L. L. CARTER.

COMBINED DUMP CART AND MIXER.

APPLICATION FILED JULY 9, 1915.

1,180,905. Patented Apr. 25, 1916.

FIG. 1.

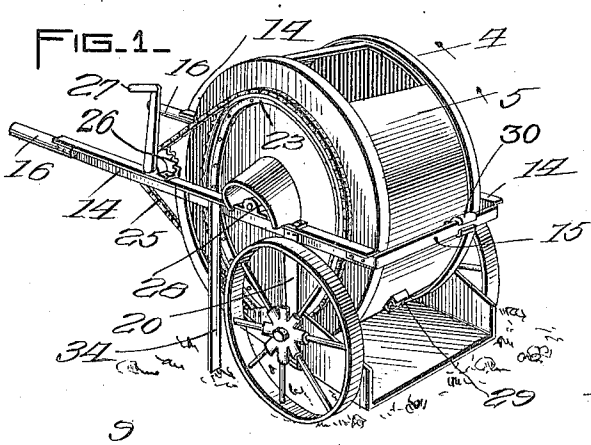


FIG. 4.

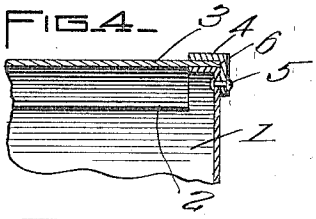
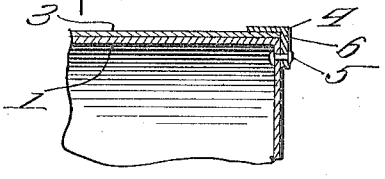


FIG. 5.



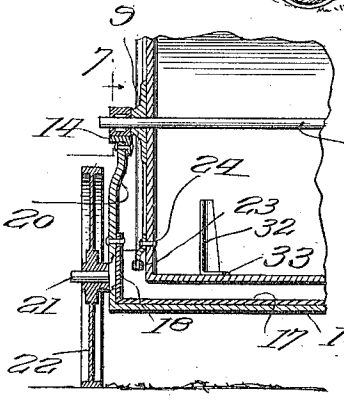


FIG. 6.

FIG. 7.

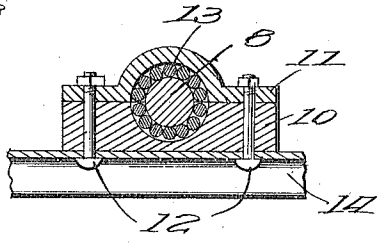


FIG. 8.

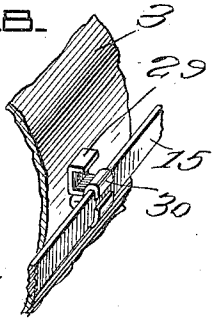


FIG. 2.

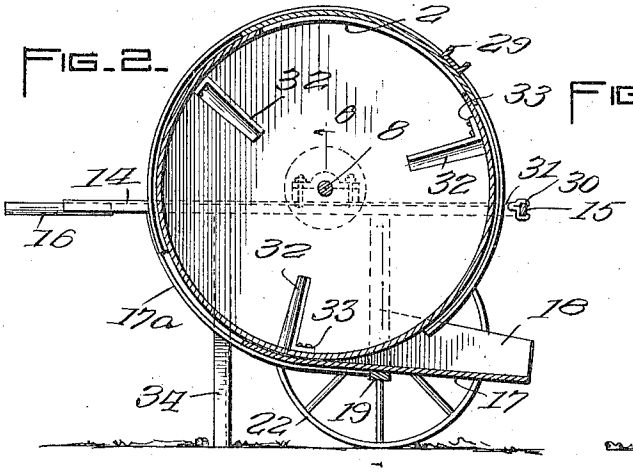
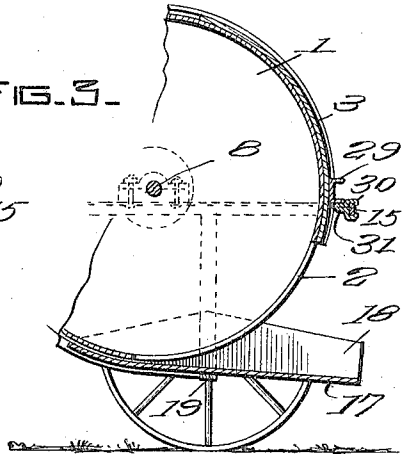


FIG. 3.



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COMBINED DUMP-CART AND MIXER.

1,180,905. Specification of Letters Patent. Patented Apr. 25, 1916.

Application filed July 9, 1915. Serial No. 38,871.

To all whom it may concern:

Be it known that I, LEWIS L. CARTER, a citizen of the United States, and a resident of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Combined Dump-Carts and Mixers, of which the following is a specification.

My invention is an improvement in concrete mixers, and the invention has for its object to provide a portable mixer of the character specified, wherein a cylindrical container is provided, having mixing vanes or blades and mounted to rotate on a wheeled support, and having means for rotating the same, the support having a delivery chute to which the container delivers.

In the drawings:—Figure 1 is a perspective view of the improved mixer, Fig. 2 is a longitudinal vertical section showing the parts in one position, Fig. 3 is a similar view showing the parts in another position, Figs. 4 and 5 are sections on the lines 4 and 5 of Fig. 1, each looking in the direction of the arrow adjacent to the line, Fig. 6 is a partial section at right angles to Fig. 2, Fig. 7 is a section through the mounting of the container, and Fig. 8 is a perspective view of the latch for the cover.

The present embodiment of the invention comprises a substantially cylindrical casing 1, having an opening 2 at its periphery for permitting the insertion and the removal of the material, and a cover 3 is provided for closing the opening, the said cover being arc-shaped transversely and having guided movement circumferentially of the casing.

As shown in Figs. 4 and 5, rings 4 of angle material are secured to the ends of the casing, each ring having a portion fitting against the end and secured thereto by rivets 5 or the like, and a portion extending at right angles thereto and parallel with the periphery of the container but spaced apart therefrom to form guideways 6, for receiving the edges of the cover 3. The cover is thus mounted to move in the guideways circumferentially of the container and on the outside thereof.

A shaft 8 extends axially of the container, being held in brackets 9 at the ends of the casing and on the outer faces of the ends, and the shaft extends beyond the ends of the casing as shown in Fig. 6. Each end of the shaft is journaled in a sectional bearing on the wheeled support, and each bearing comprises a lower section 10, and an upper section 11, which is secured to the lower section and to the support to be described, by bolts and nuts 12.

The sections have transverse recesses cooperating to form the bearing for the shaft, and a ball or roller bearing 13 is arranged between the shaft and the sectional bearing. The wheeled support comprises a frame composed of oppositely arranged bars 14 of angle material, the said bars being arranged with one portion horizontal and the other vertical and with the vertical portion at the inner side of the horizontal portion.

The bars are connected at one end by a U-shaped bracket 15, the said bracket comprising a body extending transversely between the bars 14, and arms secured to the bars 14 and extending at right angles to the body, and a rounded handle 16 is secured to the opposite end of each of the bars 14.

The bearing sections 10 and 11 are secured to the horizontal portions of the bars 14 by the bolts and nuts 12, before mentioned, and the frame 14—15 is connected to a delivery chute comprising a bottom 17 and side walls 18 extending upwardly from the bottom, by means of a U-shaped bracket, consisting of a body 19, arranged transversely of the bottom of the chute intermediate the ends thereof, and arms 20 extending upwardly alongside the outer faces of the side walls 18 of the chute, and connected at their upper ends to the bars 14. The arms 20 are also secured to the side walls 18 of the chute, and journal pins 21 extend laterally outward from the arms 20 of the bracket, and wheels 22 are journaled on the pins.

A sprocket ring 23 is secured to one end of the container by means of rivets 24, or the like, and a sprocket chain 25 connects the ring with a sprocket wheel 26 on a crank 27, which is journaled on the adjacent bar 4, and it will be evident that when the crank 27 is turned the container will be rotated on the shaft 8. Hoods or shields 28 are secured to the bars 14 at each end of the container, each hood or shield being arched above the adjacent bearing 10—11, and the said shields prevent the material loaded into the container from gaining access to the bearings.

The cover 3 is provided near one edge

with a U-shaped bracket or channel plate 29, the bottom of the said plate being secured to the cover 3, while the side walls extend radially outward from the cover. A slide 30 is mounted on the cross bar 15 to move longitudinally thereof, and this slide has a tongue 31, which is designed to engage one of the side walls of the bracket 29 to open and close the door or cover 3. It will be evident that when this slide is moved to bring the tongue 31 thereof into position to engage the bracket 29, the cover will be moved when the container is turned in the proper direction by the crank 27. By engaging the tongue 31 between the side walls of the bracket, the cover may be moved in either direction by turning the container in the proper direction.

Mixing vanes 32 are secured to the inner surface of the body of the container, and the said vanes or blades extend radially inward. The blades or vanes are arranged spirally or inclined with respect to the container, and each blade or vane has an angular flange or rib 33, which abuts against the inner face of the peripheral wall of the container, and is secured thereto to hold the blade or vane in proper position. The bottom 17 of the chute is curved upwardly at its rear, as shown at 17^a, following the curve of the peripheral wall of the container, and the said curved portion abuts the under faces of the bars 14. A supporting leg 34 is secured to each of the bars 14 just in rear of the adjacent wheel, and the said legs are of a length to hold the frame 14—15 horizontal when the legs engage the ground or other supporting surface for the mixer.

The operation of the mixer is as follows:— With the parts in the position of Fig. 1, the mixer is ready to be loaded. The cement, sand, gravel and water are placed in the container in the proper proportions, and the door or cover 3 is closed. An operative now grasps the crank 27, and rotates the container until the ingredients have been properly mixed. The vanes 32 carry up a portion of the material, and drop it down from the top of the container, and but slight rotation is required to thoroughly mix the several ingredients. During this time the support is in the position of Figs. 1 and 2 with the legs 34 resting on the ground. When the mixing is complete the operative grasps the handle 16, and pushes or pulls the entire device to the place of discharge. When this place is reached the container is turned until the bracket 29 is in register with the cross bar 15, after which the slide 30 is moved until the tongue 31 thereof engages the bracket 29. A further movement will open the door or cover 3, and at the same time will swing the opening 2 into the position shown in Fig. 3, that is, into the proper position to discharge into the chute 18. At the same moment the operative lifts upward on the handle 16 and the entire contents of the mixer are dumped through the opening 2 and off the chute.

The device is easily discharged, and easily loaded, and the arrangement of the cover prevents any jamming of the cover because of the material pressing against the same. The shields 23 protect the bearings, and since the container is mounted on ball or roller bearings the friction is greatly reduced, making the mixing extremely easy.

The device, as a whole, is simple, inexpensive and easily operated. It may be charged at a distance from the work, and serves thus as a carrier as well as a mixer. In actual use two men can mix, wheel, and discharge more concrete than double the number operating with shovels and wheel barrows. A preferable size of machine is one handling $6\frac{2}{3}$ cubic feet of material. The container is a drum, having a peripheral opening and a cover for closing the opening.

I claim:—

1. A device of the character specified, comprising a substantially U-shaped frame consisting of a body and arms, a chute supported below the frame and having its open end at the body of the frame, wheels journaled on the chute at the opposite sides thereof for supporting the frame, a drum having a peripheral opening, journaled between the arms of the frame above the chute, an arch cover for closing the opening and having guided movement on the drum, means on the frame for rotating the drum, a latch member mounted to slide on the body of the frame, the cover having a stop for engaging the latch member to hold the cover from movement with the drum as the opening of the drum registers with the chute.

2. A device of the character specified, comprising a substantially U-shaped frame consisting of a body and arms, a chute supported below the frame and having its open end at the body of the frame, wheels journaled on the chute at the opposite sides thereof for supporting the frame, a drum having a peripheral opening, journaled between the arms of the frame above the chute, an arch cover for closing the opening and having guided movement on the drum, and means on the frame for rotating the drum.

3. A device of the character specified, comprising a wheel supported frame having a chute provided with an open end at the front of the frame, and supported below the frame, a drum journaled transversely of the frame above the chute and having a peripheral opening, means for rotating the drum, a cover having guided movement circumferentially of the drum for closing the opening, and means in connection with the

frame and the cover for holding the cover from movement as the opening moves into register with the chute.

4. A device of the character specified, comprising a wheel supported frame, a drum journaled transversely of the frame and having a peripheral opening, means for rotating the drum, a cover having guided movement circumferentially of the drum for closing the opening, and means on the frame and movable into and out of operative position for holding the cover from movement as the drum moves into dumping position with the opening at the under side of the drum.

LEWIS L. CARTER.

Executed in presence of us as witnesses:
FLOYD S. CARTER,
CARL B. WINTLER.

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