G. E. KELLAR.

CONCRETE MIXER.

APPLICATION FILED JULY 20, 1914.

1,327,917.

Patented Jan. 13, 1920.

Fig. 1.

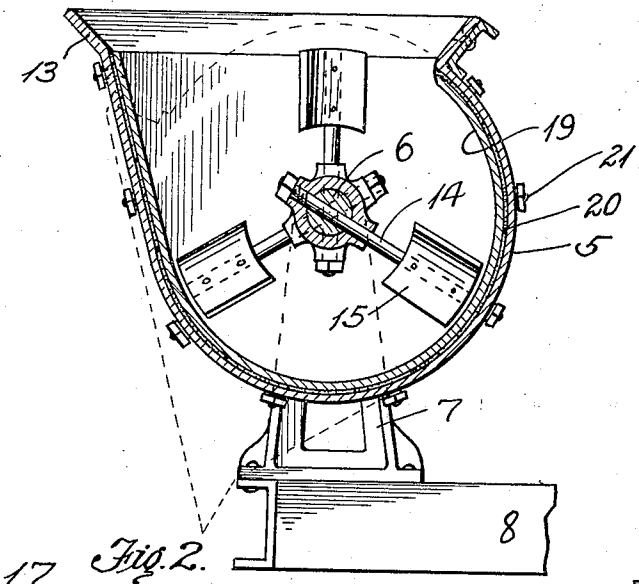


Fig. 2.

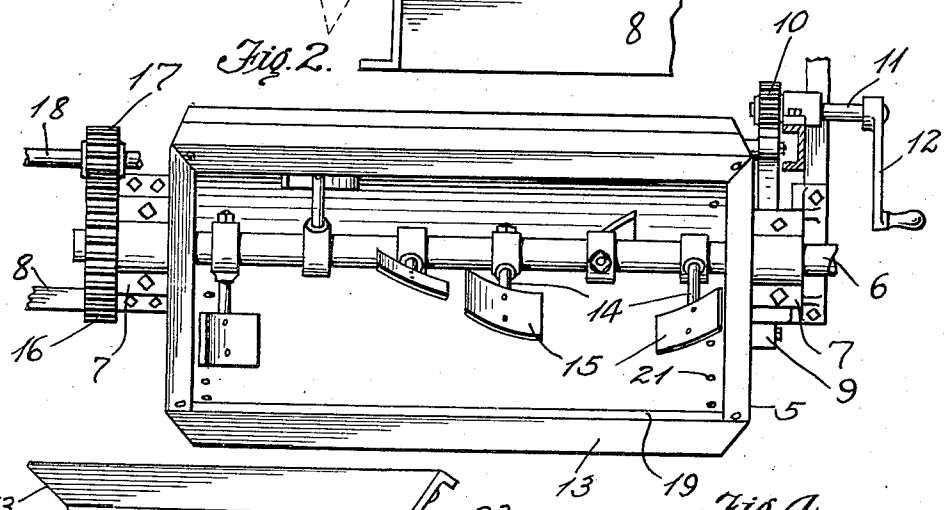


Fig. 3.

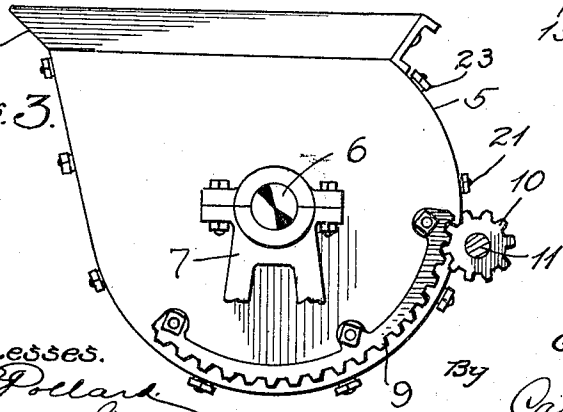
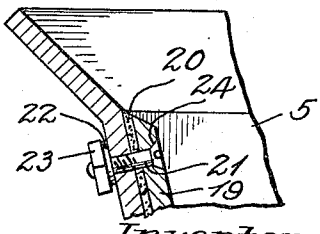


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE E. KELLAR, OF COVINA, CALIFORNIA, ASSIGNOR TO KELLAR-THOMASON COMPANY, A CORPORATION OF CALIFORNIA.

CONCRETE-MIXER.

1,327,917. Specification of Letters Patent. **Patented Jan. 13, 1920.**

Application filed July 20, 1914. Serial No. 851,875.

To all whom it may concern:

Be it known that I, GEORGE E. KELLAR, a citizen of the United States, residing at Covina, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Concrete-Mixers, of which the following is a specification.

This invention relates to improvements in concrete mixers, and particularly to that class of mixers in which the ingredients are mixed and stirred in an open trough shaped receptacle, by means of paddles or stirrers of any desired type.

It is an object of the invention to provide a concrete mixer with a stirring receptacle or trough which is provided with an inner removable wearing surface or lining, which may be removed and replaced when desired.

It is also an object of the invention to provide a concrete mixer with a mixing trough having a removable inner lining or wearing surface, a separating material being interposed between the walls of said mixing trough and the said lining, whereby the parts will be prevented from rusting together.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangements of parts as will be hereinafter more fully described and claimed.

In the accompanying drawing forming a part of this specification;

Figure 1 is a transverse vertical sectional view through the mixing trough or receptacle of a concrete mixer constructed in accordance with the present invention.

Fig. 2 is a top plan view of the same.

Fig. 3 is an end elevation of the mixing trough or receptacle showing the means for tipping the same.

Fig. 4 is a fragmentary detail sectional view showing a portion of the mixing trough wall and the wearing liner, and one of the bolts for securing the liner in place.

In concrete mixing devices where troughs or receptacles are employed, together with mixing and stirring blades or paddles for mixing the ingredients, it is found that the walls of the trough wear rapidly, particularly because the sharp sand forced around by the mixing blades, and being squeezed between the edges thereof and the wall of the trough wear and cut the same. It is also found that the larger pieces of gravel that occasionally crowd between the blades and the walls of the mixer, as said walls are usually made, force or bend outwardly the said walls and cause them to spring out of shape, the walls also being thus more deeply cut than usual so that they wear rapidly at such places.

By the present invention the walls of the mixing receptacle or trough are reinforced and stiffened so as to prevent them from being sprung out of shape, by the use of a removable liner or wearing plate, the said plate also receiving all of the wear from the constantly rubbing materials moving about in the mixer. When the liner becomes considerably worn, the bolts can be removed and a new liner readily put in place for receiving the wear and stiffening the mixing receptacle.

The details and features of the invention will now be more specifically described, reference being had to the accompanying drawing in which 5 indicates a mixing receptacle or trough, which is journaled upon a shaft 6. The shaft 6 is also journaled in bearings carried by standards 7 which rise from the main frame 8 of the mixing machine. One end of the mixing receptacle 5 is usually provided with a segmental rack 9 which meshes with a pinion 10 carried by a shaft 11. The shaft 11 is provided with a crank handle 12 by which it may be turned, and the pinion 10 actuated for moving the rack 9, and thereby tipping the mixing receptacle to the position indicated in dotted lines in Fig. 1, for emptying the receptacle of its contents, and then turning the said receptacle 5, back to its normal position as shown in full lines in said figure. The said receptacle 5 is preferably approximately cylindrical so as to fit closely about the paddles or blades within. The said receptacle is however, open at the top and provided with outwardly flaring edges to facilitate the entrance of materials as they are put in the receptacle for mixing, and one of said edges as 13 forms a stop for the movement of the receptacle when it is dumped and overhangs the edge of the frame 8 so as to prevent the materials from falling upon the said frame.

The shaft 6 carries a series of removable arms 14 within the receptacle 5, and blades or stirring paddles 15 are secured to said

arms, their outer edges extending quite close to the inner surface of the receptacle liner. There may be any number desired of arms and blades upon the said shaft for stirring the materials within the receptacle. The shaft 6 extends beyond the standard 7 at one end of the device, a sufficient distance to receive a gear 16 which meshes with a driving pinion 17. The pinion 17 may be operated in any desired way but is generally actuated by an engine driven shaft 18 to which it is secured.

Closely fitting the inner surface of the receptacle 5 is a curved plate 19 forming a liner and wearing surface member for the said receptacle. Between the said liner and the wall of the receptacle 5, is placed a filling or separating means 20, adapted to prevent the action of rust from fastening the liner to the walls of the receptacle and thereby rendering it difficult to separate them and remove the liner. Such filling or separating means may consist of one or two thicknesses of heavy paper or a coating of suitable thickness of some non-rusting material as asphaltum or the like, all within the spirit of the invention. The liner 19 is preferably secured by a number of small bolts 21 which are passed through the liner plate and the wall of the mixer, washers 22 and nuts 23 being applied to the outer ends thereof as clearly shown in the drawing. The heads of the bolts 21 are preferably countersunk as at 24 so that the smooth inner surface of the liner 19 is not interrupted.

It will be evident from the above description that the liner 19 may be formed of a plain piece of sheet metal bent to closely fit the interior of the mixer and that by removing the bolts 21, the liner when worn can be easily removed and a new one put in place. The material at 20 between the parts prevents the liner from becoming rusted to the walls of the mixing receptacle and therefore difficult to remove. The use of the liner also greatly reinforces the walls of the mixing receptacle and prevents them from being sprung out of shape, by gravel or other materials crowding between the blades and the liner. The approximately cylindrical shape of the liner also gives it stiffness and assists in reinforcing the mixing receptacle. Such a liner is cheap in structure and ordinary stock bolts may be employed for holding it in place.

What is claimed is :

In a machine of the character referred to, a container having an outer wall and an inner lining, and a co-extensive, separating sheet of paper between said outer wall and said lining, whereby to prevent said walls from rusting together and rendering their separation difficult.

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

GEORGE E. KELLAR.

Witnesses:
L. T. ODEN,
CASSELL SEVERANCE.