Nov. 23, 1943.

J. R. JONES

2,334,825

TRAYS AND TRAY STACK

Filed Feb. 4, 1943

2 Sheets-Sheet 1

Fig. 1.

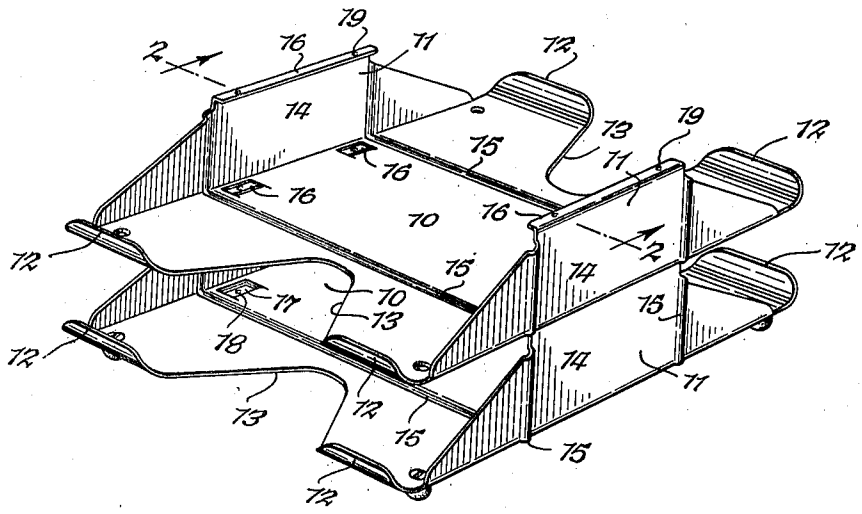
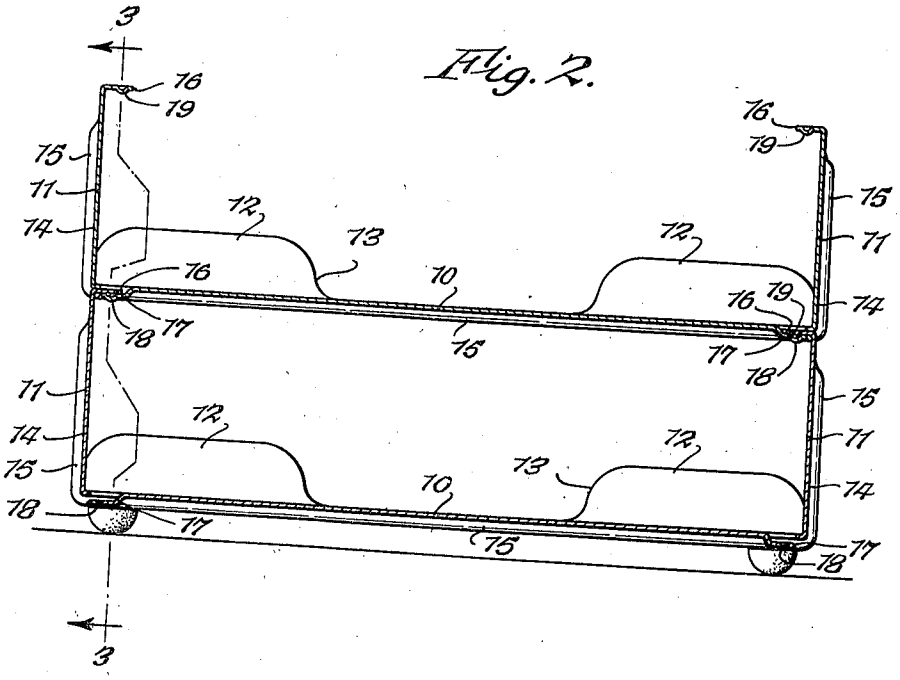


Fig. 2.



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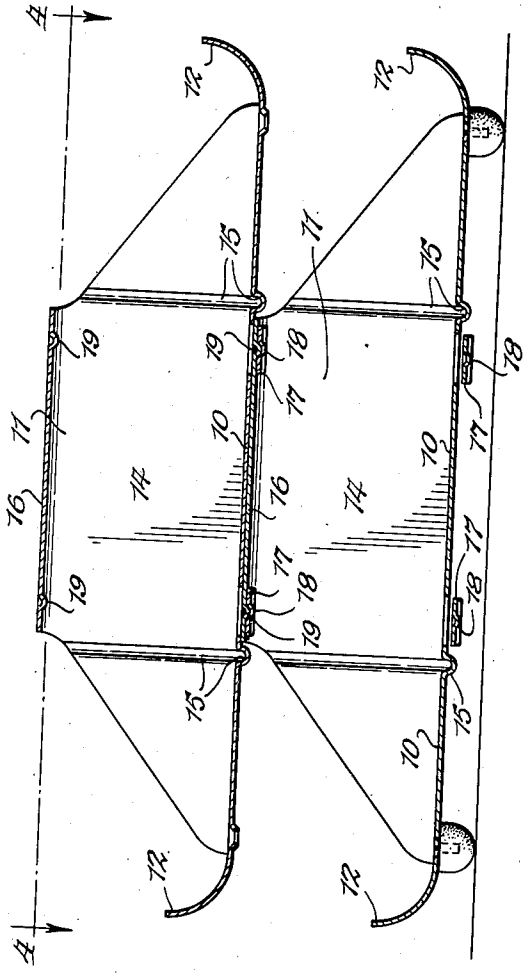


Fig. 3.

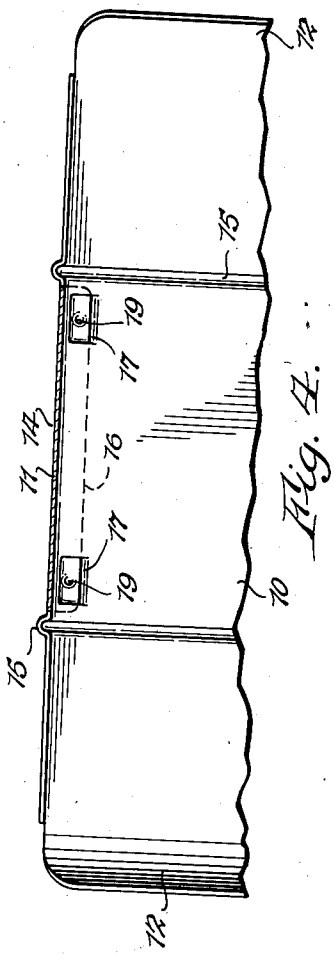


Fig. 4.

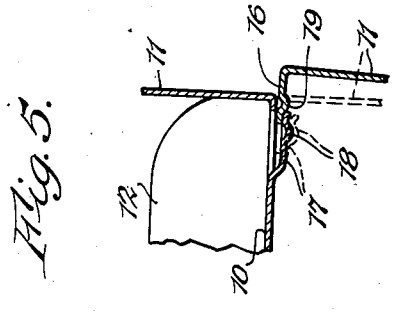


Fig. 5.

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UNITED STATES PATENT OFFICE

2,334,825

TRAY AND TRAY STACK

James R. Jones, Lakewood, N. Y., assignor to Art Metal Construction Company, Jamestown, N. Y.

Application February 4, 1943, Serial No. 474,683

8 Claims. (Cl. 211—126)

This invention relates to letter trays and tray stacks of that kind in which two or more letter trays or shallow receptacles are adapted to be stacked or arranged one above another so as to enable letters or the like to be retained neatly in different groups and to be readily placed in and removed from the trays.

One object of the invention is to provide a practical desirable and convenient tray and tray stack which are of novel improved construction.

Other objects of the invention are to provide a letter or sheet tray and tray stack which are composed of the minimum number of parts, are of exceedingly simple construction and economical to make; to provide a tray, two or more of which can be stacked and securely retained in stacked relation one above another without the necessity for any extra parts, i. e., parts other than portions of the trays themselves for securing them in stacked relation; to produce a tray which has integral securing parts at its upper and lower portions of such construction that the securing parts at the lower portion of one tray are adapted to cooperate with the securing parts at the upper portion of a similar tray for securing the trays together in stacked order; in which the individual tray consists of a single piece of sheet material formed to provide a bottom and side walls, and also formed to provide securing parts at the tray bottom and at the tops of the side walls of a form adapting the bottom securing parts of the tray to cooperate with the top securing parts of another like tray to be engaged or interlocked for holding the trays in stacked relation.

Further objects and advantages of the invention will appear from the following specification of the preferred embodiment of the invention, shown in the accompanying drawings, and the novel features of the invention are set forth in the appended claims.

In said drawings:

Fig. 1 is a perspective view on a reduced scale, of a letter tray stack embodying my invention.

Fig. 2 is a transverse, sectional elevation thereof, on the plane of line 2—2, Fig. 1.

Fig. 3 is a longitudinal sectional elevation thereof on line 3—3, Fig. 2.

Fig. 4 is a fragmentary, sectional plan of one of the trays on line 4—4, Fig. 3.

Fig. 5 is an enlarged detail transverse section illustrating the manner of engaging the securing flanges of one tray with the hooks of another tray for fastening the trays together in a stack.

The tray stack comprises two or more similar trays arranged or stacked and releasably secured in place one upon another. Each tray of the stack has a bottom 10 and side walls 11 extending upwardly from opposite sides of the bottom, and the opposite ends of the bottom 10, that is, those ends which extend at right angles to the side walls 11, are shown as curved or bent upwardly to provide raised end curbs or portions 12 which function to confine letters or sheets in the tray between the side walls and prevent unintentional escape of the sheets endwise from the tray. These opposite end portions of the tray bottom are notched to provide open-ended gaps or openings 13 in the bottom and end curbs of the tray that afford hand holes which facilitate the placing of the sheets in the tray and also adapt the sheets to be readily grasped for removing them from the tray.

Preferably, the side walls are of the shape shown, having deep central zones or portions and tapering downwardly from the opposite ends of the tops of said central zones 14 toward the opposite ends of the tray, and terminating substantially at the line of juncture of the upwardly curved end curbs 12 of the tray with the flat bottom thereof. Preferably, also, the tray comprising the bottom and side walls as described, is made from a single piece of sheet metal or other suitable sheet material bent or formed into the shape shown, and the sheet from which the tray is formed, is embossed to provide strengthening or stiffening ribs 15 which extend transversely across the bottom and upwardly across the side walls 11 in the neighborhood of the ends of the deep central zones 14 of the side walls. These ribs, in addition to stiffening the bottom and side walls and preventing the same from buckling or bending out of the intended flat form, are also alined vertically one above the other in the stacked trays and enhance the attractive appearance of the tray stack.

Each tray is provided at its lower side portions and at the tops of its side walls with securing members or parts constructed so that the securing parts at the bottom of one tray are adapted to engage, interlock or cooperate with the securing members at the top of the side walls of another like tray, in a manner to secure and firmly retain the trays in stacked relation one upon another. Preferably these securing members comprise a horizontal top flange or tongue 16 bent or extending inwardly along the top of the central zone of each side wall, and tongues or hooks 17 punched or struck out downwardly from the bottom of the tray adjacent to each side

wall. The bottom hooks or tongues 17 are attached at their inner ends to the tray bottom and extend laterally outward or toward the side edges of the tray, being offset downwardly below the lower face of the bottom a distance just slightly greater than the thickness of the top flanges 16 of the tray. Thus, the trays can be stacked one upon another and secured together by engaging the side wall top flanges 16 of one tray between the tongues 17 and the bottom face of a superposed tray, the bottom tongues or hooks forming, in effect, sockets to receive the top flanges or tongues. In the preferred construction shown, each tray is provided with two hooks 17 near each side thereof to receive the top flange at the corresponding side of the underlying tray, and each hook is formed with a downwardly protruding shallow blister or embossed projection 18 forming a cavity in the upper side of the hook which is adapted to receive a similar shallow blister or projection 19 on the cooperating top flange 16. In securing the parts together, the top side flanges 16 on one tray are inserted into place between the hooks 17 and the underside of the bottom of the next tray above, and the blisters or projections 19 on the flanges will snap into or seat in the cavities of the blisters on the hooks. This nesting or interfitting of the blisters on the flanges and hooks not only functions to retain the securing members of adjacent trays firmly in interlocking engagement with each other so that some force is necessary to disengage the securing members, but also serves to properly center or aline the trays vertically with each other in the stacked arrangement and prevent them from shifting out of their intended, superposed, alined arrangement.

When the trays are thus superposed and interlocked with each other, the bottom of each tray serves to connect and brace or hold in position the upper portions of the side walls of the next underlying tray, thereby producing a firm, rigid stack. Thus, two or more trays can be stacked and securely retained in stacked relation by cooperating integral portions of the trays themselves, so as to form a firm, steady and desirable tray stack, without the necessity of any extra or additional securing means or parts. Furthermore, as explained, each individual tray, with the means for securing it with one or more other trays in a stack, can be formed from a single piece of suitable sheet material.

I claim as my invention:

1. In a tray stack comprising a plurality of trays disposed one above another and each having a bottom and side walls, the improved construction in which top portions of the side walls of each tray are formed with integral laterally directed tongues and bottom portions of each tray are formed with integral sockets adjacent the side walls, and the tongues of one tray are arranged to seat in the sockets of the next tray above to secure said trays together in stacked relation.

2. An improved tray stack constructed according to claim 1, in which said tongues and sockets are formed with interseating embossments which resist disengagement of said tongues from said sockets.

3. In a tray stack comprising a plurality of like trays disposed one above another and each having a bottom and side walls, the improved construction in which the side walls of each tray have inwardly projecting top securing flanges and the bottom of each tray has horizontal securing tongues thereon adjacent the sides of the tray, and said top flanges of one tray and the bottom tongues of another tray being arranged to interlock with each other to secure said trays in stacked relation.

4. A tray for holding letter sheets or the like, which comprises a bottom and side walls rising from the bottom and having inwardly extending top flanges, said tray bottom having horizontal securing tongues thereon adjacent the sides of the tray, and said top flanges being arranged to interengage with said securing tongues of another like tray to secure said trays together in stacked relation.

5. A tray for holding letter sheets or the like, which consists of a single piece of sheet material forming bottom and side walls of the tray, said side walls having inwardly extending top flanges, and said tray having horizontal securing tongues struck out from the bottom thereof adjacent the sides of the tray, said top flanges being arranged to interengage with the bottom securing tongues of another like tray to secure said trays in stacked relation.

6. A tray for holding sheets or the like, which sonsists of a single piece of sheet material forming bottom and side walls of the tray, said side walls having inwardly extending top flanges, and said tray bottom having securing tongues struck out therefrom adjacent the sides of the tray, said top flanges being arranged to interengage with the bottom securing tongues of another like tray to secure the trays in stacked relation, and said top flanges and bottom tongues having embossed projections, the projections of said top flanges being vertically alined with the projections of said bottom tongues.

7. In a tray stack comprising a plurality of trays disposed one above another and each having a bottom and side walls, the improved construction in which top portions of the side walls and bottom portions of the tray adjacent its side walls are formed, the one with integral laterally directed tongues and the other with integral sockets, and the tongues of one tray are arranged to seat in the sockets of the adjoining tray to detachably secure said trays together in stacked relation.

8. In a letter or the like tray having a bottom and side walls rising therefrom, the improved construction in which the top portions of the side walls and the bottom portion of the tray adjacent its side walls are formed, the one with integral laterally directed tongues and the other with integral sockets, and the tongues of said tray are arranged to seat in the sockets of another like tray to detachably secure said trays together in stacked relation.

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