

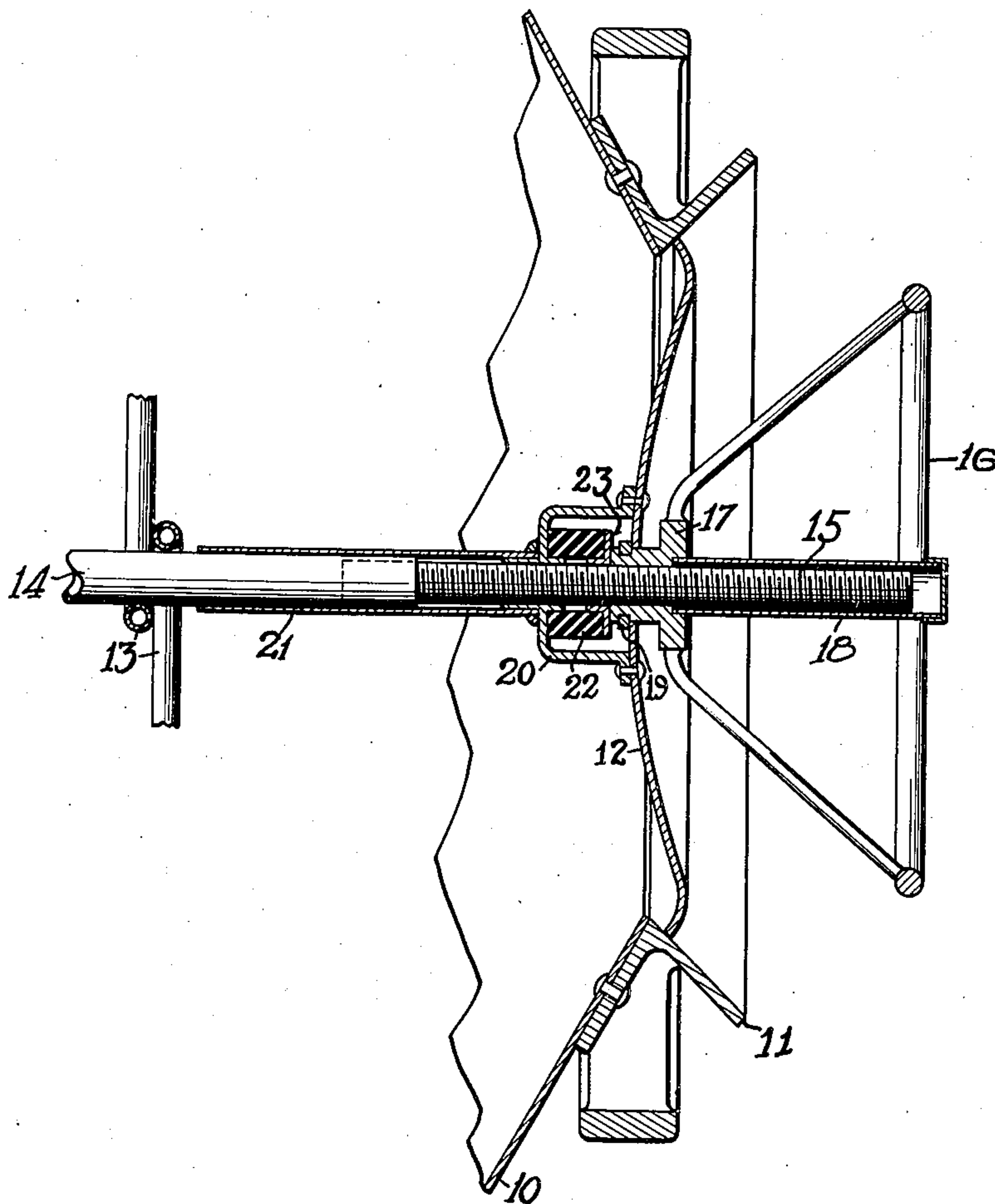
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CLOSURE FOR CONCRETE MIXING DRUMS

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CLOSURE FOR CONCRETE MIXING DRUMS

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3 Claims. (Cl. 220—55)

This invention relates to improvements in end closures for discharge openings of concrete mixing drums.

The primary object of my invention is to provide an end closure for the discharge opening of a concrete mixing drum, embodying a construction capable of being tightly closed during the mixing operation and opened to an extent required to permit the discharge of the drum's contents.

Another object of my invention is to provide an end closure for the discharge opening of a concrete mixing drum embodying a novel construction for applying an adequate yielding pressure to the closure after the latter is moved into a closed position, whereby the said closure is normally maintained in a tightly closed position during the mixing operation and while the drum is in transit.

Other and further objects of my invention will be pointed out hereinafter or indicated in the appended claims or will be obvious to one skilled in the art upon an understanding of the present disclosure. For the purposes of this application I have elected to show herein certain forms and details of an end closure for mixing drums representative of my invention; it is understood, however, that the embodiment of my invention herein shown and described is for the purpose of illustration only, and that therefore it is not to be regarded as exhaustive of the variations of the invention, nor is it to be given an interpretation such as might have the effect of limiting the claims, short of the true and most comprehensive scope of the invention in the art.

In the accompanying drawing illustrating the preferred form of my invention, the figure is a vertical sectional view taken through the axis of the end portion of a concrete mixing drum showing the end closure for the rear discharge opening of the drum in vertical section and in a closed position.

Referring to the drawing, the numeral 10 designates a rotatable concrete-mixing drum having a rear discharge opening around which is provided an outwardly flared annular flange 11. The inner face of the flange 11 constitutes a seat for a suitably shaped closure 12.

Supported axially within the mixing drum 10, as by radially disposed tubular braces 13 secured to the side walls of the drum, is a pipe 14 for supplying water to the interior of the drum. Rigidly secured to the pipe 14 is a rearwardly disposed screw shaft 15 which projects axially through the discharge opening of the drum.

Positioned rearwardly of the drum's discharge opening is a rotatable hand wheel 16 having an internally threaded hub 17 which receives the screw shaft 15. Secured to and extending rearwardly from the threaded hub 17 is a tubular casing 18 which encloses the rear end of the screw shaft 15, and serves to prevent particles of concrete or other material from collecting on the latter.

The hub 17 is provided with a forwardly disposed reduced portion which loosely extends through an axial opening in the closure 12. The closure is slidably mounted on the hub and is retained thereon by a split ring 19 or other suitable means.

Secured as by rivets, bolts or other suitable means to the closure 12 at points around its axial opening is a cap or other suitably shaped member 20 having a forwardly disposed sleeve 21 secured thereto as by welding or other suitable means. The sleeve movably extends around the forwardly disposed part of the screw shaft 15 and serves to prevent concrete material from collecting thereon.

Inside the cap 20 is positioned a resilient annular pad 22 having its forward end engaging with the said cap and its rear end contacting with a flanged ring-shaped member 23 which encircles the screw shaft 15 and normally engages with the forward end of the hub 17 of the hand wheel 16. The combination comprising the member 23, the resilient pad 22 and the cap 20 form a resilient connection between the hand wheel 16 and the closure 12. After the closure has once been closed a further turning of the hand wheel 16 in the proper direction causes the resilient pad 22 to be compressed and thereupon exert a firm but yielding pressure on the said closure, thereby normally preventing the latter from opening when the mixing drum is being rotated or moved about. This application is a refile for abandoned application Serial No. 119,657, filed January 8, 1937, entitled "Closures for concrete mixing drums".

Having described my invention, what I claim is:

1. In closure means of the kind described, a mixing drum having an end opening, a non-rotatable screw shaft supported by the drum and extending axially through its end opening, a closure for said opening having an axial opening therein, a nut on the shaft for opening and closing the closure, the said nut having a part movably extending through the opening of the closure, means on the nut for preventing the detachment of the nut from the closure, and resil-

ient means adapted to be compressed when the nut is manipulated to close the closure, the said resilient means being so constituted and arranged as to exert a yieldable pressure on the closure after the latter is closed.

- 5 2. In closure means for concrete-mixing drums, a mixing drum having a rear end opening, a non-rotatable screw shaft supported by the drum and extending axially through the said end opening, 10 a screwable member on the screw shaft, a closure for the drum's end opening loosely but non-detachably mounted on and carried by the screwable member, a forwardly disposed cap member secured axially to the closure, and resilient com- 15 pressible means positioned in the cap member between the screwable member and the forward end of the cap member, the said resilient means being so constructed and arranged as to exert a yieldable pressure on the closure after the said 20 closure is closed and the resilient means is com-

pressed between the cap member and the screwable member.

3. In closure means for concrete-mixing drums, a mixing drum having a conical end portion and a discharge opening in said conical end portion, 5 a non-rotatable screw shaft supported by the drum and extending axially through the discharge opening, a screwable member on the shaft, a closure loosely mounted on and carried by the screwable member, and resilient means interposed 10 between the screwable member and an axial flanged device secured to the forward side of the closure near its axial opening, the said resilient means being adapted to be compressed when the screwable member is actuated to move the closure 15 to a closure position, whereby an added pressure tending to maintain the closure in a tightly closed position may be exerted on the closure after it has been moved to a closed position.

JOHN P. FABER. 20