June 26, 1923. 1,459,898

D. C. MULVIHILL

METAL WHEELBARROW

Filed Feb. 10, 1922 2 Sheets-Sheet 1

Fig. 1.

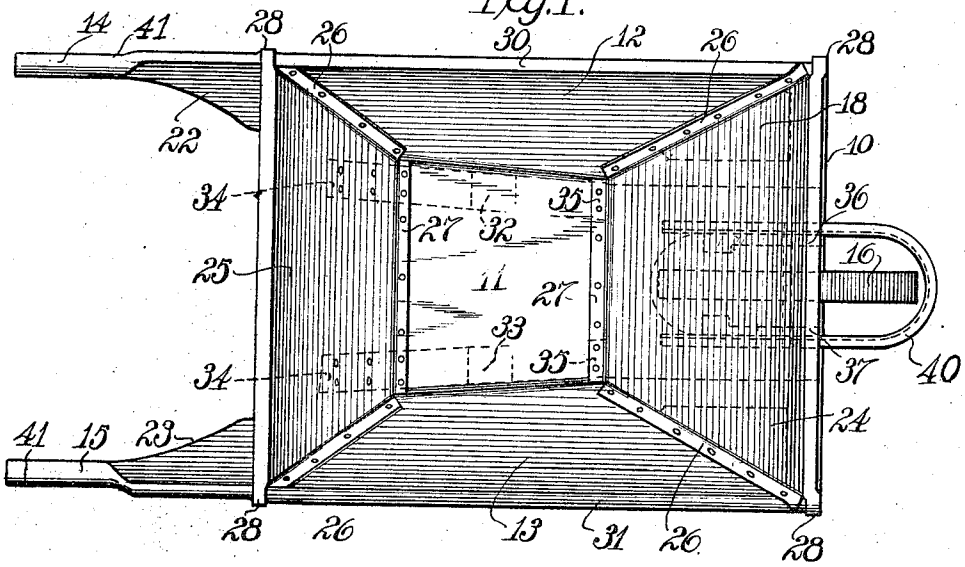
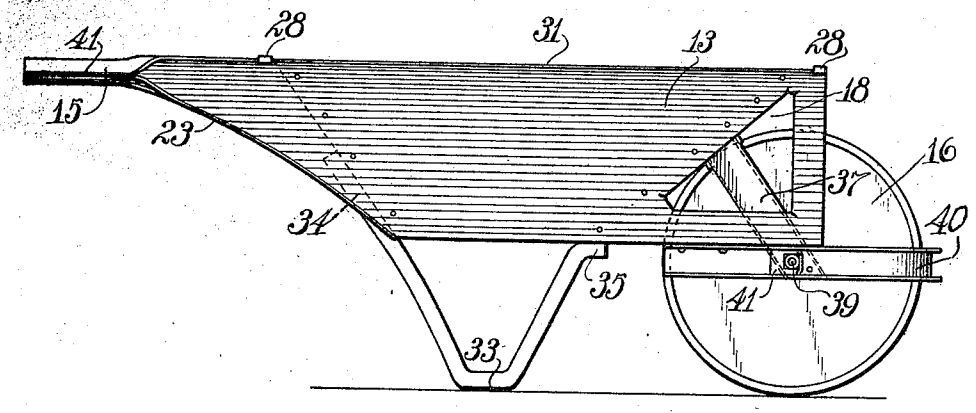


Fig. 2.



Inventor;
Daniel C. Mulvihill.
By Lieseon & Lieseon
Attorneys.

June 26, 1923.

1,459,898

D. C. MULVIHILL

METAL WHEELBARROW

Filed Feb. 10, 1922

2 Sheets-Sheet 2

Fig. 3.

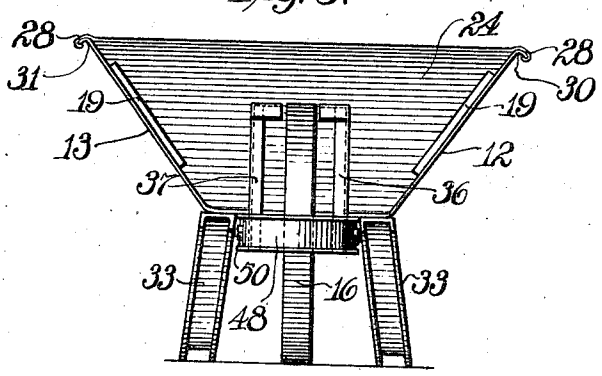


Fig. 6

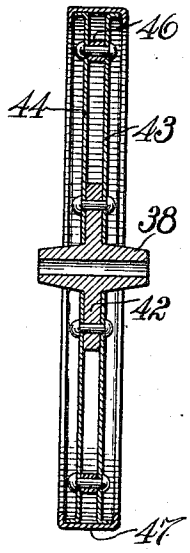


Fig. 5.

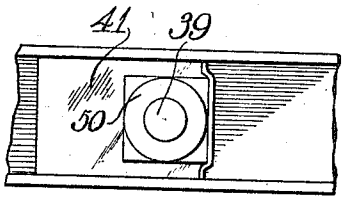
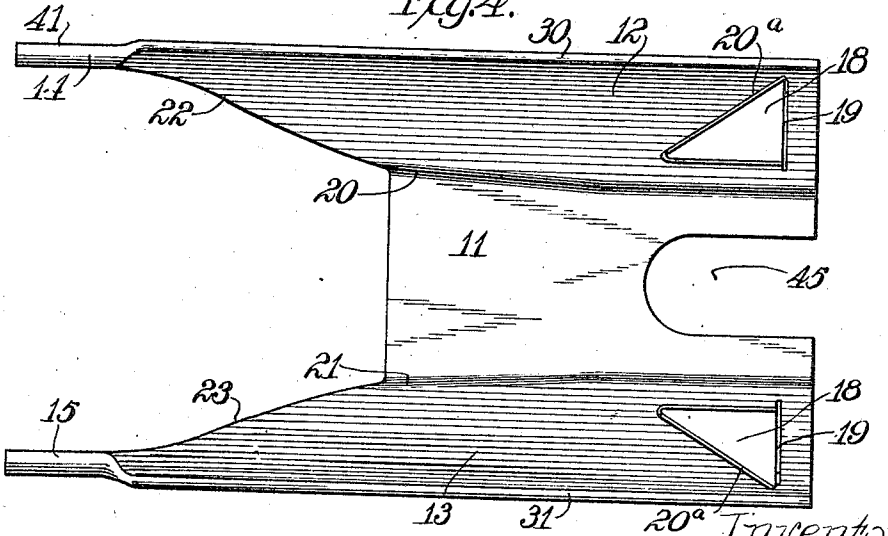


Fig. 4.



Inventor,
Daniel C. Mulvihill.

By Fleeson, Gross & Fleeson
Attorneys.

Patented June 26, 1923. 1,459,898

UNITED STATES PATENT OFFICE.

DANIEL C. MULVIHILL, OF HANNIBAL, MISSOURI.

METAL WHEELBARROW.

Application filed February 10, 1922. Serial No. 535,482.

To all whom it may concern:

Be it known that I, DANIEL C. MULVIHILL, a citizen of the United States, and resident of Hannibal, county of Marion, and State of Missouri, have invented certain new and useful Improvements in Metal Wheelbarrows, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to wheel barrows, and has as its object to provide an all steel structure which shall consist of the fewest parts possible, the handles, sides and bottom being made integral and preferably stamped from a single piece of sheet steel, thus increasing the strength of the device and at the same time decreasing the cost of manufacture.

A further object is to produce a structure which shall be as light as possible consistent with the requisite strength, and to provide improved means of securing the legs and wheel to the body structure. A further object is to provide a novel form of disk wheel which shall be of rigid construction and hence particularly adapted for use with a wheel barrow of the type hereinafter described, both being designed to withstand hard usage.

An illustrative form of the invention is shown in the accompanying drawings, in which—

Fig. 1 is a top plan view of the improved steel wheel barrow;

Figs. 2 and 3 are, respectively, side and front views of the same;

Fig. 4 is a top plan view of the integral parts, the front and rear plates, legs and wheel having been removed;

Fig. 5 is a detail view showing a preferred means of attaching the hub of the wheel to the body brackets; and

Fig. 6 is a central vertical section of the disk wheel.

The wheelbarrow, designated generally by the reference numeral 10, is constructed entirely of steel and is adapted for transporting heavy material, such as cement, sand, brick, and the like. It is therefore essential that it consist of the fewest number of parts secured together in the firmest manner possible.

As shown in Figs. 1 and 4, the bottom 11, sides 12, 13, and handles 14, 15, are formed of one piece of sheet steel. For this purpose an approximately rectangular sheet, of suitable gage, of the proper length and breadth, may be employed. From this sheet a large central portion is stamped out at the rear, leaving sufficient material at the sides to form the rolled handles 14, 15, and the connecting portions between the sides and handles. As shown, the lower or gripping portions of the handles are smooth, the seams 41, 41, being formed at the sides (see Fig. 2), thus avoiding injury to the hands of the user.

A similar but somewhat smaller portion, 45, is stamped out of the front of the sheet to allow room for a wheel 16 to turn therein. The sides 12, 13, are formed by bending the material upwardly along the longitudinal lines 20, 21, sufficient material being left between the sides and the wheel opening 45 to permit the attachment of a horizontal bracket 48 to the base 11, in which bracket the wheel 16 is journaled and whose forward portion is shown as extending around the front of the wheel, forming a guard therefor.

Inclined front and rear plates 24, 25, whose edges are adapted to fit within the inclined sides 12, 13, may be firmly secured thereto and to the bottom 11 by means of rivets passing through side flanges 26 and bottom flanges 27. The outer edges of the sides 12 and 13 are preferably flanged, as at 30, 31, and straps 28, extending laterally from the upper edges of the front and rear plates, may be rolled over the flanged portions, thus providing an additional securing means (see Figs. 1 and 3).

For the purpose of lightening the structure apertures 18, 18, preferably in the form of right triangles, may be stamped out of the material from which the sides are formed, the hypothenuse of the triangle being just in front of the line along which the plate 24 is to be secured. A flange 20^a may be turned inwardly along this line and serves to more securely hold the front plate in position. A flange 19 may be turned inwardly along the vertical leg of the triangle to prevent the material at the extreme front end of the sides from being bent by any blow it may receive. No flange is necessary along the base of the triangle on account of the bracing action of the bracket 48.

Legs 32 and 33, preferably of channel bars bent to substantially V shape, may be

riveted to the rear plate 25, as at 34, and to the bottom 11, as at 35.

The wheel 16, having a central hub 38, is shown as supported by means of a bolt 39 in the horizontal bracket 40 and in inclined bracket arms 36, 37, the latter being secured to the front plate 24. As shown in Fig. 5, the bolt, after being positioned, is prevented from rotation by means of a washer plate 41, which lies between the flanges of the channel member 40, one end of the plate being bent upwardly and inwardly about the head of the bolt. A similar device holds the nut 50 in position.

In Fig. 6 there is illustrated a preferred form of wheel designed for maximum strength and rigidity. A disk 42 is shown as formed integral with the steel hub 38, steel plates 43 and 44 being secured thereto and spaced apart adjacent their peripheries by means of thimbles 46. The peripheries of the plates are preferably flanged outwardly, and a tire 47, of slightly greater diameter than the plates, is then compressibly fitted thereover and may be welded thereto with an acetylene torch. The tire may also be rolled over the ends of the flanges to further prevent its removal.

I claim as my invention—

1. A metal wheel barrow having integral bottom, sides and handles.

2. A steel wheel barrow having its bottom and side portions formed of a single piece of sheet steel, the rear extremities of the sides being rolled to form handles.

3. A steel wheel barrow having its bottom and side portions formed of a single piece of sheet steel, the rear extremities of said side portions being rolled to form handles having seams along one side.

4. A steel wheel barrow having a flat bottom and inclined sides formed of a single piece of sheet steel, the sides having openings adjacent their forward ends, said openings having inwardly turned marginal flanges.

5. A steel wheel barrow having its bottom, sides and handle portions stamped from a single piece of sheet metal, the bottom portion being cut away centrally adjacent its forward end to allow a wheel to extend therethrough, and the side portions having stamped out apertures adjacent their forward ends for lightening the structure.

6. A steel wheel barrow having a flat bottom, inclined sides and handles formed of a single piece of sheet steel, said sides having apertures adjacent their forward ends, an inturned flange along the rear edge of each aperture, and an inclined front plate secured to said sides and resting against said flanges.

7. An all steel wheel barrow having a flat bottom and inclined sides formed of a single piece of sheet metal, inclined front and rear plates having flanges secured to said sides and bottom, a bead formed along the upper edges of said sides, and straps extending laterally from the upper edges of said front and rear plates and rolled over said beads.

8. A steel wheel barrow having a flat bottom and inclined sides formed from a single piece of sheet steel, the bottom having a central cut away portion at its front end, and said sides having adjacent their front ends stamped out apertures in the form of right triangles, the legs of the triangles being parallel, respectively, to said bottom and to the front edges of said sides, an inturned flange along the hypothenuse of each triangle, an inclined front plate secured to said sides and resting against said flanges, a horizontal bracket secured at the front end of said base, downwardly inclined bracket arms secured to said front plate, and a wheel supported in said bracket and bracket arms and projecting through the cut away portion of said base.

9. A steel wheel barrow having a flat bottom and inclined sides, said bottom having a central portion cut away at its front end, an inclined front plate having flanges adapted to be secured to said bottom and sides, respectively, a horizontal U-shaped bracket member secured to said bottom plate, the bend of the U extending beyond the front edge of the base, downwardly inclined bracket arms secured to said front plate, and a wheel having its hub supported in said U-shaped bracket and in said bracket arms.

10. In a wheelbarrow, the combination of a bottom, upstanding sides integral with said bottom and projecting forwardly and rearwardly, handles formed integral with the rear portions of the sides, a wheel, and means for mounting the front portion of the sides on the wheel.

11. In a wheelbarrow, the combination of a bottom, upstanding sides integral with said bottom and projecting forwardly, handles on the rear ends of said sides, a front plate secured to said bottom and sides, a wheel, means for mounting the front portions of the sides on the wheel and braces extending between the front plate and the mounting for the wheel.

12. In a wheelbarrow, the combination of a bottom, sides integral therewith and having rearwardly projecting handles, front and back plates secured to the front and rear edges of said bottom and to said sides, a wheel, and means for mounting the front portions of the sides on said wheel.

DANIEL C. MULVIHILL.