

P. MUELLER.
BOX CONSTRUCTION.
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1,015,454.

Patented Jan. 23, 1912.

Fig 1

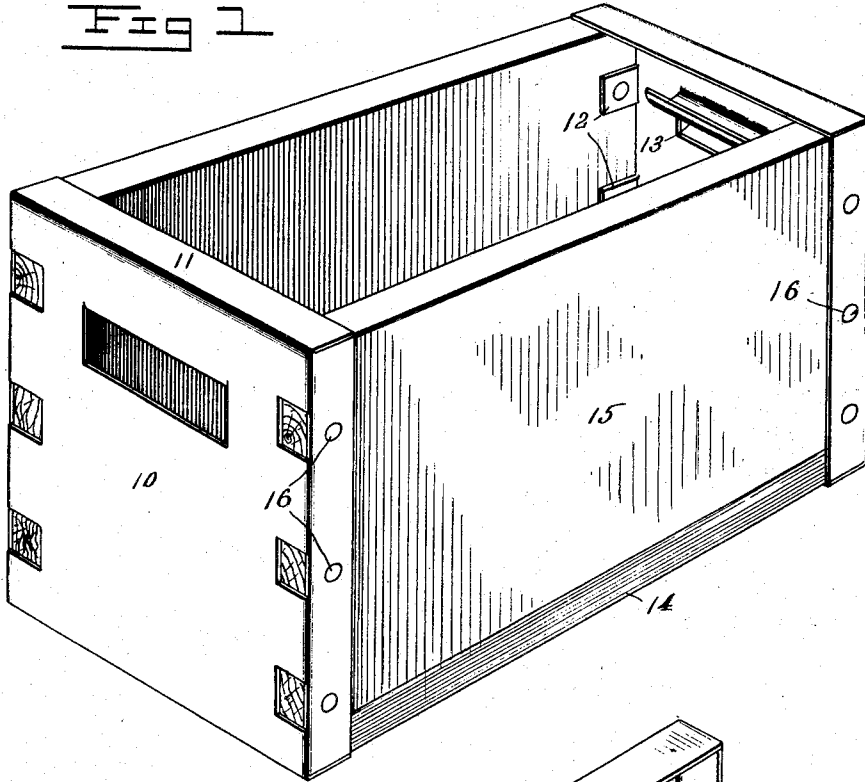


Fig 2

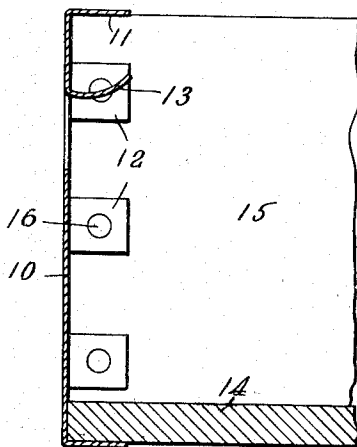
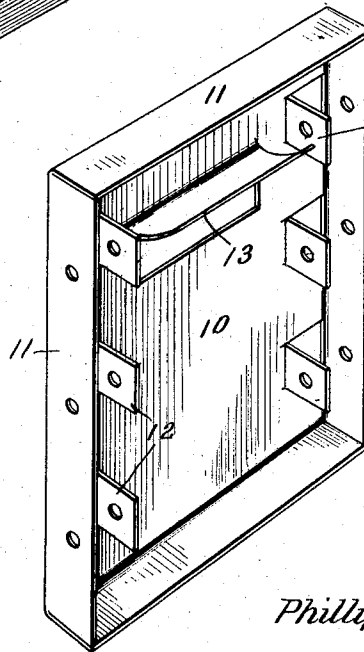


Fig 3



Witnesses

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UNITED STATES PATENT OFFICE.

PHILIP MUELLER, OF DECATUR, ILLINOIS, ASSIGNOR TO THE H. MUELLER MANUFACTURING COMPANY, OF DECATUR, ILLINOIS, A CORPORATION OF ILLINOIS.

BOX CONSTRUCTION.

1,015,454.

Specification of Letters Patent.

Patented Jan. 23, 1912.

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To all whom it may concern:

Be it known that I, PHILIP MUELLER, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented new and useful Improvements in Box Construction, of which the following is a specification.

My invention consists of a box particularly adapted for store or warehouse use, and particularly adapted further for holding heavy articles such as pipe fittings, small cocks and valves and other iron and brass goods of various description. While of the particular relation and adaptation stated, however, it will be apparent upon an understanding of my invention that it may be used in other connections and for other purposes.

According to my invention I form a box by making two or more spaced walls of sheet metal, flanging these walls or providing them with inturned projections on two or more sides, preferably on all sides; providing struck in portions adjacent to and spaced away from the flanges, and then connecting these spaced walls by other walls positioned with their ends abutting the spaced walls and between said inturned projections and the adjacent flanges. Suitable securing means are passed through the side flanges and the adjacent struck in portions. The projections adjacent the flanges together with the intervening portions of the wall and the flanges constitute sockets into which the connecting walls are fitted. Other walls necessary to complete a box of any shape desired are conveniently confined between the connecting walls mentioned and other flanges or projections from the metallic walls.

In the accompanying drawings I have shown my invention as embodied in a rectangular box with sheet metal ends, although as will be apparent upon a consideration of this embodiment the box may according to my invention be given any form other than rectangular, and the ends of the box may be made of other materials than sheet metal.

Figure 1 is a perspective view of the finished box, Fig. 2 is a central section of one end of the box, and Fig. 3 is an internal perspective view of one of the end walls.

The end walls are designated 10. They are provided with a flange 11 on each of their four sides. Adjacent the two side

flanges 11, and struck in adjacent to and turned away from said side flanges or projections are the struck in portions or projections 12. There may be as many of these portions 12 as desired to contribute to the strength and durability of the box. Three narrow ones may be used on each side of the box as shown, or one long struck in portion substantially equal to the depth of the box may be made instead. Preferably midway between the sides of these walls, and near the top is an elongated struck in portion, curved inwardly and upwardly to form a hand-grip. Referring now to Figs. 1 and 2 it will be seen that two of these spaced end walls are connected together by a bottom wall 14 which rests flat upon the bottom flange with its outer edges adjoining the side flanges, and by two side walls, the ends of which abut against the end walls 10 and which are positioned between the struck in portions 12 and the side flanges 11 in such a manner that their lower edges overlie the outer edges of the bottom 14, while their upper edges are confined by the upper flanges 11. Suitable securing means in the form of rivets or screws 16 are passed through the side flanges, through the side walls and through the adjacent struck in portions, thus uniting the box into a compact and rigid whole.

The advantages possessed by a box of this construction should be at once apparent. In the first place it is simple and extremely cheap to manufacture, the cost of the sheet metal from which the end walls may be made and the cost of striking these walls by dies being very small, and the box being most readily assembled and fastened together by a workman of most ordinary skill. In the second place it is strong and durable. The flanges give the sheet metal ends a great rigidity, and act with the struck in portions to hold the relatively thicker walls firmly and rigidly, and with the least possible number of fastening devices in the structure. As will be noted the bottom has no fastening devices at all, though such may be provided if for any reason it should become necessary. The top flange in addition to assisting in holding the connecting walls forms a broad top surface for the end walls, which prevents cutting of the hands as would be the case on a sharp sheet metal edge which was not so provided with a flange or other protecting

device, and together with the inturned and upwardly curved hand-grip these flanges form an excellent hand-hold, the box being grasped by inserting the fingers beneath the hand-grip 13 and grasping the end walls about said hand-grip and the upper flanges 11.

It will be noted from the construction of this box that the inturned flanges 11 of the end plate 10 are continuous and uninterrupted or unbroken, and extend along the entire edge of the plate. Thus when the box is assembled there are no projecting portions or tongues outside of the box structure to catch in the surrounding objects and be broken off or be bent up from the sides to weaken or disassemble the structure. The outer surface of the complete box is therefore practically smooth and uninterrupted so that, in handling a number of boxes, they will not catch on surrounding objects or against one another. The continuous flanges also afford a simple and strong structure for holding the sides of the box from bulging away from the tongues on the end plates.

What I claim is:

1. A box comprising end members and side and bottom walls, said end members having inturned flanges overlapping the extremities of the bottom and side walls and further having inturned tongues spaced from and lying in parallelism with the flanges, the tongues lapping against the inner faces of the side walls to retain the same against the flanges, said side walls resting upon the bottom to hold the same against the flanges.

2. A box comprising end members having inturned flanges about their edges, a bottom resting upon the lower flanges of the members, the sides engaging against the lateral flanges of the members and resting upon the bottom to retain the same upon the lower flanges, the upper edges of the sides engaging beneath the top flanges of the members to hold the sides from upward displacement, and fastening devices engaging through the lateral flanges, and the sides, to secure the end members to the side walls.

3. In a box having the usual sides with straight edges at its ends, an end member comprising a wall with a continuous or uninterrupted flange extending from end to end at each lateral edge and with spaced tongues inturned from the wall away from

the flanges forming therewith confining grooves for the reception of the straight ends of the sides.

4. In a box having the usual sides with straight edges, an end member for supporting the sides and comprising a wall having continuous edge flanges extending across the entire width of the member, the member further having inturned tongues turned away from the flanges and providing therebetween spaces for the extremities of the sides.

5. A box structure having side and end members, each end member comprising a metallic plate having inwardly extending flanges on opposite sides, said flanges being continuous or unbroken from end to end and disposed at substantially right angles to the plane of the plate, the plate being further provided along opposite sides with tongues struck inwardly from the body of the plate, said tongues being spaced from and located in parallelism with the flanges, said side members of the box having their opposite ends respectively located in the spaces between the tongues and the flanges of the end members, and fastening means passing through said flanges, the tongues, and said side members.

6. A box structure having side and end members, each end member comprising a metallic plate having inwardly extending flanges on opposite sides and on top and bottom, said flanges being continuous or unbroken from end to end and meeting at the corners of the plate and being disposed substantially at right angles to the plane of the plate, the plate being further provided along opposite sides with tongues struck inwardly from the body of the plate, said tongues being spaced from and located in parallelism with said side flanges, said side members of the box having their opposite ends respectively located in the spaces between the tongues and the side flanges, and between the top and bottom flanges of the end members, and fastening means passing through the side flanges, the tongues, and the side members.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PHILIP MUELLER.

Witnesses:

WILLIAM R. BIDDLE,
LEONARD F. MCKIBBEN.