A. A. MERRILL.

MIXING MACHINE.

APPLICATION FILED APR. 12, 1913.

1,102,348.

Patented July 7, 1914.

3 SHEETS—SHEET 1.

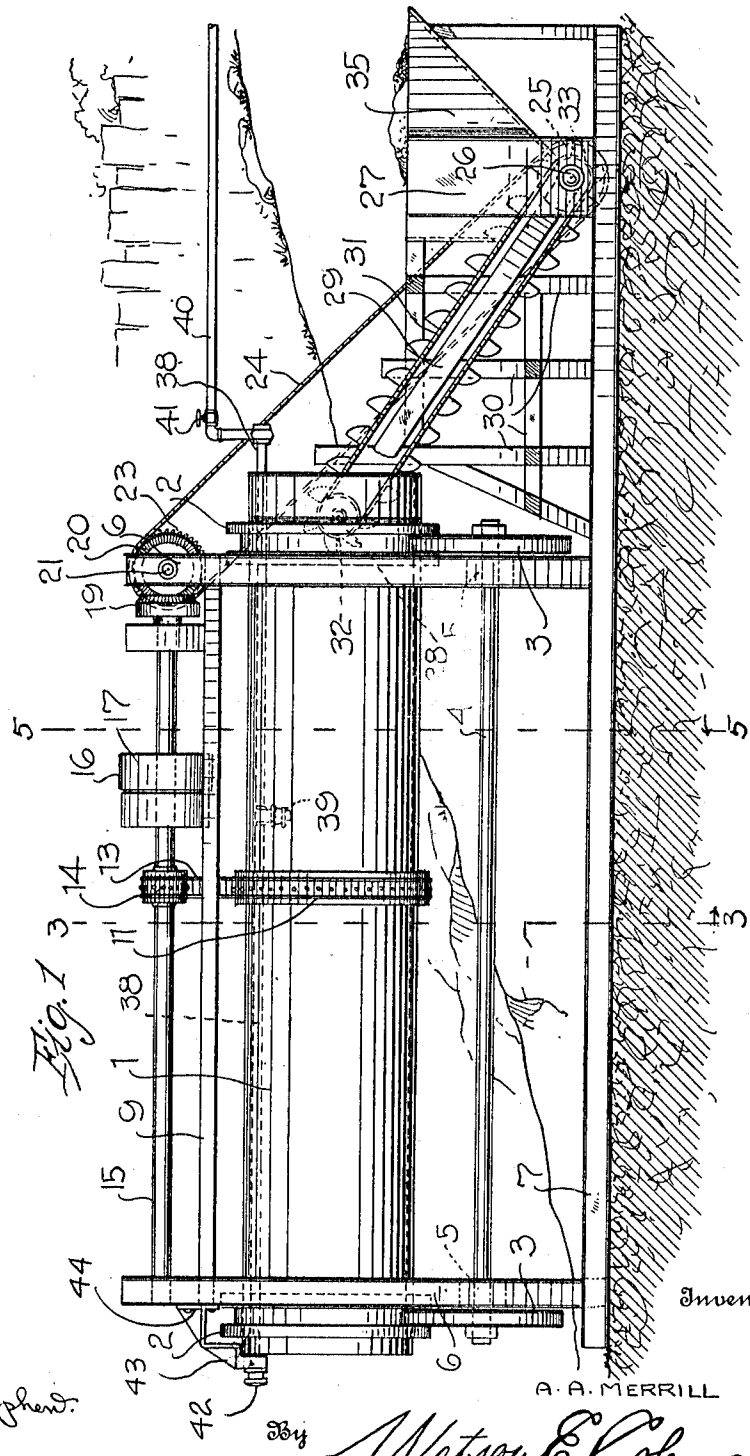


Fig. 1

Witnesses
Robert M. Sutphen
A. J. Thiel

Inventor
A. A. MERRILL

By Watson E. Coleman
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

A. A. MERRILL.

MIXING MACHINE.

APPLICATION FILED APR. 12, 1913.

1,102,348. **Patented July 7, 1914.**

3 SHEETS—SHEET 2.

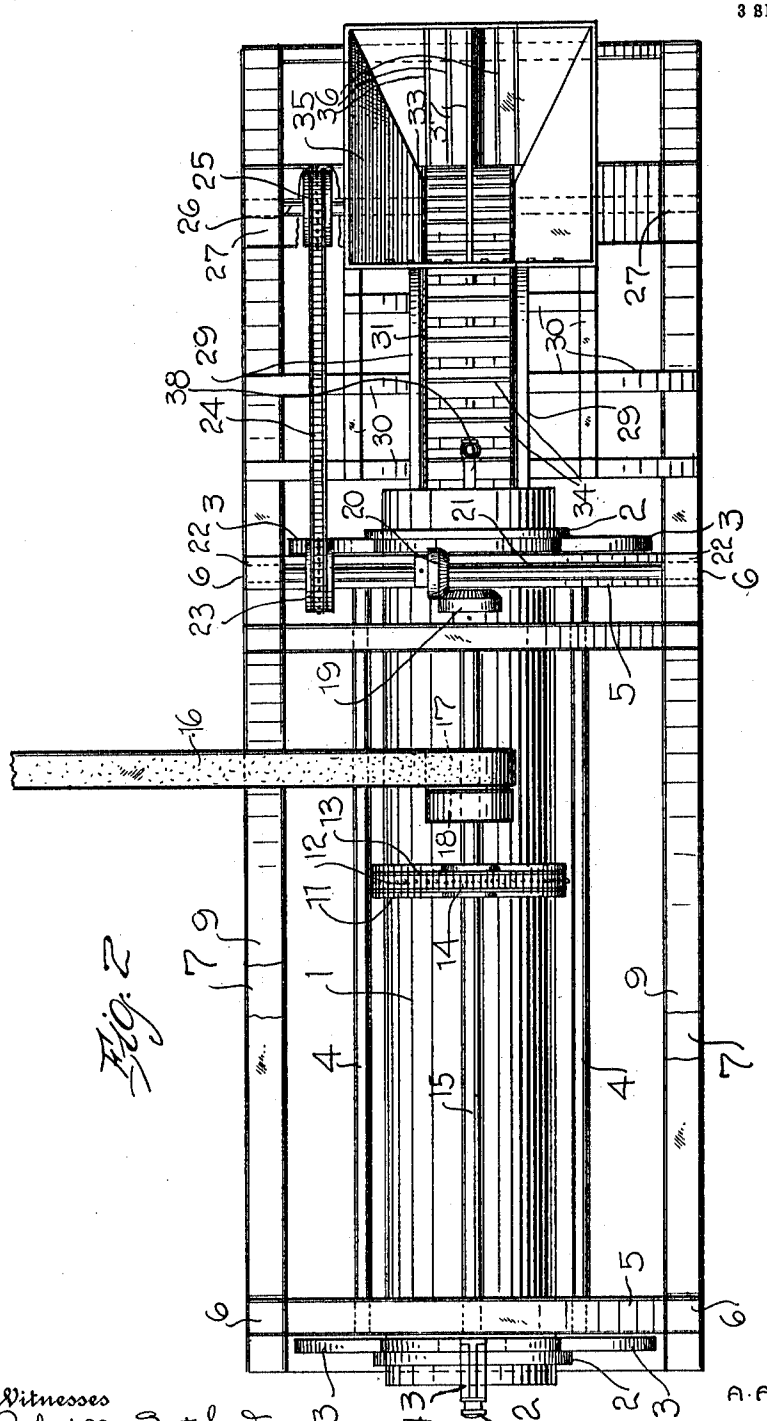


Fig. 2

Witnesses
Robert M. Sutphen.
A. L. Hind.

Inventor
A. A. MERRILL
By Watson E. Coleman
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

A. A. MERRILL.

MIXING MACHINE.

APPLICATION FILED APR. 12, 1913.

1,102,348.

Patented July 7, 1914.

3 SHEETS—SHEET 3.

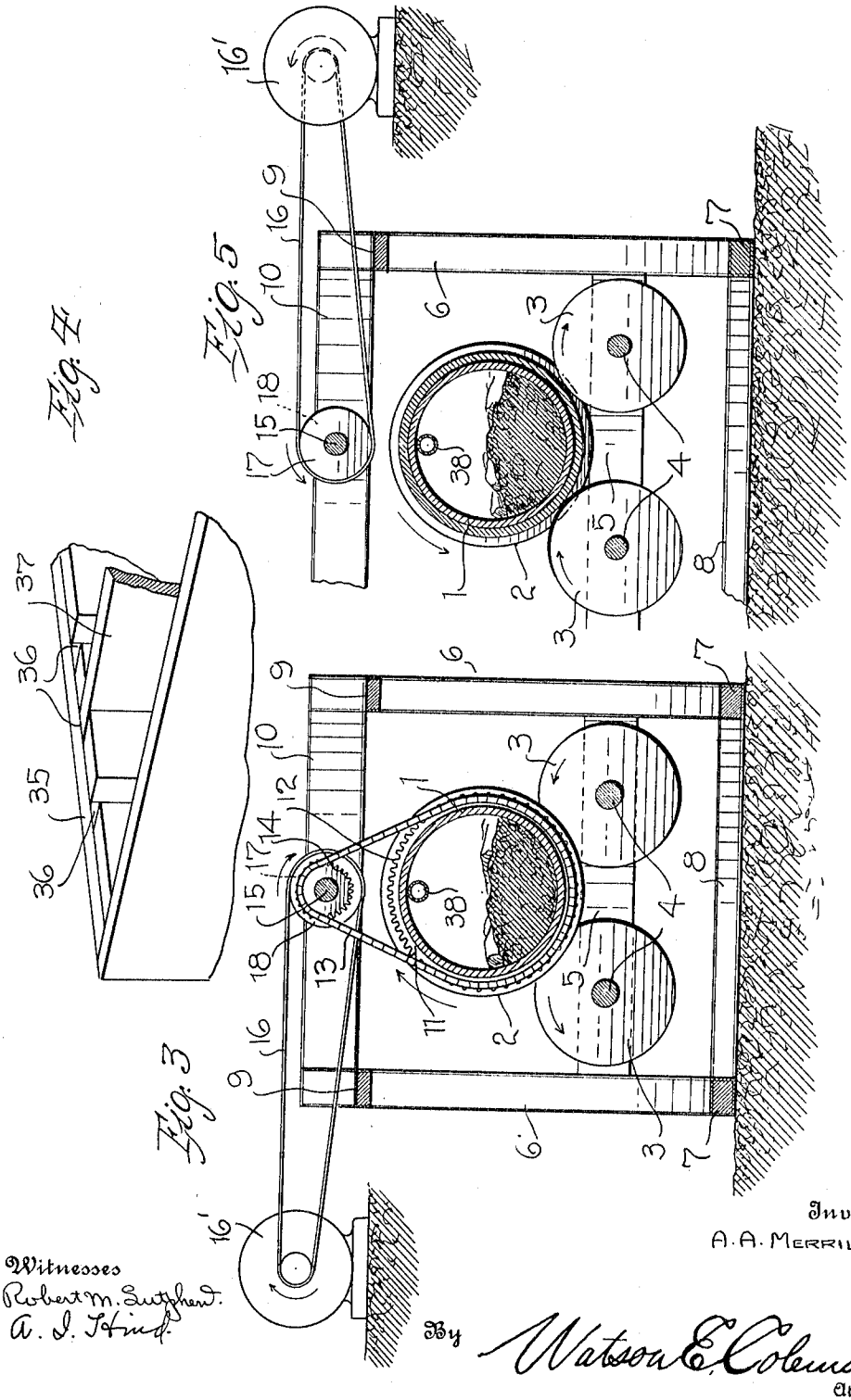


Fig. 4

Fig. 5

Fig. 3

Witnesses
Robert M. Sutphen.
A. I. Stinft.

Inventor
A. A. MERRILL

By Watson E. Coleman
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALVA A. MERRILL, OF SOUTH DAYTON, NEW YORK.

MIXING-MACHINE.

1,102,348. Specification of Letters Patent. Patented July 7, 1914.

Application filed April 12, 1913. Serial No. 760,703.

To all whom it may concern:

Be it known that I, ALVA A. MERRILL, citizen of the United States, residing at South Dayton, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Mixing-Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention comprehends certain new and useful improvements in mixing machines and relates more specifically to that class of devices especially adapted for mixing concrete and the like.

An object of the invention is to provide a machine of this character having a rotary mixing cylinder mounted upon anti-friction rollers carried in a supporting frame, and anvil means for feeding the material to the rotary cylinder and also means for rotating said cylinder.

Another object is to provide a feed hopper having a movable partition adapted to be secured in various positions for varying the relative proportions of the materials to be mixed, said partition serving to separate the materials while in the hopper.

Another object is to generally improve and simplify the construction and operation of various parts of the device and thereby reduce the cost of the mixer and increase the commercial value of the same.

With the above and other objects in view, this invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, claimed and illustrated in the accompanying drawings, in which—

Figure 1, is a side elevation of my complete mixer. Fig. 2, is a top plan view of the same. Fig. 3, is a vertical cross sectional view on the line 3—3 of Fig. 1, and looking in the direction indicated by the arrow. Fig. 4, is a fragmentary perspective view of the hopper, showing the movable partition and means for securing the same in adjusted position. Fig. 5, is a view similar to Fig. 3, on the line 5—5 of Fig. 1 and looking in the direction indicated by the arrow, the cylinder rotating means being removed.

Referring more specifically to the drawings in which similar reference characters designate corresponding parts throughout the several views, 1 designates the rotary cylinder which may be formed of one continuous piece or of longitudinal strips suitably connected by the encircling track members 2 spaced from the opposite ends of the cylinder and adapted to travel on the anti-friction rollers 3 loosely mounted upon the spaced longitudinal shafts 4 carried in suitable brackets 5 mounted on the corner standards 6 of the supporting frame within which the cylinder 1 is adapted to rotate. The corner standards 6 are secured at their lower end to the lower longitudinal frame members 7 which are in turn connected by the transverse lower frame members 8 and the standards 6 are suitably connected and braced above the frame members 7 and 8 by the upper longitudinal and transverse frame members 9 and 10 respectively.

Encircling the central portion of the rotary cylinder 1 is a ring 11 having the sprocket teeth 12 formed upon its upper face for engagement with the sprocket chain 13 which is also engaged around the small sprocket wheel 14 on the longitudinal counter shaft 15 mounted in the upper end of the standards 6 of one side of the framework to rotate the cylinder at a lower rate of speed upon rotation of said counter shaft. The counter shaft 15 is in turn driven by a belt 16 engaged around the drive pulley 17 and connected with any suitable source of power as shown at 16′. The idle pulley 18 is also carried by the counter shaft 15 adjacent the drive pulley 17 to receive the belt 16 when it is desired to discontinue the rotation of the counter shaft 15 without stopping the engine or other means by which the belt 16 is operated.

The counter shaft 15 carries the beveled gear 19 upon one end and engaged with this beveled gear is a second beveled gear 20 mounted upon a shaft 21 positioned at an angle to the counter shaft 15, said shafts 15 and 21 being preferably at right angles to one another, the purpose of which will presently be apparent. The shaft 21 is rotatably mounted in the suitable brackets 22 carried by the framework and has a sprocket wheel 23 mounted thereon with a sprocket chain 24 engaged therewith, said chain being also engaged around a sprocket wheel 25 upon the lower elevator shaft 26. The lower elevator shaft 26 is mounted in suitable brackets 27 carried by the extended forward ends of the longitudinal frame members 7 and 8. The upper elevator shaft 28 is considerably shorter than the lower elevator shaft 26 and is mounted in the upper ends of the inclined

supporting bars 29 within the elevated forward end of the cylinder 1, it being understood that the cylinder 1 is positioned at an incline by elevating the forward end of the supporting framework to cause the materials being mixed within the cylinder to move toward the rear end of the cylinder as the latter rotates. The lower ends of the supporting bars 29 are secured to the extended forward ends of the longitudinal frame members 7 and 8 and the lower elevator shaft 26 extends through said lower ends of the supporting bars. The supporting bars 29 are suitably braced adjacent their upper ends by means of the bracing standards 30 secured at their upper ends to the supporting bars 29 and at their lower ends to the longitudinal frame members 7 and 8.

The elevator chains 31 are engaged around the sprocket wheels 32 and 33 provided therefor upon the elevator shafts 26 and 28 and the chains are suitably connected by the usual connecting strips 34. The feed hopper 35 is mounted upon the connecting strips 34 between the elevator chains 31 to feed the materials to be mixed to the elevated forward end of the rotary cylinder.

The hopper 35 is provided in its opposite ends with a series of vertical grooves 36 formed in the inner faces of said ends to receive the vertical partition 37, whereby the partition may be adjusted transversely of the hopper to vary the proportions of the cement and sand or other materials to be mixed, it being understood that the materials are placed in the hopper to opposite sides of the partition 37. Thus it will be seen that should the partition 37 be placed in the proper grooves 36 to divide the hopper in equal compartments and each compartment filled with a different material, the hopper will deliver equal quantities of the two materials to the cylinder 1. The partition may be shifted to one side, however, to vary the relative proportions of the materials, as desired, as will be readily apparent. As the rear or lower end of the cylinder 1 is also open and properly supported above the ground or other surface upon which the framework is positioned, a wheelbarrow or any suitable receptacle may be readily positioned beneath said cylinder end to receive the mixture as the same is delivered from this end of the cylinder, as will be readily understood.

The water supply pipe 38 extends longitudinally through the rotary cylinder 1 and in the upper portion of the latter and has the T outlets 39 about one-third the distance from the elevated forward end of the cylinder to the rear lower end of said cylinder, and by means of which, water is supplied to the materials within the cylinder to assist in mixing the same. The pipe 38 is connected at its forward end to the main water supply pipe 40 which is provided with a valve 41 for controlling the supply of water from the main pipe 40 to the water pipe 38. The opposite end of the pipe 38 is closed, as shown at 42 and this closed end extends outwardly of the rear end of the cylinder 1 and is supported in position by means of the supporting bracket arm 43 connected with the framework, as shown at 44, said bracket arm 43 being of angular formation so as to contact with the top and end of the cylinder 1.

From the foregoing it will be apparent that I have provided a mixing machine which will be of extremely simple construction and operation and highly efficient and effective in use. It will further be seen that should the water pipe 38 be caused to burst from the water freezing therein, the same may be readily replaced at a small cost, without having to purchase a new hollow shaft for the cylinder, or other inexpensive part of the machine, as has been heretofore necessary with the former devices of this character.

While I have shown the preferred embodiment of my invention, it will be apparent that minor changes in the details of construction may be resorted to within the scope of the appended claim without departing from the spirit of my invention.

Having thus described my invention, what I claim is:—

A device of the character described including a frame, a substantial horizontally disposed cylinder having its ends open and rotatably supported by the frame, a bracket carried by the frame at a point above the rear end of cylinder, the lower extremity of the bracket being angular and depending below the upper portion thereof and adapted to contact with the top and end of the cylinder, a supply pipe directed through the cylinder and having an end portion mounted in the bracket, means for rotating the cylinder, and means for supplying material within the cylinder.

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

ALVA A. MERRILL.

Witnesses:

JESSIE S. PERRY,

B. E. ROSS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."