J. KIDD.

METAL WHEELBARROW.

No. 185,546. Patented Dec. 19, 1876.

Fig. 1.

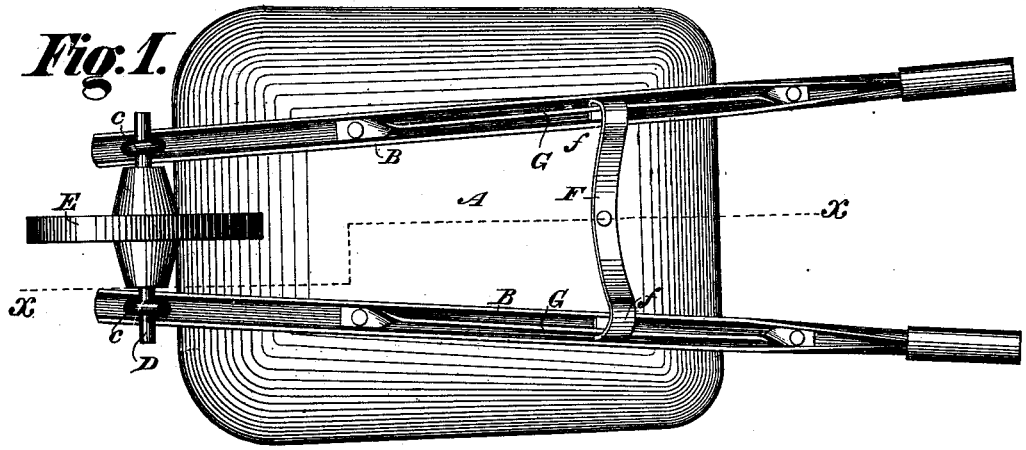


Fig. 3.

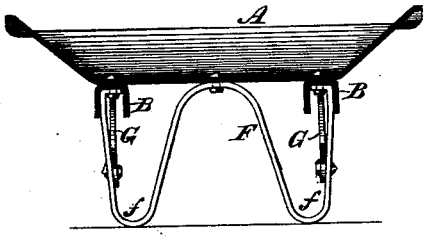
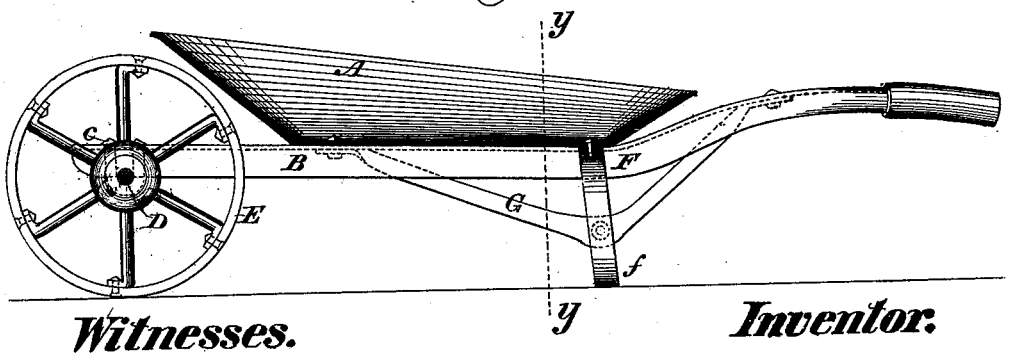


Fig. 2.



Witnesses.

E. C. Davidson.

Wm J. Peyton.

Inventor.

James Kidd,

by Henry Baldwin Jr

Atty.

UNITED STATES PATENT OFFICE.

JAMES KIDD, OF HARRISBURG, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO C. H. JACKSON, OF STEEL WORKS, PENNSYLVANIA.

IMPROVEMENT IN METAL WHEELBARROWS.

Specification forming part of Letters Patent No. **185,546**, dated December 19, 1876; application filed September 23, 1876.

To all whom it may concern:

Be it known that I, JAMES KIDD, of Harrisburg, Pennsylvania, have invented certain new and useful Improvements in Wheelbarrows, of which improvements the following is a specification:

My invention relates to that class of wheelbarrows which are made of metal; and my object is to make a stronger, lighter, more durable, and cheaper wheelbarrow than has heretofore been made entirely of metal.

To this end my invention consists in making a metal wheelbarrow the tray of which is composed of a single piece of steel, the metal being so distributed that the bottom of the tray is thick and strong, as it is desirable it should be. The sides are thick enough and strong enough for all requirements, and yet are thinner and lighter than the bottom, and the edge is stiff and strong enough to resist battering and bending, while the tray, being without any seam or joint, is stronger, lighter, and cheaper, with less weight of metal, than any heretofore made; and my invention consists, further, in constructing the wheelbarrow-frame of channeled bars, constituting the shafts, and affording supports for the tray, for the legs and braces, and for the bearings of the wheel, with the lightness and strength of the principle of the arch, and the advantage of using short rivets or bolts for connecting the frame together and with the tray.

I am aware that a wheelbarrow made entirely of metal is not new; and I am also aware that pipe or tubing has been used for the handles and shafts of wheelbarrows; but the objections to such wheelbarrows comprise those of expense of manufacture and unnecessary weight of metal. Such trays, so far as I am aware, are made of several pieces, overlapped and riveted together, the edge being stiffened with a bar, riveted to the tray, and requiring constant repair. The pipe or tubing is heavy, expensive, and not durable, and the riveting of the frame and the braces together and to the tray requires much labor in drilling the holes, and the rivets are necessarily so long as to be weak. Altogether, such wheelbarrows, as heretofore made, have been, though strong enough at first, heavy, comparatively expensive, and easily racked to pieces under the uses for which they are employed.

In the accompanying drawings, which form part of this specification, Figure 1 is a plan of my improved wheelbarrow inverted. Fig. 2 is a vertical longitudinal section therethrough at the line *x x* of Fig. 1; and Fig. 3 is a vertical longitudinal section at the line *y y* of Fig. 2.

I form the tray A of a single piece of sheet-steel, in the manner described by me in another application filed simultaneously with the filing of this application, thereby getting the full strength and thickness of the metal in the bottom of the tray, the desired inclination and slope of the sides without any unnecessary weight of metal in this part of the tray, and a strong stiff flange around the edge of the tray to resist all twisting and bending forces. The two channel-bars B B constitute the shafts, occupying the usual position relative to the tray, converging toward the back ends, where they sustain the loops or bearings *c c*, in which the axle D of the wheel E is supported. These loops are riveted in the channels of the bars B B, and I let the axle into the bars about half of its depth, as shown in the drawings, to obtain additional bearing-surfaces for the axle, and to make the axle act as a stay to prevent the bars B B from wabbling. The axle is fixed, while the wheel revolves freely upon it. The forward ends of the bars B B are bent round together, so as to be more readily and comfortably grasped by the hands, and may, with further comfort and convenience, be covered with hand-pieces of india-rubber tubing or of cloth. About the forward end of the bottom of the tray the bent ends of a W-shaped bar, F, are inserted in the channels and riveted through the bars B B and through the bottom of the tray, while the bridge or this bent bar F is riveted through the tray only. This bar F not only braces the channel-bars, and prevents them from wabbling, but also constitutes the legs *f f* of the wheelbarrow, which are braced by the curved longitudinal braces G G, riveted at their rear ends in and through the channel-bars B B

and through the bottom of the tray, while at their forward ends they are riveted in the channels and through the bars B B only. About their center these braces are riveted to the inside of the legs *f f*.

In this construction it is manifest that durability, strength, lightness, and economy are attained in the highest degree compatible with the service required.

I contemplate making the connection of the other parts, with the tray and with each other, entirely or partly by means of threaded bolts and nuts for convenience of packing and transportation; but this does not vary the principle of my improved construction.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A wheelbarrow-tray constructed of one piece of steel, with the metal distributed therein between the bottom, the sides, and the flange, substantially as and for the purposes described.

2. A wheelbarrow-frame consisting of channeled shafts, a bent brace-bar, forming legs, and a fixed axle, substantially as and for the purposes described.

3. The combination, in a wheelbarrow, of a metal tray and channeled shafts, substantially as and for the purposes described.

4. The combination, in a wheelbarrow, of channeled shafts, a fixed axle, and a wheel revolving on the axle, substantially as described.

JAMES KIDD.

Witnesses:
W. C. DETWEILER,
C. H. JACKSON.