T. L. SMITH.

CONCRETE MIXER.

APPLICATION FILED SEPT. 19, 1907.

1,069,491.

Patented Aug. 5, 1913.

2 SHEETS—SHEET 1.

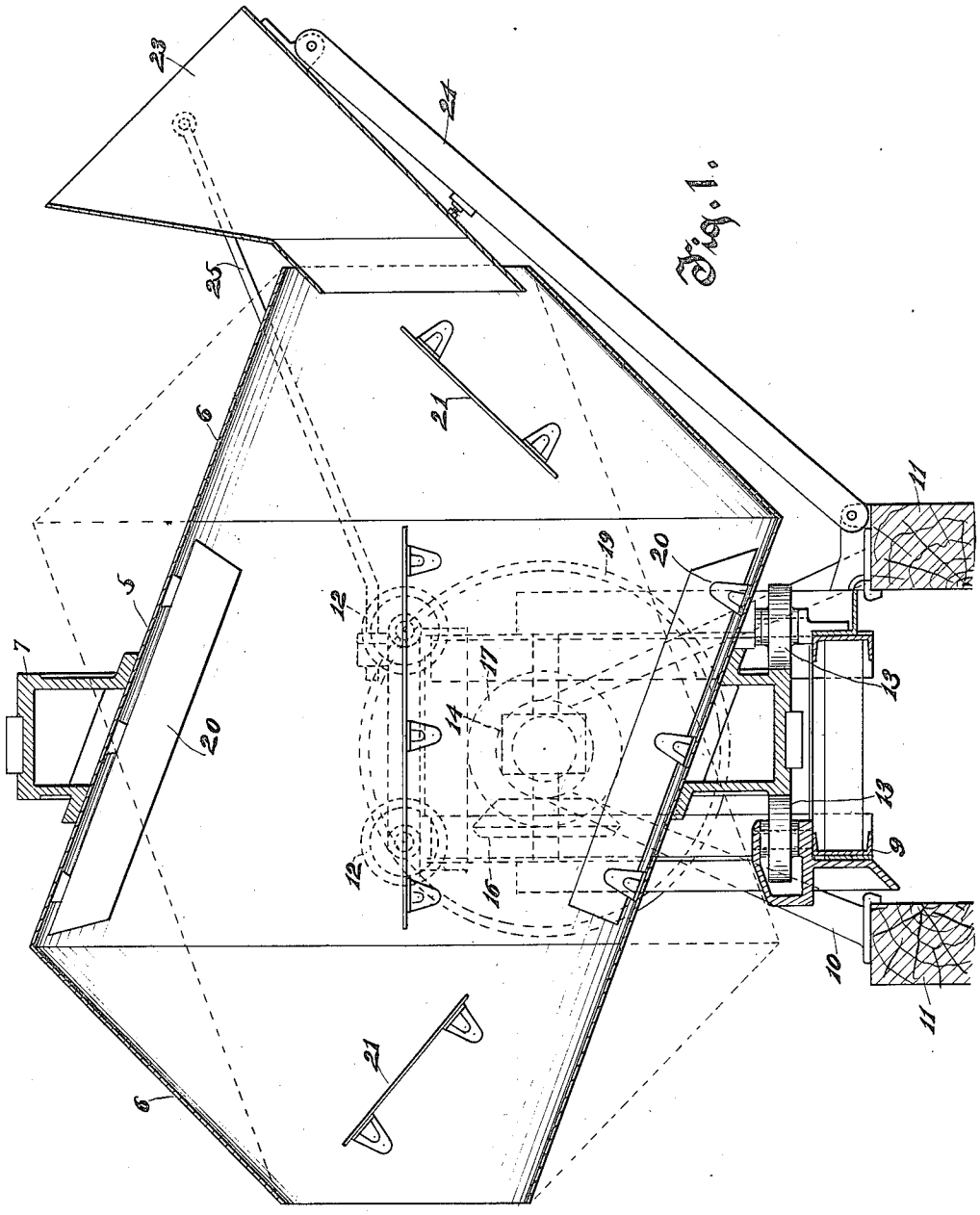

Fig. 1.

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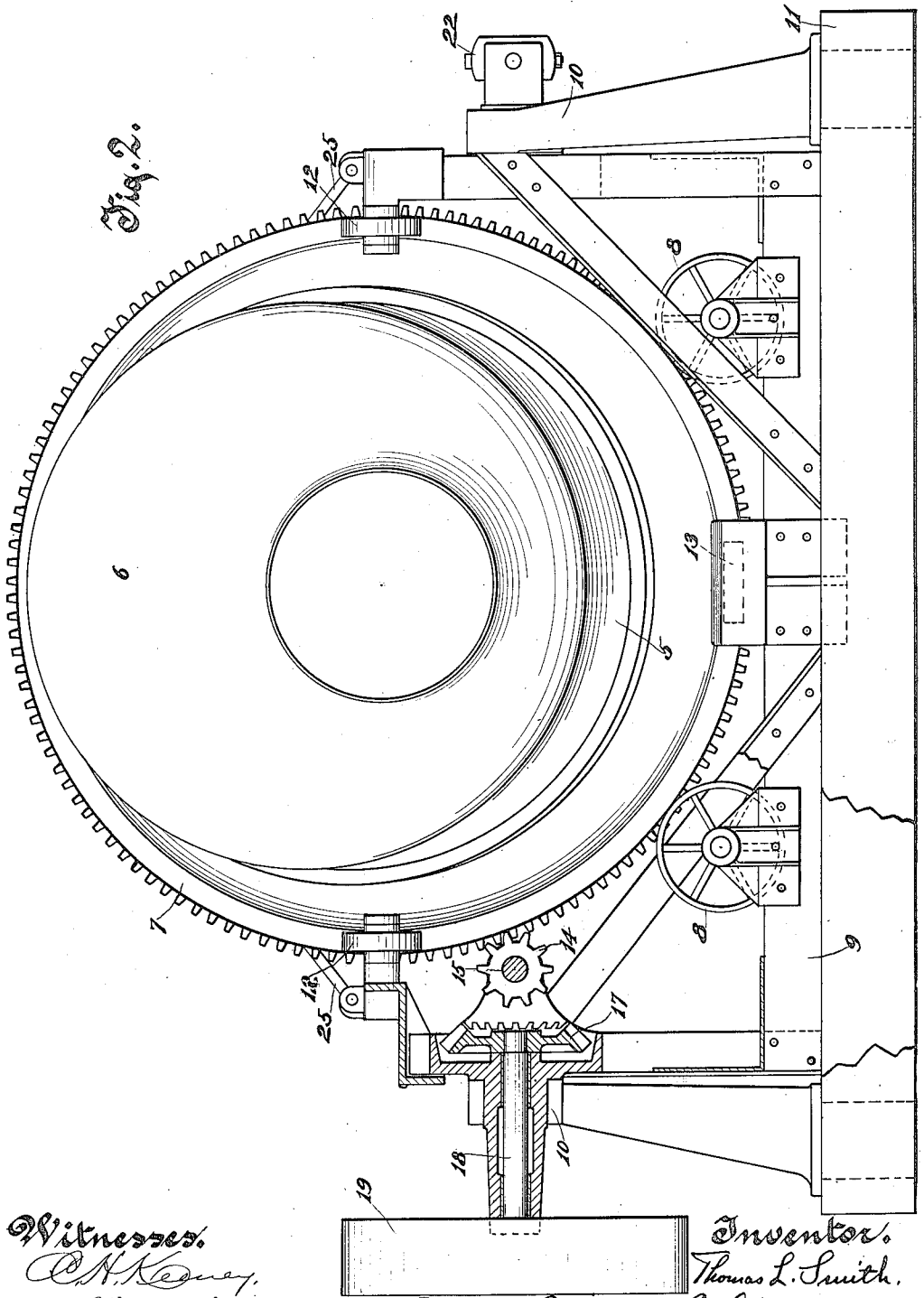
2 SHEETS—SHEET 2.

Fig. 2.



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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.

1,069,491. Specification of Letters Patent. Patented Aug. 5, 1913.

Application filed September 19, 1907. Serial No. 393,602.

To all whom it may concern:

Be it known that I, THOMAS L. SMITH, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Concrete-Mixers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention has for its object to provide a concrete mixer of such a construction that the material will be thrown from one end of the drum to the other thereof during its rotation to effect a thorough mixture, said drum being preferably of a cylindrical shape with its axis at an angle to the axis of rotation and provided with conical end hoods which are of a truncated oblique cone shape with their openings at the axis of rotation of the drum.

With the above and other objects in view, the invention consists in the concrete mixer herein claimed, its parts and combinations of parts and all equivalents.

Referring to the accompanying drawings in which like characters of reference indicate the same parts in the different views; Figure 1 is a central longitudinal sectional view of a mixing machine constructed in accordance with this invention, one position of the mixing drum being shown in full lines and its position after receiving a half turn being shown in dotted lines; and, Fig. 2 is an end elevation thereof with parts sectioned for clearness of illustration.

In these drawings the base and driving mechanism, except the gear and track ring, are of the same construction as now used with a well known type of concrete mixer somewhat similar to the construction shown in Letters Patent issued to me on January 7, 1902, No. 690,783, and the gear and track ring only differs from the former construction in the shape given to its bore which is necessary to conform to the shape of the mixing drum here employed.

The mixing drum comprises a central section 5 which is cylindrical or nearly so and is mounted to rotate on a horizontal axis while its axis is at a decided angle to the axis of rotation, the ends of the central cylindrical section lying in vertical planes at right angles to the axis of rotation and having secured thereto end hoods 6 which are of the shape of a truncated oblique cone, with their open smaller ends in vertical planes and centered upon the axis of rotation of the drum.

A gear and track ring 7 is mounted on the central section 5, being supported by rollers 8 journaled on a swinging frame 9 which is suspended from trunnion bearings 10 on a portable stationary frame 11. Guide rollers 12 are mounted on the upper part of the swinging frame to bear on opposite sides of the track ring and hold it in position and similar guide rollers 13 are likewise journaled in the lower part of the swinging frame for the same purpose.

A pinion 14 is carried by a shaft 15 which is journaled in the swinging frame and meshes with the gear teeth on the periphery of the gear and track ring 7 for turning the drum, said shaft having a beveled gear 16 meshing with a beveled gear 17 on a drive shaft 18 which is journaled through one of the trunnions of the swinging frame and carries a belt pulley 19 on its outer end.

The cylindrical central portion 5 of the drum is provided with the usual mixing blades 20 and the conical end hoods 6 have similar blades 21 to lift and drop the material and cause it to become thoroughly mixed.

A handle 22 is formed on one of the trunnions of the swinging frame by means of which the entire swinging frame and mixing drum may be swung upon the trunnions so as to bring the mixing drum to an inclined position for discharging the contents through the discharge opening at the left of Fig. 1. In the opening at the other end of the drum is a charging hopper 23 which is supported by a link 24 connected with the stationary frame and by rods 25 mounted on the swinging frame, so as to be movable with the drum.

In operation the drum is caused to rotate on a horizontal axis passing through the centers of the openings in its ends, by means of the driving mechanism as usual, and in rotating the drum will change from the position shown in full lines in Fig. 1 to the position shown in dotted lines, so that besides the material being lifted and dumped by the mixing blades it is shifted from one end of the drum to the other and thus becomes thoroughly mixed. When the mixing operation is completed the drum is tilted as usual so as to discharge the mixture

through the discharge opening, the drum being turned meanwhile if desired to thoroughly rid it of the contents.

Obviously the drum need not be truly cylindrical in form as the mixing effect is the same when it is elliptical in cross section, and consequently the term "approximately cylindrical" as here employed is intended to comprehend such modifications.

What I claim as my invention is:

1. A mixing machine comprising a drum formed of an approximately cylindrical body or shell portion terminating in vertical planes at right angles to the axis of rotation, with end hoods of the shape of truncated oblique cones with their open ends centered on the axis of rotation of the drum and their bases connected with the edges of the body portion; means for rotatably supporting the drum with its body portion oblique to its axis of rotation, and means for tilting the drum.

2. A mixing machine comprising a drum formed of an approximately cylindrical body or shell portion with end hoods of the shape of truncated oblique cones with their open ends centered on the axis of rotation of the drum and their bases connected with the edges of the body portion, means for rotatably supporting the drum with its body portion oblique to its axis of rotation, and means for tilting the drum, each end hood having one portion thereof in alinement with a portion of the body portion, whereby the drum in its respective inclined positions presents an uninterrupted chute-like surface formed by the bottom of the body portion and the end hood with which it is in alinement and presents a pocket at the lower end of the chute formed by the bottom of the body portion and the other end hood.

In testimony whereof, I affix my signature, in presence of two witnesses.

THOMAS L. SMITH.

Witnesses:
A. L. MORSELL,
ANNA F. SCHMIDTBAUER.