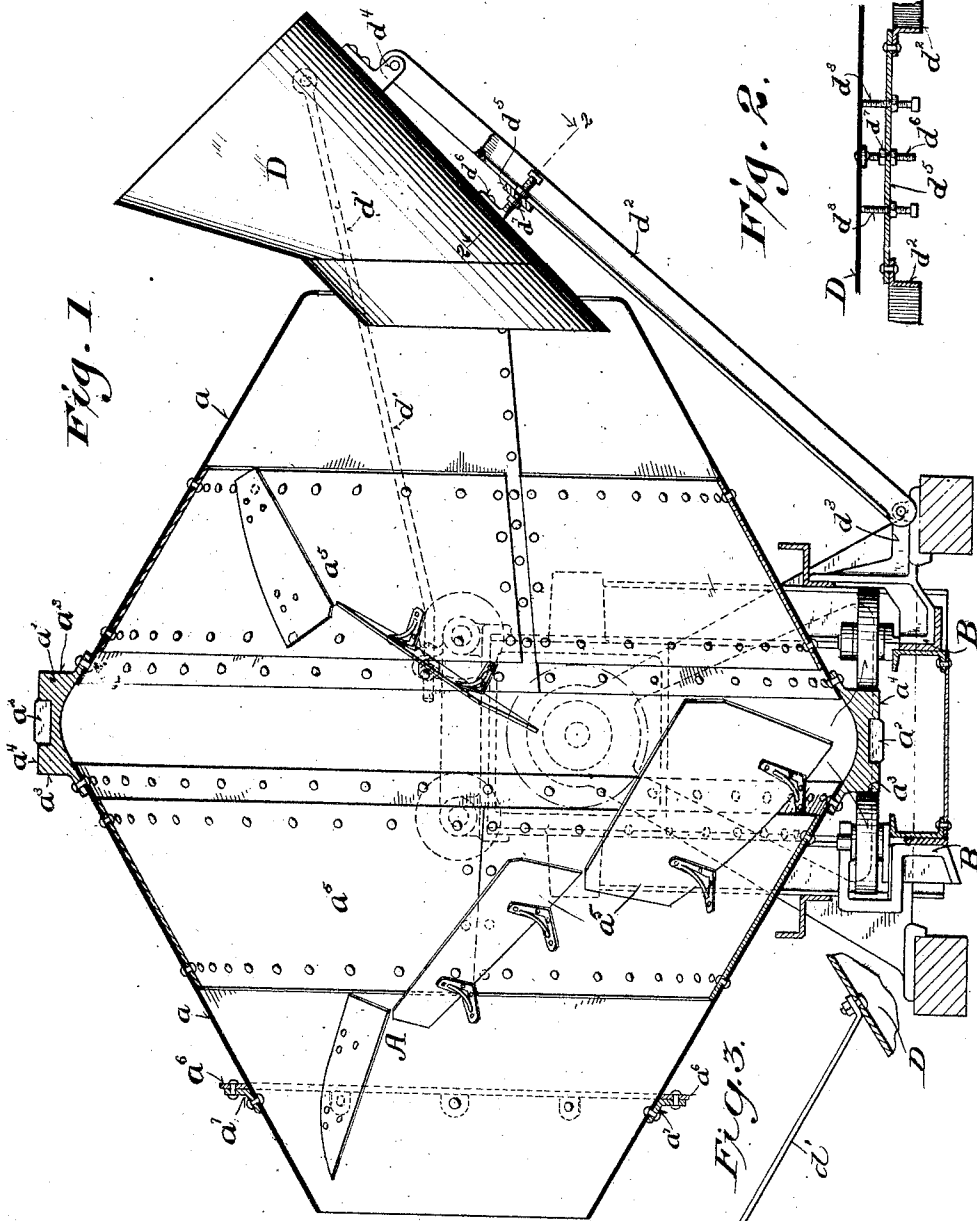


T. L. SMITH.
CONCRETE MIXER.

APPLICATION FILED NOV. 2, 1906.

1,058,803.

Patented Apr. 15, 1913.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS L. SMITH, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE T. L. SMITH COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

CONCRETE-MIXER.

1,058,803.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed November 2, 1906. Serial No. 341,792.

To all whom it may concern:

Be it known that I, THOMAS L. SMITH, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Concrete-Mixers, of which the following is a specification.

My invention relates to improvements in concrete mixing machines, in which a rotating drum is employed, and which is tilted to discharge, and the object of my improvement is to increase the durability of the feed spout, which necessarily remains stationary in the feed end of the revolving drum, by providing adequate supports and adjustments to maintain the spout free from wearing contact with the revolving drum. I attain this object by the various features of construction shown in the accompanying drawing, which is hereby made a part of this application, and in which—

Figure 1 is a vertical section taken through the center and lengthwise of the mixing drum, the feed spout with its supports, and the lower guide rollers being shown in elevation. Fig. 2 is a section through the spout adjusting device, taken on the line 2—2, of Fig. 1. Fig. 3 is a detail view of one of the guy rods and its connections with the frame and the spout.

Similar letters refer to the same parts throughout the several views.

It will be understood that the machine herein shown is the same machine, with slight modifications, as the one shown in my Patent No. 690783, Jan. 7, 1902, and as the various details of supporting, driving, and tilting the drum do not differ therefrom they are shown in dotted lines only.

In the drawing A is the revolving drum, composed of the two conical steel plate portions a , a , riveted to the central gear ring a^1 . The teeth, a^2 , of this gear ring are the means by which the drum is rotated, and it is supported entirely by rollers mounted in the trunnioned tiltable frame portion, B, said rollers engaging the sides of the ring, as at a^3 . In the present illustration, only two of these guide rollers, b , b , are shown.

a^4 , a^4 , are the mixing blades, which are attached to the interior of the drum. As the drum revolves, these blades throw the material to be mixed back and forth across the central transverse plane of the drum, and also lift the material and let it fall to another peripheral portion of the drum.

The material of which concrete is composed consists frequently of sharp crushed stone, sharp sand and cement. The continual movement of the material, particularly of the sharp stone, is wearing on the steel plates of the drum. This wearing is destructive of the drum at its larger diameter near the cast gear ring, where the stone falls the greatest distance from the blades. When the drum is perforated or materially weakened by this constant wear, entire reconstruction of the drum is necessitated, and owing to the peculiar shape of the drum, and the fact that it must run true, this reconstruction cannot be satisfactorily effected, away from the factory where it was made. I have therefore devised the wear plates, a^5 , which can be riveted in the drum in any blacksmith shop, and in fact this work could generally be done by the contractor himself. It will be understood that these plates a^5 are not so much strengthening plates as they are wear plates. Whenever they are worn very thin or worn through, the rivets which hold these plates, and nothing but these plates, should be cut out and new plates substituted for the old ones. It will be noted that it is not necessary for these wear plates to fit the drum nicely; it is only essential to have the rivets tight in the holes in the drum, to prevent leakage.

a^6 is a ring or flange, extending in a plane at right angles to the axis of the drum, and secured in place by a series of small brackets, riveted to the drum and ring.

The drum of this machine is discharged by tilting it by means of the trunnion mounted tiltable frame B to an angle of 45 degrees to the horizontal, while it is revolving. When the drum is tilted back into horizontal position, a little of the more fluid part of the mortar runs down the outside of the drum, and would eventually get onto the guiding and supporting faces of the gear ring. The drip ring, a^8 , intercepts this fluid mortar creeping along the exterior of the drum, and the mortar drips harmlessly from the periphery of this ring. The guiding and supporting rollers and the drum gear ring are thus protected from the clogging and wearing action of the mortar.

The hopper and spout, D, is the means by which the material, crushed stone, sand, cement and water, is introduced to the re-

volving drum, A. This spout is supported from the frame, B, by means of guy rods, $d^1 d^1$, shown in dotted lines, and the braces, $d^2 d^2$, pivoted to the frame at d^3 , and the spout at d^4 .

d^5 is a cross bar, riveted to the braces d^2 . The stud, d^6 , which is riveted to the spout, engages the cross bar d^5 , by means of the clamping nuts. The set screws, d^8 , tapped into the cross bar, d^5 , also help to support the spout D, in its adjusted position relative to the braces d^2 . By means of the stud d^6 , and clamping nuts, d^7 , the drum entering end of the spout may be adjusted in the drum opening, by swinging it slightly in a vertical plane around the pivot at d^4 . The stud, d^6 and the horizontal pivot at d^4 prevent the spout getting out of position laterally.

As these machines are generally used in the construction of bridges, dams, piers, and various kinds of field work, remote from repair shops, and as they are subjected to very rough treatment, all improvements tending to increase their durability become important.

What I claim is,—

1. In a concrete mixer a frame, a drum rotatably mounted therein, a feed spout entering said drum, braces pivoted to the bottom of said frame and to the top of said spout, adjustable guy rods connected to the top of said frame and to said spout, and adjusting and securing means engaging between said braces and the lower portion of said spout.

2. A concrete mixer, comprising a frame,

a drum rotatably mounted thereon, a feed spout entering said drum, braces connected to said frame and pivoted to said spout, guy rods connected to the frame and to said spout, and adjusting means between the braces and the spout.

3. A concrete mixer, comprising a frame, a drum rotatably mounted thereon, a feed spout entering said drum, braces connected to the frame and pivoted to the feed spout, a cross bar connecting the braces, a stud on the feed spout passing through an opening in the cross bar, and nuts threaded on the stud and engaging the opposite sides of the cross bar whereby the position of the feed spout may be adjusted with relation to the opening of the drum.

4. A concrete mixer, comprising a frame, a drum rotatably mounted thereon, a feed spout entering said drum, braces connected to the frame and pivoted to the spout, a cross bar connecting the braces, a stud on the feed spout passing through an opening of the cross bar, nuts threaded on the stud and bearing on opposite sides of the cross bar whereby the feed spout may be adjusted with relation to the opening of the drum, and set screws threaded in the cross bar and bearing on the feed spout to steady it in its adjusted positions.

In testimony whereof, I have signed my name to this specification in the presence of two witnesses.

THOMAS L. SMITH.

Witnesses:

CHARLES F. SMITH,
F. B. MARSHALL.