

R. G. LEVERICH.
CONCRETE MIXING MACHINE.
APPLICATION FILED DEC. 18, 1908.

941,998.

Patented Nov. 30, 1909.

2 SHEETS—SHEET 1.

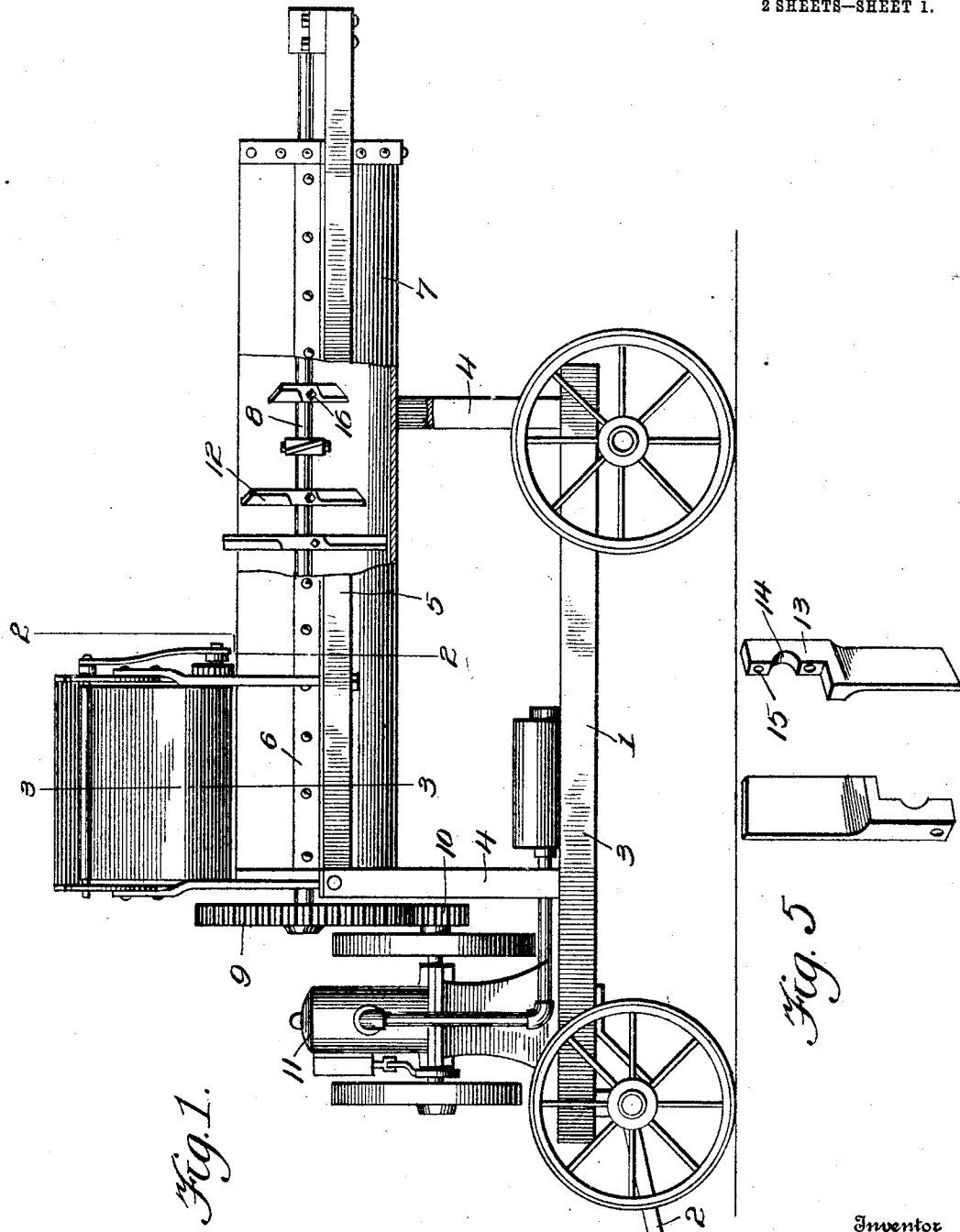


Fig. 1.

Fig. 5.

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Witnesses

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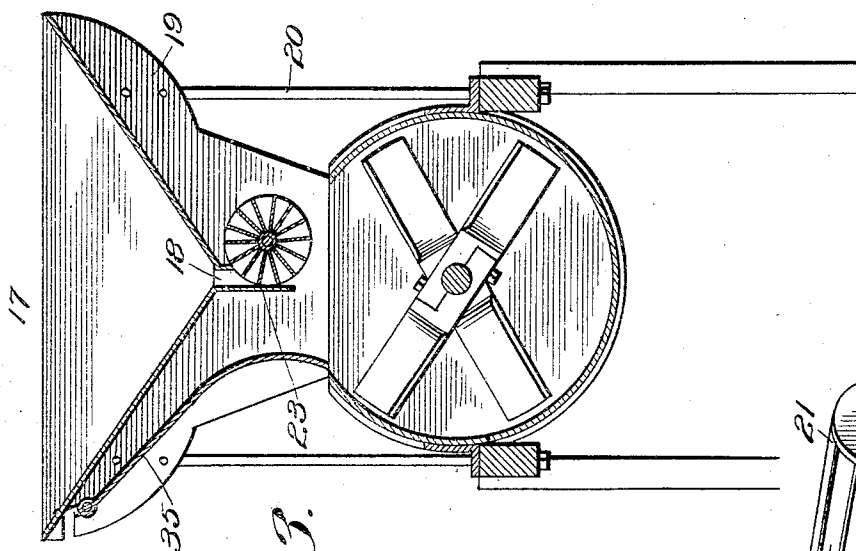


Fig. 3.

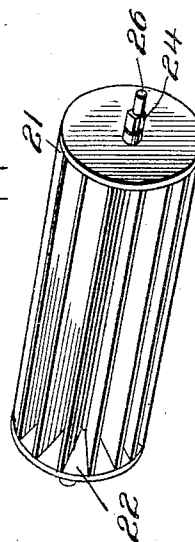


Fig. 4.

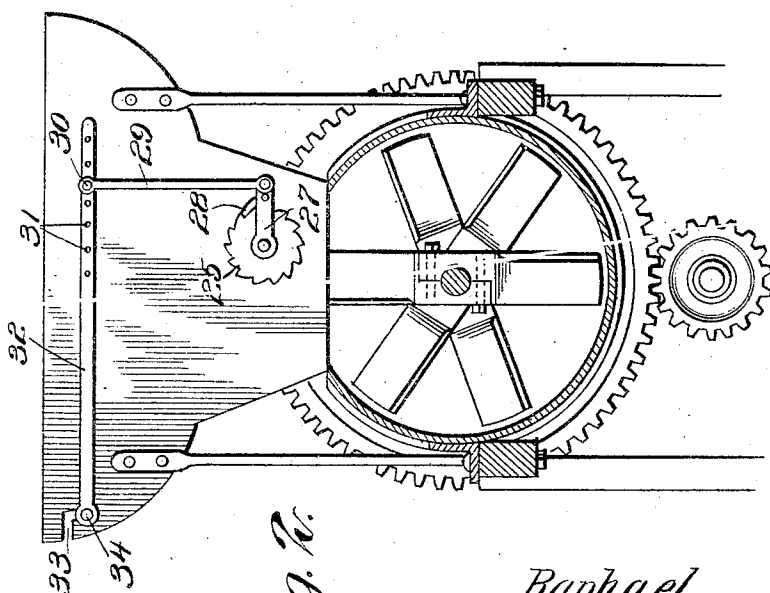


Fig. 5.

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UNITED STATES PATENT OFFICE.

RAPHAEL G. LEVERICH, OF BERRIEN SPRINGS, MICHIGAN.

CONCRETE-MIXING MACHINE.

941,998.

Specification of Letters Patent.

Patented Nov. 30, 1909.

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To all whom it may concern:

Be it known that I, RAPHAEL G. LEVERICH, a citizen of the United States, residing at Berrien Springs, in the county of Berrien and State of Michigan, have invented new and useful Improvements in Concrete-Mixing Machines, of which the following is a specification.

This invention relates to concrete mixing machines, and the main object of the invention is to provide a portable mixer provided with a suitable source of power whereby the agitator or mixing arms of the device are rotated within the suitable cylindrical receptacle, the device being provided with a cement chamber positioned above the mixing chamber and having a suitable outlet communicating with a cylindrical element having a plurality of pockets, this cylindrical measuring element being provided with a central shaft adapted to be operated by a suitable pawl and ratchet mechanism as the broken stone or brick is thrown within the mixing chamber.

With the above and other objects in view which will appear as the description progresses, the invention resides in the novel construction and arrangement of parts hereinafter fully described and claimed.

In the accompanying drawings, there has been illustrated a simple and preferred embodiment of the invention, and in which:

Figure 1 is a side elevation of a mixer constructed in accordance with the present invention, a portion of the mixing chamber being broken away to more clearly illustrate the arrangement of the agitator or mixing arms upon the main shaft. Fig. 2 is an enlarged vertical transverse sectional view upon the line 2—2 of Fig. 1. Fig. 3 is a similar view upon the line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of the cement measuring device. Fig. 5 is a detail perspective view of the two sections comprising one of the agitator or mixing arms.

In the accompanying drawings the numeral 1 designates a suitable wheeled truck. This truck 1 is provided with the usual tongue 2 whereby the draft animals are attached for moving the said truck when the device is to be transferred from one location to another, it being understood that when the mixing apparatus attached to the truck is in operation, the wheels of the truck are blocked to prevent movement.

The body 3 of the truck 1 is provided

with suitable vertically extending standards 4, which are adapted to support the longitudinally extending beams 5 which are adapted for engagement with L-shaped retaining members 6 secured upon the main chamber 7 of the device. This chamber 7 is provided with a longitudinally extending shaft 8 having one of its outwardly extending portions provided with a gear wheel 9 which is adapted to mesh with a similar wheel 10 carried by a gasolene engine 11 or other suitable motive power. The shaft 8 is provided with a plurality of spaced agitator or mixing arms 12, and these arms are arranged in pairs, as clearly illustrated in Fig. 5 of the drawings, and each of the members comprising an arm is cut away adjacent their centers so as to provide a reduced extending portion 13, approximately intermediate of the cylindrical cut away portion 14 which is adapted to engage upon the shaft 8. The portions of the cut away portion upon each side of the device opposite the arcuate or semi-cylindrical part 14 are provided with suitable openings 15 which are adapted for the reception of threaded retaining elements 16 through the medium of which the members comprising the arm are securely positioned upon the shaft 8.

By reference to Figs. 1, 2, 3 and 5 of the drawings it will be noted that the oppositely arranged sections comprising the mixing arms 12 are beveled in opposite directions so that when the shaft 8 is revolved the material within the chamber 7 receives a slicing or cutting motion at different angles so as to thoroughly agitate and mix the said material and at the same time force the material toward the open mouth of the hopper 7.

The numeral 17 designates the cement chamber of the device. This cement chamber is approximately V-shaped in cross section and is provided with a suitable outlet mouth 18. The cement chamber 17 is provided with enlarged ends 19, and connected with these ends are suitable supporting rods 20, having their lower portions secured upon the beam 5 whereby the said casing is effectively sustained above and adjacent one end of the mixing chamber 7.

Positioned directly below the mouth 18 of the cement chamber 17 is a measuring cylinder 21. This cylinder 21 is provided with a plurality of longitudinally extending pockets 22 which are positioned directly beneath the mouth 18 so that one or more of the

pockets are at all times filled with the cement from the chamber 17. The mouth 18 of the chamber has one of its walls 23 projecting downwardly a suitable distance so as to act as a shield or door for the pockets of the cylinder 21 which are filled with cement. The cylinder 21 is provided with a suitable axle extending beyond each of its ends, and the axle is adapted to be mounted in suitable openings provided in the sides 19 of the chamber 17. The portion of the axle extending beyond the sides 19 are squared as indicated by the numeral 24, and this squared portion is adapted for the reception of a toothed wheel 25, while projecting beyond this squared portion is a reduced rounded portion 26 which is adapted for engagement with a link 27 carrying a pawl 28 which is at all times in engagement with the teeth of the wheel 25. Secured to the free end of the link 27 is a rod 29. This rod 29 has its upper extremity provided with a suitable pin 30 which is adapted to engage any one of a series of perforations 31 provided within an arm 32 extending longitudinally of the ends 19 of the casing 17. The ends 19 are provided with L-shaped slots 32, and these slots are adapted for the reception of suitable bearings or trunnions 34 provided upon an apron 35. One of these trunnions 34 is adapted to extend a suitable distance beyond its bearing within the L-shaped or bayonet slot 33 and this projecting portion is suitably connected with the arm 33. The arms 32 have connected therewith an apron 35 which is of a width approximately equaling that of the distance between the sides 19 of the hopper, the said apron has its body portion preferably rounded or of an arcuate formation and its end terminating at or slightly below the open top or mouth of the chamber 7.

The operation of the device is as follows: The rod 29 has its pintle adjusted to the desired perforation 31 of the arm 32 so as to regulate the throw of the wheel 25 which is secured to the measuring cylinder 21. The rubble is gathered in shovels and thrown by the workman so as to contact with and swing the apron 35 inwardly. By so doing it will be noted that the arm 32 will be swung upon its trunnion or connection 34 thereby raising the said arm so as to cause the pawl 28 to move the toothed wheel 25 and the measuring cylinder 21 secured thereto and thus causing a predetermined amount of cement to be deposited upon the rubble within the mixing chamber. It is to be understood that the shaft 8 is constantly rotating and that the agitator arms 12 not only effectively mix the concrete but effectively force the concrete to the open mouth of the chamber 17 at its end opposite the end upon which the cement chamber is located.

Having thus fully described the invention what is claimed as new is:

1. In a concrete mixing machine, the combination with a mixing chamber, and a cement chamber positioned above the mixing chamber, said cement chamber having an outlet connecting with the mixing chamber, a measuring cylinder comprising a plurality of longitudinally extending pockets normally closing the mouth, a swinging apron connected with the cement chamber and positioned directly above the mixing chamber, and mechanism connected with the apron for imparting intermittent revoluble motion to the measuring cylinder as the apron is swung inwardly when contacted by rubble fed to the mixing chamber.

2. The combination with a mixing cylinder having an open top and an outlet, of a cement chamber positioned above and adjacent one of the ends of the mixing chamber, said cement chamber being provided with a hopper having an outlet mouth positioned directly above the mixing chamber, a measuring cylinder provided with a plurality of longitudinally extending pockets communicating with and normally closing the mouth of the hopper, said measuring cylinder being provided with trunnions extending through the sides of the chamber, a ratchet upon one of these trunnions, a link provided with a pawl engaging the ratchet wheel upon the trunnion, an apron trunnioned within the sides of the cement chamber and having its lower end terminating at the open mouth of the mixing chamber, an arm secured to one of the trunnions of the apron and an adjustable connection between this arm and the link connected with the trunnion of the measuring cylinder.

3. In a mixer of the character described, the combination with a mixing chamber having a hopper member and a body member provided with an open top and an outlet mouth, a shaft extending longitudinally of the mixing chamber, an apron hingedly connected with the said chamber, a measuring cylinder below the cement chamber and communicating with the mixing chamber, means provided upon the apron and connected with the mixing chamber to intermittently revolve the measuring cylinder when the apron is contacted with, and a plurality of mixing arms upon the shaft adapted to mix and to push the mixed material through the open mouth of the mixing chamber.

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

RAPHAEL G. LEVERICH.

Witnesses:

ORFA SKINNER,
CLAYTON M. NILES.