

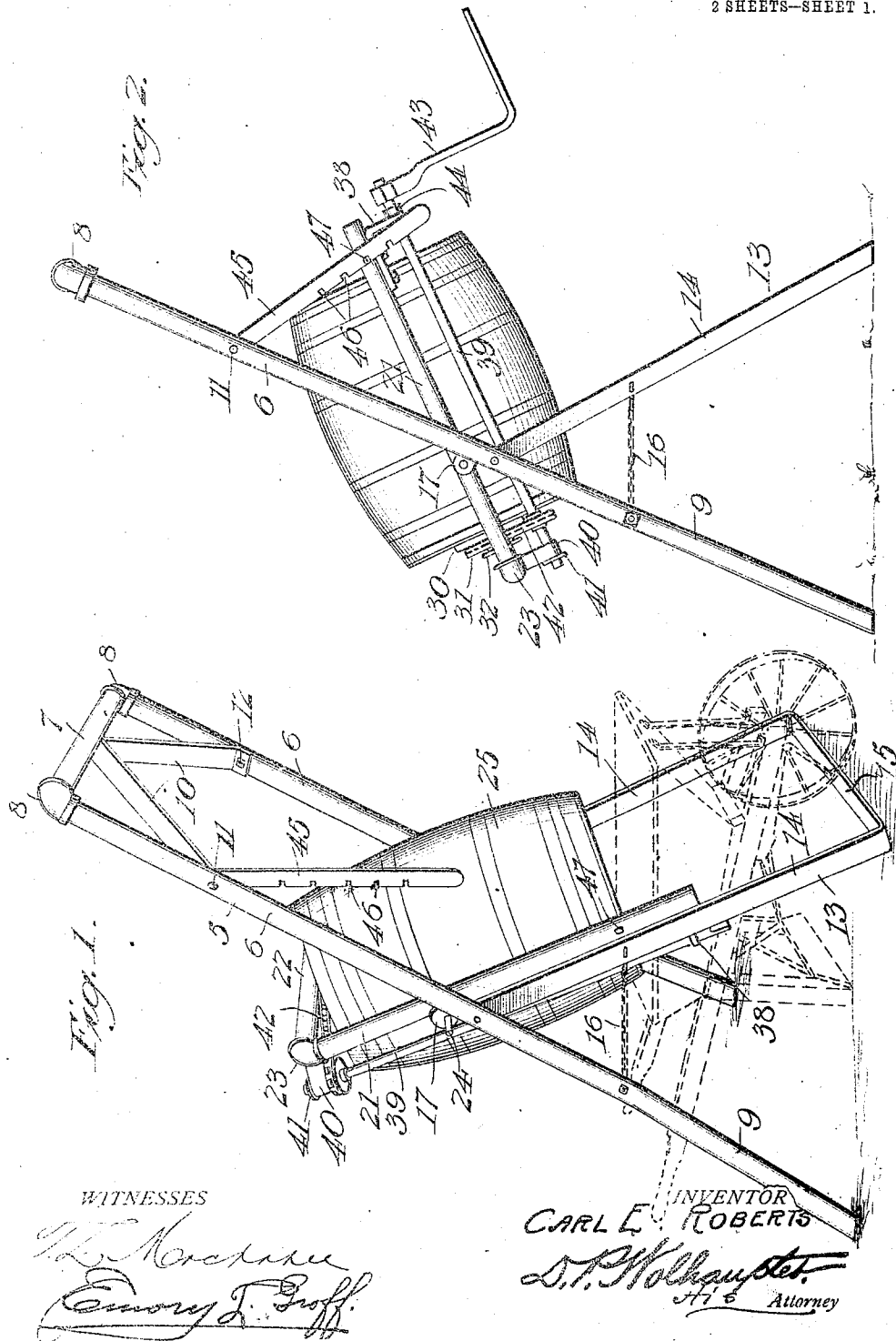
C. E. ROBERTS.
CONCRETE MIXER.

APPLICATION FILED FEB. 16, 1911.

1,015,981.

Patented Jan. 30, 1912.

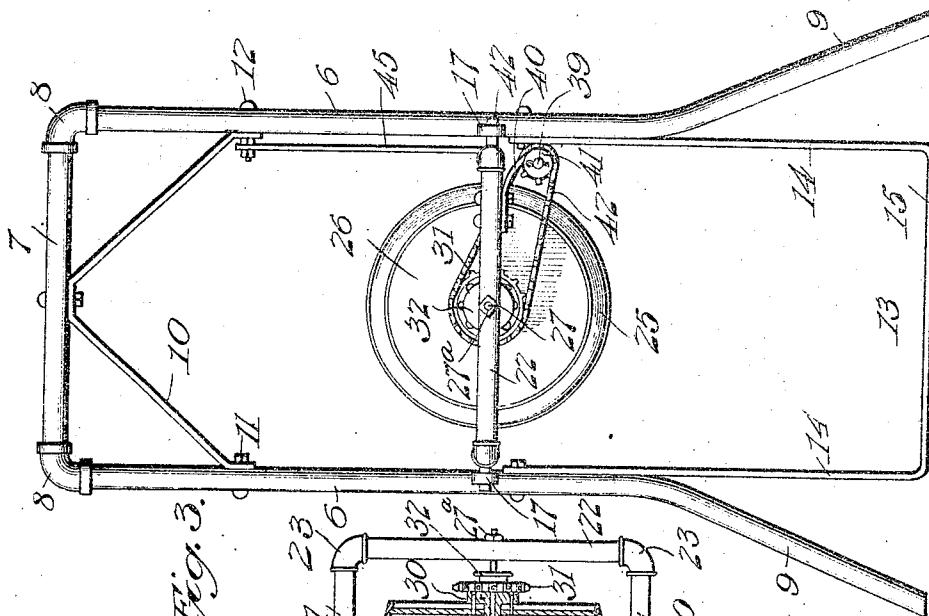
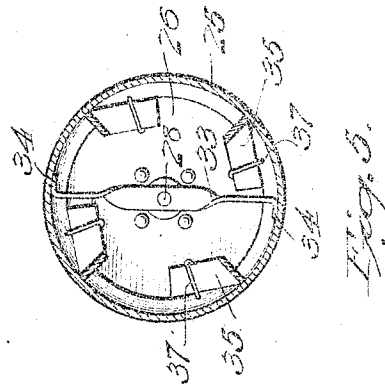
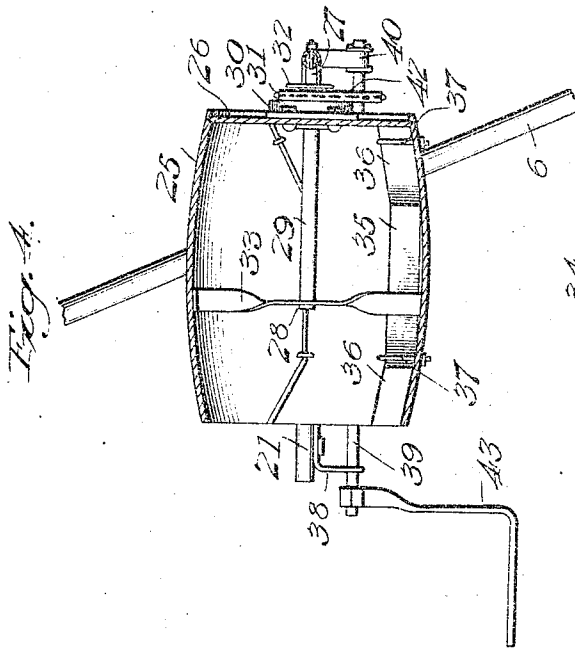
2 SHEETS—SHEET 1.



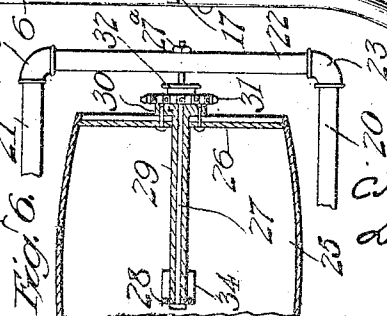
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2 SHEETS-SHEET 2.



WITNESSES
J. L. Koenig
Emory J. Buff



INVENTOR
 CARL E. ROBERTS
S. T. Kolhaupfer
 His Attorney

UNITED STATES PATENT OFFICE.

CARL E. ROBERTS, OF ATCHISON, KANSAS.

CONCRETE-MIXER.

1,015,981.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed February 16, 1911. Serial No. 609,045.

To all whom it may concern:

Be it known that I, CARL E. ROBERTS, a citizen of the United States, residing at Atchison, in the county of Atchison and State of Kansas, have invented certain new and useful Improvements in Concrete-Mixers, of which the following is a specification.

This invention relates to an improvement in machines designed especially for use in mixing sand, cement, mortar and the like.

The principal object of the invention is to provide a machine of the class described which is portable and manually operated.

Another important object of the invention is to provide a mixing machine which will automatically be dumped upon the release of a supporting rod.

A further object of the invention is to provide an improved supporting frame for the mixer, which can be quickly collapsed when it is desired to transport the machine from place to place.

A still further object of the invention is to provide a mixing machine which is composed of a minimum number of parts and is therefore simple in construction, and cheap to manufacture.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of the machine, showing the receptacle in its dumping position. Fig. 2 is a side elevation of the machine, showing the receptacle in an elevated or operative position. Fig. 3 is a rear end view of the machine. Fig. 4 is a detail longitudinal sectional view through the receptacle, some of the parts attached thereto being shown in elevation. Fig. 5 is a vertical transverse sectional view of the receptacle, taken on the line 5—5 of Fig. 4. Fig. 6 is a fragmentary sectional view similar to Fig. 4, showing the receptacle supporting and rotating means in section.

Like reference numerals designate corre-

sponding parts in all the figures of the drawings.

Referring to the drawings, the invention comprises a main supporting frame designated by the numeral 5. This frame is preferably of an inverted U-shaped formation, and is preferably formed of sectional tubing, although I do not wish to limit myself thereto. This frame consists of legs 6—6, which are respectively bent outwardly at their lower end portions 9 and are connected at their upper ends by a member 7 and elbows 8.

In order to prevent lateral movement of the legs, a brace 10 is provided and is preferably formed of metal and bent into an inverted V-shaped formation. The free ends of the brace are connected to the legs 6 by means of bolts 11 and 12, and a central portion being connected to the member 7 of the frame. By this construction, it will be seen that two braces are formed from a single strip of metal. This frame is normally arranged at an inclination, and in order to support the same, a support 13 is provided. This support is also preferably formed of metal and is bent to form supporting members 14—14 and a connecting portion 15, the latter being adapted to rest on the ground and the free ends of the supporting members 14 having pivotal engagement with the frame 5. Chains 16 are respectively connected to the frame 5 and the support 13 below the pivot for limiting the relative movements thereof. Ears 17—17 are secured to the legs 6 of the supporting frame, preferably above the said pivotal connection. The invention further comprises a tilting frame adapted to support a receptacle. This frame is preferably formed of metal tubing and comprises short and long arms 20 and 21 respectively which are connected at one end by a member 22 and elbows 23. Laterally projecting from the arms 21 are trunnions 24 which are journaled in the said ears 17 of the supporting frame. These trunnions are disposed in close proximity to the connecting member 22 for a purpose hereinafter described. Longitudinally arranged within this frame is a receptacle 25, which has one end closed as shown by 26, and the other end open. Centrally arranged and inwardly projecting from the bottom 26 of the receptacle, to a point intermediate its ends, is a supporting rod 27, the other end of the rod projecting outwardly beyond the said

frame and having rigid connection with the said member 22 of the tilting frame. The inner end of the said rod is provided with a head 28. Rotatably mounted on the rod is a sleeve 29, which is rigidly secured to the closed end 26 of the receptacle, the free end of the sleeve abutting the head 28 of the rod. Fixedly secured to the sleeve 29 and outside of the drum is a sprocket wheel 31, and arranged intermediate the member 22 of the frame and the sprocket wheel 31 is a suitable bearing block 32. Secured on the projecting end of the rod is a nut 27^a or other suitable tensioning means. By manipulating this nut, the head 28 of the rod will be drawn against the end of the sleeve, and in this manner the receptacle will be firmly, yet rotatably, supported on the said rod 27. Secured to the inner end of the sleeve 29 is a brace 33, which extends to opposite sides of the receptacle. The ends of the said brace are angularly bent to form ears 34 which are rigidly secured to the sides of the receptacle. By means of this brace, the receptacle will be prevented from any lateral or vibrating motion while being rotated.

Located within the receptacle is a plurality of spaced mixing wings 35, which are each formed of sheet metal and are angularly bent at their ends, as at 36. These wings are longitudinally arranged on edge and are secured to the wall of the receptacle by means of hook bolts 37. The inner ends of these wings preferably extend to the bottom 36 of the receptacle, while the outer ends preferably terminate at, or adjacent the open end thereof. This fastening means for the wings permits of the latter to be disengaged from the receptacle, whenever it is desirable to clean the same.

Depending from the free end of the arm 21 of the tilting frame is a bracket 38, and in this bracket is journaled an operating rod 39. The other end of the rod is rotatably supported by a depending bracket 40 carried by the opposite end of the said frame. Fixedly secured to the operating rod 39 and arranged in alignment with the sprocket wheel 31 is a smaller sprocket wheel 41, which transmits motion to the first mentioned sprocket wheel by a chain 42. The opposite end of the rod 39 is preferably squared for the purpose of receiving a crank handle 43 or other suitable means. Arranged intermediate the said squared end and the bracket 38 is a collar 44 which prevents the said rod from any longitudinal movement.

A supporting rod 45 is pivotally connected at one end to the supporting frame 60 by the bolt 12, and is provided with a plurality of notches 46, any one of which being adapted to receive a lug 47 that is carried by the arm 21 of the tilting frame.

From the foregoing, it will be seen that when the receptacle is elevated as shown in

Fig. 2 of the drawings, it can be positioned at various angles by engaging the lug 47 with any one of the notches of the supporting rod. After the sand, cement, or other material to be mixed has been placed within the receptacle, the latter can be rotated by means of the crank handle 43. Motion is transmitted from the handle, through the operating rod 39, sprocket wheel 41, chain 42, sprocket wheel 31, to the receptacle. While the receptacle is in motion, the angular ends 36 of the wings, cause the material to be directed to a central point, thus insuring a thorough mixing of the material. After the material has been thoroughly mixed, the supporting rod 45 can be disengaged and the open end of the receptacle will drop by gravity, due to the fact that the tilting frame is pivoted, as before mentioned, and thereby permit the contents to be dumped into a wheel barrow or another suitable conveyance. In this connection it will be observed that the novel frame structure is of practical importance in carrying out the present invention for the reason that such a frame is not only of the collapsible type to admit of ready transportation and handling, but is also constructed in a manner that it admits of an ordinary barrel or the like, with suitable alterations, being utilized as the receptacle and so combined with the folding frame that a wheel-barrow or like conveyer may be handled within the lower part of the folding frame to receive the mixed charge from the receptacle. These functions are all attained through the novel combination of the folded frame structure with the secondary folding frame that carries the receptacle and the agitating mechanism.

What I claim is:—

1. In a mixing machine, the combination of a folding frame structure comprising a main supporting frame adapted to be set up on one end as legs, a secondary frame pivoted to the main frame and adapted to be swung out therefrom to also form supporting legs, said secondary frame being foldable within the main frame, a receptacle-carrying frame pivotally hung within the main frame, a receptacle, an agitator mechanism carried with said receptacle carrying frame, and means for holding the receptacle-carrying frame at different angles.

2. In a mixing machine, the combination with a supporting frame, a tilting frame pivotally mounted thereon, a receptacle having a bottom arranged within the tilting frame, a rod having one end connected to the tilting frame and having its other end projecting through the bottom and into the receptacle, a sleeve loosely mounted on the rod and rigidly secured to the receptacle, a sprocket wheel rotatably mounted on the rod and fixedly secured to the receptacle, an operating rod supported by the tilting frame,

a sprocket wheel fixedly mounted on the operating rod and arranged in alinement with the first mentioned sprocket wheel, a sprocket chain connecting the said sprocket wheels, and means for actuating the said operating rod.

3. In a mixing machine, the combination with a supporting frame, a tilting frame pivotally mounted thereon, a receptacle having a bottom arranged within the tilting frame, a rod having one end connected to the tilting frame, and having its other end projecting through the bottom and into the receptacle, said projecting end being provided with a head, a sleeve loosely mounted on the rod, one end of the sleeve abutting the head of the rod and the other end of the sleeve being provided with a flange which is fixedly secured to the bottom of the receptacle, and means carried by the tilting frame for rotating the receptacle on the rod.

4. In a mixing machine, the combination with a supporting frame, a tilting frame

pivotally mounted thereon, a receptacle having a bottom arranged within the tilting frame, a rod having one end connected to the tilting frame, and having its other end projecting through the bottom and into the receptacle, said projecting end being provided with a head, a sleeve loosely mounted on the rod, one end of the sleeve abutting the head of the rod and the other end of the sleeve being provided with a flange which is fixedly secured to the bottom of the receptacle, a sprocket wheel rotatably mounted on the rod and fixedly secured to the receptacle, a bearing block on the rod intermediate the tilting frame and the sprocket wheel, and means carried by the tilting frame and operatively connected to the sprocket wheel for rotating the receptacle.

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

CARL E. ROBERTS.

Witnesses:

Z. E. JACKSON,
RUTH S. AINSWORTH.