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INTERLOCKING TRAY.

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This invention relates to trays or containers, and especially to an interlocking connection whereby a number of trays may be interlocked.

5 The object of the present invention is to generally improve and simplify the construction and operation of trays of the character described; to provide a tray which is substantial in construction and cheap to
10 manufacture; a tray which may be nested for storage or shipment, and further, a tray which is provided with an interlocking connection, whereby a plurality of trays of
15 uniform or various sizes may be quickly and readily interlocked or disconnected as desired.

One form which our invention may assume is exemplified in the following description and illustrated in the accompanying
20 drawings, in which—

Fig. 1 is a perspective view of the tray.

Fig. 2 is a plan view of the blank from which the tray is formed.

Fig. 3 is a plan view showing a number
25 of trays of various sizes connected and interlocked.

Fig. 4 is a central vertical longitudinal section taken on line 4—4 of Fig. 3.

Fig. 5 is a section of a tray showing the
30 manner in which the sides may be bent outwardly if it is desired to enlarge or increase the capacity of the tray.

Referring to the drawings in detail, and particularly to Figs. 1 and 2, it will be
35 noted that the tray consists of a bottom section 2 and connected side and end sections indicated at 3 and 4, respectively. It will also be noted that the upper edges of the side and end sections are turned outwardly
40 and downwardly as shown, and that flanges are thus formed on the upper edges, the function of which will hereinafter be described.

The tray is preferably constructed of thin
45 sheet metal or a like material. It is formed from a blank such as shown in Fig. 2, which is cut by a die or other suitable means. The side and end sections are bent upwardly along the dotted lines indicated at 5 and
50 6, and the upper edges are then bent outwardly and downwardly along the dotted lines indicated at 7 and 8, thus producing a curled, hook-like flange on each side and end section. These hook-like flanges are
55 adapted to overlap each other when the

trays are placed side by side, or end for end, as shown in Fig. 3, and this overlapping of the flanges produces an interlocking connection which prevents separation of the trays under normal conditions.

60 For the purpose of permitting the trays to be readily and quickly interlocked when desired, and also for the purpose of maintaining the trays in a perfect horizontal position, with the bottom sections engaging
65 the counter or other support upon which they are placed, it is necessary that two of the flanges be bent or shaped in such a manner as to be slightly larger than the opposite flanges. For instance, the hook-like
70 flanges indicated at 9 and 10 are larger than the hook-like flanges indicated at 11 and 12. The flanges 9 and 10 are furthermore slightly higher than the flanges 11 and 12; that
75 is, the increased height being merely that of the thickness of the metal employed. This is important as it permits the flange 9, as shown in Fig. 4, to overlap the flange 11
80 without raising or tilting the trays, thus permitting the bottom sections to assume the same plane with relation to the support upon which they are placed. The difference in height of the flanges 9 and 11 is
85 clearly shown in Fig. 4, but as the height is merely equal to the thickness of the metal, it is obvious that it is hardly perceptible to the eye and in no way destroys the uniform appearance of the side and end sections when a single tray is employed, as
90 shown in Fig. 1.

By again referring to Fig. 1 it will be noted that the corners between the side and end sections are slightly open, as indicated at 14. This is produced by cutting out the metal at the corners, as indicated at 15, when
95 forming the blank shown in Fig. 2. These openings in the corners of the tray serve an important function when trays of various sizes are assembled and interlocked, as shown in Fig. 3. For instance, two trays of
100 uniform size are indicated at A and B, and a third tray, having a length equal to the trays A and B, is indicated at C. This tray is a duplicate in construction of the trays indicated at A and B, the only differ-
105 ence being that it is twice as long. The flange indicated at 9, which is the large flange, extends from end to end of the tray C and overlaps the smaller flanges indicated by dotted lines at 11 of the trays A and B. 110

The large flange 9 of the tray C could not overlap the smaller flanges 11 of the respective trays A and B unless the corners were open, but as the corners are open, as previously described, the flange 9 can settle down over the flanges 11 and a perfect interlock is thus made between two small trays and a large tray.

Another reason for leaving the corners open is to permit a slight enlargement of the trays; that is, the side and end sections normally assume the full line position shown in Fig. 5, but they may be bent outwardly, as indicated by dotted lines at 16, if it is desired to slightly enlarge the tray or to change its appearance.

The trays, as previously described, are exceedingly simple in construction and cheap to manufacture, as the blanks may be formed by die operations and the side and end sections, together with the flanges 9, 10, 11 and 12, may also be bent up and formed by die action. Uniformity in size is also obtained by such construction and it is, therefore, possible to nest all trays of uniform size for shipment, storage or otherwise.

The trays may be readily assembled when required for use, as it is merely necessary to overlap the flanges of the adjacent trays. They may be arranged in line formation or in squares, and in fact in any arrangement desired, and as such may be used to advantage for display purposes in store windows, counters and otherwise. They may also serve the purpose of containers for samples, other kinds of goods, etc., and as the trays may be square in shape, rectangular or otherwise, they may be designed to support any articles desired.

While certain features of the present in-

vention are more or less specifically illustrated, we wish it understood that various changes in form and proportion may be resorted to within the scope of the appended claims. We similarly wish it understood that the materials and finish of the several parts employed may be such as the experience and judgment of the manufacturer may dictate or various uses may demand.

Having thus described our invention, what we claim and desire to secure by Letters Patent is—

1. A tray formation consisting of a plurality of trays, each tray having down-turned flanges at opposite sides, the flange on one side being of such height and size as to detachably overlies the flange of an adjacent tray, the latter flange being of a lesser height and size than the said overlying flange.

2. A tray formation consisting of a plurality of trays, each tray having down-turned flanges at opposite sides and ends, the flanges on one side and end being of such height and size as to detachably overlies the sides and end flanges of adjacent trays, the flanges on the latter trays being of a lesser height and size than the said overlying flanges.

3. As an element of a tray formation comprising a plurality of detachably connected trays, a tray having down-turned flanges at opposite sides and ends, the flanges on one side and end being of a greater height and size than the opposite side and end flanges whereby the flanges on one tray are adapted to overlies the smaller flanges of adjacent trays.

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