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1,863,029

CONCRETE MIXER

Original Filed Aug. 29, 1930

FIG. 1.

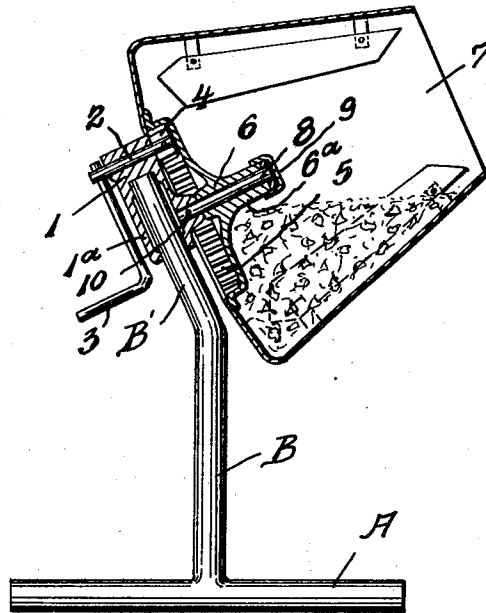
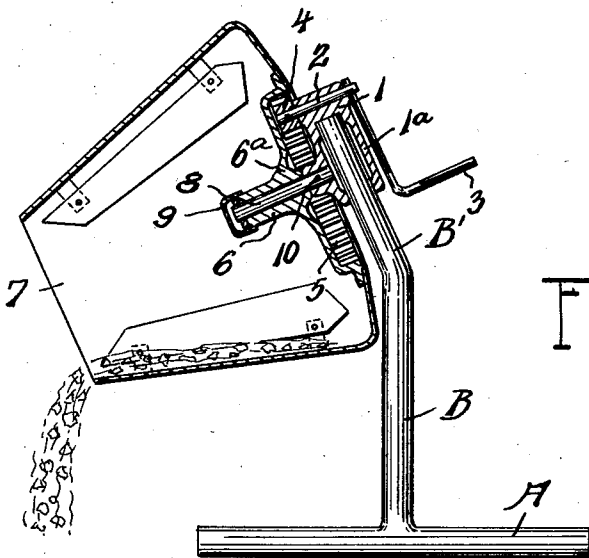


FIG. 2.

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CONCRETE MIXER

Application filed August 29, 1930, Serial No. 478,701. Renewed April 19, 1932.

This invention embodies an extraordinarily simplified construction of concrete mixing machine of that type known as a tilting drum or barrel machine, the drum or barrel being employed as the mixing receptacle.

The purpose of the invention has been to so design the mixer that it is made of as few parts as possible, may therefore be sold very cheaply, may be readily operated by hand since it is of a small type construction, and will have a number of advantages due to its simplification of operation and fewness of mechanical parts.

Essentially the invention comprises a mixer in which I employ a vertical supporting standard deflected at an angle at its upper portion so that the concrete mixing drum supported by such portion may in one position incline upwardly so as to have a non-discharging adjustment, but may in another position, after proper rotation, assume a downwardly inclined adjustment such that it may be readily emptied or discharged. The operating means which I employ has a dual function in acting upon the drum. In the first place it is adapted to rotate the drum for its mixing operation and in the second place it is adapted to swing the drum around its general axis established by the mounting thereof by the standard aforesaid so as to bring the drum from a non-discharging position to a discharging position, and vice versa.

With the foregoing general objects in view, my invention is depicted in the accompanying drawing, by two figures, as follows:—

Figure 1 is a vertical sectional view illustrating the mixing machine as when it is being operated for mixing, and

Figure 2 is a similar view showing the drum turned to the position it assumes when discharging.

A machine made in accordance with my invention comprises a base A which may be a flat base or made of three diverging foot

members, this being immaterial. From the base projects upwardly the standard B which comprises a vertical lower portion and an upper portion B' extending at an angle to the axis of said lower portion. The standard B may be a bent structure or a composite structure. At the top of the angularly disposed portion B' of the standard is the supporting head 1 which carries the mixing drum and drive mechanism therefor. The supporting head includes a socket portion 1a that receives the upper end of the angular portion B' on the standard B so that the head 1 has a swivelling movement or is revolvable about the part B' under suitable control. Transversely of the head 1 at its upper portion is disposed the discharging shaft 2 operable by a handle 3 or any suitable motor means that might be mounted on the standard B if such means is desired to be used. However, as the mixer is intended to be a small type construction, it will preferably be made by manual operation by a handle like the crank handle 3. Fixed to the shaft 2 is the driving gear 4 which meshes with an internal driven gear 5 carried by the head or casting 6 at the closed end of the drum 7. The drum is of the tapering tiltable type which is known to be used considerably today. The casting 6 which carries the gear 5 receives a mounting shaft 8 and has a bearing 6a surrounding said shaft 8 so that the drum 7 may freely rotate on the shaft 8 as an axis. A cap 9 may be used to close the upper end of the bearing 6a and extend over the upper end of the shaft 8 and also contain a lubricant such as oil or grease.

Now since the supporting head 1 may be revolved about the part B' as an axis which may be maintained in the adjustment of Figure 1 wherein the mixing rotation of the drum 7 may be compelled to perform the mixing operation since the shaft 8 is secured by being keyed or pinned, as at 10, to the head 1, it will be apparent that by swinging

or revolving the head 1 around the upper part B' of the standard B, the drum 7 may be adjusted to occupy the position of Figure 2 and then when rotated the blades thereof will discharge the aggregates of mixed concrete therefrom. Any suitable blading construction may be employed in the drum.

It will be observed that the handle 3 and the shaft 2 constitute a driving means for rotating the drum 7 and they also constitute a means whereby the supporting head may be turned bodily or revolvable on the standard part B' to shift the drum from the position of Figure 1 to the position illustrated in Figure 2, and vice versa. It will be apparent that my mixing machine comprises practically nine parts of greatly simplified arrangement and construction. Also it will be apparent that the machine may be practically adjusted so that its mixing drum mixes in any position that may be reached in its revolving movement and discharges in any position that may be reached in its revolving movement.

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

1. In a concrete mixing machine, in combination, a base, a standard carried by said base and arranged at an angle to the vertical, a supporting head mounted on said standard and adapted to revolve about the standard as an axis, and a rotatable mixing drum carried by said head and adjustable by reason of movement with the head to assume discharging and non-discharging positions.

2. In a concrete mixing machine, in combination, a base, a standard carried by said base and arranged at an angle to the vertical, a supporting head mounted on said standard and adapted to revolve about the standard as an axis, and a rotatable mixing drum carried by said head and supported by reason of the angular disposition of the standard and head thereon in an upwardly inclined position when mixing, and in a downwardly inclined position when discharging, together with instrumentalities for causing rotation of the drum.

3. In a concrete mixing machine, in combination, a base, a standard carried by said base and arranged at an angle to the vertical, a supporting head mounted on said standard and adapted to revolve about the standard as an axis, and a rotatable mixing drum carried by said head and supported by reason of the angular disposition of the standard and head thereon in an upwardly inclined position when mixing, and in a downwardly inclined position when discharging, together with means common to the head and to the drum for revolving the head upon the standard and for rotating the drum relatively to the head.

4. In a concrete mixing machine, in com-

bination, a base, a standard projecting upwardly from the base, a rotatable head at the upper portion of the standard, a drum rotatably mounted upon said head, a bearing on the head supporting the drum for rotation, driving means on the head for rotating the drum upon said bearing, and means for actuating the head and turning the same upon the standard, the said standard having a portion at an angle to the vertical which supports said head.

In testimony whereof I affix my signature.
VAINO PIISPANEN.

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