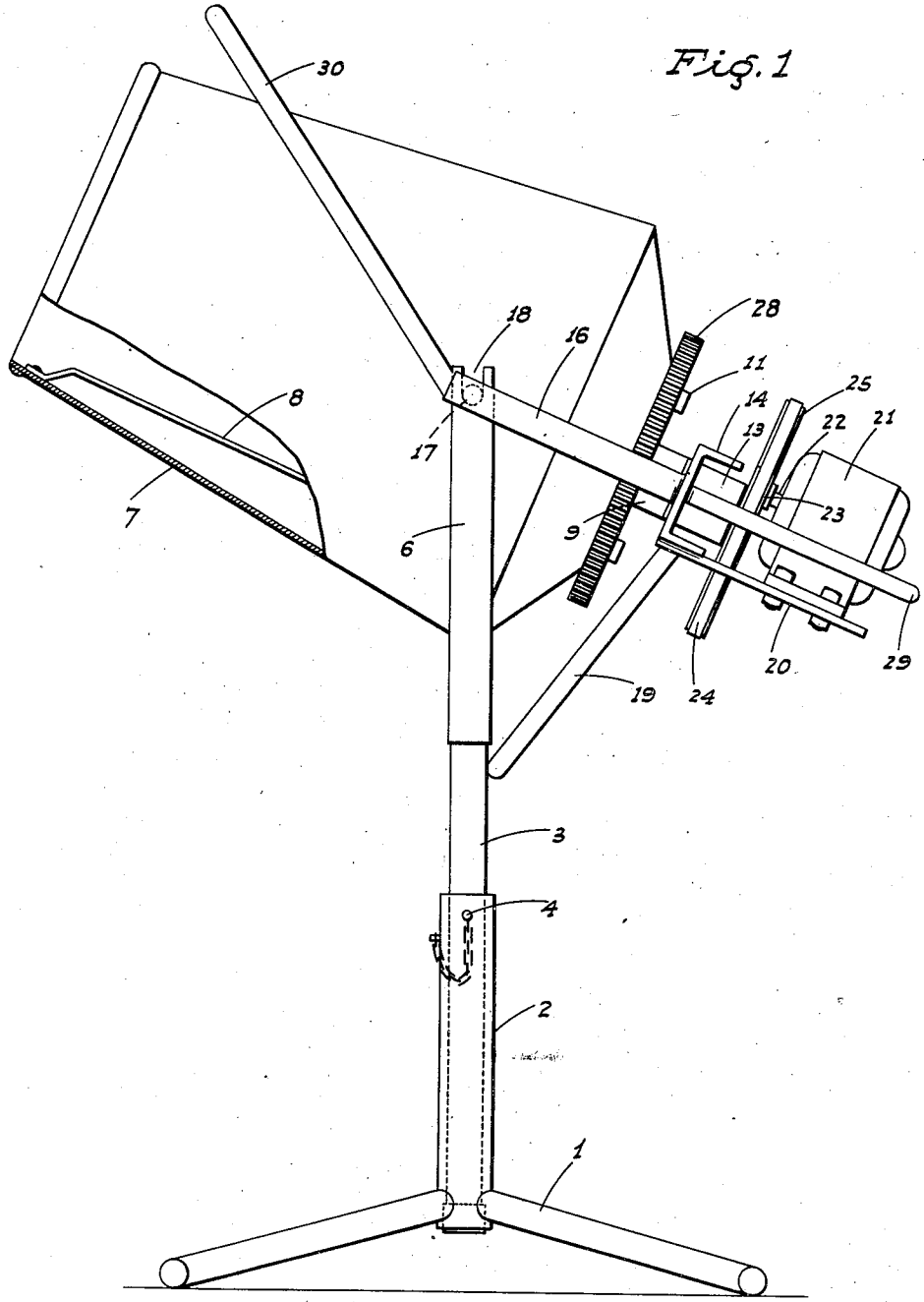
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CEMENT MIXER

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Fig. 1



INVENTORS
Homer W. Bonney
Mahlon Bonney

BY

ATTYS

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Fig. 2

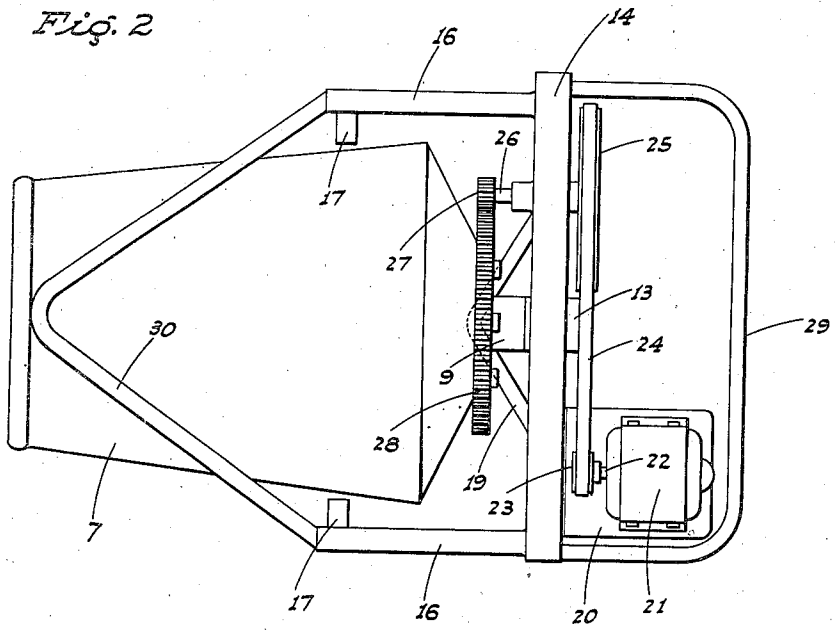


Fig. 3

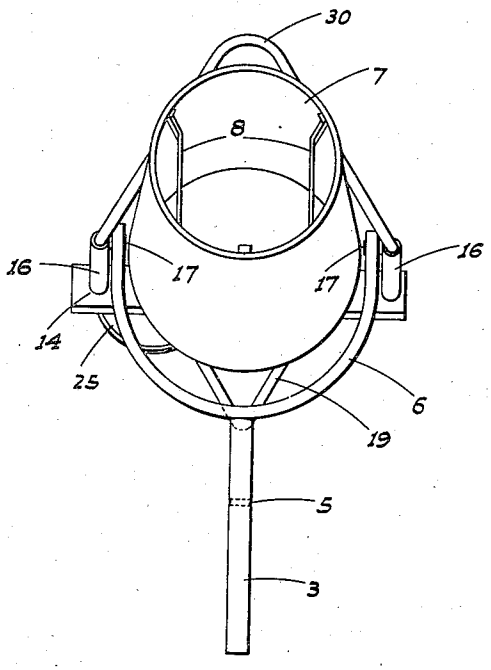
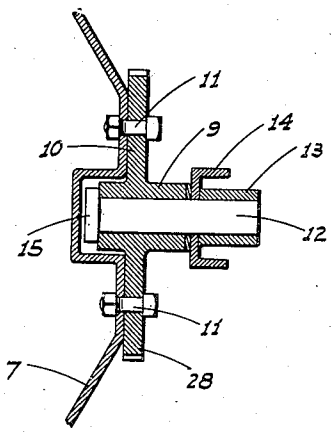


Fig. 4



INVENTORS
Homer W. Bonney
Mahlon Bonney
BY
ATTYS

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CEMENT MIXER

Homer W. Bonney and Mahlon Bonney,
Roseville, Calif.

Application September 1, 1945, Serial No. 613,988

4 Claims. (Cl. 259—177)

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This invention is directed to, and it is an object to provide an improved relatively light weight and portable cement mixer; the mixer being readidly demountable for transport from place to place.

Another object of the invention is to provide a cement mixer which includes an electric drive mechanism arranged in unitary assembly with the mixing drum; said assembly being demountable from the remainder of the structure without disconnecting or in any way disturbing said drive mechanism.

A further object of the invention is to provide a cement mixer, as in the preceding paragraph, which includes an electric motor and a novel driving arrangement between said motor and the mixing drum.

An additional object of the invention is to provide a cement mixer wherein said mixing drum and drive mechanism assembly are mounted on a swivel base whereby to facilitate loading or unloading of said drum; said assembly being manually tiltable between a drum position normally upwardly inclined toward its open end for loading, and a downwardly inclined position for unloading.

A further object of the invention is to provide a simple and inexpensive device, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of the improved cement mixer in loading position.

Figure 2 is a plan view of the cement mixer.

Figure 3 is a front elevation of the mixer detached from the pedestal.

Figure 4 is a fragmentary cross section showing the rotary mount for the mixing drum.

Referring now more particularly to the characters of reference on the drawings, the improved cement mixer comprises a pedestal 1 which includes a vertical tubular standard 2. A vertical post 3 is seated in the tubular standard 2 in rotatable relation, but is normally prevented from escape from said standard by means of a radial locking or retaining pin 4 which projects through the standard and rides in an annular groove 5 formed in said post 3.

At its upper end the post 3 is fitted with an upwardly opening yoke 6 of rigid construction.

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A cement mixing drum 7 is straddled from below and adjacent but short of its closed rear end by the yoke 6; said mixing drum being of taper type and normally extending at an upward incline towards its open outer or discharge end. Within the drum 7 it is provided with a plurality of circumferentially spaced mixing baffles 8.

The mixing drum 7 is demountably and tiltably supported from the yoke 6 as follows:

At its rear end and centrally thereof the mixing drum is fitted with an axial hub 9 which includes an annular, radially extending flange 10 affixed to said rear end of the mixing drum by a plurality of circumferentially spaced bolts 11. The hub 9 is mounted on a heavy-duty spindle 12 which projects into a bearing sleeve 13 fixed in connection with a horizontal cross beam 14. Escape of the hub 9 from the spindle 12 is prevented by means of a head 15 on said spindle. It will thus be seen that the mixing drum 7 is suspended or mounted in its entirety by means of the hub and spindle arrangement above described.

At opposite ends the cross beam 14 is provided with rigid, forwardly projecting supporting arms 16 which include, at their free ends, inwardly projecting trunnions 17 which removably seat in saddles 18 formed in the upper ends of the legs of yoke 6. The cross beam 14 and the supporting arms 6 form, in effect, a frame structure. A generally V-shaped leg 19 is fixed on the under side of the cross beam 14 and depends at a downward inclination toward and into normal engagement with the post 3 below the yoke 6; such leg 19 thus serving as stop means to limit upward swinging movement of the mixing drum at its forward end, and in which direction the drum normally tends to swing on account of the weight of the driving mechanism, as hereinafter described.

The driving mechanism for the mixing drum 7 comprises the following:

A platform 20 is fixed in connection with and projects rearwardly from the cross beam 14 adjacent one end of the latter, and an electric motor 21 is mounted on said platform to the rear of the cross beam 14, with the motor shaft 22 projecting forwardly. A pulley 23 on shaft 22 drives a transversely extending, endless belt 24, which in turn drives a pulley 25 on a countershaft 26 journaled through the cross beam 14 adjacent the end opposite the motor 21. The countershaft 26 is fitted, ahead of the cross beam, with a pinion 27, which in turn meshes with and drives a relatively large-diameter main

gear 28 formed as an integral part of the flange 10. With actuation of the motor 21 a relatively slow-speed but positive drive is thus imparted to the mixing drum 7.

By reason of the described driving mechanism it will be evident that the mixing drum 7, together with said driving mechanism, may be removed as a unit from the yoke 6 for transport. This is accomplished by merely lifting the trunnions 17 from the saddles 18. Also, for transport the unit of post 3 and yoke 6 is easily withdrawn from the tubular standard 2 after removal of the locking pin 4.

For ease of manipulation of the assembly comprising the mixing drum 7 and the driving mechanism when the cement mixer is in use, there is provided a rear handle 29 which extends bail-like rearwardly from the cross beam 14 about the motor 21 and the adjacent parts of the driving mechanism. The rear handle 29 thus also serves as a guard for the motor and said parts of the driving mechanism. There is also provided a generally V-shaped front handle 30 which extends from the forward ends of the supporting arms 16 at a forward and upward incline in clearance relation over the mixing drum 7; said front handle terminating at the top adjacent the open or discharge end of the mixing drum 7.

When the described cement mixer is in use, its normal position is as shown in Fig. 1. With the motor 21 running, the mixing drum 7 is rotated and the parts of the mix are fed into said drum through its then uppermost open forward end. When the mixture is complete the assembly of the mixing drum 7 and the driving mechanism is tilted in a direction to lower the open end of said drum, whereby to discharge the mix into a mix-transporting wheel-barrow or the like.

The above tilting can be accomplished either by manipulating the rear handle 29 or the front handle 30, whichever is most convenient to the operator. In addition, the swivel mounting of the post 3 facilitates both loading and unloading of the mixer, as the operator can swing the drum 7 to the most convenient position.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations therefrom may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful and upon which Letters Patent are desired:

1. A cement mixer comprising a pedestal including a vertical tubular standard, a vertical post seated in the standard and turnable therein about a vertical axis, an upwardly opening yoke on the upper end of the post, a mixing drum extending through the yoke, a frame structure on which the drum is journaled, means mounting the frame structure on the yoke for independent vertical tilting of the drum on a horizontal axis between loading and discharging positions at any point to which the yoke may be turned about such vertical axis, and drive means mounted in unitary relation on the frame structure and connected in driving relation to the drum.

2. A cement mixer comprising a pedestal including a vertical tubular standard, a vertical post seated in the standard and turnable therein about a vertical axis, an upwardly opening yoke on the upper end of the post, a mixing drum extending through the yoke, a frame structure on which the drum is journaled, means mounting the frame structure on the yoke for independent vertical tilting of the drum on a horizontal axis between loading and discharging positions at any point to which the yoke may be turned about such vertical axis, and drive means mounted in unitary relation on the frame structure and connected in driving relation to the drum; the frame structure being demountable from the yoke.

3. A cement mixer comprising a pedestal including a vertical tubular standard, a vertical post seated in the standard and turnable therein about a vertical axis, an upwardly opening yoke on the upper end of the post, a mixing drum extending through the yoke, a frame structure on which the drum is journaled, means mounting the frame structure on the yoke for independent vertical tilting of the drum on a horizontal axis between loading and discharging positions at any point to which the yoke may be turned about such vertical axis, and drive means mounted in unitary relation on the frame structure and connected in driving relation to the drum; the frame structure being demountable from the yoke, and the post being removable from the standard.

4. A cement mixer comprising an upstanding tubular standard, a post turnable in the standard, a substantially U-shaped yoke on the post, an open ended saddle on the upper end of each arm of the yoke, a cross beam, a supporting arm projecting from each end of the cross beam, an inwardly projecting trunnion at the outer end of each arm, each trunnion resting in one of said saddles, a mixing drum mounted for rotation on the cross beam and projecting forwardly between the arms of the yoke, power drive means mounted on the cross beam and connected in driving relation with the drum, the drive means being so disposed relative to the trunnions that the weight thereof will normally tilt the forward end of the drum upward about said trunnions as an axis, and a leg fixed to the cross beam and in contact with the post to limit such tilting movement.

HOMER W. BONNEY.
MAHLON BONNEY.

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