

[54] **MATERIAL HANDLING BOX**

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220/97 R

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[58] Field of Search ....220/4 R, 62, 69, 70, 76, 97 R

[56] **References Cited**

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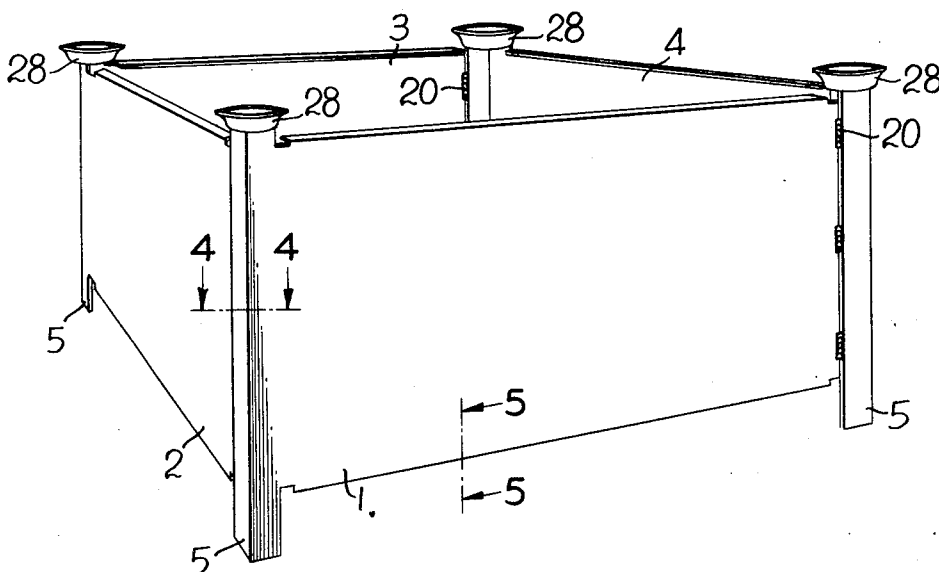
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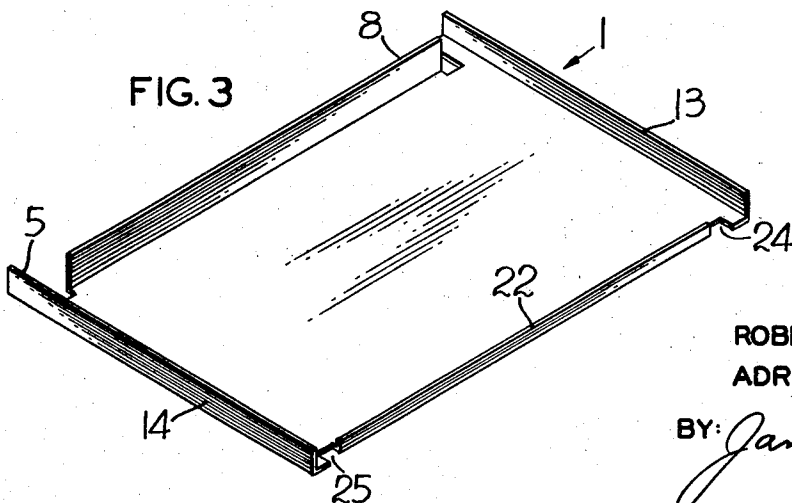
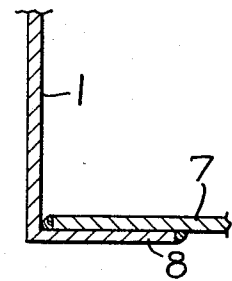
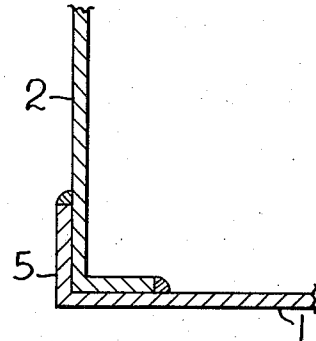
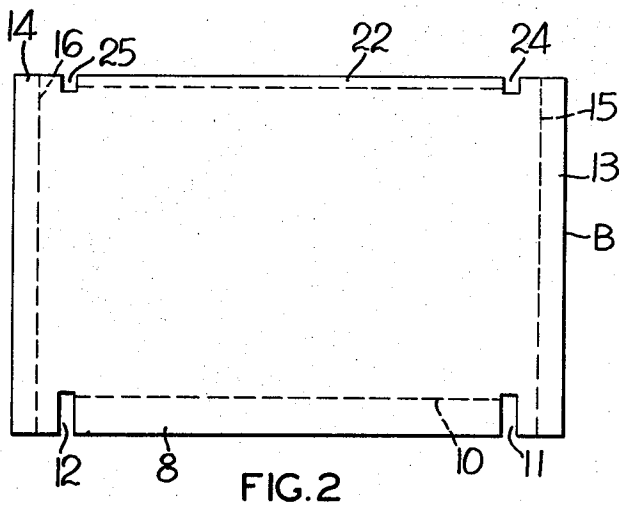
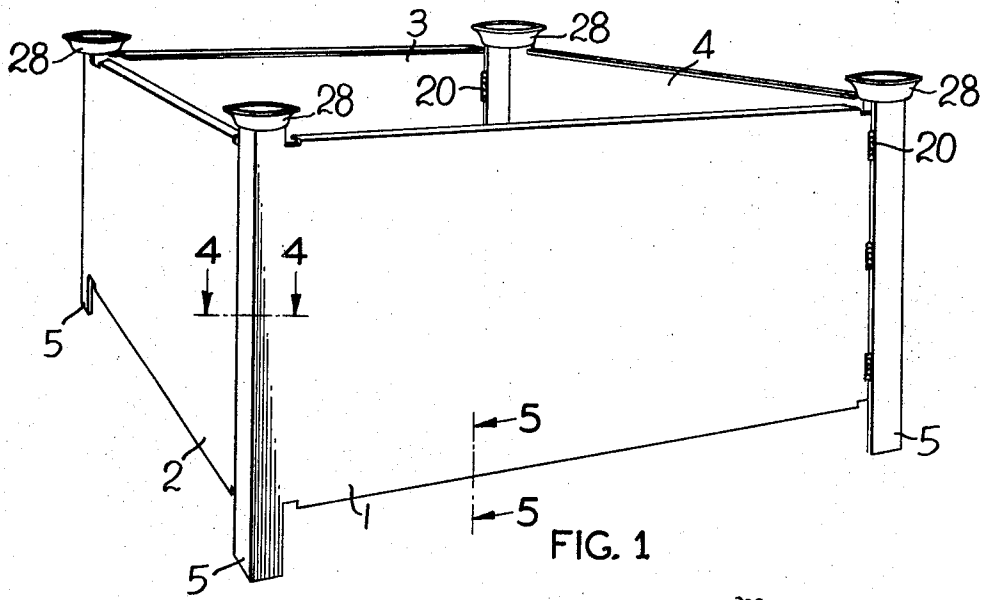
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**ABSTRACT**

A metal material handling box for industrial use which is fabricated from sheet steel to form a particularly rigid and strong box that can be used for transporting and storing articles. The box is fabricated from four similarly formed sides which provide a double thickness leg at each corner and also provide a support for the bottom of the box at an elevated position from the floor.

**8 Claims, 5 Drawing Figures**





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## MATERIAL HANDLING BOX

## BACKGROUND OF THE INVENTION

The invention pertains to metallic receptacles such as material handling boxes which are subjected to extremely rough treatment, and examples of this general type of box are shown in the prior art U.S. Pat. Nos. 1,224,234, issued May 1, 1917; 1,462,640, issued July 24, 1923; and 3,246,828, issued Apr. 19, 1966. These prior art devices however have not been entirely satisfactory because of the extreme strength and rigidity required which have heretofore required many reinforcing parts and separate operations to fabricate such reinforced tote boxes. Some of these prior art devices have had a comparatively short life due to the wear and tear to which they are subjected and have also been expensive to manufacture.

## SUMMARY OF THE PRESENT INVENTION

The present invention provides a material handling box or the like in which the four sides of a box are fabricated similarly and from blank sheets of steel. These sides are fabricated at their opposite edges so as to form a double thickness corner leg for the box which provides exceptional rigidity and strength at a rather critical area of the box. Furthermore, these sides are bent along their lower edge to form a support flange for rigidly and accurately supporting the bottom of the tote box. The double walled corner also defines a leg which permits economical fabrication of an extremely rigid and strong material handling box, which box can be readily stacked with the weight of the boxes carried directly in compression by the double walled corners and legs. The boxes can absorb the rough treatment to which they are subjected, thereby contributing to long life.

These and other objects and advantages of the present invention will appear hereinafter as this disclosure progresses, reference being had to the accompanying drawings.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a material handling box made in accordance with the present invention;

FIG. 2 is a view of one of the similar sides after it has been cut to proper shape but before it is bent into the finished side;

FIG. 3 is a perspective view of one of the sides taken generally from the inner side thereof, after it has been bent to finished form;

FIG. 4 is a sectional view taken along line 4—4 in FIG. 1, but on an enlarged scale;

FIG. 5 is a sectional view taken along line 5—5 in FIG. 1, but on an enlarged scale.

## DESCRIPTION OF A PREFERRED EMBODIMENT

The material handling box B shown in FIG. 1 includes four sides 1, 2, 3 and 4, and, as these sides are similar, specific references to only one of them will be made. The box has corner legs 5 which, as will appear, are of double walled construction for maximum strength and rigidity and also has a bottom wall 7 which is supported on the inwardly turned flanges 8 of the side walls 1, 2, 3, and 4.

The bottom 7 is of such a size so as to almost completely fill the interior of the box thereby acting to rigidify the structure. The bottom wall is rigidly secured to the flanges 8 by welding, and is positioned above the floor on which the box sets.

The flange 8, as shown in FIG. 2, is formed by bending the lowermost edge of the side blank B along the dotted line 10, after the recesses 11 and 12 have been cut from adjacent the side edges of the blank B. These recesses 11 and 12 are of the depth which is of the width of the flange 8 to be formed by bending the blank along line 10.

The double walled thickness of the box at its corners are formed by bending flanges 13 and 14, one along each side edge of the blank B, more precisely along the dotted lines 15 and 16, respectively. It will be noted that the recesses 11 and 12 are spaced a distance from the lines 15 and 16 so that when

the legs are bent and the sides are assembled as shown in FIG. 1, a double walled corner is formed along the entire height of the box. The walls are welded together as indicated at 20 so as to form a particularly rigid and strong structure.

A top reinforcing flange 22 is formed along each of the upper sides of the side walls. More specifically, this flange is defined by the recesses 24 and 25 which are of a depth corresponding to the width desired for flange 22, and are in vertical alignment with recesses 11 and 12, respectively. It will be noted that the double walled corner of the box extends past the flange 22 and for the entire height of the box.

Stacking members in the form of cups 28 are welded to one end of each of the double walled corners, such as at the upper ends as shown in FIG. 1. When the boxes are stacked (not shown), the cups receive the legs of the box stacked above them, and the weight of the boxes is carried in compression by the double walled corners.

The box provides a rigid support flange around the entire box for the bottom of the box and at a distance spaced from the lower end of the legs. Thus the legs are of sufficient height to clear the cups and provide the necessary clearance between boxes for the reception of loading apparatus (not shown) such as the forks of a lift truck.

The present invention provides a material handling box formed from similar sides that are easily fabricated to form a double walled corner for the entire height of the box including a double walled leg. The box provided by the present invention is economical to manufacture, rigid and strong in construction.

We claim:

1. A metal material handling box or the like formed from four similar sides which are formed of sheet steel and welded together, each of said sides being bent inwardly along their two vertical edges to form a double walled corner, each of said sides also having a bottom support flange bent inwardly in the same direction as said side edges and extending around the interior of the box and at a distance spaced from the lowermost portion of said double walled corners, said doubled walled corners forming double walled legs below said supporting flanges, and a bottom wall resting on and secured to said supporting flanges.

2. The box set forth in claim 1 further characterized in that each of said side walls have an inwardly turned flange along their uppermost edge to thereby provide a reinforcing flange around the top of said box, said reinforcing flange being located between said double walled corners of said box.

3. The box set forth in claim 1 including a stacking member secured to one end of each double walled corner and adapted to receive the end of the double walled corner of an adjacent box stacked therewith.

4. The box set forth in claim 2 including a stacking member secured to one end of each double walled corner and adapted to receive the end of the double walled corner of an adjacent box stacked therewith.

5. A metal material handling box or the like fabricated from four sides of similar construction, said sides being formed of blanks of sheet steel, each of said sides being bent inwardly at a right angle along their two vertical edges to provide a double walled corner for the box when the sides are assembled, each of said sides also having a pair of recesses cut in their bottom edge and spaced apart along the length of said sides to thereby define a flange, said flange bent inwardly at an approximately 90° angle and in the same direction as said side edges are bent to thereby provide a generally horizontal supporting flange around the box and at a distance spaced from the lowermost portion of said double walled corners, said double walled corners thereby forming double walled legs which extend below said supporting flanges, and said box including a bottom wall resting on and secured to said supporting flanges.

6. The box set forth in claim 5 further characterized in that each of said side walls have an inwardly turned flange along their uppermost edge to thereby provide a reinforcing flange around the top of said box, said reinforcing flange being located between said double wall corners of said box.

7. The box set forth in claim 5 including a stacking member secured to one end of each double walled corner and adapted to receive the end of the double walled corner of an adjacent box stacked therewith.

8. The box set forth in claim 6 including a stacking member 5 secured to one end of each double walled corner and adapted to receive the end of the double walled corner of an adjacent box stacked therewith.

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