

June 27, 1933.

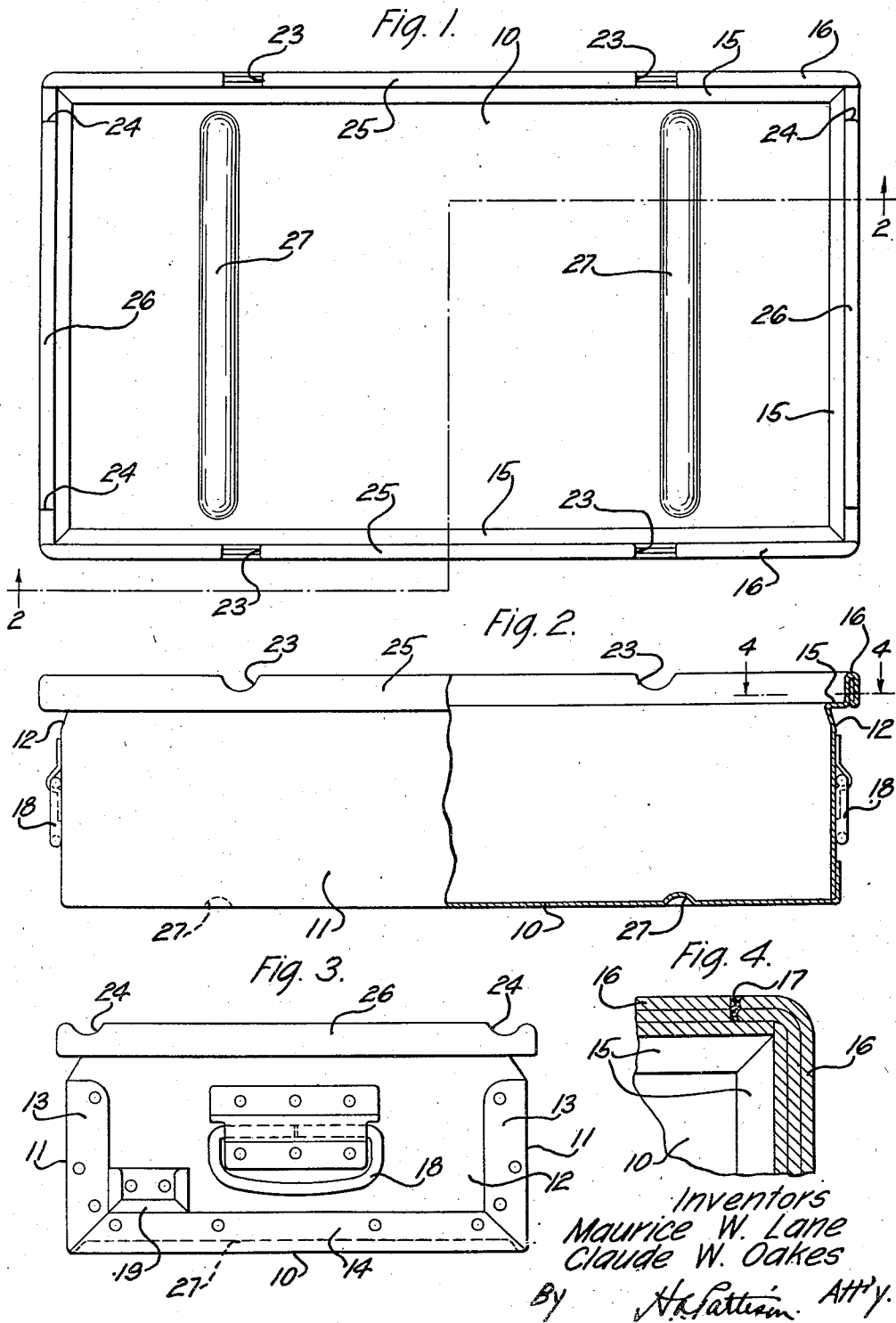
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1,915,369

STACKING TRAY

Filed Sept. 7, 1929

2 Sheets-Sheet 1



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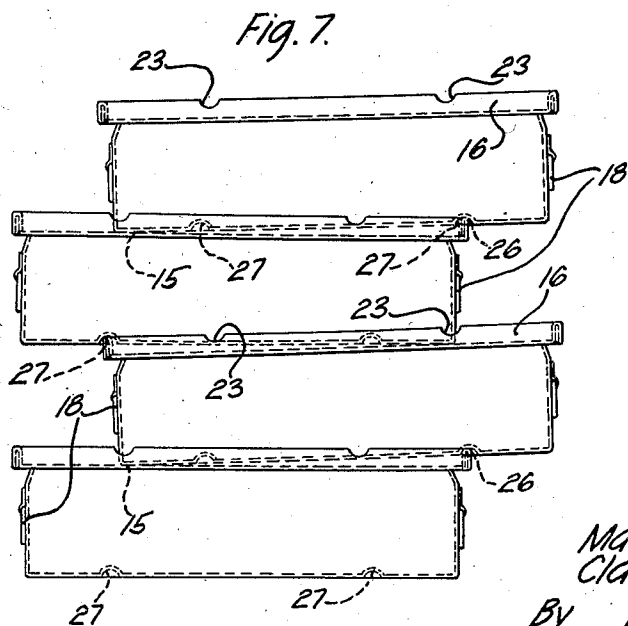
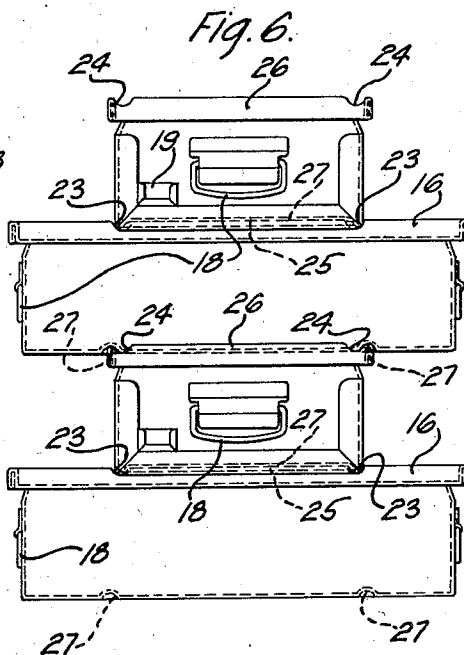
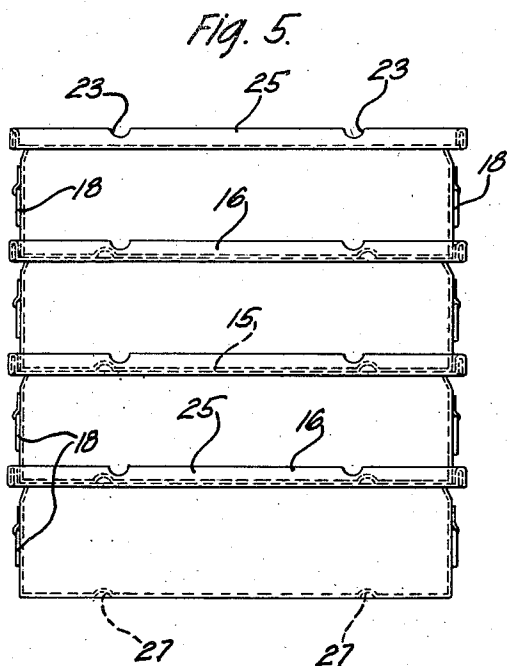
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2 Sheets-Sheet 2



Inventors
Maurice W. Lane
Claude W. Oakes
By *H. A. Lutton* Atty.

UNITED STATES PATENT OFFICE

MAURICE W. LANE, OF CHICAGO, AND CLAUDE W. OAKES, OF DOWNERS GROVE, ILLINOIS, ASSIGNORS TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

STACKING TRAY

Application filed September 7, 1929. Serial No. 391,007.

This invention relates to stacking trays, and particularly to trays which may be stacked in a variety of ways.

In the stacking of trays in a shop or manufacturing plant for storing or transporting shop parts and articles, it is desirable in many instances that the trays be capable of being stacked in a variety of ways, according to the use to which they are put or the space which they may occupy. Thus when the trays contain articles which are to be inspected, it is desirable that the trays be stacked in such a way that some of the articles may be removed for inspection or other purposes without moving or shifting the trays, or it may be desirable to stack the trays in as small a space as possible.

An object of this invention is to provide an economically and rigidly constructed tray which may be stacked and interlocked with similar trays in a variety of ways.

In accordance with this object, one embodiment of the invention consists of a rectangular metal tray having transverse, upwardly directed embossings extending nearly across the bottom for engaging and interlocking with projections of a corresponding size provided in the rim or upper edges of the tray by notches formed or cut therein. A pair of such projections on the lateral edges of the tray cooperating with the embossing in the bottom provide for crosswise stacking and interlocking of one tray on top of the other, and a pair of these projections on the end edges provide for endwise staggered stacking and interlocking of one tray on top of another. A horizontal ledge is also formed around the rim of the tray for stacking one tray directly above the other, and the rim of the tray is reinforced by turning the edge of the metal under itself.

A clear understanding of the invention will be had by referring to one specific embodiment thereof as illustrated in the accompanying drawings, wherein

Fig. 1 is a plan view of the tray;

Fig. 2 is a side elevation thereof, partly in section, the section being taken on the line 2—2 of Fig. 1;

Fig. 3 is an end view thereof;

Fig. 4 is a sectional view of the joint structure provided for the upper portions of the tray corners, taken on the line 4—4 of Fig. 2;

Fig. 5 shows how the trays may be nested one above the other;

Fig. 6 discloses the method of crosswise stacking the trays, and

Fig. 7 illustrates the method of stacking the trays with their ends staggered.

Referring now to the drawings in which like reference numerals designate similar parts in the several views there is disclosed a rectangular tray constructed of three pieces of sheet metal consisting of a bottom 10, integral side portions 11, and two end pieces 12. This tray is assembled by bending the two side portions 11 upwardly at right angles to the bottom 10 and the side portions being provided with flaps 13 and the bottom with flaps 14 for securing the end pieces 12 in position. The end pieces 12 are placed in position and the flaps 13 and 14 are bent around their outer surfaces and riveted thereto, as shown in Fig. 3, to secure them in position. The portions of the four corners of the pan above the flaps 13 are joined by welding. The upper portions of the end pieces 12 and side portions 11 are inclined inwardly and then bent horizontally to provide a stacking ledge 15 and this ledge is provided with a reinforced hem or rim 16 extending around the periphery of the tray which is formed by bending the edges of the sheet metal upwardly and then downwardly in under themselves as shown in Fig. 2. The joints of this reinforced rim 16 between the sides and end portions of the tray are not welded directly at the corners, but are constructed as shown in Fig. 4 with a portion of the end part of the rim extending and lapping around the cor-

ners and welded on one side of the tray at 17 to the side portion of the rim. This type of rim welding provides a stronger joint at the corners than if the side and end rim portions were welded directly in line with the welded corners of the tray. Suitable handles 18 and card or label holders 19 are also riveted to the ends of the tray.

It will be apparent that the horizontal stacking ledge 15 provides for stacking or nesting such a tray above another one of similar construction as shown in Fig. 5, this type of stacking being used where a minimum amount of space is given or in cases where the trays are empty.

In order that the articles or parts contained by these trays may be readily inspected or removed without shifting or moving the trays, it is necessary that the trays be stacked in such a way that the parts are easily accessible, and in order to furnish such accessibility, the trays are preferably stacked crosswise of each other as shown in Fig. 6, or in an endwise staggered formation as shown in Fig. 7. To provide for these two modes of stacking, equally separated pairs of notches 23 and 24 are furnished in the side and end portions, respectively, of the reinforced rim 16 to provide equal length projections or discontinuous rim portions 25 and 26 extending therebetween. These projections 25 and 26 in the end and side edges of the tray are designed to engage a pair of similar size upwardly directed embossings or corrugations 27 provided in the bottom of the tray and separated by a distance equal to the distance between the sides of the tray, a sufficient unembossed or unindented portion being left adjacent the ends of each of the embossings 27 for engaging the notches 23 and 24. Thus, when the trays are stacked crosswise as shown in Fig. 6 the upwardly directed embossings 27 engage and interlock with the lateral projections 25 extending between the notches 23, the unembossed or unindented portions of the bottom of the tray adjacent the embossings 27 engaging the notches 23. Such engagement between the embossings 27 and the lateral projections 25 of the rim of the tray prevent the tray from sliding either longitudinally or laterally of the tray positioned underneath. Thus the trays may be stacked for a considerable height in the manner shown in Fig. 6 without any danger of them being moved out of position.

For stacking the trays in the endwise staggered position shown in Fig. 7, the embossings 27 are positioned to engage the end projections 26 of the rim provided by the notches 24 with one end of the tray engaging the horizontal stacking ledge 15 as shown in Fig. 7. With this formation of endwise staggered stacking, it is apparent that the tray is permanently interlocked as in the manner of stacking shown in Fig. 6 and also

that the parts contained in the trays may be removed in this instance as readily as in the case of the crosswise stacking.

It is of course apparent that the embossings 27 and the rim projections 25 and 26 may be constructed in a variety of different ways to provide for different kinds of stacking according to the kind of stacking required, it being noted that the engagement between the rim projections and the bottom embossings always provides a firm and secure interlocking between the trays.

It will of course be understood that the invention is not to be limited by the specific embodiment herein described, but is to be limited only by the scope of the appended claims.

What is claimed is:

1. A tray having its upper edges provided with projections and its bottom provided with channel-like recesses corresponding in size to such projections for receiving similar projections on the edges of another tray of like construction.

2. A tray having its upper side edges provided with projections and its bottom provided with channel-like recesses corresponding in size to such projections for receiving similar projections on the side edges of another tray of like construction.

3. A tray having its bottom provided with channel-like recesses and its upper end and side edges provided with projections corresponding in size to such recesses for extending into similar recesses in another tray of like construction to furnish either crosswise or endwise staggered stacking thereof.

4. A tray having its bottom provided with channel-like recesses and its rim provided with discontinuous portions for forming an interlocking association with such recesses in a similar tray, and a horizontal stacking ledge provided around the rim of the tray.

5. A tray having its bottom provided with channel-like recesses and its upper periphery provided with projections for forming an interlocking association with such recesses in a similar tray, and a horizontal stacking ledge with a reinforced rim surrounding the upper periphery.

6. A tray having its bottom provided with channel-like recesses and its rim provided with discontinuous portions for forming an interlocking association with such recesses of a similar tray in any of a plurality of positions.

7. A tray having its bottom provided with channel-like recesses and its upper periphery provided with projections for forming an interlocking association with such recesses of a similar tray in predetermined positions, whereby a plurality of similar trays may be stacked in staggered relation, the alternately positioned trays being parallel.

8. A tray having its bottom provided with

channel-like recesses and its upper periphery provided with projections for forming an interlocking association with such recesses of a similar tray in predetermined positions, 5 whereby a plurality of similar trays may be stacked in staggered relation, the alternately positioned trays being parallel and in general alignment.

In witness whereof, we hereunto subscribe 10 our names, this 23rd day of August A. D., 1929, and this 26th day of August A. D., 1929, respectively.

MAURICE W. LANE.
CLAUDE W. OAKES.

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