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J. F. BURN ET AL

1,758,732

MIXING MACHINE

Filed Sept. 21, 1928

Fig. 1.

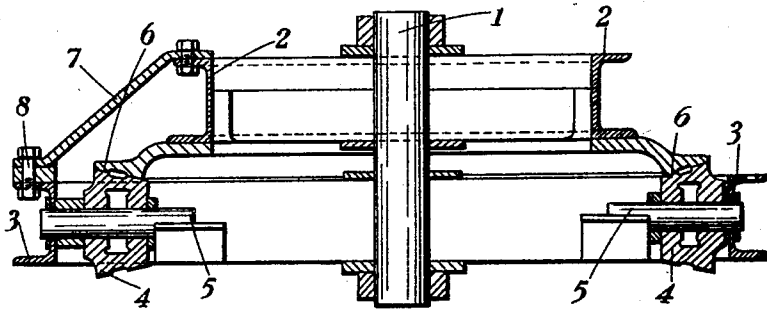


Fig. 2.

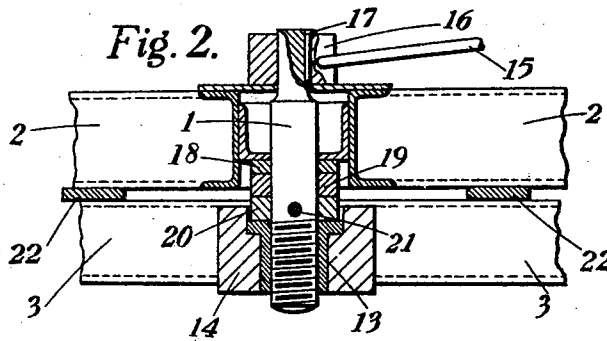
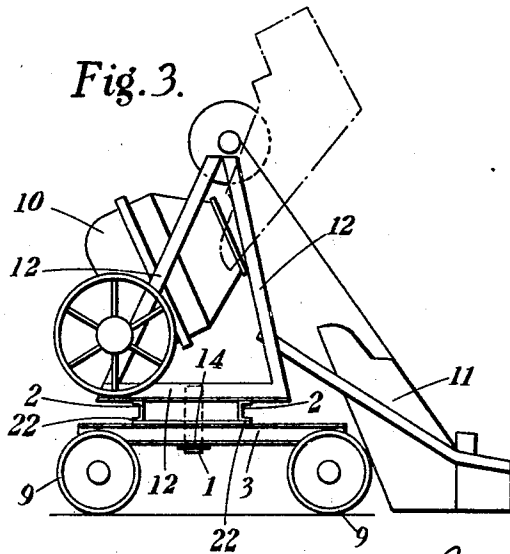


Fig. 3.



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MIXING MACHINE

Application filed September 21, 1928, Serial No. 307,436, and in Great Britain October 6, 1927.

This invention relates to mixing machines such as are used in the production for building and construction or other work, of concrete and other mixtures.

5 It is the object of the present invention to provide means whereby a mixer unit may be readily swung round bodily in a horizontal direction so that the hopper of the mixer may be filled from the heap of aggregate and
10 the mixed concrete or the like, then subsequently discharged at any desired position near the mixer, without the necessity of moving the chassis and the wheels upon which the mixer unit is mounted. The mixer unit
15 should preferably be adapted to be swung around in either direction.

It will be apparent that the advantages emanating from such arrangement are indeed very great when the mixer is being
20 worked in a confined space (for example, on a scaffolding) or when the said wheels are immersed in mud.

Further, it may be arranged that the mixer unit, normally, is incapable of being swung
25 round bodily, as aforesaid, in a horizontal direction, until it has been lifted or jacked up. When it has been swung to the desired position it may then be restored to its normal position of contact with the chassis and may
30 be locked tightly thereto.

According to the present invention, then, we provide a mixing machine in which the mixer unit is adapted to be swung round
35 bodily in a horizontal direction upon the chassis.

In one form of construction according to our present invention we provide a mixing machine in which the mixer unit is adapted to be swung round bodily in a horizontal
40 direction upon the chassis, a vertical shaft interconnecting the mixer unit and the chassis, said shaft preventing relative vertical movement therebetween, and roller and track means for permitting frictionless rotation. Conical rollers, for instance, mounted
45 on the chassis may run upon a conical circular track provided on the mixer unit. A member secured to the mixer unit may be arranged to permit of its locking engagement
50 with the chassis. Such member may

conveniently comprise a plate which is adapted to be bolted to the chassis.

In another form of construction according to our present invention we provide a mixing machine in which the mixer unit is adapted to be swung round bodily in a horizontal
55 direction upon the chassis, a vertical shaft interconnecting the mixer unit and the chassis, which shaft is capable of producing a relative vertical movement therebetween by reason of its being screwed into the chassis and
60 having fixed thereto a collar which supports the mixer unit when it is being swung round into a desired position. The chassis may have secured thereto a bearing containing a
65 screwed bush, which bush is adapted to accommodate the screwed end of said shaft. A collar keyed to the shaft and provided with holes will enable the shaft to be rotated
70 by means of a tommy bar. Pads may be fixed to the mixer unit so that when the latter has been swung round into a required position said shaft may be screwed down until these
75 pads bind or lock with the chassis.

Reference will now be made to the accompanying sheet of drawings in which:—

Fig. 1 represents one form of our invention in which constant distance between the chassis and the mixer unit is maintained;

Fig. 2 represents another form of our invention in which the distance between the chassis and the mixer unit is variable; and

Fig. 3 represents in diagram form a general lay-out of a mixing machine incorporating the arrangement shown in Fig. 2.

With reference to Fig. 1, shaft 1 interconnects the two channel bearers 2 of the mixer unit and the two channel bearers 3 of the chassis, and conical rollers 4 mounted on shafts 5 and fitted to the chassis run upon
85 the conical circular track 6. Four rollers altogether are provided, two only however are shown in Fig. 1. Plate 7 fixed to one of the bearers 2 is bolted to the chassis after the mixer unit has been swung round into the
90 desired position, bolt hole 8 being provided for this purpose. The arrangement of the bearers 2 and the bearers 3 with regard to the complete mixing machine may easily be
95 understood upon reference to Fig. 3, two
100

parallel bearers 3 being suitably secured to the road wheels 9. Two parallel bearers 2 carry the complete mixer unit which includes the engine (not shown), mixing drum 10, chute 11, and two triangular supporting frames 12.

With reference to Fig. 2, the shaft 1 is screwed into bush 13 contained in bearing 14 secured to the chassis. Rotation of the shaft 1 is obtained by means of a tommy bar 15 inserted into holes formed in collar 16 which is secured to the shaft 1 by the key 17. The mixer unit is carried to its raised position by means of three collars 18, 19 and 20, collar 20 being secured to the shaft 1 by means of pin 21. Pads 22 fixed to the mixer unit enable it to be locked firmly to the chassis after the same has been swung into the desired position. The threads on shaft 1 are thus relieved of the weight of the mixer unit. This locking as will be understood is obtained by rotation of the tommy bar in a clockwise direction assuming the threads on the shaft 1 to be right handed. Four pads 22 altogether are employed, two only being shown in Fig. 2. If desired, further locking devices may be provided. It will be obvious that we may include in the arrangement shown in Fig. 2 if desired, ball or roller bearings. For instance, the collar 18 might be replaced by a ball race.

It will be obvious that to swing round the mixer unit into a desired position it is first necessary (see Fig. 2) to rotate shaft 1 by means of the tommy bar 15 so that the shaft 1, collars 18, 19 and 20, and the mixer unit will all rise together vertically to such an extent that the pads 22 come out of contact with the bearers 3.

Our invention, it will be readily appreciated is capable of modification without departing from the scope thereof as set forth in our following claims.

We claim:

1. A mixing machine comprising a mixer unit and means for rotatably supporting the same on a vertical axis comprising bearer members one above the other, the lower bearer member being part of a chassis, the upper bearer being rotatable with the mixer unit relative to the chassis bearer, a vertical shaft extending between and connecting said bearers, in a central position, and means to prevent unintentional rotation of the mixer unit with its bearer.

2. A mixing machine comprising a mixer unit and means for rotatably supporting the same on a vertical axis comprising bearer members one above the other, the lower bearer member being part of a chassis, the upper bearer being rotatable with the mixer unit relative to the chassis bearer, a vertical shaft extending between and connecting said bearers, and means to move the bearers vertically with reference to one another.

3. A mixing machine comprising a mixer unit and means for rotatably supporting the same on a vertical axis comprising bearer members one above the other, the lower bearer member being part of a chassis, the upper bearer being rotatable with the mixer unit relative to the chassis bearer, a vertical shaft extending between and connecting said bearers, and means to move the bearers vertically with reference to one another, comprising a screw device associated with said vertical shaft.

4. A mixing machine comprising a mixer unit and means for rotatably supporting the same on a vertical axis comprising bearer members one above the other, the lower bearer member being part of a chassis, the upper bearer being rotatable with the mixer unit relative to the chassis bearer, a vertical shaft extending between and connecting said bearers, and means to move the bearers vertically with reference to one another, comprising a screw device associated with said vertical shaft, that include thread on the lower end of the shaft and a nut carried by the chassis bearer.

5. A mixing machine comprising a mixer unit and means for rotatably supporting the same on a vertical axis comprising bearer members one above the other, the lower bearer member being part of a chassis, the upper bearer being rotatable with the mixer unit relative to the chassis bearer, a vertical shaft extending between and connecting said bearers, and means to move the bearers vertically with reference to one another comprising a screw device associated with said vertical shaft, and removable means between the bearer members that take the load off the screw device.

In witness whereof we have signed this specification.

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