

P. A. KOEHRING.

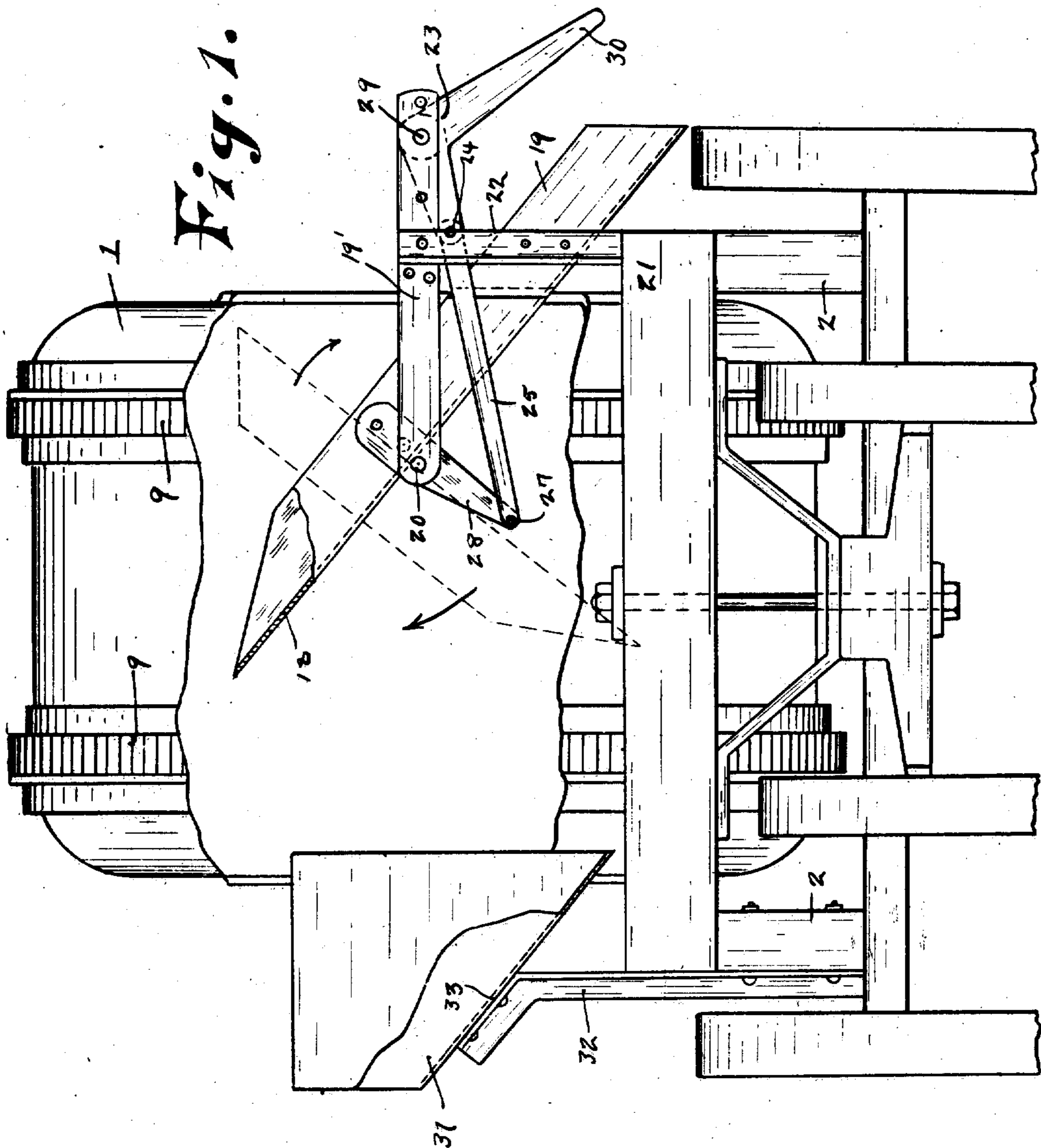
CONCRETE MIXER.

APPLICATION FILED MAY 15, 1907.

899,414.

Patented Sept. 22, 1908.

2 SHEETS—SHEET 1.



WITNESSES:

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INVENTOR

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2 SHEETS—SHEET 2.

Fig. 2.

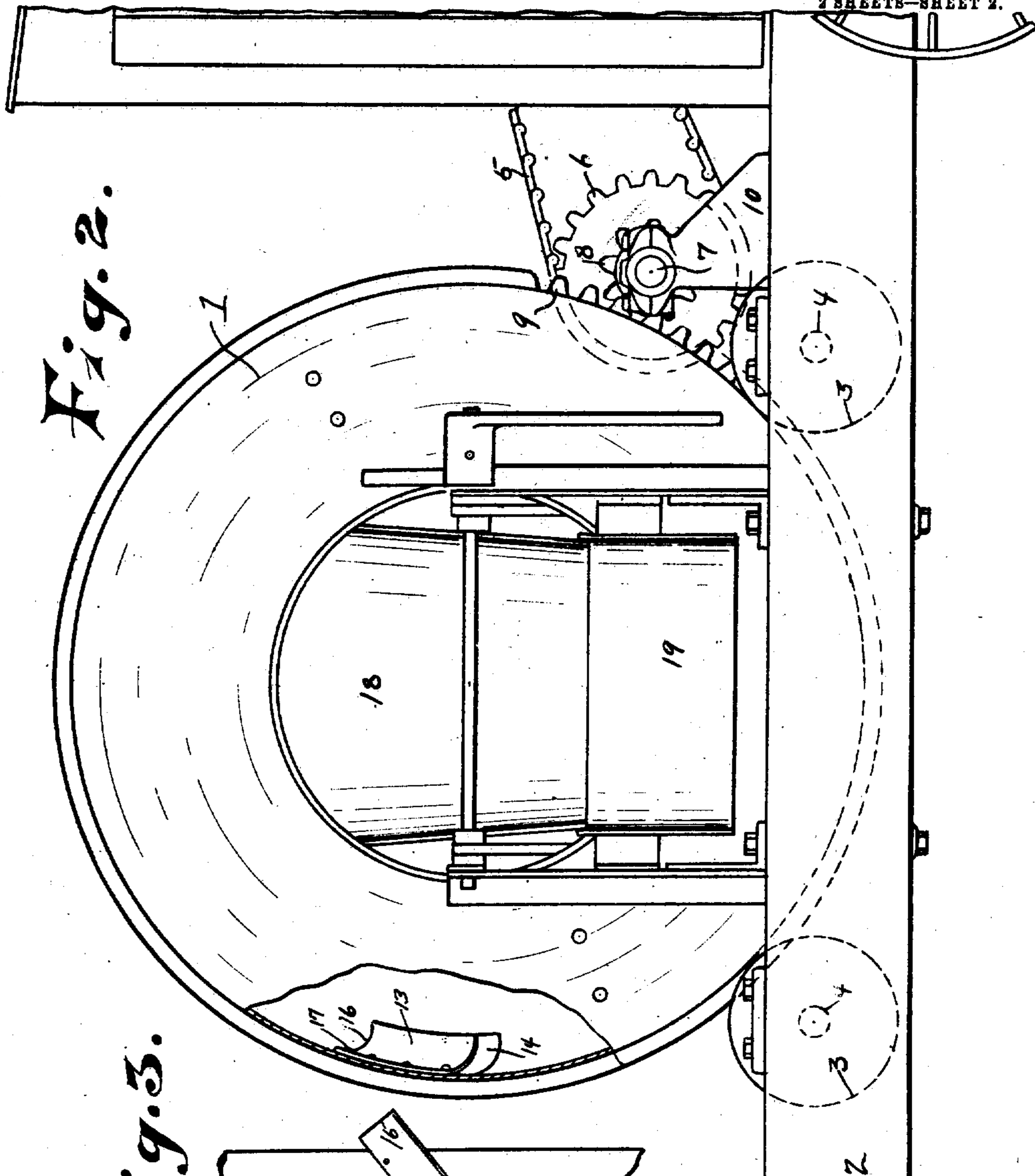
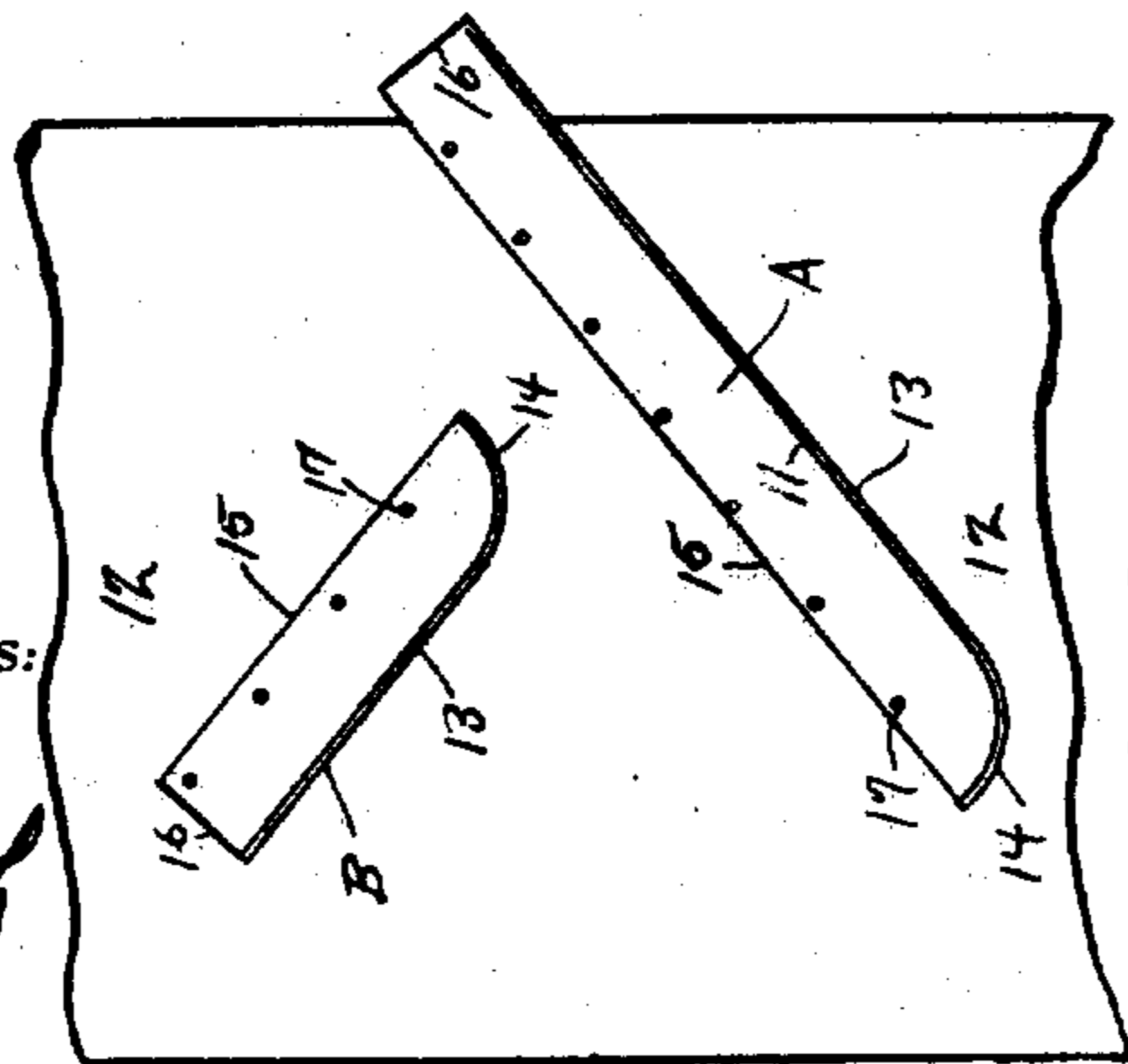


Fig. 3.



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UNITED STATES PATENT OFFICE.

CONCRETE-MIXER.

No. 899,414.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed May 15, 1907. Serial No. 373,768.

To all whom it may concern:

Be it known that I, PHILIP A. KOEHRING, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Concrete-Mixers, of which the following is a specification.

My invention relates to that class of concrete mixers in which cement, sand and other material of which the concrete is composed, are mixed together preparatory to being used within a revoluble drum and it pertains more especially among other things, to the means employed for discharging the concrete from the outlet toward the inlet side of the drum and for discharging the same when properly mixed from the drum while the same is being revolved into a stationary receptacle.

The construction of my device is explained by reference to the accompanying drawings in which,

Figure 1 is a side view part broken away to show the interior of the drum. Fig. 2 is an end view part broken away, and Fig. 3 is a detail showing the relative arrangement of the mixing buckets.

Like parts are identified by the same reference figures throughout the several views.

1 represents the drum which is revolubly supported from the frame 2 of the vehicle through the rollers 3, 3, and roller supporting shaft 4. Motion is communicated to the drum 1 from the sprocket chain 5 through the sprocket wheel 6, wheel supporting shaft 7, pinions 8 and two annular series of cog teeth 9, 9, which series of teeth 9 are secured to the periphery of the drum. The shaft 7 is supported from the frame 2 at its respective ends from the bracket 10. The mechanism thus far described is substantially of ordinary construction.

My invention pertains more especially, as previously suggested, to the means employed for discharging the contents of the drum therefrom as the same is being revolved as hereinafter described. The buckets of the series 12 comprise the bottom portion 13, the lower end 14 which curves upwardly and terminates flush with the upper edge 15, reference being had to the position of said buckets as shown in Figs. 2 and 3, while the rear wall 16 is formed at substantially right angles to the bottom portion 13 and said buckets are secured to the inner wall of the drum by a plurality of rivets 17.

Each alternate bucket A of the series is preferably made longer than the intermediate buckets B and extends laterally to near the end of the drum as shown in Fig. 3 and each alternate bucket of said series is inclined at opposite directions as indicated in Fig. 3. For example, the long buckets A are inclined downwardly and toward the left and are adapted as the drum is revolved to discharge their contents toward the end of the drum upon the left hand side thereof, while each alternate bucket B inclines downwardly toward the right at substantially right angles to the buckets A, whereby the contents of such buckets as the drum is revolved will be discharged toward the opposite end of the drum. Thus as said drum is revolved, the contents therein will be alternately thrown toward the right and left, the same being discharged from the buckets of the series as they approach and rise above the longitudinal axis of the drum, whereby the contents of the drum becomes thoroughly mixed.

When the contents of the drum has been thoroughly mixed, the same is discharged therefrom while the drum is revolving through the pivotally supported trough 18 and the stationary extension thereof, 19. The trough 18 is pivotally supported at its respective sides from the horizontal arms 19 upon the pivotal bolt or rod 20, said arms 19 being connected with the frame 21 by the standard 22 in the ordinary manner.

While the concrete is being mixed preparatory to discharging the same, the pivotally supported trough 18 is inclined downwardly and inwardly as indicated in dotted lines in Fig. 1, whereby the concrete as it falls from the buckets therein will discharge toward the left hand side of the drum, reference being had to Fig. 1. When, however, the concrete has been sufficiently mixed and it is desirous to discharge the same, the trough 18 is turned upon its supporting pivot 20 from the position indicated in dotted lines, to that shown, in Fig. 1, when its outer portion is adapted to rest within the inner end of the portion 19, whereby as the concrete is carried up by the revolving buckets it will be discharged from the drum through said pivotal trough 18 and stationary extension 19 thereof. Motion is communicated to the pivotally supported trough for the purpose of inclining the same in the two positions shown and indicated through the elbow crank lever 23, pivotal bolt 24, link 25, pivotal bolt 27 and lever 28, the

elbow crank lever 23 is pivotally supported from one of the arms 19 upon the bolt 29. Thus it will be obvious that by pressing downwardly upon the arm 30 of the elbow crank lever 23, motion will be communicated to the pivotally supported trough 18 and the same will be inclined from the position shown to that indicated in dotted lines in Fig. 1. When, however, it is desired to discharge the contents of the drum therefrom, said trough is brought back to its normal position shown by drawing upwardly upon the arm 30. 31 is a hopper through which the material to be mixed is discharged into the drum as the same is being revolved. The hopper 31 is supported from the supporting frame of the vehicle upon the standards 32 with which standards it is connected by the rivets 33 in the ordinary manner. The frame 2 upon which the drum 1 is supported is preferably supported on a wheeled vehicle of ordinary construction by which the machine is readily transported from one place to another.

The respective ends of the drum 1 are preferably curved inwardly toward the center of the drum, whereby the concrete mixed therein has a tendency as the drum is revolved to be thrown by gravity toward the center of the drum in position to be acted upon and elevated by the annular series of buckets and whereby the tendency of the concrete to accumulate as heretofore in the corners between the ends and the periphery of the drum is thereby avoided.

It will be understood that the arm 28 is rigidly affixed to the side of the trough 18 by nails, screws, or in any ordinary well known manner. It will also be understood that when the trough 18 is inclined in the position indicated in dotted lines in Fig. 1, the con-

crete which is deposited therein by the revolving drum will be discharged toward the inlet side of the drum. Also that when said trough is inclined in the opposite direction as shown in Fig. 1, the concrete will be discharged from the drum into the stationary trough 19.

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

1. In a concrete mixer, the combination of a revoluble drum having separate receiving and discharge openings at its respective ends, a stationary hopper having its discharge end within one of the openings of said drum, arms connected with the drum supporting frame and projecting into the drum at its discharge end, a reversely inclinable trough pivoted to the inner ends of said arms and means for manually changing the inclination of said trough upon its pivotal support.

2. In a concrete mixer, the combination of a revoluble drum having separate receiving and discharge openings at its respective ends, a stationary hopper, having its discharge end within one of the openings of said drum, a stationary trough supported from the exterior near the opposite end of said drum, arms connected with the drum supporting frame and projecting into the drum at its discharge end only, and a reversely inclinable trough pivoted to the inner ends of said arms and adapted to contact with said stationary trough.

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

PHILIP A. KOEHRING.

Witnesses:

JAS. B. ERWIN;
O. R. ERWIN.