May 14, 1963 R. V. KING 3,089,584

TRAY FOR WATER COLOR PAINT BOX

Filed May 13, 1960

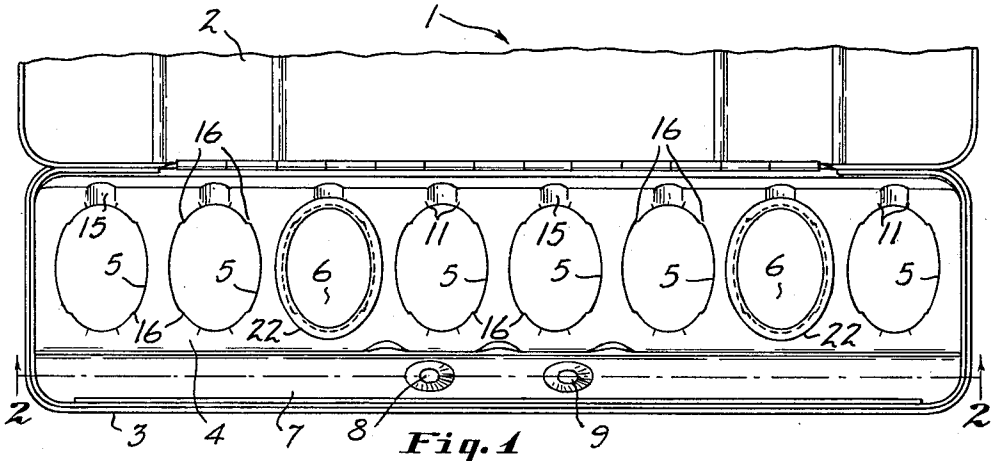


Fig. 1

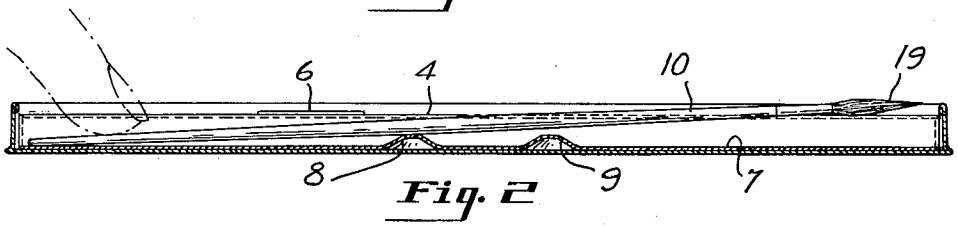


Fig. 2

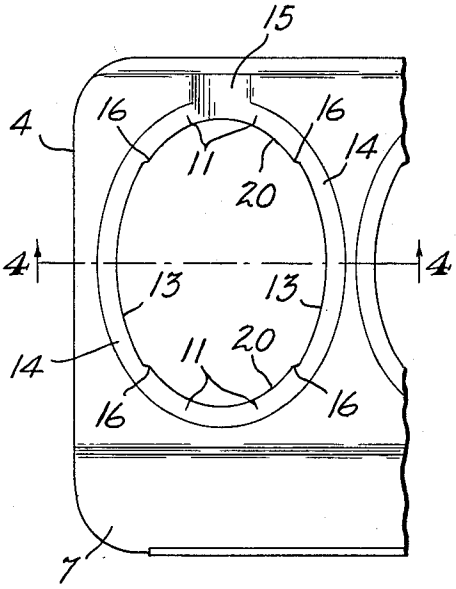


Fig. 3

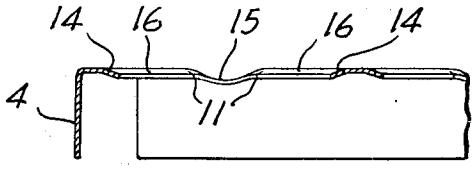


Fig. 4

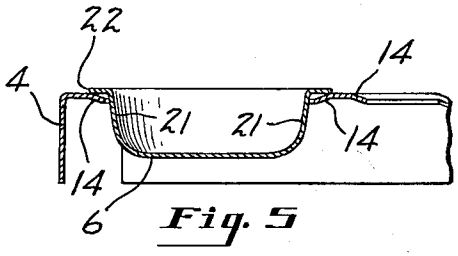


Fig. 5

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TRAY FOR WATER COLOR PAINT BOX

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The present invention relates to a tray for oval-shaped water color paint pans.

Oval-shaped water color paint pans, such as shown and described in U.S. Patent No. 2,221,191, are utilized because they facilitate the complete removal of paint from the pan. One of the complications introduced by the use of an oval-shaped pan is that of retaining the pans in the tray during shipment and use and providing for easy removal of the pans for insertion of refill pans.

The object of the present invention is to provide a tray for oval-shaped paint pans which retains the pans during shipment and use and yet permits easy removal of empty pans for replacement by refill pans.

Other objects and advantages of the present invention will become apparent from the following description and drawings in which like numerals relate to like parts and in which:

FIGURE 1 is a plan view, with parts broken away, of a paint box containing a tray made in accordance with the present invention;

FIG. 2 is a side elevational view in cross-section of the unit of FIG. 1 taken along line 2—2 of FIG. 1, a paint brush being added for the purpose of illustrating one feature of the present invention;

FIG. 3 is an enlarged plan view of a section of the tray showing a pan opening;

FIG. 4 is a side elevational view in cross-section taken along line 4—4 of FIG. 3; and

FIG. 5 is a side elevational view, the same as FIG. 4, showing a pan inserted in the pan opening.

The paint box unit **1** comprises a lid **2** hinged to a box **3**. Disposed within the box **3** is a paint pan tray **4** having a series of paint pan receiving openings **5**. Pans **6** are shown disposed in two of the openings. The paint box, tray, and pans are all made of 75 to 100 pound tin plate having a thickness 30 to 48 gauge U.S. standard, which is in the order of .010 inch. This material may be more generally characterized as resilient sheet metal for the purposes of this application.

The front portion of the tray **4** has a paint brush receiving trough **7** provided with upstanding knobs **8** and **9** which are spaced apart in the center portion of the unit. The knobs **8** and **9** are formed in the floor of the trough and extend upwardly therefrom approximately the same height, preferably about one-half of the thickness of the box. When a paint brush **10** is placed in the brush-receiving trough **7**, it rests on the two knobs **8** and **9**. This keeps the brush bristle portion **19** off of and away from the floor of the trough so that it dries more rapidly.

An additional feature of the spaced knob arrangement is that when a child wishes to pick the brush out of the trough **7**, he may press down on one end of the brush to pivot the other end upward over the knob and then grasp the raised end of the brush. This eliminates the difficulty of reaching into the trough and extracting the brush. This feature is illustrated in FIG. 2.

A series of generally oval-shaped or elliptical pan-receiving openings **5** are formed in the tray **4** as shown. Portions **13** and **20** define the perimeter of the openings. The openings are generally of the same size and shape and only slightly larger than the pans received therein. The portions **13** of the tray adjacent the side portions or neck of the openings are slightly relieved. Notches or indentations **16** characterize the junction of the end portions **20** and side portions **13** of the opening. The edge of the opening is a free cut edge and is coned inwardly very slightly when it is worked upon by the forming punch to form the opening border portion **14** which is shown in FIG. 4. The coning effect of the punch tends to smooth the upper edges of the opening. Similarly, when the flat surface of the tray is pierced to form the opening, the upper edge tends to be smoothed and rounded out and the bottom edge rough-cut and more jagged.

When a pan **6** is forced into position in an opening **5**, the end portions **20** ride against the sidewalls **21** of the pan and grip them tightly. The slits **11** in the end portions **20** provide the necessary flexibility and variation in the end portion to grip the pan. From one to three or more slits may be employed. The relieved side portions **13** exert a slight gripping action on the pan sidewalls, if they contact them at all.

It should be pointed out that the manufacturing tolerances employed in the manufacture of this class of goods are approximately plus or minus .005 inch per part. This means that the openings and pans can vary as much as .010 inch. One of the problems overcome by the present invention is to provide openings which can accommodate different sized pans and grip them equally well. The arrangement of the present invention overcomes this problem because it substitutes an edge-to-surface contact with the prior art surface-to-surface contact. When a pan is inserted in the opening, it passes by the relatively smooth top edge and presses it inwardly sufficiently to grip the pan firmly, adjusting as required. When a pan is removed, it pulls the end portions outward with it so as to re-size and re-set the opening for a replacement pan.

A single row of depressions **15** are formed adjacent the ends of the openings in the tray to permit a knife-blade or the like to be inserted under the edge **22** of the pans and pry them out as required. If desired, a second row of depressions may be formed adjacent the other end of the openings. The ends of the openings are considered the portions adjacent the hinge or joint between the box **3** and lid **2** and the portions directly opposite them.

This application is a continuation-in-part of my application Serial No. 721,252, filed March 13, 1958, entitled "Tray for Water Color Box and Paint Pans Therefor."

It will be understood that, in accordance with the provisons of the patent laws, modifications of the invention shown and described herein may be made without departing from the spirit thereof.

What I claim is:

1. A paint box tray comprising a sheet of thin resilient material, and pan receiving openings in said sheet, pans positioned in said openings, said openings being only slightly larger than the pans received therein, portions of said material defining the marginal edge of each said opening extending inwardly of some of the other of said marginal edge portions, and terminating in a free cut edge, said inwardly extending marginal edge portion being coned toward the bottom of said sheet, said free cut edge being roughened and gripping the side walls of the pans inserted in said opening.

2. The tray recited in claim 1 wherein an inwardly extending portion of the material defining each said opening is disposed diametrically opposite said first mentioned inwardly extending portions.

3. The tray recited in claim 1 wherein said inwardly extending portions have a slit extending radially of said opening therein and dividing said inwardly extending portion into two parts.

4. A paint box and a tray therefor, said paint box having a pan tray therein, means in said paint box for

supporting said pan tray, said pan tray comprising a sheet of thin resilient material, and pan receiving openings in said sheet, pans positioned in said openings, said openings being only slightly larger than said pans, portions of said material defining the marginal edges of each said openings extending inwardly of some of the other of said marginal edge portions and terminating in a free cut edge, said inwardly extending free cut marginal edge portion being coned toward the bottom of said sheet, said free cut edges being roughened and gripping the side walls of a pan inserted in said opening.

5. The paint box and tray recited in claim 4 in which the pan receiving openings are oval-shaped and the pans positioned in said openings are oval-shaped.

References Cited in the file of this patent

UNITED STATES PATENTS

424,603	Favor	Apr. 1, 1890
1,349,217	Mentzer	Aug. 10, 1920
1,478,242	Milliken	Dec. 18, 1923
1,516,175	Daniel	Nov. 18, 1924
2,165,345	Conway et al.	July 11, 1939
2,806,312	Grumbacher	Sept. 17, 1957
2,931,495	Stratton	Apr. 5, 1960