Oct. 24, 1939. D. ST. JOHN 2,176,874

CONCRETE MIXING WHEELBARROW

Filed May 17, 1938 2 Sheets-Sheet 1

Fig. 5.

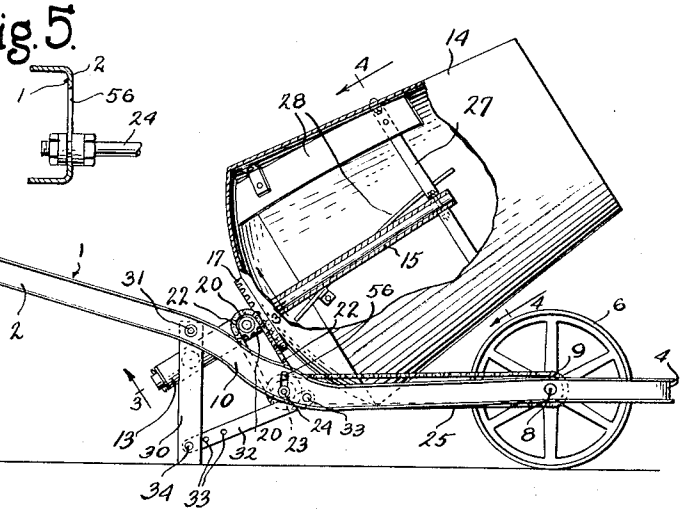
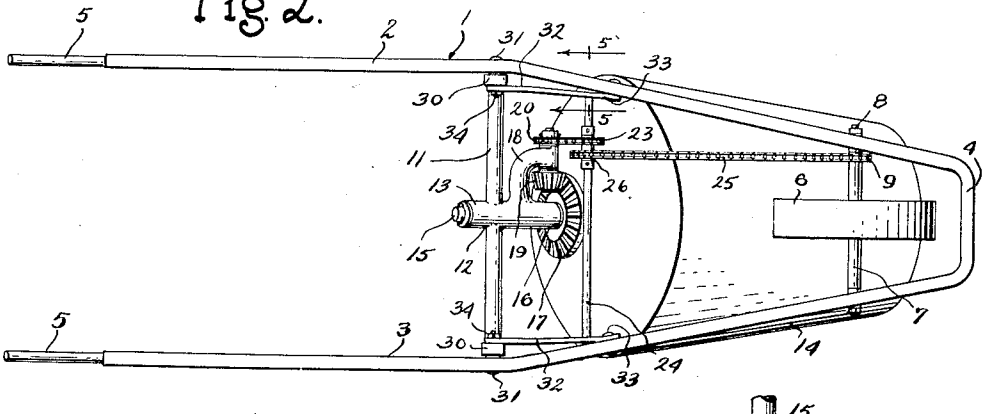


Fig. 1.

Fig. 2.



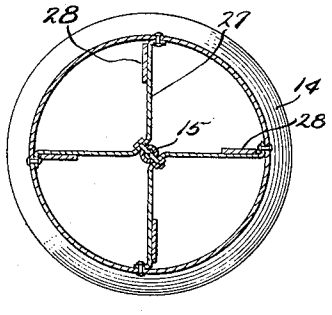


Fig. 4.

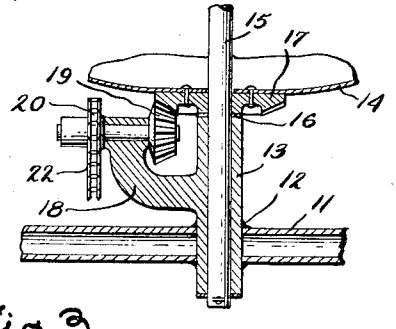


Fig. 3.

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CONCRETE MIXING WHEELBARROW

Filed May 17, 1938 2 Sheets-Sheet 2

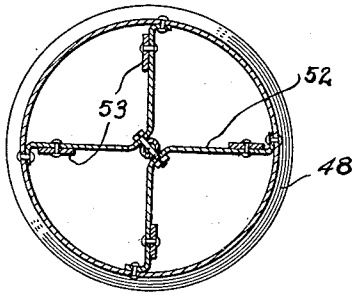


Fig. 8.

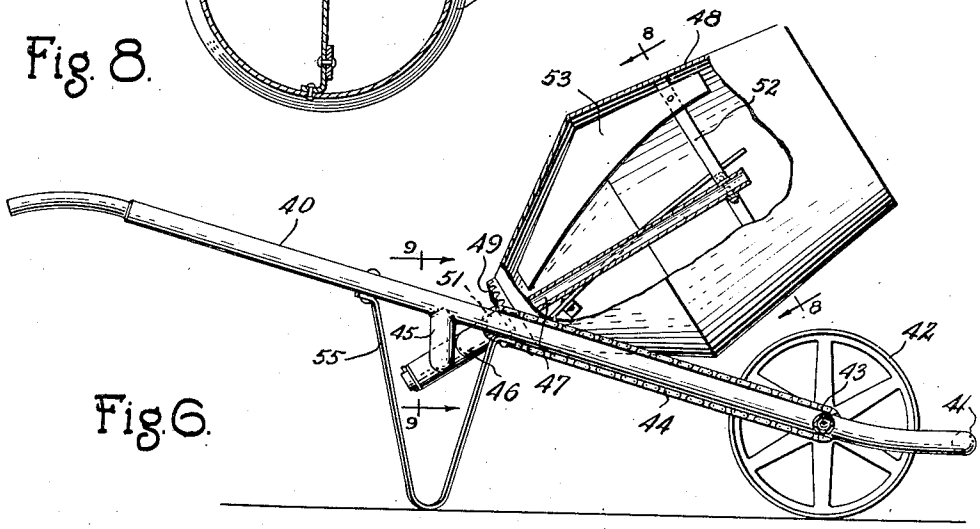


Fig. 6.

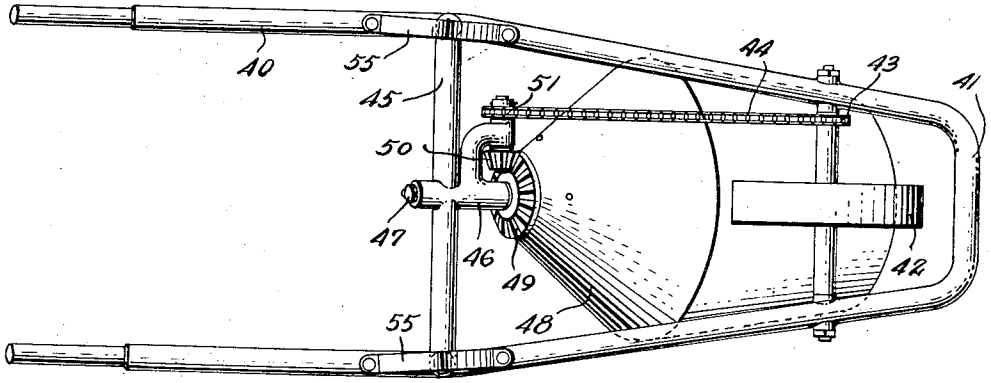


Fig. 7.

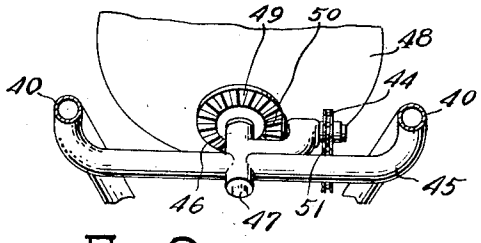


Fig. 9.

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Patented Oct. 24, 1939 2,176,874

UNITED STATES PATENT OFFICE

2,176,874

CONCRETE MIXING WHEELBARROW

Dee St. John, Flint, Mich.

Application May 17, 1938, Serial No. 208,414

2 Claims. (Cl. 259—177)

This invention relates to a concrete mixing wheelbarrow.

The general object of the invention is to provide an improved wheelbarrow designed to be handled by a workman and which has a container in the form of a mixing drum which is actuated by reason of movement of the wheelbarrow to mix the contents placed therein. For example, on various construction jobs it is oft-times found convenient to use wheelbarrows and where a mixture of substance is being formed such as concrete or the like for roads, foundations, or for any other purpose, a suitable dry mix of cement, sand and gravel aggregate, and water may be disposed in the container or drum and wheeled to the location where the mix is to be discharged. A wheelbarrow constructed in accordance with the invention has been found to thoroughly mix concrete in a very short distance. While the invention is specifically referred to as a wheelbarrow for mixing concrete it is to be understood that it may be used for mixing any other suitable substance.

In the accompanying drawings:

Fig. 1 is a side view of a wheelbarrow constructed in accordance with the invention with some parts cut away and some parts in section.

Fig. 2 is a bottom plan view of the wheelbarrow.

Fig. 3 is an enlarged cross sectional view taken substantially on line 3—3 of Fig. 1 showing some of the driving mechanism.

Fig. 4 is a cross sectional view taken substantially on line 4—4 of Fig. 1.

Fig. 5 is a detail section taken substantially on line 5—5 of Fig. 2.

Fig. 6 is a side view with parts cut away and with parts in section showing a modified form of wheelbarrow.

Fig. 7 is a bottom plan view of the form shown in Fig. 6.

Fig. 8 is a sectional view taken substantially on line 8—8 of Fig. 6.

Fig. 9 is a sectional view taken substantially on line 9—9 of Fig. 6 showing some of the driving mechanism.

The structure comprises a suitable frame generally illustrated at 1 and this frame may be of channel formation, as illustrated in Fig. 5, with the channel opening outwardly. The frame may be in one piece with the channel shaped to provide two opposite frame members or rails 2 and 3 tapered at the forward end and having a bight portion 4. The ends may be preferably provided with handles 5 which may be tubular in form and welded to the channels. A single ground-engaging wheel is illustrated at 6 having a hub 7 journaled on a suitable axle 8 which extends across the frame, and a sprocket 9 may be attached to the hub. The frame is preferably depressed in its forward portion thus having a lower forward end joining to an angular section 10 for accommodating the drum. A cross support 11 extends transversely of the frame. This cross support may be tubular in form as illustrated in Fig. 3, and fixedly secured thereto as by means of welding as illustrated at 12 is a bracket 13. A mixing drum 14 has a shaft 15 which extends out through the bottom and which is journaled in the bracket as shown. Preferably, a thrust bearing is used as at 16. A ring gear 17 is secured to the bottom of the drum centrally of the shaft 15 and the bracket has an arm 18 in which a pinion 19 is journaled, the teeth of which mesh with the teeth of the gear 17. On this pinion is mounted a sprocket 20 over which runs a chain 22, the chain running over a sprocket 23 which is keyed or pinned to a rotary cross shaft 24 journaled in the frame. A chain 25 runs over sprocket 9 and another sprocket 26 keyed or pinned to the shaft 24.

The shaft 15 extends well into the mixing drum, and supporting pieces 27 are connected to the shaft near its end and extend radially outwardly and connect to the drum as illustrated in Fig. 5 for supporting the same. Suitable mixing blades 28 are also secured to the interior of the drum.

The member 11 is secured at its ends to supporting legs 30 which are pivotally connected to the rails as at 31, and these legs are stabilized by links 32, each having a pivotal connection to a rail as at 33 and having an adjustable connection with the legs 30. The adjustable connection, as illustrated, resides in a series of holes 33 in the links and a hole in each leg 30 designed to be aligned to receive a bolt or pin 34.

It will be observed that when the handles are grasped by a workman and lifted that the wheelbarrow may be propelled in the usual manner and that the turning of the ground-engaging wheel 6 causes the drum to rotate by reason of the chains, sprockets and gear connections described. The contents, such as a suitable amount of cement, sand, gravel and water or the like may be placed in the drum; and as the wheelbarrow is propelled the drum rotates and the contents mixed.

It is desirable that the drum be at about the correct angle while it is being propelled, but

workmen vary in height. By adjusting the connection between the links 32 and the legs 30 the angularity of the bracket 13 and therefore the drum is changed with respect to the frame. This makes it feasible to adjust the wheelbarrow for proper use by workmen who normally hold the frame at different elevations. Where a fleet of such wheelbarrows are used various adjustments may be had on different wheelbarrows. When the angularity of the drum is changed by varying the connection at 34 it will be seen that the sprocket 20 shifts away from the sprocket 23 on the shaft 24. However, the shaft 24 is adjustable in elongated openings 56 in the frame. The openings 56 may be disposed on an arc around the axis of the ground-engaging wheel 6 so as not to interfere with adjustment of the chain 25.

In Figs. 6 and 7 a wheelbarrow is shown having a tubular frame 40 shaped to provide opposite frame members or rails and having a bight portion 41. The land-engaging wheel 42 is journaled in the frame, and a sprocket 43 is fixed to its hub over which runs a chain 44. A cross member 45, which may be of tubular form, is welded to opposite rails and a bracket 46 is secured thereto in which the shaft 47 of the mixing drum 48 is journaled. The mixing drum has a gear 49 fixed to its closed end, the teeth of which mesh with the teeth of a pinion 50 also carried by the bracket 46 and the pinion 50 is turned by the chain 44 running over a sprocket 51. In this form drum supports 52 stabilize the drum by connecting the drum with the shaft 47, and mixing blades 53 are disposed within the drum. The legs or supports are illustrated at 55. In this form the angularity of the drum is fixed in that the cross member 45 and bracket 46 are not adjustable.

In both forms of the invention it will be noted that the drum is supported at one end where it is journaled in the bracket so that the supporting and driving mechanism is simplified.

I claim:

1. A wheelbarrow for transporting and mixing concrete or the like which comprises a frame with handles at one end adapted to be lifted by a workman, a single land-engaging wheel at the other end of the frame, a supporting member extending crosswise of the frame, a bracket rockably disposed on the supporting member, an upwardly opening mixing drum journaled in the bracket, driving means interconnecting the mixing drum and land-engaging wheel for rotating the mixing drum as the wheelbarrow is propelled, and means for rockably adjusting the bracket on the supporting member and for maintaining said adjustment to determine the angularity of the upwardly opening mixing drum relative to the frame.

2. A wheelbarrow for transporting and mixing concrete or the like which comprises, a frame with handles at one end adapted to be lifted by a workman, a single land-engaging wheel at the other end of the frame, supporting legs for the frame, a member connecting the supporting legs, a bracket carried by said member, a mixing drum having an open end and a closed end, an axis member at the closed end of the mixing drum and journaled in said bracket for holding the mixing drum in an inclined position with its open end uppermost and positioned adjacent the end of the frame with the land-engaging wheel, means interconnecting the land-engaging wheel and the mixing drum for rotating the mixing drum as the wheelbarrow is propelled, and means for adjustably varying the angularity of the supporting legs said member and said bracket, to vary the angle of inclination of the mixing drum relative to the frame.

DEE ST. JOHN.