

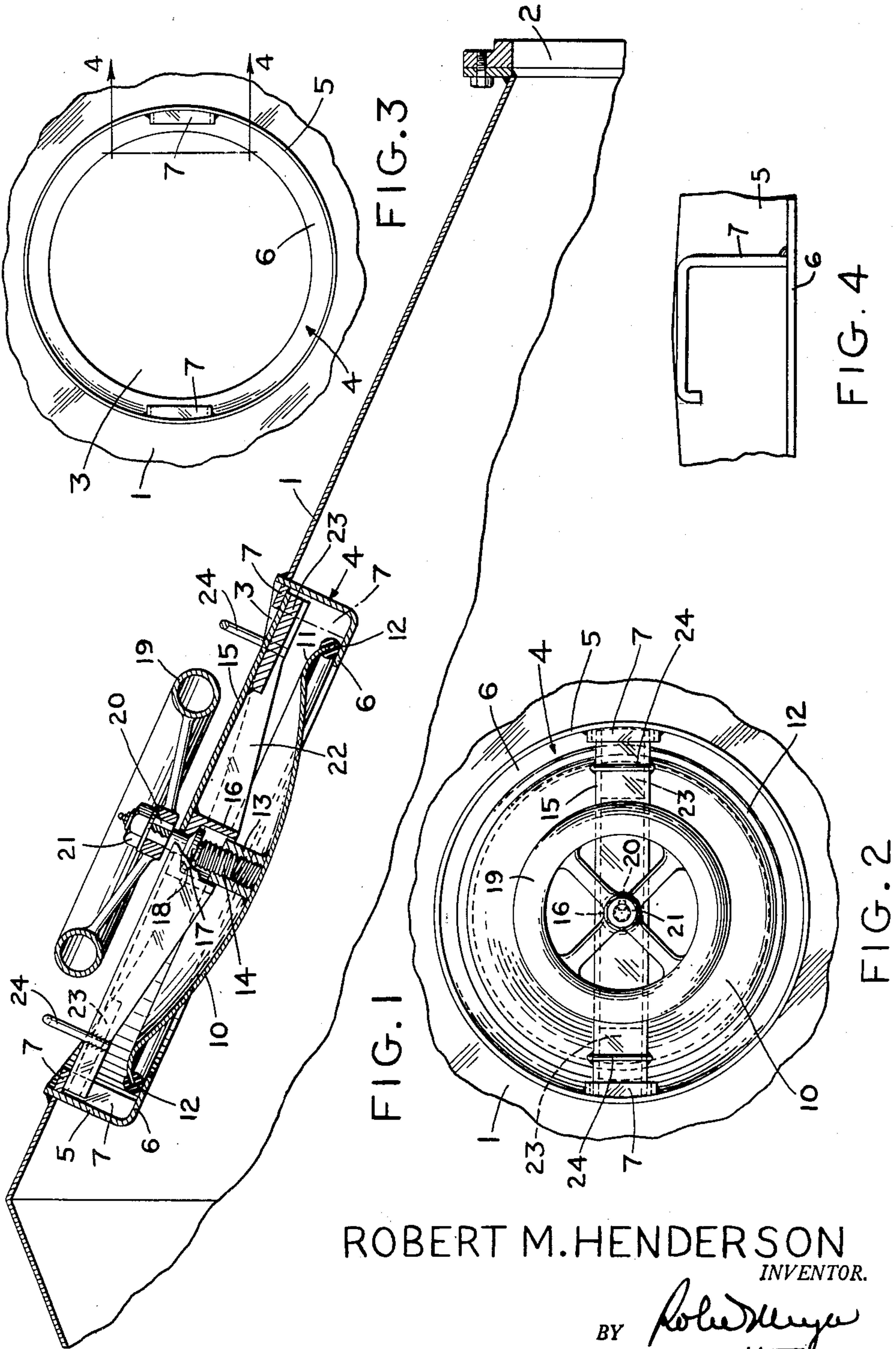
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R. M. HENDERSON

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CHARGING DOOR FOR TRANSIT CONCRETE MIXERS

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ROBERT M. HENDERSON
INVENTOR.

BY *Robert M. Henderson*
Attorney

UNITED STATES PATENT OFFICE

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CHARGING DOOR FOR TRANSIT
CONCRETE MIXERSRobert M. Henderson, Bound Brook, N. J., as-
signor to Worthington Corporation, Harrison,
N. J., a corporation of Delaware

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1 Claim. (Cl. 220—46)

1

This invention relates to concrete agitators or mixers and more particularly to a charging door by means of which a charge of ready mixed concrete or the ingredients of concrete may be loaded into the rotatable drum of a transit mixer.

More specifically, an object of the present invention is to provide a door for the charging openings of the drums of transit concrete mixers or agitators which will effectively seal the charging opening against leakage of water or fine particles of grit during rotation of the drum, as well as a door structure which may quickly and with comparative ease be placed and locked in closing position or be removed to allow charging of the drum.

With these and other objects in view, as may appear from the accompanying specification, the invention consists of various features of construction and combination of parts, which will be first described in connection with the accompanying drawings, showing a charging door for transit concrete mixer of a preferred form embodying the invention, and the features forming the invention will be specifically pointed out in the claim.

In the drawings:

Figure 1 is a fragmentary section through a transit concrete mixer drum showing the door in closed position.

Figure 2 is a top plan of the door.

Figure 3 is a top plan of the door clamping ring carried by the mixer drum.

Figure 4 is a view taken on line 4—4 of Figure 3.

Referring more particularly to the drawings, 1 indicates the rotatable mixing drum of a transit concrete mixer which may be rotated in any of the approved manners in which the mixing drums of transit concrete mixers are rotated, many such structures being on the open market. The drum 1 is provided with an end discharging opening 2 and with a charging opening 3 formed in the side of the drum at a position which is the normal stopped top of the drum so that the opening will be readily accessible for loading a charge of ready mixed concrete or the ingredients of concrete into the drum.

A clamping ring structure 4 is welded to the drum about the perimeter of the opening 3 and it includes the annular ring 5 which extends into the drum and has an annular inwardly extending flange 6 upon its inner edge.

A pair of diametrically opposed flanges 7 extend inwardly from the inner side of the ring 5

2

near the upper outer edge of the ring. These flanges may be formed in any suitable manner such as by the welding of angle plates to the interior of the ring. The ring 4 opens out through the drum so as to permit the concrete ingredients or premixed concrete to be passed through the opening into the drum. A door or closure structure is provided for tightly closing the charging opening during transit of the mixer and prevent water or fine grit from leaking out of the drum through the charging opening during rotation of the drum. The door structure includes the dished disc 10, the perimetrical portion of which is reversely dished to the curvature of the main body of the disc as shown at 11. An elastic gasket 12 preferably of molded rubber is mounted upon the perimeter of the disc 10, as clearly shown in Figure 1 of the drawings. An internally threaded projection 13 extends outwardly from the concave side of the disc at its axis. The internally threaded projection 13 receives a threaded stud 14. The stud 14 extends through the locking bar 15 and is partially housed in a housing 16 depending from the locking arm 15. A wedging washer or flange 17 is formed on the stud 14 and engages against the annular shoulder 18 of the housing 16.

A hand wheel 19 is keyed on the stud 14 by any suitable type of key indicated at 20, and is held against longitudinal movement by means of a lock nut 21. The locking bar 15 is braced by a yoke structure 22 which is welded to the housing 16 and to the re-enforcing plates 23 which are in turn welded or otherwise suitably attached to the locking bar 15.

In use, the locking bar 15 is rotated so that it will clear the diametrically opposed flanges 7 on the ring 4 and the door structure is inserted into the ring with the annular elastic gasket 12 engaging the inturned annular flange 6 after which the locking bar 15 is moved so that its ends will engage beneath the diametrically spaced flanges 7. The hand wheel 19 is then rotated to move or force the disc 10 and the locking bar 15 apart, forcing the locking bar into tight locking engagement with the flanges 7 and forcing the gasket 12 in tight sealing engagement with the annular flange 6.

When it is desired to remove the door, the hand wheel 19 is rotated in the opposite direction to move the disc 10 and locking bar 15 towards each other so that when the locking bar is released from clamping engagement against the flanges 7 it may be slightly rotated so as to clear the flanges and the entire door structure

3

lifted out of the ring 4 by means of the handles 24 which are attached to the locking bar 15.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown, but that they may be widely modified within the invention defined by the claim.

What is claimed is:

In combination with a rotatable drum on a transit concrete mixer, said drum having a charging opening in the wall thereof at its normal stopped top position, of a clamping ring in said opening about the circumference thereof and extending into said drum, said clamping ring including an annular flange on its inner portion turned radially inward and a pair of inturnd flanges adjacent its outer edge extending radially inward, a door mounted in said clamping ring for closing said opening consisting of a dished disc having its outer perimetrical portion dished reversely to the dishing of the main body, and provided with an annular gasket on its outer edge to engage said annular flange when the door is mounted in said clamping ring, an internally threaded projection formed at the center of said door, a stud having a threaded portion thereon engaging said internally threaded projection, a shoulder on said stud above said threaded portion, a locking bar provided with a bore to receive said stud therethrough, a hous-

4

ing about said bore adapted to abut said shoulder on the stud for rotatably mounting said locking bar, a handwheel fixedly connected to the portion of the stud extending through said locking bar to move said locking bar into and out of locking engagement with said pair of inturnd flanges on the outer edge of said clamping ring, and said housing in assembled position extending about the outer circumference of said internally threaded projection and slidable thereover during movement of said locking bar.

ROBERT M. HENDERSON.

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