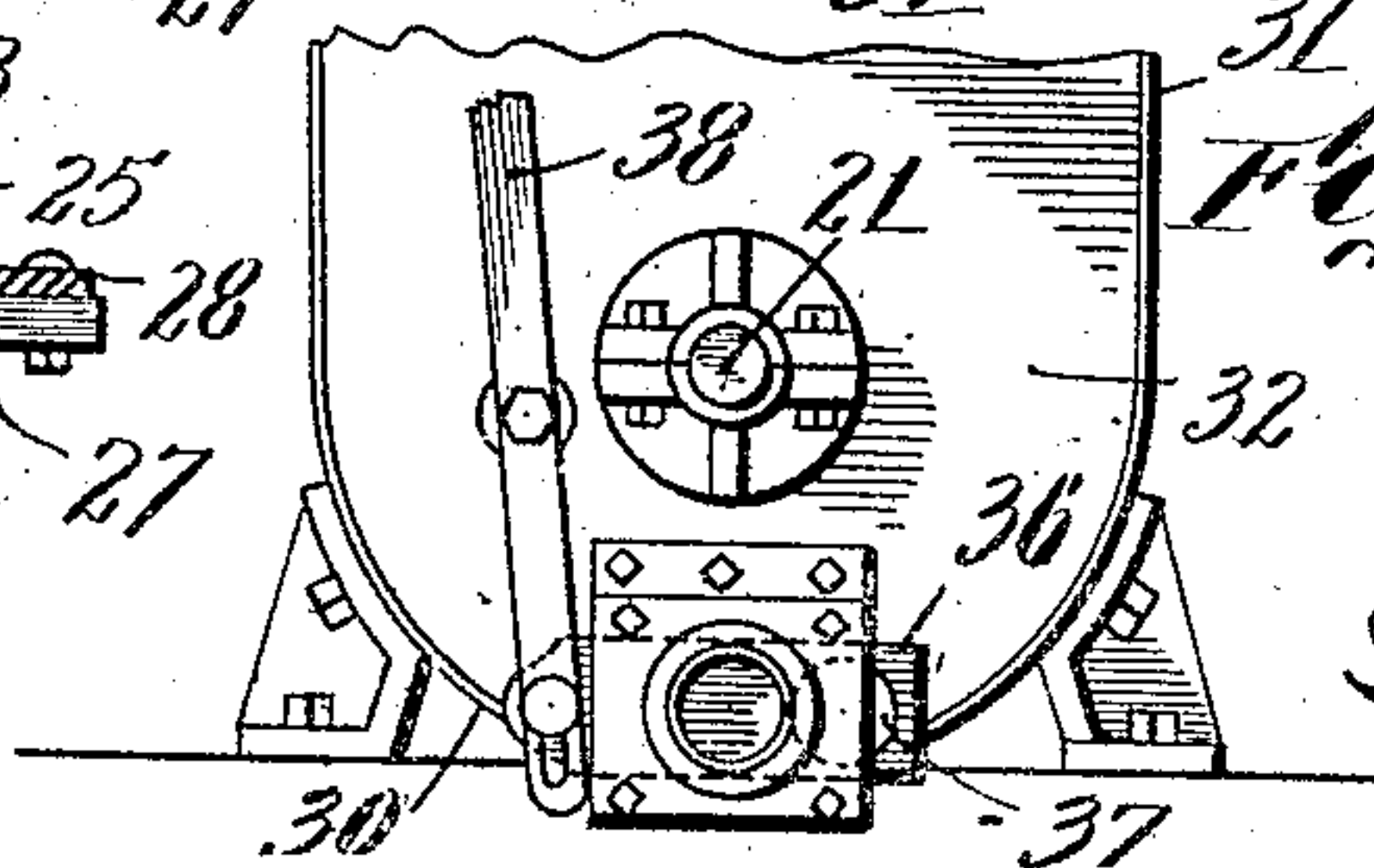
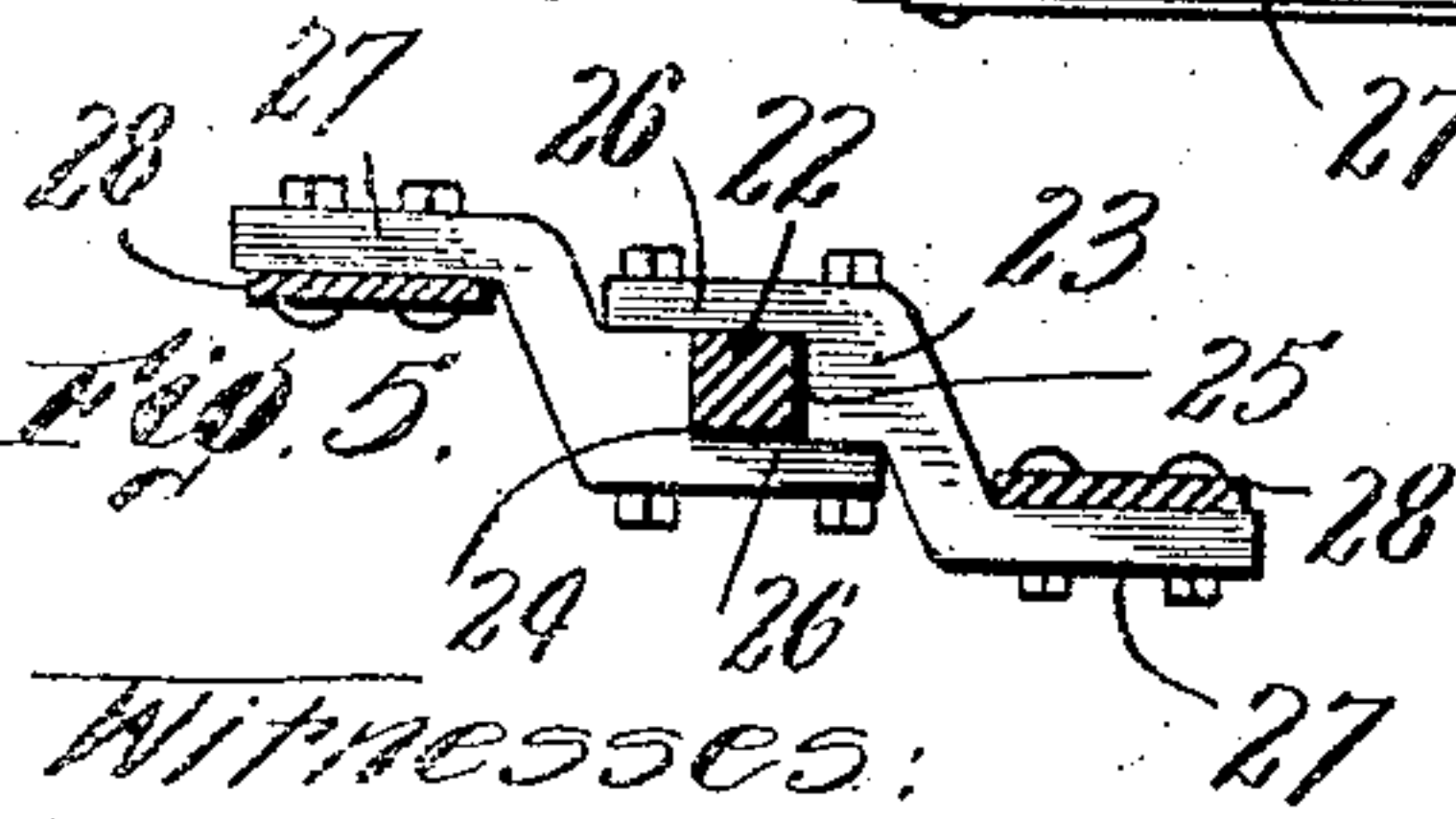
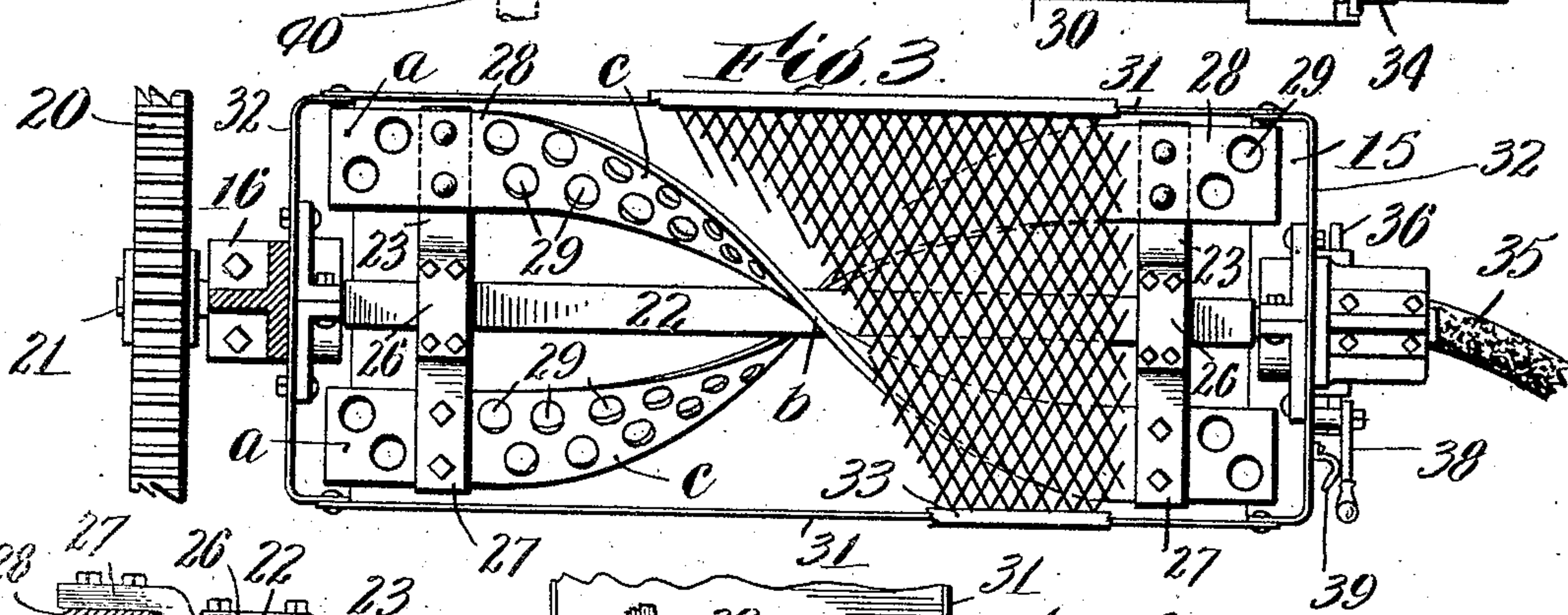
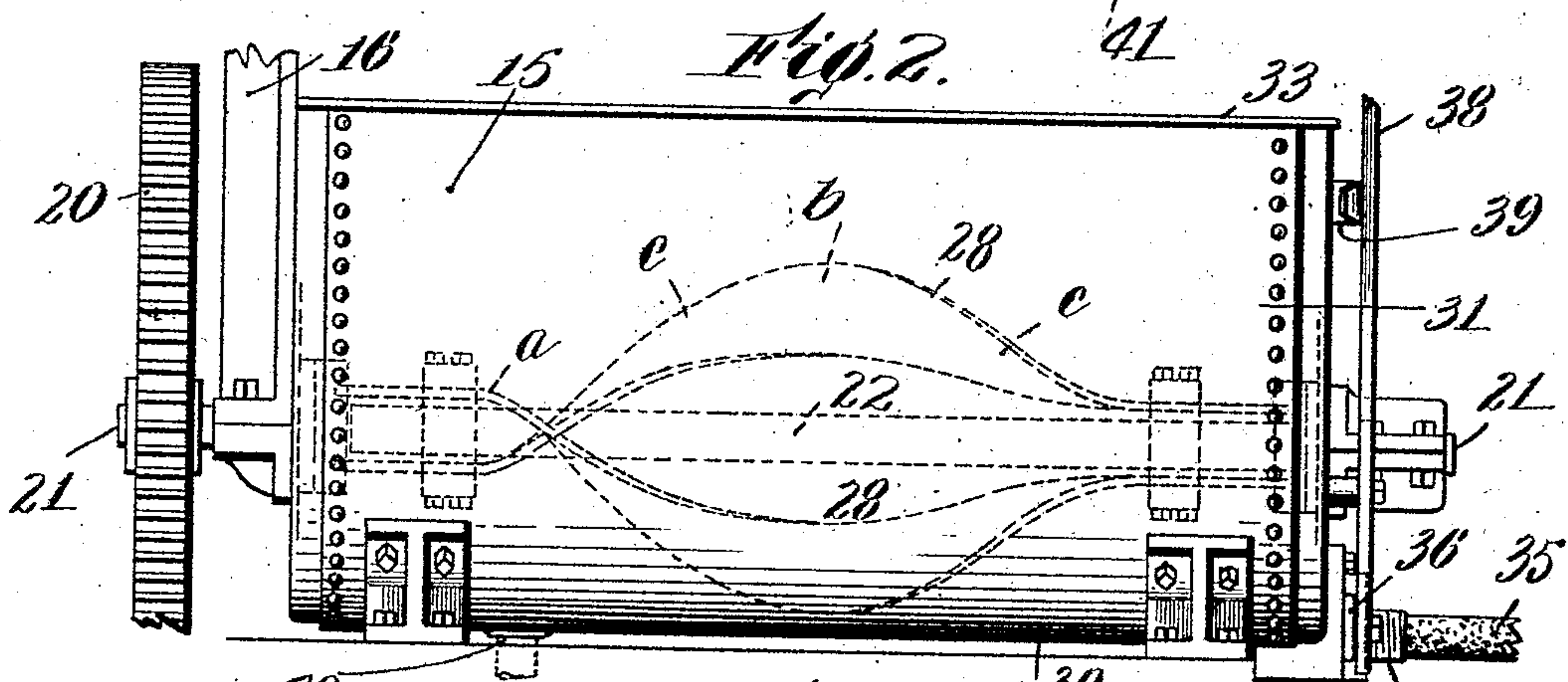
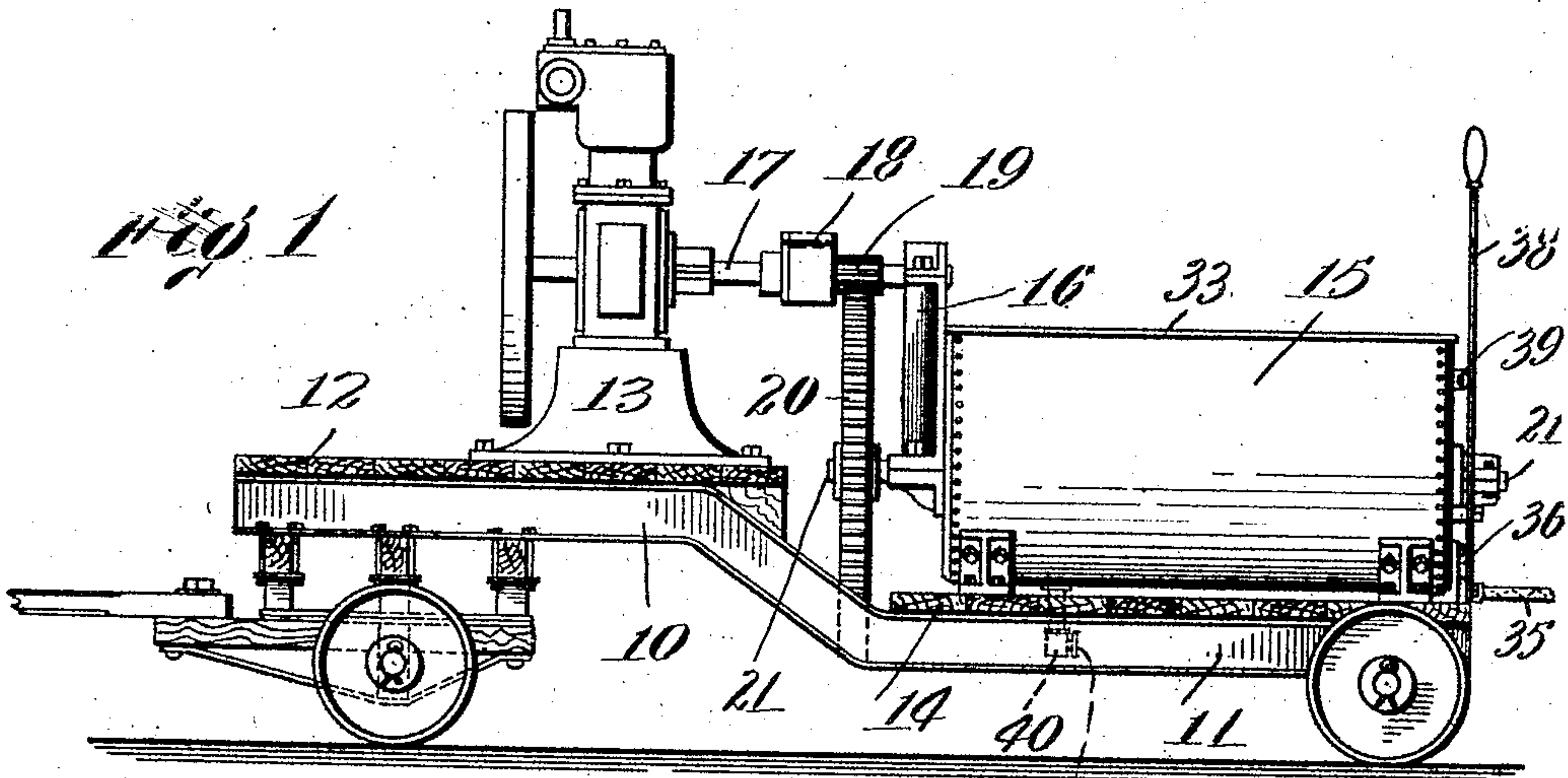


W. E. HASSAM.
CONCRETE MIXER.
APPLICATION FILED APR. 8, 1907.

912,125.

Patented Feb. 9, 1909



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UNITED STATES PATENT OFFICE.

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CONCRETE-MIXER.

No. 912,125.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed April 8, 1907. Serial No. 366,890.

To all whom it may concern:

Be it known that I, WALTER E. HASSAM, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Concrete-Mixer, of which the following is a specification.

This invention relates to a device for mixing concrete for use especially in road making.

The principal objects of the invention are to provide an improved construction of blades for efficiently mixing the concrete and a simple and convenient means for mounting them on the shaft of the mixer; to improve and simplify the construction of the mixing tank; to provide a convenient vehicle on which the mixing tank and motor or engine for operating it may be mounted; and generally to improve and simplify the construction of devices of this character.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a side elevation of a preferred embodiment of the invention. Fig. 2 is a side elevation of the mixing tank on an enlarged scale showing the mixing blades in dotted lines. Fig. 3 is a plan of the same partly broken away. Fig. 4 is an end elevation, and Fig. 5 is a sectional view of a detail showing how the blades are mounted.

In order that the device may be readily movable as is necessary in road making, the invention is preferably embodied in a structure consisting of a vehicle body which has a raised portion 10 at the front and a depression portion 11 at the rear. This body may be made in any desired way but the portions 10 and 11 are preferably integrally connected and are shown as consisting of pieces of bent channel iron. On the raised portion is a platform 12 on which is supported an engine or motor 13.

The depression portion of the body is provided with a platform 14 which carries the mixing tank 15. From one end of this mixing tank extends a bracket 16 which has a bearing for the end of the shaft 17 of the motor or engine. This shaft is provided with a clutch 18 of any desired construction and with a pinion 19 which meshes with a gear 20 on the shaft 21 which passes through

the mixing tank. It will be seen that the tank provides a support for the end of the shaft of the engine and that the engine is conveniently located in proper position for driving the shaft of the mixing tank.

The shaft 21 is provided with a square portion 22 on which are removably bolted two pairs of brackets 23. Each of these brackets has a reentrant angle 24 for receiving the shaft, one side of the angle being commensurate with the shaft and the other side 26 being longer than the width of the shaft. The two brackets of each pair are applied to the shaft as indicated in Fig. 5, with their sides or legs 23 overlapping and bolted in position. This construction is such that the brackets can be secured in place in a very simple and convenient manner and they all can be made from cast iron and cast from the same pattern. This is a very simple construction and requires very little manipulation in setting up the parts and taking them to pieces. Each of the brackets is provided with a flat extension 27 projecting outwardly preferably in the plane of the shaft. When the brackets of a pair are placed in position on the shaft as indicated in Fig. 5, the two extensions 27 are preferably on opposite sides of the shaft and are shown as located in parallel planes. When these brackets are mounted on the shaft in sets of two, as is indicated in the drawings, each extension 27 of one pair is located on the opposite side of the shaft from the corresponding extension on the other pair and preferably directly opposite and parallel with it as indicated. These extensions are designed for securing the ends of blades 28. These mixing blades are formed of metal strips secured to the extensions 27 and extending across from one side of the tank to the other. This location of the blades is secured by fixing one end to an extension on one side and at one end of the shaft and the other end of the blade to a corresponding extension at the other end of the tank and on the opposite side of the shaft. As the extensions project directly out from the shaft, the two ends of each blade will be located at right-angles to their direction of motion as the shaft rotates. Consequently, they act as flat sweeps to mix concrete or other material in the tank. Owing to this

particular location of their ends, it will be seen that the blades are twisted in such a manner that at their centers *b* they are in a plane at right-angles to the adjacent side of the shaft and on an inclination with respect to the axis thereof; consequently while this part of the blade moves against the material flat-wise, it is inclined with respect to its direction of motion so as to displace the material longitudinally with respect to the tank. This action insures the circulation of the material and makes it come into contact with the various parts of the blades. In addition to this, it will be observed that those parts *c* of the blades which are between the centers and ends are inclined with respect to their direction of travel so that they meet the material with a cutting action. They also partake of the shape at the center of the blade so that they assist at this point in transferring the material longitudinally of the tank. It will be seen, therefore, that these blades act to mix the material by the flat-wise movement of their ends and that they cut the material by the motion of their curved portions *a* while the portions *b* and *c* of the blades have a tendency to move the material longitudinally of the tank in addition to the other function of assisting in the mixing.

The blades are preferably spaced from the shaft on account of the location of the extensions 27 so that they operate along the semi-cylindrical bottom of the tank, any material above them being gradually drawn down into position to be operated upon. Each blade is preferably provided with numerous perforations 29 to permit the concrete or other material to pass through them during their rotation and thus spread the same into small streams which are continuously uniting, thus thoroughly mixing the material in the tank.

The tank has a semi-cylindrical bottom portion 30 concentric with the shaft 31 and vertical sides and ends 32. It is open at the top except for a screen 33 which extends across it. At the discharge end, the tank is provided with an opening at the bottom to which is applied a nozzle 34 connected with a hose 35 or the like for distributing the material in any desired way.

The opening through the nozzle is controlled by a sliding gate or valve 36 which has an opening 37 and which is operated by a lever 38. A spring 39 is located in position for engaging the lever to hold it. The tank is also provided with an outlet 40 having a valve 41 through which the interior may be cleaned out.

It will be seen that by this construction, the device is admirably adapted for the work of mixing concrete, that the power is applied to the mixing device in a simple and convenient way, the whole mechanism being mounted compactly on a vehicle which can be taken from place to place and the

contents of the tank can be distributed through reasonably wide limits by means of the hose. Moreover, the application of the mixing blades to the square shaft is accomplished in a most simple and convenient manner.

While I have illustrated a particular form of the invention, I am aware that many modifications may be made therein without departing from the spirit of the same as expressed in the claims. Therefore, I do not wish to be limited to the particular form shown, but

What I do claim is:—

1. The combination with a vehicle body having a raised portion in front and a depressed portion in the rear integrally connected together, a platform on the raised portion and a platform on the rear portion, of an engine or motor supported on the upper platform having a driving shaft, a mixing tank supported on the lower platform and having a shaft, a bracket on the top of one end of the mixing tank supporting the end of the engine shaft, and means for transmitting power from one shaft to the other.

2. In a mixing device, the combination of a square shaft, two pairs of parallel brackets removably bolted to the opposite ends thereof, each bracket having a reëntrant angle whereby the brackets of each pair may be clamped to the square shaft, said brackets having flat extensions projecting on opposite sides of the shaft and parallel with each other, and two curved blades each one being secured to the flat extensions on a bracket of one pair and to the opposite bracket of the other pair, whereby both blades are fixed with respect to each other and each extends through an angle of substantially 180 degrees.

3. A mixing device, comprising a square shaft, a pair of brackets secured thereto, each bracket having a reëntrant angle one side of which is substantially of the same size as one side of the shaft, and the other side of which is longer than the side of the shaft whereby said brackets can be fitted together on the shaft, means for removably securing said brackets together and clamping them to the shaft, said brackets having projections extending therefrom in opposite directions but in planes parallel with each other and with the side of the shaft on which said longer side of the reëntrant angle is fixed, and curved mixing blades removably secured to said extensions.

4. In a mixing device, the combination of a shaft, two pairs of parallel brackets secured to the opposite ends thereof, each bracket having a reëntrant depression whereby the brackets of each pair may be clamped to the shaft, said brackets having extensions projecting on opposite sides of the shaft and parallel with each other, and two curved

blades each one being secured to the extension on a bracket of one pair and to the opposite bracket of the other pair.

5 5. A mixing device, comprising a shaft, a pair of brackets secured thereto, each bracket having a reëntrant angle one side of which is longer than the side of the shaft whereby said brackets can be fitted together on the shaft, means for removably securing said
10 brackets together and clamping them to the shaft, said brackets having projections ex-

tending therefrom in opposite directions but in planes parallel with each other, and curved mixing blades removably secured to said extensions.

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In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

WALTER E. HASSAM.

Witnesses:

SAMUEL E. HULL,

THOMAS H. SULLIVAN.