

April 14, 1931.

G. JAEGER

1,801,162

TRUCK CONCRETE MIXER

Filed March 24 1928

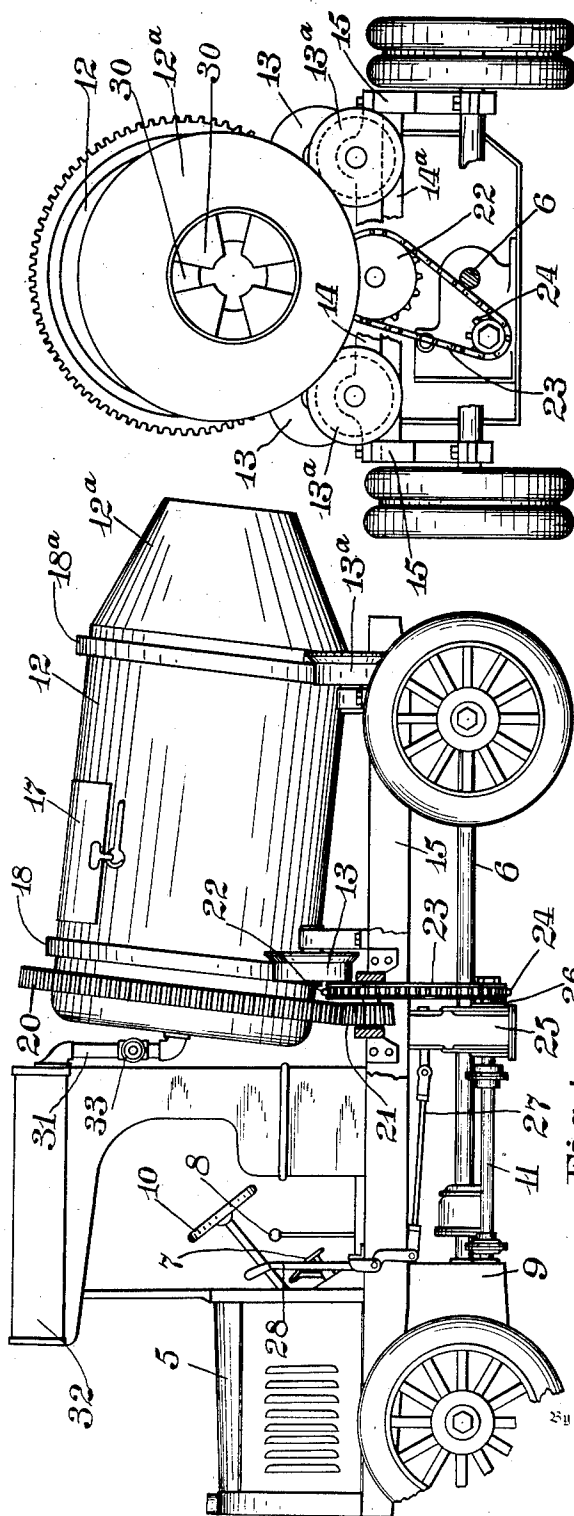


Fig. 1.

Fig. 2.

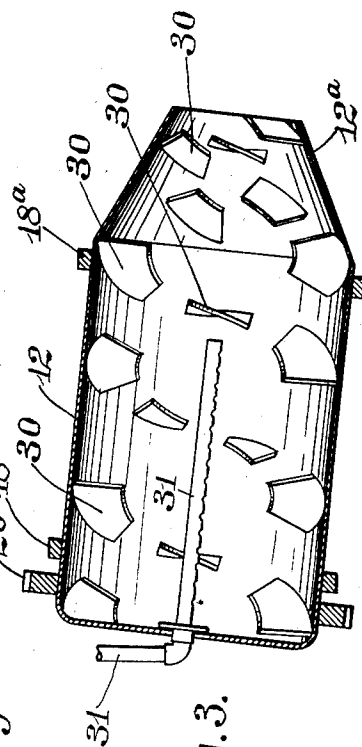


Fig. 3.

Inventor  
**GEBHARD JAEGER**  
*Gebhard Jaeger*  
 his Attorneys

## UNITED STATES PATENT OFFICE

GEBHARD JAEGER, OF COLUMBUS, OHIO, ASSIGNOR TO THE JAEGER MACHINE COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF OHIO

TRUCK CONCRETE MIXER

REISSUED

Application filed March 24, 1928. Serial No. 264,347.

This invention relates to concrete mixers and particularly to that type in which the mixing drum is mounted on a truck having an engine propelling mechanism adapted to be utilized as the means for operating the mixing drum.

The object of the invention is to provide improved and simplified means whereby the mixing drum can be driven in one direction by the engine to effect principally the mixing of the concrete materials and in the opposite direction by the same means to effect principally the discharge of the mixed materials and dispense with mechanism for raising and lowering the drum in effecting the mixing and discharge of the concrete materials. Other objects of the invention can be gathered from the disclosure herein.

The invention is embodied in the example herein shown and described the features of novelty being finally claimed.

In the accompanying drawings—

Figure 1 is a view in side elevation of the invention, parts being broken out to illustrate details.

Fig. 2 is a rear view of the same, also with parts broken out.

Fig. 3 is a central longitudinal view of the mixing drum removed from the truck.

In the views 5 designates the truck, it consisting of an ordinary gasoline motor vehicle and containing an engine, the propeller shaft 6 extending to a differential gear at the rear for driving the wheels, a clutch operated by a foot lever 7, a gear shift lever 8 for controlling the usual change speed and reversing gear in box 9.

In addition to these parts there is in the present instance extended from the gear box a power take off shaft 11 adapted to be operated from the crank shaft of the engine and gears in the gear box 9 to turn said take off shaft clockwise or anti-clockwise as desired.

A power take-off is common in some forms of motor trucks, as for example, such as used for raising and lowering one end of a dumping body. In the present instance the take-off shaft extends to a box or housing 25 from which protrudes a normally idle short shaft 26 having fixed thereon the

sprocket wheel 24. In said housing 25 is a suitable clutch mechanism operable through a link 27 and handle 28 to connect and disconnect at will the short shaft 26 with the power take-off shaft 11. By this means the short shaft 26 and sprocket wheel 24 thereon can be driven either clock-wise or anti-clock-wise as desired.

12 designates the mixing drum which is supported in rear of the driver's seat to roll on forward pair of rollers 13 and rear pair of rollers 13<sup>a</sup>, these rollers being journaled in stout saddles 14 and 14<sup>a</sup>, respectively, secured transversely on the truck sills 15. In the example shown the drum is mounted on its supporting rollers 13 and 13<sup>a</sup> so that its axis of rotation is inclined to the horizontal from its forward end to the rear, the forward rollers for the purpose being journaled in a plane above that of the journaling of the rear rollers. The main body of the drum is cylindrical in form terminating at its rear in tapered portion 12<sup>a</sup>, the lower side of which is inclined upwardly from the horizontal. The rear end of the drum is shown as left open for the discharge of the mixed material, no closure being required at this end as will hereinafter appear.

The drum is preferably supplied with the dry materials to be mixed through an opening covered with an ordinary hinged lid 17 adapted to be tightly latched when the drum is rotated to mix and discharge the materials. The drum is provided with projecting circumferential track bands 18 and 18<sup>a</sup> to rest and travel on said rollers 13 and 13<sup>a</sup> respectively; and because the rollers are flanged the drum is securely positioned thereon.

The forward end of the drum is provided with a peripheral gear rack 20 engaged by a pinion 21 journaled in suitable bearings between the truck sills, the shaft of said gear 21 having secured thereto a sprocket wheel 22 driven by a sprocket chain 23 that is in turn driven by a smaller sprocket wheel 24 driven through a clutch by the power take-off of shaft 11.

The interior of the drum including its rear tapered end is provided with a series of

mixing blades 30 arranged in suitable fashion, preferably spiral and staggered so as to tend to cause a motion of the concrete materials in an upward direction within the drum toward the forward end thereof, but as it is piled up at the forward end the material is caused to slide by gravity rearward where it is again picked up by the more rearward blades, hence the two forces acting on the materials cause them to have, in effect, a back and forth motion in the drum in addition to the rotary motion thereby promoting their thorough mixing. The gearing of the drum is preferably, but not necessarily, such that this operation can be coincided with the forward motion of the vehicle in which case the operation of the sprocket chain 23 is reversed to discharge the mixed materials from the drum.

The necessary water can be supplied to the interior of the drum by means of a pipe 31 extending to or into the drum from a suitable tank 32 located in any suitable position as for example above the driver's cab. Said pipe 31 is provided with a valve operated by a wheel 33 to establish or cut off the flow of water.

In practice it is designed that the mixing drum shall be supplied with the materials to be mixed at a central plant or station and the mixing operation performed during the time or portion of the time used in driving the machine to the job. To effect a most thorough mix the usual dry materials can be mixed first and the water added subsequently.

The blades are made sufficiently numerous in the tapered end of the drum to prevent the material from flowing out when the mixing drum is rotated in mixing direction; and all the blades cooperate to effect a rapid and thorough discharge of the mixed materials when turned in the reverse direction.

The machine will be useful in emergencies as where the materials are at the place of the job and the ordinary machine used by the contractor is temporarily out of order.

The forms, proportions and arrangements of the parts can be changed without departing from the gist of the invention as claimed.

What I claim is:

A mixing drum for concrete materials and the like consisting of a substantially cylindrical portion having a frusto-conical discharging portion at one end, spirally arranged blades in said cylindrical portion, and blades in said frusto-conical portion, said drums adapted for rotation in opposite directions, the blades in said cylindrical portion adapted to mix the materials when the drum is rotated in one direction and the blades in the frusto-conical portion adapted to discharge the mixed materials from the drum when the drum is rotated in the opposite direction.

GEBHARD JAEGER.