

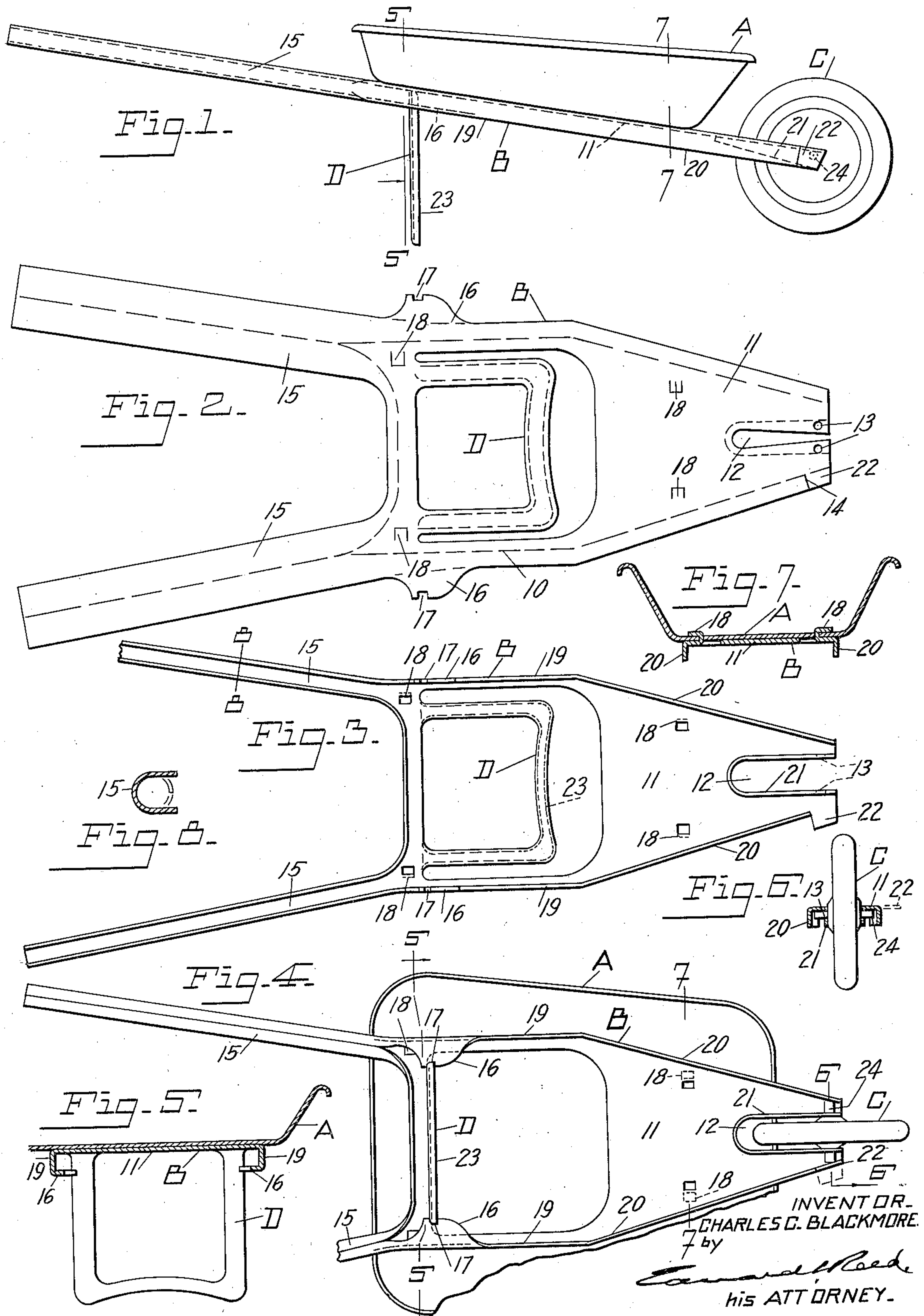
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TOY VEHICLE

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TOY VEHICLE

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9 Claims. (Cl. 280—52)

This invention relates to toy vehicles and more particularly to a toy wheelbarrow. Toys of this kind must be made to sell at a very low price, the present wheelbarrow being made in various sizes one of which retails for ten cents each. Such a toy should not only be pleasing in appearance and a fairly accurate simulation of a full size vehicle, or wheelbarrow, but it must be of a strong durable construction which will withstand the usual more or less rough handling which it receives from a child. In order that the toy may be manufactured to retail at this low price and to allow a profit for both the manufacturer and the retailer it is essential that both the material cost and labor cost be reduced to the lowest level consistent with the production of a high quality toy.

One object of the present invention is to provide a toy vehicle of such a construction that it may be produced from a minimum amount of material and with a minimum amount of labor.

A further object of the invention is to provide a toy vehicle in which the supporting structure, including the body support, the wheel mounting, and the handles, may be formed in one piece from sheet metal and with a minimum number of operations.

A further object of the invention is to provide such a vehicle in which successive supporting structures may be blanked from sheet of metal with a minimum waste of material.

A further object of the invention is to provide such a toy vehicle in which the supporting standard or legs may be formed integral with the main supporting structure.

A further object of the invention is to provide such a toy vehicle in which the body may be quickly and easily attached firmly to the supporting structure.

Other objects of the invention will appear as the toy is described in detail.

In the accompanying drawing Fig. 1 is a side elevation of a toy wheelbarrow embodying my invention; Fig. 2 is a plan view of the blank from which the supporting structure is formed; Fig. 3 is a plan view of the partially formed blank, partly broken away; Fig. 4 is a bottom plan view of the toy, partly broken away, showing the completely formed supporting structure in bottom plan; Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4; Fig. 6 is a transverse section taken on the line 6—6 of Fig. 4; Fig. 7 is a transverse section taken on the line 7—7 of Fig. 4; and Fig. 8 is a transverse section of one of the par-

tially formed handles taken on the line 8—8 of Fig. 3.

In the drawing I have illustrated one embodiment of my invention but it will be understood that the particular construction here shown has been chosen for the purposes of illustration only and that the invention may take various forms and may be applied to toy vehicles of various kinds.

In that embodiment here illustrated the toy wheelbarrow comprises a body A which is carried by a supporting structure B which in turn is supported at its forward end by a wheel C and is provided near the rear end of the body with a standard or leg D to support the body substantially in a horizontal position when the wheelbarrow is at rest. The body A and wheel C are of more or less conventional design and may be formed in the usual or any suitable manner.

The supporting structure B is formed in one piece from sheet metal and to this end a blank, such as that shown in Fig. 2, is stamped from a strip of sheet metal. This blank comprises an intermediate portion 10 on which the body A is to be supported and extending forwardly from the intermediate portion is a relatively narrow portion 11 to form a wheel mounting, the lateral edges of which preferably converge forwardly to impart thereto a tapered shape. A longitudinal slot 12 is formed in the forward end of this portion of the blank and holes 13 are punched in the blank on the respective sides of the slot and closely adjacent thereto and to the forward end of the blank. This forwardly tapered part of the blank is also provided with a short transverse slit 14 spaced slightly to the rear of the holes 13. Extending rearwardly from the respective sides of the intermediate portion 10 are two relatively narrow elongated portions 15, adapted to form handles. These handle forming portions preferably diverge rearwardly and, as here shown, they are spaced apart a distance equal to or slightly greater than the width of the corresponding portions of the forward portion of the blank, so that the metal which is removed from between the handle portions 15 may be utilized to form the forwardly tapered portion and a part of the intermediate portion of a second blank, thereby reducing the waste of material to a minimum. Extending laterally from the respective edges of the intermediate portion of the blank, near the rear end thereof, are ears 16, the forward edges of which are curved and which are provided in their outer or lateral edges with notches 17. A part of the intermediate portion of the blank, which

lies beneath the bottom of the body in the assembled toy, is utilized to form the supporting leg or standard C and in the blanking operation this part of the blank is severed from the body of the blank along its lateral edges and across its front end but remains attached thereto at its rear end, as shown in Fig. 1. Preferably a portion of this part of the blank between its lateral edges is cut away so as to impart thereto substantially a U-shape. A plurality of attaching lugs 18, in the present instance four, are each severed along three of its sides during the blanking operation.

The blank thus formed is then subjected to a forming operation in which the lateral edges of the body portion and forwardly tapered portion are bent at substantially right angles to the body of the blank, along the dotted lines shown in Fig. 2, to form flanges 19 and 20 which reinforce the supporting structure and impart thereto the appearance of strength. Flanges 21 are also formed on opposite sides of the slot 12, thereby moving the holes 13 into alignment one with the other. The flange 20 at one side of the tapered portion terminates short of the front end of that portion and that part lying in front of the slit 14 remains in its flat position and forms a lateral extending lip 42. In this forming operation the lateral edges of both handle portions 15 are bent upwardly to impart thereto a substantially U-shape in cross section, as shown in Fig. 8. The standard forming part C is also flanged, as shown at 23, these flanges extending in a direction opposite to the direction of the flanges 19 and 20. It will be noted that the partially formed blank is shown in Fig. 3 in bottom plan view as it would appear in the assembled toy and the flanges 19 and 20 which are usually bent upwardly in the forming of the blank extend downwardly in the finished toy, while the flanges 23 on the standard extend downwardly during the forming operation and forwardly when the standard is in its operative position, as will hereinafter be described, thereby not only strengthening the standard but imparting a more finished appearance thereto. In this forming operation the attaching lugs 18 are bent at right angles to the face of the blank so as to extend upwardly in the finished toy. This forming operation does not modify the laterally extending ears 16 except that they moved with the lateral flanges of the blank and now extend at substantially right angles to the plane of the blank.

The partially formed blank is then subjected to a second and final forming operation in which the edges of the respective handle portions 15 are bent substantially into engagement one with the other to form tubular handles, as shown in Fig. 4, and the ears 16 are bent inwardly so that their notched edges slightly overlap the outer lateral edges of the standard. This completes the formation of the supporting structure or frame for the toy and the body is now attached to the supporting structure. The body is provided in its bottom with four slots adapted to receive the respective attaching lugs 18 and when the supporting structure has been completely formed, as above described, the body is placed in position thereon with the lugs extending through the slots and projecting above the bottom of the body. With the parts in this position the structure is placed in a press and the four lugs simultaneously clinched onto the bottom of the body, thus rigidly securing the body to the supporting structure. The assembled supporting structure and body

are then painted, preferably by dipping, and the toy is ready to pack for shipping. It is preferably packed for shipment with the wheel C detached so that it can be packed in the body A where it will not enlarge the size of the package. The standard D remains in the position in which it was formed, that is, substantially in the plane of the intermediate body supporting portion of the supporting structure. Consequently the toy as a whole can be packed in a very small bundle. The assembly of the toy is completed by the dealer when he is ready to place the same on sale. To do this he removes the axle 24 from the wheel, places the latter in the slot 12 and then inserts the axle through the openings 13 in the flange 21 and through the wheel, the axle being inserted from that side of the wheel adjacent to the lip 22 where the opening 13 is unobstructed. The flange at the opposite side of the structure limits the movement of the axle in that direction and after it has been fully inserted the lip 22 is bent into substantial alignment with the adjacent flange 20 and serves to retain the axle in the openings 13. The forward end of the standard D is then grasped by the hand, it being noted that ample space is allowed for this purpose, and is bent to an upright position, as shown in Figs. 1 and 5. As the standard is bent toward this upright position the lateral edges thereof engage beneath the curved edges of the ears 16 and these ears yield to permit the standard to move past the same. When the standard has been moved into alignment with the notches 17 in the ears the latter will, due to their resiliency, spring into engagement with the respective edges of the standard and securely lock the same in its upright or operative position. The toy is then completely assembled, as shown in Fig. 1.

While I have shown and described one embodiment of my invention I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a toy vehicle, a supporting structure comprising a single piece of sheet metal having an intermediate body supporting portion, and a tapered portion extending forwardly from said intermediate portion to form a wheel mounting, said structure also having elongated portions extending rearwardly from said intermediate portion, spaced laterally one from the other, and bent about longitudinal axes to form handles, said intermediate portion having between its lateral edges a part severed therefrom at its sides and one end only and adapted to be bent to an upright position with relation thereto to form a support for the rear end of said structure.

2. In a toy vehicle, a supporting structure comprising a single piece of sheet metal having an intermediate body supporting portion and a tapered portion extending forwardly from said intermediate portion to form a wheel mounting, said structure also having elongated portions extending rearwardly from said intermediate portion, spaced laterally one from the other and bent about longitudinal axes to form handles, said intermediate portion having between its lateral edges a part severed therefrom at its sides and one end only and adapted to be bent to an upright position with relation thereto, said structure and said partially severed part having parts arranged to be brought into co-operative relation

when said partly severed part is moved to said upright position to retain the latter in said upright position.

3. In a toy vehicle, a supporting structure comprising a single piece of sheet metal having an intermediate body supporting portion and a relatively narrow portion extending forwardly from said intermediate portion and provided with a longitudinal slot to receive a wheel, said structure being bent to form flanges at the lateral edges of both portions thereof and on both sides of said slot, the flange about said slot having openings to receive the axle of said wheel, and said forwardly extending portion having a laterally extending lip arranged to be bent into alignment with the openings in the flange about said slot to retain said axle therein, said structure also having parts extending rearwardly from the intermediate portion thereof to form handles.

4. A support for a toy vehicle comprising a single piece of metal having an intermediate portion to form a body support, a portion extending forwardly from said intermediate portion to form a wheel mounting, and a handle at the rear end thereof, said structure having between the lateral edges thereof a part severed therefrom at two sides and one end only, lying substantially in the plane of said structure, and adapted to be bent to an upright position to form a support for the rear end of said structure.

5. In a toy vehicle, a body supporting structure of sheet metal, a wheel mounted in supporting relation with the forward end of said structure, and a handle at the rear end of said structure, said structure having between its lateral edges a part severed therefrom at its sides and front end only and arranged to be bent to an upright position with relation thereto to support the rear end of said vehicle.

6. In a toy vehicle, a body supporting structure of sheet metal, a wheel mounted in supporting relation to the forward end of said structure, and a handle at the rear end of said structure, said structure having between its lateral edges a part severed therefrom at its sides and front

end only and arranged to be bent to an upright position with relation thereto to form a support for the rear end of said vehicle, said structure and said support having parts arranged to be brought into cooperative relation when said support is moved to its upright position and to retain said support in said upright position.

7. In a toy vehicle, a body supporting structure of sheet metal, a wheel mounted in supporting relation to the forward end of said structure, a handle at the rear end of said structure, said structure having a part severed therefrom at its sides and front end only and arranged to be bent to an upright position with relation thereto to support the rear end of said vehicle, and a device formed integral with said structure and bent to a position to retain said part in said upright position.

8. In a toy vehicle, a body supporting structure of sheet metal, a wheel mounted in supporting relation to the forward end of said structure, a handle at the rear end of said structure, said structure having a part severed therefrom at its side and front end only and arranged to be bent to an upright position with relation thereto to support the rear end of said vehicle, and a resilient device carried by said structure and arranged to be displaced by said part as the latter is moved to said upright position and then to spring into retaining engagement therewith.

9. In a toy vehicle, a body supporting structure of sheet metal, a wheel mounted in supporting relation to the forward end of said structure, a handle at the rear end of said structure, said structure having a part severed therefrom at its sides and front end only, said part having an intermediate portion cut out to provide said part with legs adapted to be bent to upright positions, and resilient ears extending inwardly from the respective sides of said structure, having notches in their inner edges and overlapping the respective legs.

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