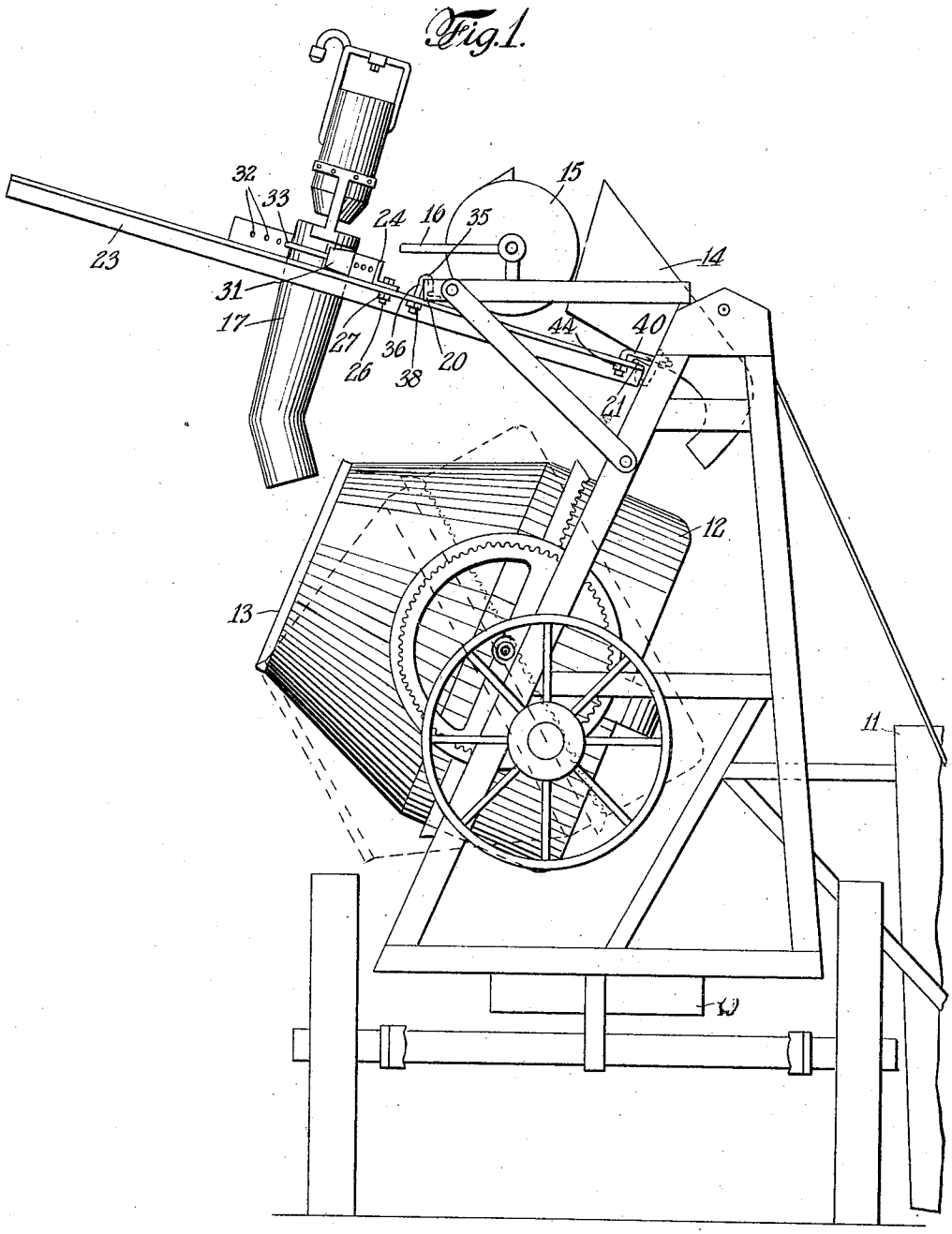
June 24, 1930. W. C. ELZE 1,767,746

STRUCTURE FOR ADAPTING OIL BURNERS TO CONCRETE MIXER APPARATUS

Filed Oct. 25, 1926 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

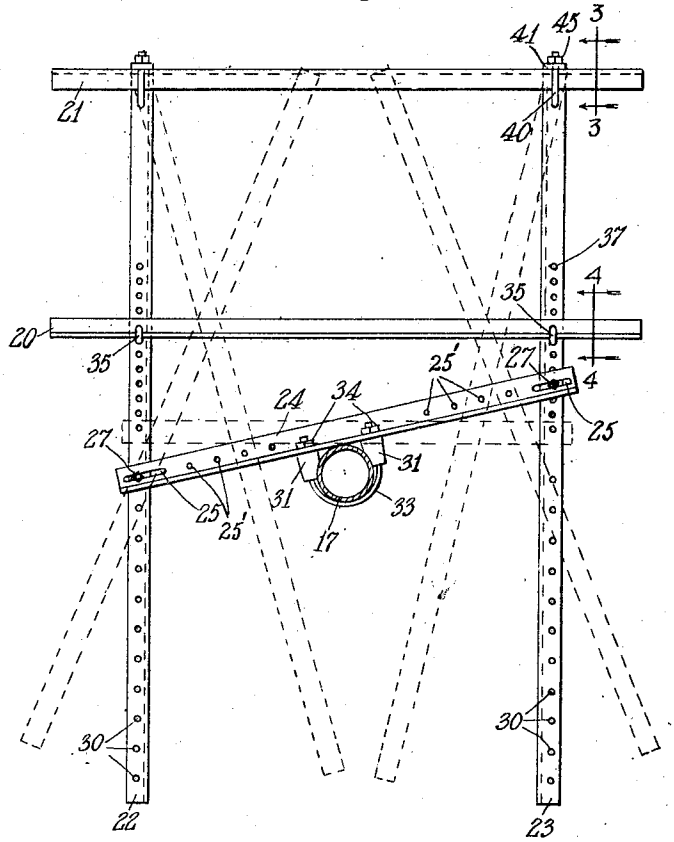


Fig. 3.

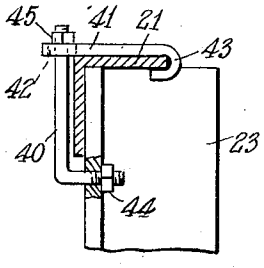
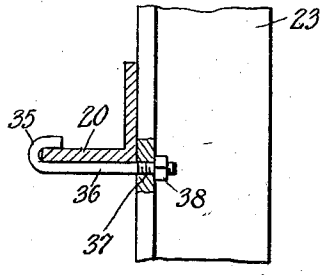


Fig. 4.



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UNITED STATES PATENT OFFICE

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STRUCTURE FOR ADAPTING OIL BURNERS TO CONCRETE-MIXER APPARATUS

Application filed October 25, 1926. Serial No. 143,987.

The invention relates to concrete mixers of the type wherein a batch of the materials is rotated in a suitable drum provided with single opening and which drum is arranged to be then tilted to discharge the load. In operating such mixtures during colder seasons of the year, difficulty is experienced due to the lumping or balling of the materials employed because of the low temperatures to which the same are exposed and the discharged aggregate, also, often freezes before setting of the same has taken place.

In a prior U. S. Patent No. 1,578,021, I have indicated means to obviate these difficulties by associating with such concrete mixer apparatus a suitable burner member for directing thereto a flame jet in order to heat the drum portion and charge.

Difficulty has been experienced, however, in connection with the installation of the said burner apparatus, more particularly in adapting it to the various sizes and models of concrete mixer apparatus of this type as placed on the market by different manufacturers and especially in connection with the adaptation of burner apparatus to existing units already in service.

The present invention has for its object a universal form of attaching member whereby the burner may conveniently and readily be installed either initially in the manufacture of the mixer apparatus or subsequently thereto as to existing mixers and, for example, already in use. Owing to the various sizes of the mixers required and the variety in design in, for example, the location of the water tank and chute for same utilized for supplying water to the aggregate, and the variation in shape and size and the location of the structural members of the mixer apparatus, it has not heretofore been possible to provide such burner apparatus to these mixers without, as a rule, designing a special mounting for each particular type. This, of course, is generally impractical and often impossible from a commercial standpoint. Applicant's practise has been, therefore, to only initially equip mixers with a burner and which is specially designed therefor, leaving untouched the large field of mixers already in use and mixers of more or less special type.

With the novel burner supporting structure or device hereinafter more fully described, it is possible to accommodate a burner to various sizes and styles of mixer apparatus, and admit, also, of adjustment of the burner outlet to the desired relationship with the mouth of the drum to be heated. The installation of a burner by this particular supporting structure, furthermore, requires no change or operation to the existing mixer apparatus and the use merely of a suitable tightening tool for specially designed bolts and nuts associated with the bracket in the novel manner set forth.

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

Fig. 1 is a side elevation of concrete mixer apparatus with single-opening, tilting-type drum, and shown equipped with burner apparatus mounted thereon by the novel mounting member.

Fig. 2 is a plan view of the novel burner supporting member and two of the structural members of the mixer superstructure to which the said member is to be attached.

Figs. 3 and 4 are transverse sections taken respectively on the lines 3—3, and 4—4, Fig. 2, and looking in the direction of the arrows.

Referring to the drawings, 10 designates, by way of example, a suitable wheeled truck for carrying the loading, mixing, water supplying and heating devices with operating mechanism therefor, the same being of the usual and well known construction and design, and comprise a loading bucket or hopper 11 to which the material to be mixed is delivered in the usual manner, whereupon it is to be elevated and discharged into a mixing drum 12 of the tilting type with a single opening or mouth 13 thereof located to coact with the loading bucket or hopper and receive therefrom the contents of the same for mixing in the said drum 12, as is well understood. A water delivery chute 14 is also provided to deliver to the mouth 13 the water for the aggregate in the drum,

water being arranged to be dumped into the chute, preferably, from an oscillatable tank or container 15 receiving in turn thru a pipe 16 the water from a suitable source (not shown). The apparatus hereinbefore described as well as the burner 17 is of more or less standard design and forms no particular part of the present invention which relates more especially to a mounting member for properly associating the said burner with respect to the mouth 13 of the mixing drum.

While it will be appreciated that various styles and sizes of mixer apparatus are manufactured, generally they comprise some superstructure or framing for retaining the various parts and, as a rule, are provided with transverse structural steel members, as the members 20 and 21 shown in the specific embodiment set forth, and in the nature usually of angle pieces and extending transversely over the upper outer portion and an intermediate inner portion respectively. The pieces vary, of course, in shape, location and thickness and it is to these more or less standardized pieces of the superstructure that the universal burner supporting member forming the subject of the present invention is to be attached. As hereinfore stated, the construction of this member is to be such as will permit of its installation without the use of any special tools other than a tightening wrench or the like for bolts and nuts and without requiring any change in or drilling of the supporting superstructure.

To this end, the member comprises a pair of lateral frame pieces, as the angle pieces 22 and 23, and a tranverse holding angle piece 24 which is provided at its ends with respective slots 25 through which is adapted to pass corresponding bolts 26 on which work nuts 27 for securing rigidly the said transverse holding angle piece to the respective lateral members 22 and 23. The latter for this purpose are provided over their lengths with a series of perforations 30 to admit of securing the tranverse member at various portions along the length of the said lateral members, the slots allowing for a limited variation in angularity. Further adjustment may be afforded by perforations 25′ between the slots 25.

The member 24 at its middle portion or intermediate portions is designed to support a substantially semi-circular clamping or gripping member comprising the pair of blocks 31 thru which and thru perforations 32 in one of the sides of the angle piece 24 are arranged to pass the ends of a rod or clevis 33 curved suitably intermediate its ends and adapted to be tightened by nuts 34. These clamping blocks and curved portion of the rod are designed to receive and retain the burner member 17 which may thus be rigidly positioned by suitably taking up on the nuts 34 to draw the rod to the wall of the angle piece; and the particular desired location of its end may be adjusted to suit the conditions by moving the burner as a whole in the line of its longitudinal axis with reference to mouth 13 of the drum.

It will be appreciated, however, that the lateral members 22 and 23 may assume various angles and positions in a vertical plane relatively to the superstructure by which they are to be supported; and to this end, provision must be made for suitably adapting the member 24 with clamping means to said superstructure, namely the transverse inner and outer angle members 20 and 21 thereof. Over one edge of the former, for example, is therefore arranged to be brought the turned-over end or hook portion 35 of a bolt 36 whose other end is designed to pass through a perforation 37 of the top wall of a member 22 or 23. A nut 38 fits over the threaded end of said hook bolt 36 and, by tightening same, a lateral member 22 or 23 may be rigidly secured in the desired position in a plane at right angles to the plane of the transverse piece 20.

In the attachment of the inner ends of the lateral members 22 and 23 to the transverse member 21, further freedom of adjustment is necessary and therefore two attaching members 40 and 41 are employed. A bolt 40 to this end is bent at right angles, one portion thereof being adapted to fit through the top wall of the member 23 while the other fits into a slot 42 in the attaching member 41 which is in the nature of a hook member having a turned-over end portion 43 which fits over the edge of the side wall of transverse member 21. Nuts 44 and 45 are provided over the respective threaded ends of the bolt 40 so that when the proper angular position of the lateral pieces in, for example, a vertical plane has been determined, said position may be maintained by tightening the aforesaid nuts.

By this expedient, various angularities and positions both in a vertical and horizontal plane are possible for the lateral members 22 and 23 and which will allow of correspondingly altering the position of the burner member 17 retained by the transverse member 24, it being understood that the positions of said lateral pieces 22 and 23 relatively to the transverse pieces 20 and 21 are not restricted nor limited thereby so that various members, as, for example, the water tank 15 and other members of the mixer apparatus may be avoided by properly locating the burner supporting elements, for example, as indicated by the position shown by the dotted lines, Fig. 2, the position of the burner 17 being maintained.

I claim:

1. A three-piece separable supporting

structure for rigidly securing a burner member in position on concrete mixer apparatus of the character set forth, such structure comprising two lateral angle pieces perforated along one side, a transverse angle piece slotted at its outer ends, clamping means for the burner and carried by the transverse angle piece, bolts and nuts for adjustably securing the outer ends of said transverse angle piece through its said slots to the lateral pieces, adjustable securing means at the inner end of each of the lateral pieces for attaching the same to the mixer apparatus, and securing means at an intermediate point of each of the lateral pieces for attaching the said pieces to the mixer apparatus.

2. A three-piece separable supporting structure for securing a burner member in position on concrete mixer apparatus of the character set forth, such structure comprising two lateral angle pieces perforated along one side, a transverse angle piece slotted at its outer ends, clamping means for the burner and carried by the transverse angle piece, bolts and nuts for adjustably securing the outer ends of said transverse angle piece to the lateral pieces, adjustable securing means at the inner end of each of the lateral angle pieces and consisting of a rod with hook at one end and slotted at the opposite end, a right-angled bolt member threaded at both ends, one end being adapted to pass through a lateral angle piece and the other end through the slotted portion of the hooked rod, nuts fitting over the threaded ends of said bolt member, and securing means at an intermediate point of each of the lateral members.

3. A three-piece separable supporting structure for securing a burner member in position on concrete mixer apparatus of the character set forth, such structure comprising two lateral angle pieces perforated along one side, a transverse angle piece slotted at its outer ends, clamping means for the burner and carried by the transverse angle piece, bolts and nuts for adjustably securing the outer ends of said transverse angle piece to the lateral pieces, adjustable securing means at the inner end of each of the lateral angle pieces and consisting of a rod with hook at one end and slotted at the opposite end, a right-angled bolt member threaded at both ends, one end being adapted to pass through a lateral angle piece and the other end through the slotted portion of the hooked rod, nuts fitting over the threaded ends of said bolt member, and securing means at an intermediate point of each of the lateral members and consisting of a bolt member having a hook at one end and its other end threaded and adapted to pass through a lateral piece, and a nut fitting over the threaded end of said bolt.

4. A three-piece separable supporting structure for rigidly securing a burner member in position on a concrete mixer apparatus of the character set forth and comprising two lateral angle pieces perforated along one side, a transverse angle piece slotted at its outer ends and provided with perforations between the slotted ends, clamping means for the burner and carried by the transverse angle piece, bolts and nuts for adjustably securing the outer ends of said transverse angle piece through its said slots to the lateral pieces, adjustable securing means at the inner end of each of the lateral pieces for attaching the same to the mixer apparatus and securing means at an intermediate point of each of the lateral pieces for attaching the said pieces to the mixer apparatus.

In testimony whereof I affix my signature.

WALTER C. ELZE.