sheet, each of said edge sections being folded along its last mentioned fold line and defining outer folded portions which are secured to the inner portions of said edge sections, said folded portions and said edge sections being spaced from one another along the last mentioned fold line and defining a tubular formation along said last mentioned fold line, one of said sheets having at least two spaced notches therein along its said tubular formation, the other of said sheets having an elongated notch therein along its said tubular formation, the length of said elongated notch being substantially equal to the distance between said two spaced notches, the portion of said tubular formation of said sheet intermediate the two spaced notches being positioned in said elongated notch and the portions of said tubular formation of said other sheet adjacent said elongated notch being positioned in said two spaced notches and a hinge pin extending through the tubular formations of each of said sheets for securing said sheets together.

2. A knock-down paperboard utility case ensemble comprising two sheets of paperboard, said sheets each having scores forming fold lines which define rectangular areas inset from the edges of said sheets and along which the outer edge sections of said sheets may be readily turned at substantially right angles with said rectangular areas and interconnected to form said sheets into a box and a cover for the box, respectively, one of said edge portions of each of said sheets having a score forming a fold line parallel to and intermediate the score line on which each of said one edge sections is turned and an edge of said sheet, each of said edge sections being folded along its last mentioned fold line and defining outer folded portions which are secured to the inner portions of said edge sections, said folded portions and said edge sections being spaced from one another along the last mentioned fold line and defining a tubular formation along said last mentioned fold line, one of said sheets having spaced notches provided in its tubular formation defining an odd number of projections, at least three, the other of said sheets having spaced notches provided in its tubular formation defining an even number of projections, at least four, said sheets being joined together with the projections on the sheet having the odd number positioned in the notches of the sheet having the even number of projections and the projections on the

sheet having the even number positioned in the notches of the sheet having the odd number of projections and a hinge pin extending through the tubular formation of the projections on both sheets for securing said sheets together.

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