

A. G. OLSEN.  
CEMENT MIXER.

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913,425.

Patented Feb. 23, 1909.

Fig. 1

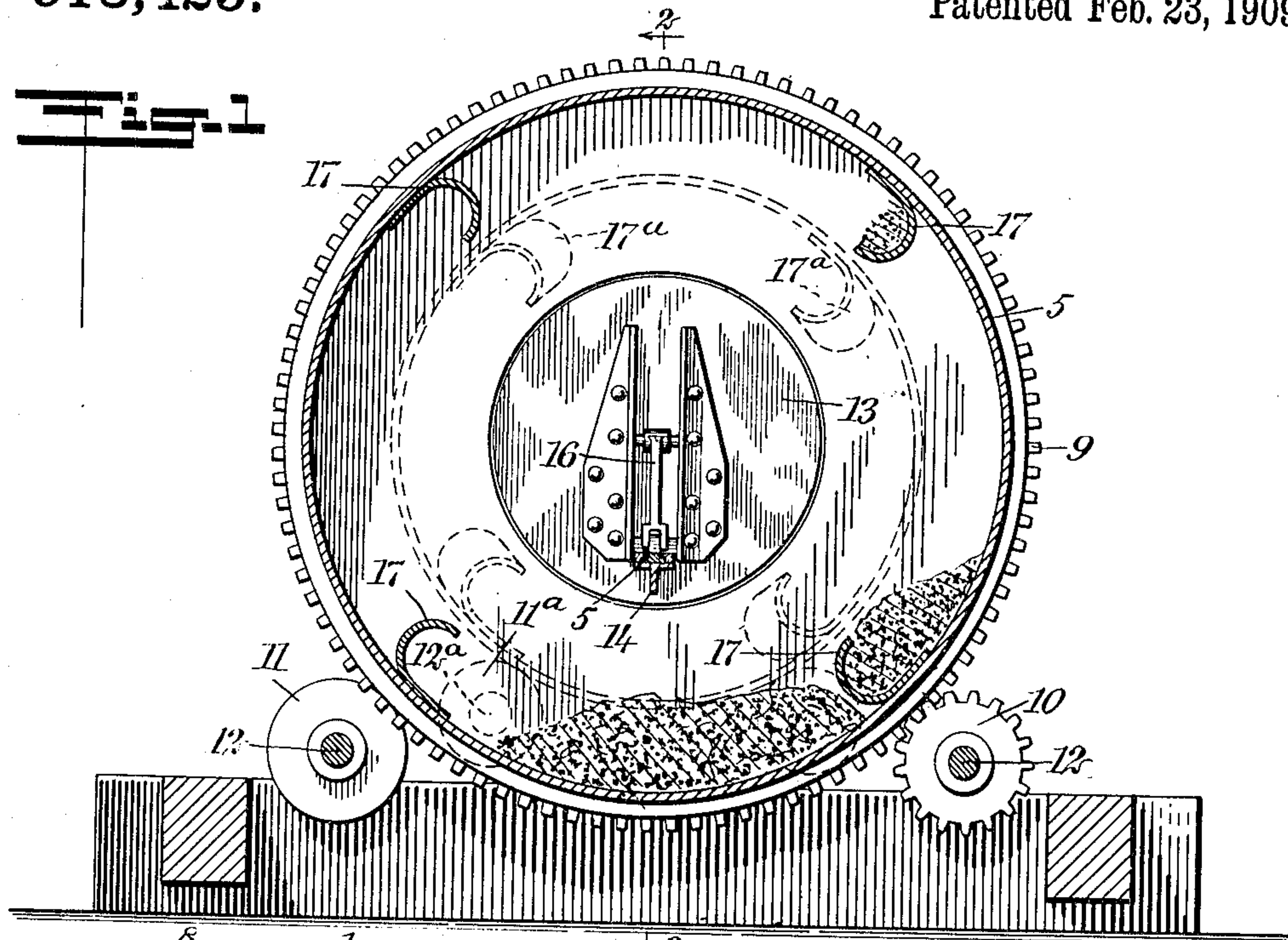
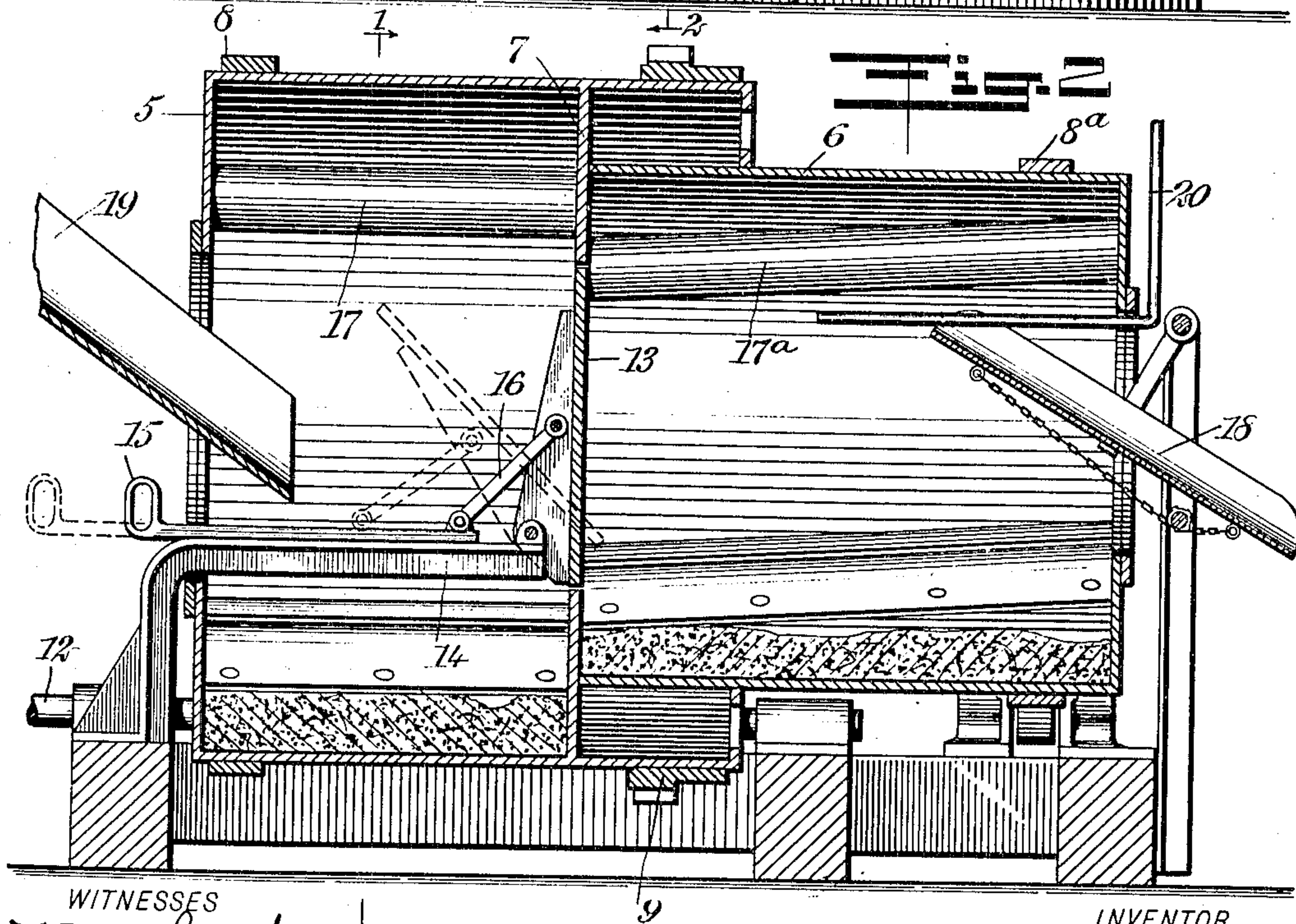


Fig. 2



WITNESSES

F. D. Sweet.  $\frac{1}{1}$   
W. W. Sweet

INVENTOR

Alfred G. Olsen

BY *Mum & Co*

ATTORNEYS



# UNITED STATES PATENT OFFICE.

ALFRED GERHARD OLSEN, OF ELKHORN, WISCONSIN.

## CEMENT-MIXER.

No. 913,425.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed February 12, 1908. Serial No. 415,468.

*To all whom it may concern:*

Be it known that I, ALFRED G. OLSEN, a citizen of the United States, and a resident of Elkhorn, in the county of Walworth and State of Wisconsin, have invented a new and Improved Cement-Mixer, of which the following is a full, clear, and exact description.

This invention is an improvement in cement mixers, and has for its purpose to provide for a uniform and rapid mixing of the ingredients, especially avoiding the collection of fine cement on the inside of the compartment or drum in which the wetting of the mass takes place. This collecting of the cement makes it necessary in the operation of the usual mixer to pound the drum and scrape it frequently on the inside to break the caked cement loose. The caking of the cement also has the effect of contracting the capacity of the mixer and rendering it less efficient in operation, in addition to causing some of the mixings to be too poor in cement and too thin, and in others, as when the cake breaks loose, to contain a higher percentage of cement than desired and be also too thick. I have, however, found by experience that in order to obtain the best results the aggregates when mixed dry should be widely scattered, but after the wetting takes place they should be confined as much as is possible consistent with thorough mixing, since a portion of the mass wets a contiguous portion and so on until the moisture is uniformly distributed. The confining or gathering together of the aggregates during the moistening period also excludes a large per cent. of the air that would otherwise obtain access and start a premature setting.

With these objects in view I preferably construct my improved mixer in the form of two adjoining revoluble drums concentrically arranged, one of which serves to mix the aggregates in the dry state and the other for receiving the dry mixed materials and mixing them with the water added, the dry-mixing drum being of larger diameter than the wet-mixing drum, but of substantially the same capacity.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a cross-section of a cement mixer embodying my invention substantially on the line 1—1 of Fig. 2; and Fig. 2 is a

longitudinal central section of the same on the line 2—2 of Fig. 1.

More specifically described, the mixer embodies in its construction two drums 5 and 6 respectively, the drum 5 which initially mixes the ingredients in a dry state being of larger diameter but of substantially the same capacity as the drum 6. These drums are rigidly connected, with the drum 6 telescoping in the rear end of the drum 5 and separated therefrom by a partition 7. The drums respectively have peripheral tracks 8 and 8<sup>a</sup>, and the larger drum a peripheral gear 9 arranged thereabout over the telescoping end of the other drum, the track 8 and gear being respectively engaged by a driving pinion 10, and rollers 11 mounted on the usual longitudinal shafts 12, located under the drums at the opposite sides of a central vertical plane, and the track 8<sup>a</sup> resting on rollers 11<sup>a</sup> carried by shafts 12<sup>a</sup>, similarly situated, as shown in dotted outline in Fig. 1. The manner of joining the drums together and supporting them at their telescoping portions distributes the weight uniformly on the bearings of the shafts.

The partition 7 has a central door or closure 13 of circular form which is pivotally supported at its bottom on an arm 14, laterally extending within the drum 5, the said arm serving as a guide for a manually-operated lever 15, having a connection with the closure above its point of pivotal support through the intermediary of a link 16, this construction admitting of the closure being moved to and from the inclined dotted position shown in Fig. 2, by the reciprocation of the lever. Both the drums 5 and 6 have attached on their inner surfaces longitudinally-extending scoops or buckets 17 and 17<sup>a</sup> respectively, the scoops 17<sup>a</sup> of the drum 6 inclining in a direction to discharge on an adjustable chute 18.

In the operation of the mixer, the aggregates are introduced into the open end of the drum 5 either by shoveling them directly thereinto or through a chute 19, and are thoroughly mixed while the closure 13 remains closed. When the dry mixing is completed the closure 13 is thrown down to the dotted inclined position shown in Fig. 2, in which position it operates to discharge the mass into the drum 6 as the said mass is carried to an elevation by the scoops 17 and dropped. When the dry-mixing drum is



substantially empty it is in readiness to be again charged with the ingredients, which it will mix as the wet-mixing in the drum 6 proceeds. As the mass is thoroughly mixed 5 when introduced into the drum 6, the tendency of the fine cement to cake on its inner wetted surface will be materially lessened, and, in fact, I have found in practice to be inappreciable. The moistening of the uni- 10 formly mixed aggregates will also quickly take place by virtue of the diminished diameter of the drum and will exclude a large quantity of air which will have the effect of preventing the premature setting of the 15 cement. For moistening the materials in the drum 6 I have shown a pipe 20 leading thereinto from any suitable source of water supply. When the mixing of the wet material is completed the chute 18 is introduced, 20 as shown in Fig. 2, and discharges the mass by the aid of the buckets 17<sup>a</sup>.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

25 1. In a mixing machine, the combination of two drums rigidly connected and revolvably mounted, one of said drums being of smaller diameter than the other drum and telescoping therein, and a closure between 30 the drums stationary with respect to the revolution thereof for discharging the contents of the larger drum into the smaller drum.

35 2. In a mixing machine, the combination of two drums rigidly connected and revolvably mounted, a partition separating said drums having an opening, an approximately vertically arranged closure for closing the

partition opening, and means for moving the door to an inclined position into one of 40 said drums to discharge the material therefrom into the other drum.

3. In a mixing machine, a support, a drum revolvably mounted having a closure disconnected therefrom at the discharge end there- 45 of and carried on said support, and means for moving the door to an inclined position within the drum to discharge the material therefrom.

4. In a mixing machine, a stationary sup- 50 port, and a revolvably mounted drum having a closure in the discharge end thereof pivoted at its bottom to the support, adapting it to swing to an inclined position within the drum to discharge the material there- 55 from.

5. In a mixing machine, the combination of two drums rigidly connected together and revolvably mounted, a partition separating the drums having an opening provided with 60 a closure, an arm laterally projecting within one of said drums, pivotally supporting the closure near the lower portion thereof, a manually controlled lever slidably supported 65 on the arm, and a link connecting the lever with the closure, whereby said closure may be moved to an inclined position within one of said drums to discharge the ingredients therefrom into the other drum.

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

ALFRED GERHARD OLSEN.

Witnesses:

JAY G. LYON,

JESSIE L. SPRAGUE.