

July 2, 1935.

W. FEILER

2,006,827

METAL BOX CONSTRUCTION

Filed March 29, 1934

2 Sheets-Sheet 1

Fig.1.

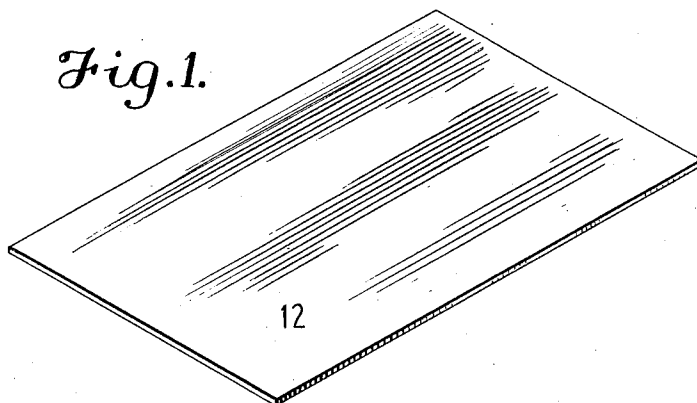


Fig.2.

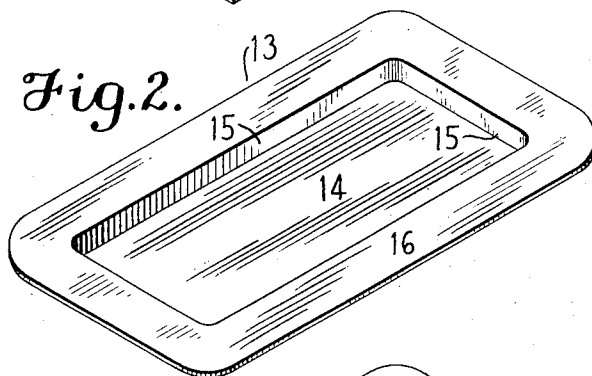


Fig.3.

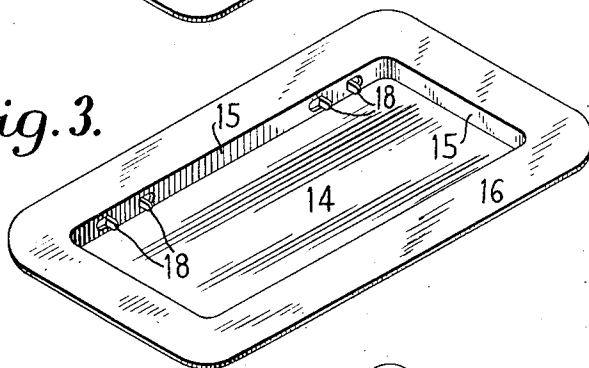
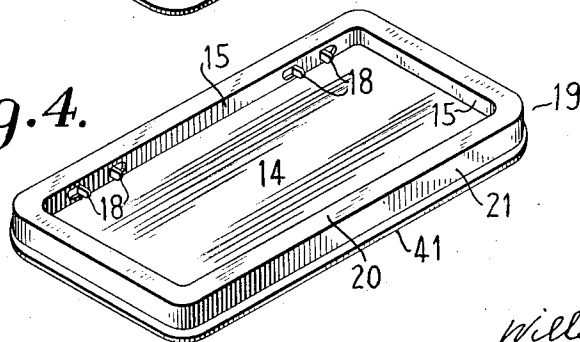


Fig.4.



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2 Sheets-Sheet 2

Fig.5.

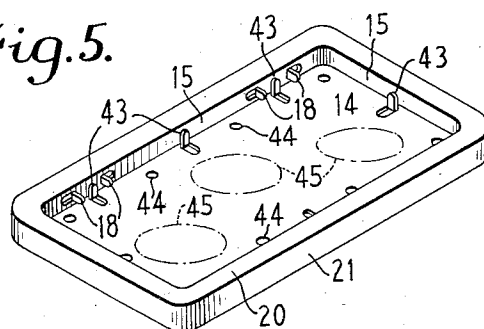


Fig. 6.

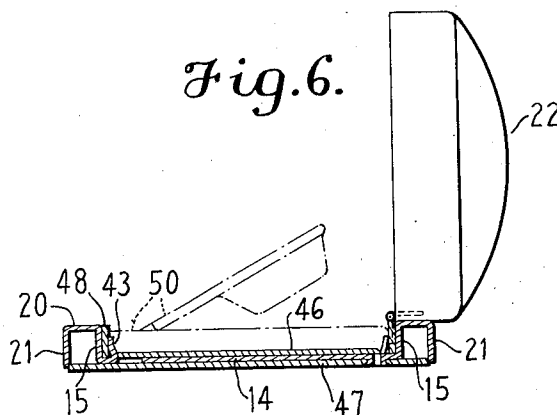


Fig. 7.

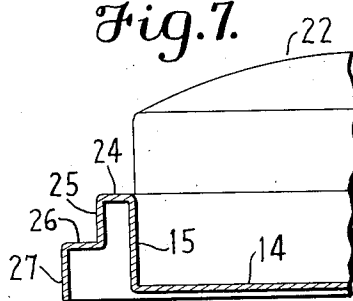


Fig. 8.

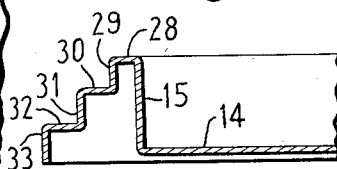


Fig. 9.

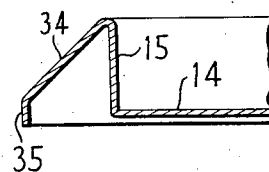
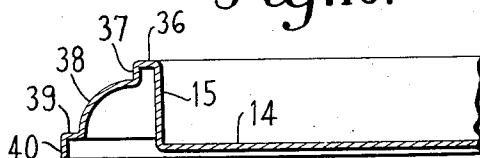


Fig. 10.



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UNITED STATES PATENT OFFICE

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METAL BOX CONSTRUCTION

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Application March 29, 1934, Serial No. 717,890

3 Claims. (Cl. 220—83)

This invention relates to the field of display boxes, display bases, caskets and the like, suitable for displaying, setting off, holding or encasing articles of jewelry, watches, and other small objects. Boxes in which the outside of the receptacle part gives the appearance of a broad rim or massive section and is extended beyond the contour of the cover, have been made of wood, cardboard, or sheet metal, covered or uncovered. A known form of sheet metal construction for such boxes is one involving a frame with internal flanges, the manufacture of which requires that the external configuration must be produced at the initial metal working operation, in consequence of which each style of frame of the same size must start with a different first-stage product. The flexibility of such frames is such that, in practice, they are made rigid by an additional metal plate, riveted or clinched to the flanges. The frame type of construction was devised for box receptacles in which the metal was covered with flexible material after the first forming operation. The present invention is also applicable to receptacles the metal of which is covered by fabric, and is especially adapted for the manufacture of receptacles a beauty of which is in exposed metal, plated, brushed or polished to an attractive finish.

An object of this invention is to provide a decorative receptacle construction of sheet metal, which is of one piece, inherently rigid and relatively light. Another object is to provide a low-cost construction, advantageous for quantity production, and which can be made in a wide variety of configurations from the same initial product or with use of the same dies in the forming of the initial product, no matter what the configuration of the final product may be.

In the accompanying drawings, forming part hereof:

Fig. 1 is a perspective view of a piece of sheet metal from which to form one of the receptacles of the invention;

Fig. 2 is a perspective view of the product of the blanking and drawing step;

Fig. 3 shows the result of the next step, which is the piercing of one of the boundary walls and forming hinge-attaching lugs;

Fig. 4 shows the result of the second draw;

Fig. 5 illustrates the finished metal receptacle or shell, after trimming, piercing for neck-retaining lugs and punching out holes, if any, in the bottom;

Fig. 6 is a cross-section through the receptacle, with neck, and inner and outer labels, a form of

pad held in the receptacle being shown in broken lines, and the cover of the box being shown open, in elevation; and

Figs. 7 to 10 are fragmentary sections showing other configurations of the outer shell of the receptacle.

In the manufacture of a shallow box receptacle in accordance with this invention, a piece of sheet metal 12 is operated upon by dies in a blanking and drawing operation so as to produce the partly formed blank 13 of Fig. 2. This blank has a bottom wall 14 offset from the plane of the original sheet, four low cavity-bounding walls 15, and a broad flange 16 projecting horizontally outward from the tops of the bounding walls. All of these portions are continuous with each other. The first-stage product is made in the same way as a simple box body, and is like the ordinary metal box-body before it is trimmed, with the important difference that, instead of there being only a slight amount of excess metal to cut away, the broad flange is provided this flange containing the metal from which the hollow exterior of the receptacle of this invention is later formed. The first-stage product is of such strength that it can be stored without care in large quantities and handled in any manner without suffering injury.

The next step is the piercing of one of the bounding walls with bending in of the hinge-fastening lugs 18.

Next the blank is drawn between dies which form and shape the integral shell 19 which surrounds and conceals the walls 15 and gives horizontal extension and apparent thickness. The encompassing shell of Figs. 4-6 is one having a horizontal top 20 continues with the walls 15 and a vertical down-turned skirt 21 extending to or below the plane of the bottom. In conjunction with the cover 22, when closed, the effect produced is that of a one-step plinth or extension beyond the lines of the cover.

Figs. 7 to 10 show certain other of the numerous outer configurations that can be produced with appropriate dies from a first-stage product such as shown in Fig. 2. The two-step formation of Fig. 7 comprises a horizontal top portion 24, a vertical portion 25 extending downward therefrom, another outward extending horizontal portion 26 at an intermediate level, and a final vertical portion 27. All such portions are continuous with each other and with the walls 15 around the entire circuit of the receptacle. The three-step construction of Fig. 8 comprises top portion 28, vertical portions 29, 31 and 33 and intermediate outwardly extending horizontal portions

30 and 32. Fig. 9 shows a beveled extension work, consisting of a sloping portion 34 and a vertical lower portion 35. Fig. 10 illustrates a molding effect, having top portion 36, upper vertical portion 37, curved portion 38, lower horizontal portion 39 and a vertical portion 40 at the bottom.

In any case there is a fin 41, of excess metal, as shown in Fig. 4, extending outward from the bottom edge of the external shell, it being necessary to provide for this fin by the size of the original piece of metal or by the depth of the first draw, in order to insure the production of a complete and perfect exterior for the receptacle. A further step is, therefore, the trimming off of the fin.

Other operations, which may be performed, are the piercing of the bottom for neck-retaining lugs 43 and for holes 44 having down-turned edges. Also, if extra lightness is desired, larger holes may be punched out of the bottom 14, as indicated by the broken lines 45 in Fig. 5. The receptacle may be lightened in this manner without in any way impairing the rigidity which is an advantage of the integral construction herein disclosed.

A so-called inner label 46, consisting of a piece of paper, cloth or the like, may be disposed over the bottom plate or wall 14, and an outer label 47 of cardboard, paper or other material is applied under the bottom to form a bottom covering and to provide the surface which contacts with a table-top or other underlying surface. This bottom label may be held by causing the edges of the holes 44 to penetrate it and upsetting these edges. A neck 48 is set within the bounding walls 15, and may be held by bending the lugs 43 against it. A pad of any suitable kind is inserted into the receptacle, within the neck to support the watch or other article which the box is to hold. A pad is indicated by the broken lines 50.

The cover 22 may be made, covered, lined, and hinged in customary manner.

I claim:

1. A box of the kind described having a shal-

low receptacle part and a hinged cover part, said receptacle part extending outward beyond the lines of the cover part, and comprising a single piece of sheet metal shaped to form walls bounding the cavity of the receptacle part, portions continuous with the tops of said walls and extending outward and downward to completely encompass said walls and form a hollow external enlargement of the receptacle part, and a bottom part constituted from the same piece of material, said bottom part being continuous with all said walls and extending as a rigid brace from wall to wall.

2. A box of the kind described having a shallow receptacle part and a hinged cover part, said receptacle part extending outward beyond the lines of the cover part, and comprising a single piece of sheet metal shaped to form walls bounding the cavity of the receptacle part, portions continuous with the tops of said walls and extending horizontally outward therefrom, with other portions continuous with said horizontal portions and extending downward to completely encompass said walls and form a hollow external enlargement of the receptacle part, and a bottom part constituted from the same piece of material, said bottom part being continuous with all said walls and extending as a rigid brace from wall to wall.

3. A box of the kind described having a shallow receptacle part and a hinged cover part, said receptacle part extending outward beyond the lines of the cover part, and comprising a single piece of sheet metal shaped to form walls bounding the cavity of the receptacle part, portions continuous with the tops of said walls and extending outward and downward in a stepped formation to completely encompass said walls and form a hollow external enlargement of the receptacle part, and a bottom part constituted from the same piece of material, said bottom part being continuous with all said walls and extending as a rigid brace from wall to wall.

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