

Nov. 30, 1926.

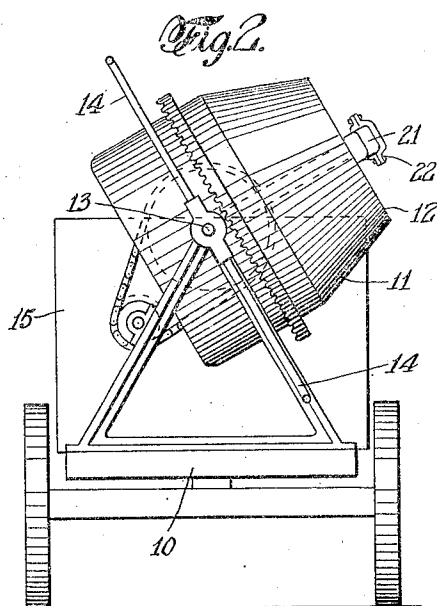
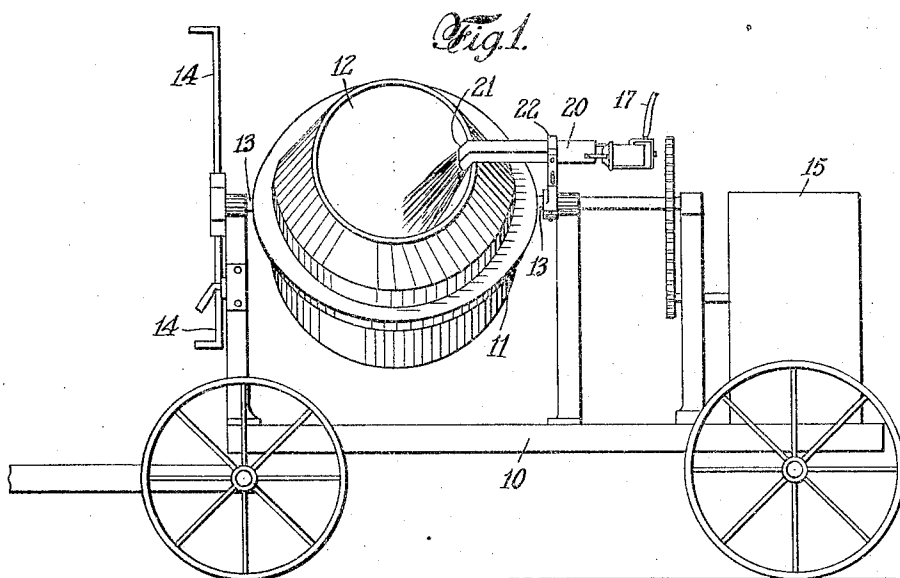
1,609,072

W. C. ELZE

HEATED CONCRETE MIXER

Filed June 8, 1926

2 Sheets-Sheet 1



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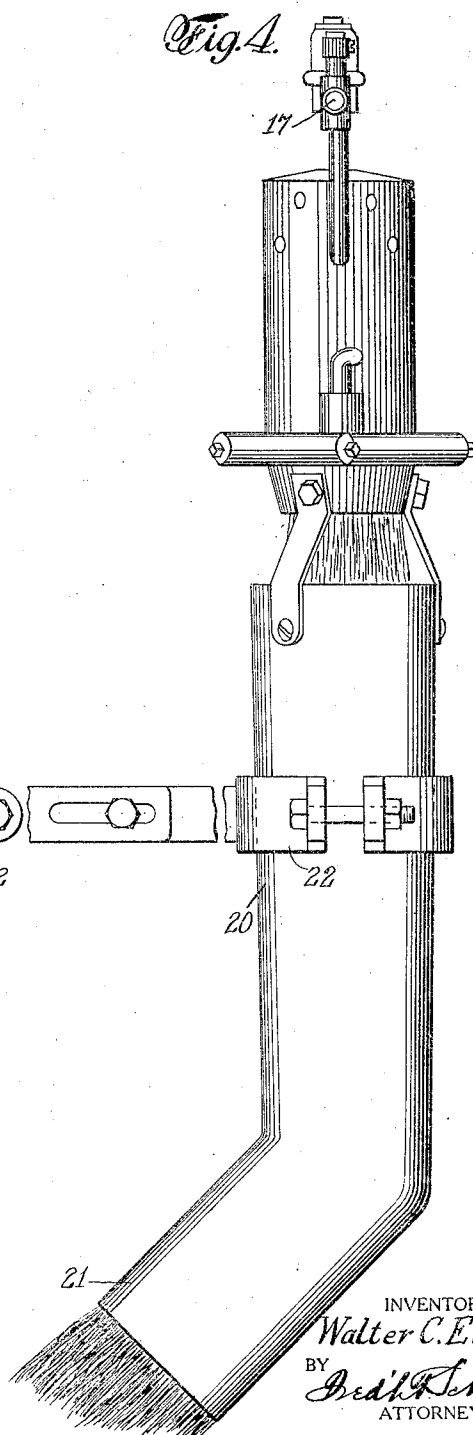
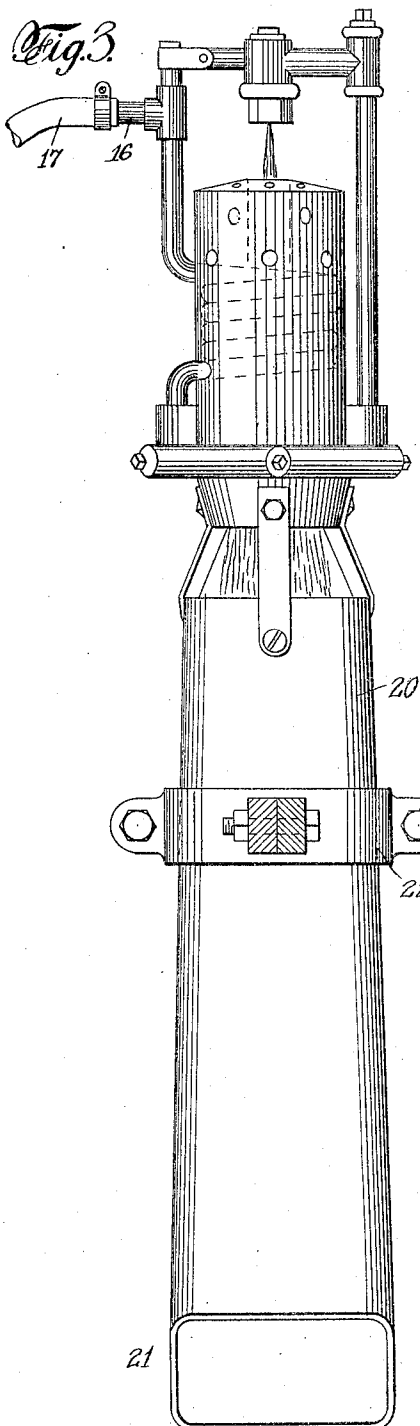
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HEATED CONCRETE MIXER

Filed June 8, 1926

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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HEATED CONCRETE MIXER.

Application filed June 8, 1926. Serial No. 114,398.

The invention relates to concrete mixers of the type wherein a batch of the materials is rotated in a suitable drum which is arranged to be then tilted to discharge the load.

5 In operating such mixers, especially during the winter season of the year, difficulty is frequently experienced due to the lumping or balling of the materials employed because of the low temperature to which the same
10 are exposed; and the discharged aggregate, also, freezes before proper setting of the same has taken place.

In a prior U. S. Patent, No. 1,578,021, granted me the 23rd of March 1926, I have
15 disclosed means for heating the concrete aggregate in connection with mixing apparatus provided with a loading bucket or hopper for applying the material thereto. In the apparatus of said patent, the heat-
20 supplying member is stationary so that the flame therefrom, while impinging on the drum in all of its different positions, does not at all times extend within the interior of said drum. It is the object of the present
25 invention to provide a construction which will admit of a flame for heating the aggregate continuously by directing it at all times into the interior of the drum; and the invention is more particularly adaptable to
30 the simple type of apparatus in which loading of the drum is accomplished manually rather than by means of a loading bucket or hopper. It is desirable, also, that the heat applying member be readily attachable
35 to and as readily removed from the concrete mixer and that it may conveniently be adjusted to mixer drums of various diameters and depths.

To this end, the heating means comprises
40 a delivery or distributing pipe for directing the flame into the interior of the drum, said means and pipe partaking of the tilting movement of said drum so that there is no relative change in position of the one with
45 respect to the other, the heating means with pipe, however, being adjustable relatively to the drum and conveniently attachable thereto and removable therefrom.

The nature of the invention, however, will
50 best be understood when described in connection with the accompanying drawings, in which:

Figure 1 is a front elevation of the mixer
55 apparatus equipped with heating means; and Figure 2 is a side elevation thereof.

Figures 3 and 4 are respectively a detail front and side elevation of the burner mechanism and flame delivery tube, together with means for attaching same to the mixer apparatus.

Referring to the drawings, 10 designates, by way of example, a suitable wheeled truck for carrying the mixing and heating devices with operating mechanism for the mixing
60 device. The latter is of the usual and well known construction and design and comprises a drum 11 with mouth 12 into which the materials are adapted to be charged and from which the aggregate is subsequently
65 to be dumped. The drum to this end is tiltable, being mounted, for example, upon trunnions 13 attached thereto, and is operable generally manually thru suitable hand
70 levers 14. The rotation of the drum for mixing is usually accomplished by an internal combustion engine 15 carried by the truck 10 and connected thereto thru intermediate mechanism, in manner well understood.

In accordance with the invention, suitable heating means are associated with said drum
80 and may comprise standard and well known gaseous fuel burners as the oil burners indicated more particularly in Figures 3 and 4. The fuel may be applied thereto thru a connection 16 from a source of supply (not
85 shown); and a portion 17 of said connection is made flexible to admit of movement of the burner with the drum. The said burner is provided with an extension or delivery
90 pipe 20 thru which is discharged a flame arranged to be directed into the mouth 12 of the drum by the said pipe 20 which, for this purpose, is bent forward at its outer end as indicated to provide a distributing
95 tip 21.

The burner apparatus is arranged to be rigidly though removably secured to the drum as through one of the trunnions 13, utilizing for this purpose an adjustable
100 clamping bracket 22, attachable both to said trunnion and to the delivery pipe 20, as indicated more clearly in Figures 3 and 4. The clamp member is constructed, also, preferably to afford an adjustment along
105 its length as shown, so that the tip 21 of the delivery pipe may be variously spaced with reference to the mouth 12 of the drum to accommodate the burner apparatus to drums of various depths, while for drums
110 of different diameters, the bracket may be

secured in various positions along the supporting delivery pipe 20. Being thus fixedly mounted on the trunnion 13, the burner apparatus will partake of the angular movement of said trunnions and its drum as the latter is tilted to receive the charge or to dump the same; and the relative position of the tip 21 with reference to the mouth 12 of the drum will be maintained thruout the tilting operation whereby the flame from the burner may be continuously directed into the interior of the said mixer drum.

In operation, the drum may be preheated if desired, the burner being first lighted to provide a jet of flame which impinges then upon the inner walls of the drum. Thereupon, the drum is loaded, generally manually, the flame being maintained if desired during this period as the tip is in such close proximity to the mouth 12 that little if any danger of workmen becoming burned is involved. Or, if desired, the flame may be cut off during the loading period and restored again during the period of mixing while the drum is being rotated. This causes the mixer to be operated at a temperature sufficiently high to obviate any of the usual difficulties encountered if working with materials and apparatus of the character in question when the operations are performed under low temperature conditions.

I claim:—

1. The combination with a concrete mixer apparatus having a rotatable and tilting drum with single opening; of an oil burner member movable with said drum for combustion external thereto and adapted to

project a jet of flame into said drum in all of its positions.

2. The combination with concrete mixer apparatus having a rotatable and tilting drum with single opening; of an oil burner member movable with said drum for combustion external thereto and adapted to project a jet of flame into said drum in all of its positions, and a flexible fuel supply connection to the burner.

3. The combination with concrete mixer apparatus having a rotatable drum with single opening, and provided with trunnions for tiltably mounting the same; of an oil burner member; and attaching means for securing the same rigidly to the trunnions of the drum, whereby said burner member will follow the tilting movement of said drum and the said burner having its flame directed into the mouth of the said drum.

4. The combination with concrete mixer apparatus having a rotatable and tilting drum with single opening; of an oil burner member movable with said drum for combustion external thereto and adapted to project a jet of flame into said drum in all of its positions; and an adjustable bracket member for locating the burner member relatively to the mouth of the drum.

5. The combination with concrete mixer apparatus having a rotatable and tilting drum with single opening; of a burner member removably attached to the drum and moveable therewith for combustion external thereto and adapted to project a jet of flame into said drum in all of its positions.

In testimony whereof I affix my signature.

WALTER C. ELZE.