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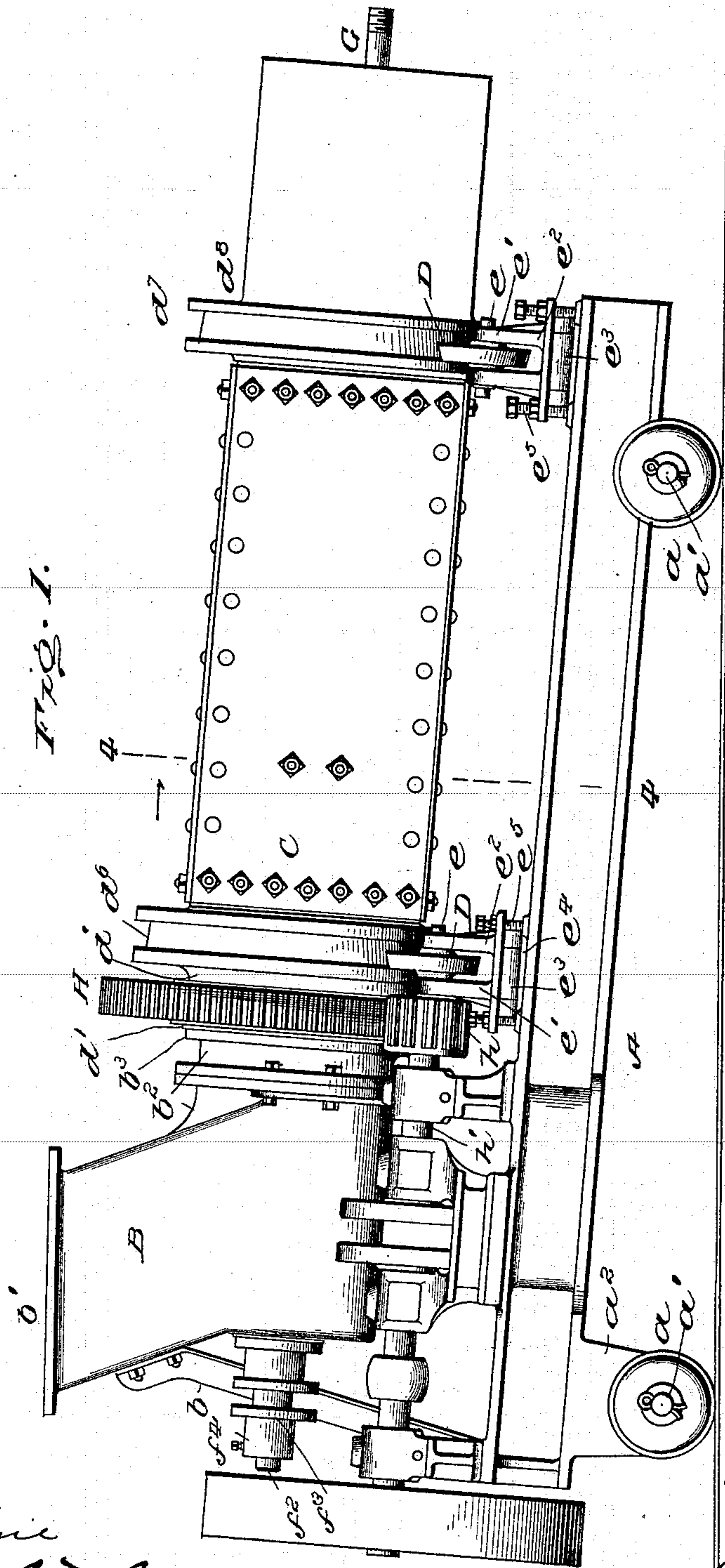
Patented Dec. 6, 1898.

W. C. BARR.
CONCRETE MIXING MACHINE.

(Application filed Apr. 18, 1898.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

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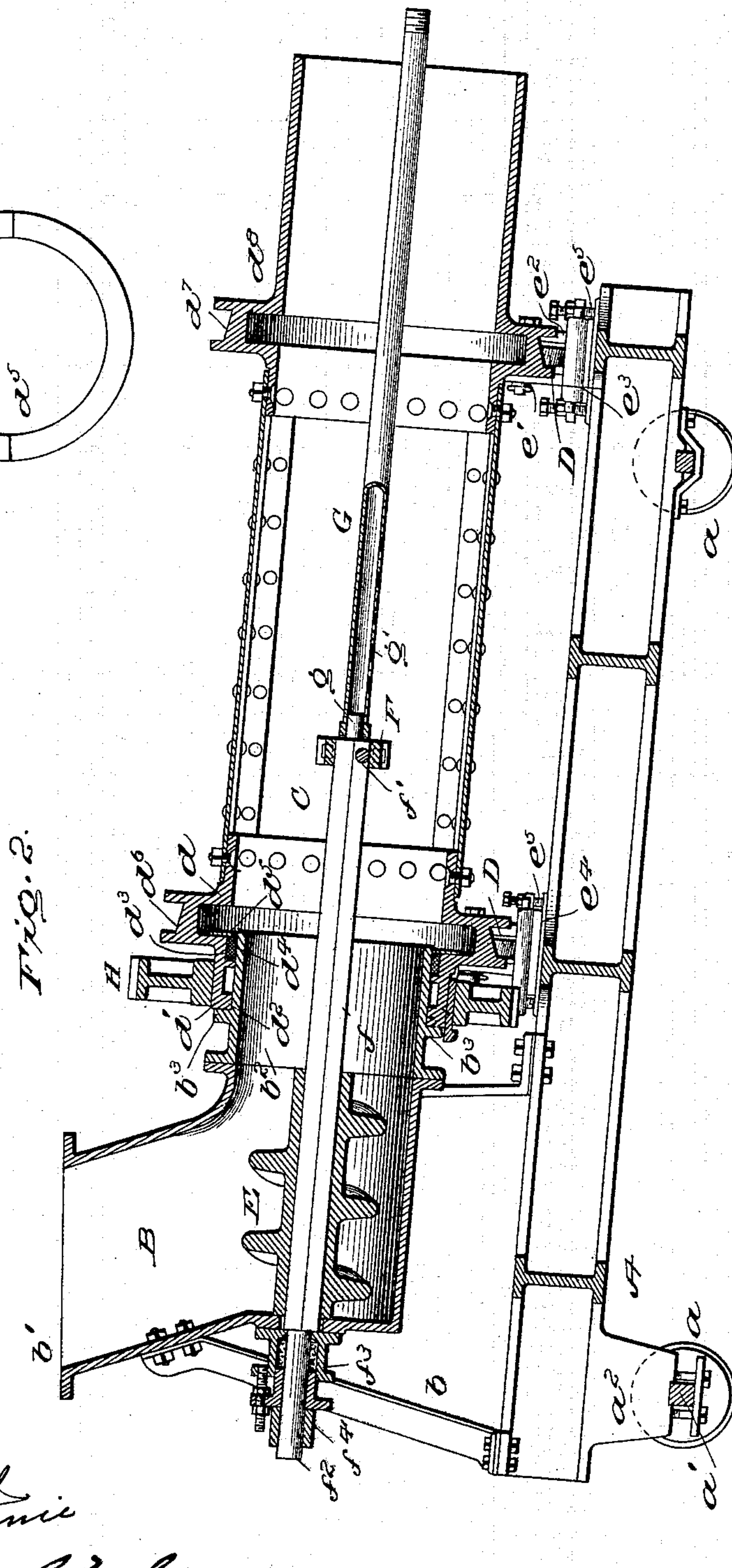
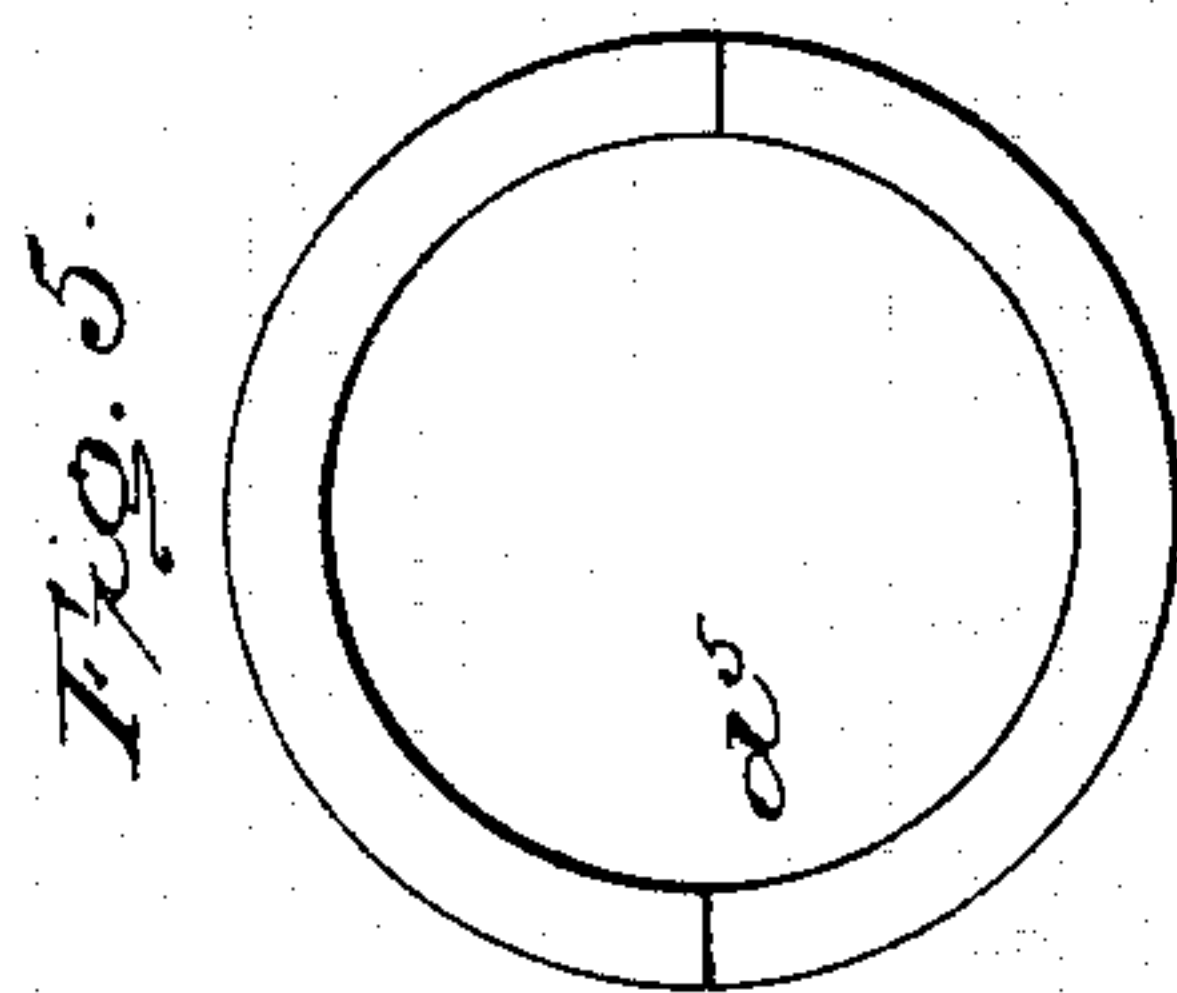
Patented Dec. 6, 1898.

W. C. BARR.
CONCRETE MIXING MACHINE.

(Application filed Apr. 16, 1898.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses

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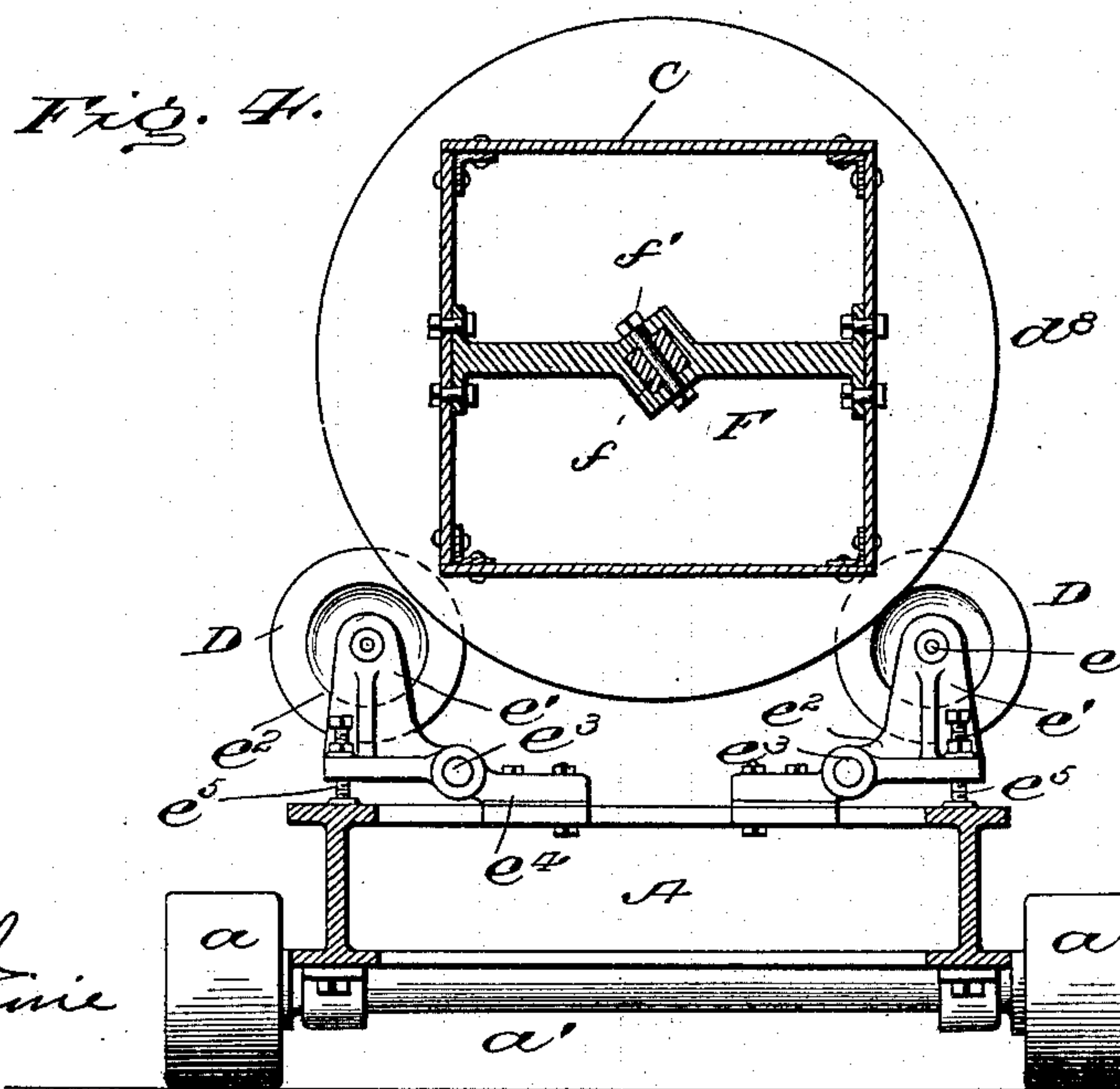
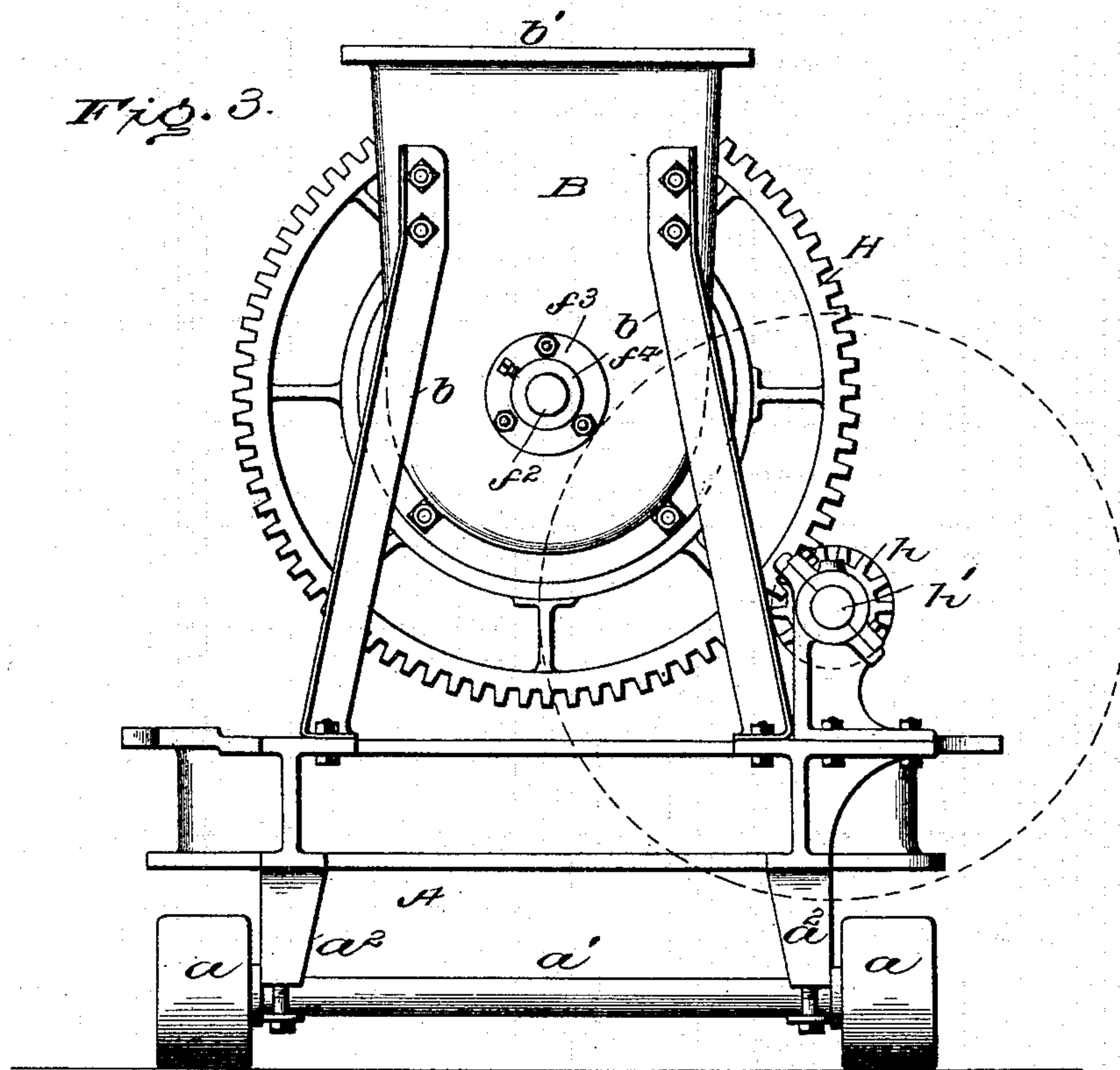
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

WILLIAM COCKBURN BARR, OF JERSEY CITY, NEW JERSEY.

CONCRETE-MIXING MACHINE.

SPECIFICATION forming part of Letters Patent No. 615,519, dated December 6, 1898.

Application filed April 16, 1898. Serial No. 677,796. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM COCKBURN BARR, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Concrete-Mixing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates certain new and useful improvements in concrete-mixing machines, having reference to that class employing tumbler-boxes, the rotation of which effects the thorough mixing of the materials fed therinto.

The objects are, first, to provide improved means for operating the feeder; second, to tightly draw the tumbler-box up against its seat when the machine is in operation; third, to prevent dust and grit from entering the bearing of the tumbler-box; fourth, to prevent the box from pulling away from its seat and bearing, and, lastly, to generally improve the construction of the machine, simplify its parts, and increase its general efficiency.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a front end view. Fig. 4 is a transverse sectional view on line 4 4, Fig. 1. Fig. 5 is a view of the packing-ring.

Referring to the drawings, A is the supporting-truck, and a the carrying-wheels thereof. This truck is pitched or inclined throughout its entire length, the axle a' of the wheels at one end being secured to interposed depending posts a^2 .

B is the hopper. It is supported upon truck A by braces b and is approximately in the form of an elbow. Its receiving end b' is slightly inclined, while its discharge end consists of a cylinder b^3 , a flange of which is bolted to a corresponding flange on the main portion of the elbow. On the exterior of this cylinder is an annular collar b^3 , set in a short distance from the extreme outer end of said cylinder.

C is the tumbler-box or mixing-chamber, which is preferably of rectangular form. To

its inner end is bolted an extension d , which is formed with a cylindrical sleeve d' , designed to inclose and fit over a portion of the cylinder b^3 , which forms the bearing for the tumbler-box. The extreme flanged end d^2 is designed to fit up against the annular collar b^3 , which limits the inward movement of the tumbler-box when pulled in that direction by the feeding operation. Within an inner groove d^3 of this sleeve d' is placed packing d^4 , which is securely held in place by a ring d^5 , fitted to the sleeve d' and serving to form an outer wall for the packing-groove. To enable the packing to be readily renewed, I preferably form this ring d^5 in two halves. In an outwardly-bulged portion of the extension d is formed an annular exterior groove d^6 , which is beveled toward the discharge end of the machine. A similar groove d^7 , likewise beveled, is formed on the exterior of a bulged portion of an extension d^8 , bolted to the discharge end of box C. This extension is, in fact, a part of the tumbler-box and projects beyond the end of the truck, so that material discharged from said box may be received in wheelbarrows or other receptacles placed beneath the outer end of said extension.

D designates a series of small wheels upon which the tumbler-box rests. Each of these wheels has its periphery beveled to conform to the bevel of the grooves d^6 and d^7 . Two wheels are placed on each side of the truck, one for each of the grooves. The journals e of these wheels D are supported by stanchions e' of bracket e^2 , which are hinged at e^3 to plate e^4 , bolted to the truck-frame. Each bracket is provided at its outer free end with two adjusting-bolts e^5 , the lower ends of which rest upon the side bars of the truck-frame. In this way the wheels D may be adjusted so that they will fit snugly within the respective grooves of the tumbler-box. As the latter is rotated the tendency of these wheels is to prevent the box from moving away from the hopper and to hold the sleeve d' up on its bearing.

E is the feeder, which consists of a screw located longitudinally within the lower portion of hopper B and axially of the tumbler-box. This screw is mounted on a shaft f , which is preferably square in cross-section. At its forward end this shaft is fitted in a cor-

responding opening of a cross-bar F, extended transversely within the tumbler-box, to opposite walls of which its ends are firmly bolted. A nutted bolt f' , passing through the central squared portion of cross-bar F and shaft f , serves to hold said shaft to said cross-bar, whereby the rotation of the tumbler-box will effect the operation or rotation of the feeder. The other end f^2 of this shaft is reduced into cylindrical form and is projected through the end wall of the hopper and a stuffing-box f^3 , secured to said wall. Upon the extreme end of said shaft is keyed a collar f^4 . This collar serves to prevent the longitudinal movement of shaft f in the direction of the discharge end of the machine, which is the tendency when the box is being rotated and no material is within the hopper. On the other hand, when material is fed into said hopper the action of the feeder thereon draws the tumbler-box toward said hopper and holds the flanged end of the sleeve d' up against the annular collar b^3 . Hence this collar acts as a stop and prevents or limits the inward movement of the tumbler-box during the feeding operation.

G is a water-pipe which is located longitudinally within the tumbler-box, being extended inward through the discharge end thereof. The inner end of this pipe is fitted on a stud g , projecting from the end of shaft f , said stud forming a loose bearing for said water-pipe. In the under side of the latter are formed outlet-ports g' . To the outer end of this pipe may be connected a hose or another pipe (not shown) for supplying water.

H is a large gear-wheel keyed on the sleeve b' . With this gear-wheel meshes a smaller gear-wheel h , mounted on an operating-shaft h' , the bearings of which shaft are secured to the truck-frame. Inasmuch as this shaft may be operated by any preferred means—as, for instance, a small engine located on the truck-frame—and as the same constitutes no part of my present improvements further reference thereto is not necessary.

From what has been said it will be seen that the rotation of the shaft h' will be communicated through wheel h to the large gear-wheel H of the tumbler-box. This will effect the rotation of the latter, and as material to be mixed is fed into the hopper it will be forced longitudinally into the tumbler-box by the feeder E. The action of the feeder on the material serves to draw the tumbler-box up toward the hopper by reason of the feeder-shaft being fast to said box. In this way a firm and secure joint or bearing for the receiving end of the tumbler-box is obtained, and this, together with the packing within the sleeve, prevents dust from getting into the bearing and avoids wear thereof. Otherwise dust and the like entering said bearing would quickly cause the sleeve to wear out the annular collar against which the end of the sleeve is firmly held while the box is being rotated and the feeder is acting on the

material within the hopper. Another advantage of my invention over the constructions heretofore employed is that the water-pipe is extended inwardly through the discharge end of the box. Heretofore it has been customary to extend such pipe into said box through the hopper, which frequently resulted in the pipe being broken, especially when the hopper became choked, and it was necessary to relieve the same by packing it with crowbars, and when the material was damp such packing was constantly required. Then, too, in placing the tumbler-box on an incline the tendency has always been for the box to move away from its bearing, resulting in leakage and the admission of dust and the consequent wear upon said bearing. It will be observed that the feeder-screw regulates the amount of material fed into the box and that said screw derives its rotary motion from the rotation of the box. Thus the screw not only feeds the material but serves to prevent the box from moving off of its bearing. Hence by means of the present improvements I am enabled to mount the tumbler-box on a truck having a decided incline or pitch toward the discharge end, and in this way the mixing operation is greatly accelerated.

I claim as my invention—

1. A concrete-mixing machine comprising a hopper having at one end a cylindrical bearing, a tumbler-box fitted at one end on said bearing, a stop for limiting the longitudinal movement of said tumbler-box, a feeder-screw located in said hopper in line with the longitudinal axis of said tumbler-box, said feeder-screw being secured to the latter, and means for rotating said tumbler-box, substantially as set forth.

2. A concrete-mixing machine comprising a hopper having at one end a cylindrical bearing, an annular collar on said bearing forming a stop, a tumbler-box having a cylindrical sleeve fitted on said bearing, a feeder-screw located in said hopper in line with the longitudinal axis of said tumbler-box, and a shaft for said feeder-screw rigidly secured to said tumbler-box and bearing at one end in the wall of said hopper, and means for rotating said tumbler-box, as set forth.

3. A concrete-mixing machine comprising a hopper having at one end a cylindrical bearing, an annular collar on said bearing forming a stop, a tumbler-box having a cylindrical sleeve fitted on said bearing, said sleeve having an inner groove surrounding the extreme end of said bearing, packing in said groove, a ring secured to said sleeve for holding said packing, a feeder-screw located in said hopper in line with the longitudinal axis of said tumbler-box, a shaft for said feeder-screw rigidly secured to said tumbler-box and having a bearing in the wall of said hopper, and means for rotating said tumbler-box, as set forth.

4. A concrete-mixing machine comprising a truck having an inclined platform, a hopper

mounted on said platform having at one end a cylindrical bearing, a stop on said bearing, a tumbler-box having a cylindrical sleeve at one end fitted on said bearing, a feeder-screw located in said hopper in line with the longitudinal axis of said tumbler-box, a shaft for said feeder-screw secured at one end to said tumbler-box, the other end of said shaft having its bearing in the wall of said hopper, and means mounted on said platform for rotating said tumbler-box, as set forth.

5. A concrete-mixing machine comprising a truck having an inclined platform, a hopper mounted on said truck having at one end a cylindrical bearing, a tumbler-box having at one end a sleeve fitted on said bearing, a feeder-screw located in said hopper in line with the longitudinal axis of said tumbler-box, a shaft for said feeder-screw having its bearing at one end in the wall of said hopper, a rigid cross-bar within, and secured to, said tumbler-box, means for securing said shaft to said cross-bar, and means mounted on said truck for rotating said tumbler-box, as set forth.

6. A concrete-mixing machine comprising a truck having an inclined platform, a hopper mounted on said truck having at one end a cylindrical bearing, a tumbler-box having at one end a sleeve fitted on said bearing, a feeder-screw located in said hopper in line with the longitudinal axis of said tumbler-box, a shaft for said feeder-screw having its bearing at one end in the wall of said hopper, said shaft having an angular portion, a cross-bar located within and secured to said tumbler-box and having a central angular opening to accommodate said shaft, means for securing said shaft to said cross-bar, and means mounted on said truck for rotating said tumbler-box, substantially as set forth.

7. A concrete-mixing machine comprising a hopper having at one end a cylindrical bearing, a tumbler-box having at one end a sleeve fitted on said bearing, a stop on the exterior of said bearing, a shaft in line with the longitudinal axis of said tumbler-box having a bearing at one end in said hopper, a collar fast on said shaft adjacent to said bearing, a

cross-bar within, and secured to, said tumbler-box, means for securing said shaft to said cross-bar, a feeder-screw on said shaft within said hopper, and means for rotating said tumbler-box, substantially as set forth.

8. A concrete-mixing machine comprising a truck having an inclined platform, a hopper mounted thereon having at one end a cylindrical bearing, a stop on said bearing, a tumbler-box having a sleeve fitted on said bearing, a gear-wheel on the exterior of said sleeve, an operating-shaft mounted on said truck having a gear-wheel meshing with said former gear-wheel, a shaft rigidly secured to said tumbler-box and located in line with the longitudinal axis thereof, said shaft having its bearing at one end in the wall of said hopper, and a feeder-screw on said shaft within said hopper, substantially as set forth.

9. A concrete-mixing machine comprising a hopper having at one end a cylindrical bearing, a tumbler-box open at its outer end and having a sleeve on its inner end fitted on said bearing, a feeder-screw located in line with the longitudinal axis of said tumbler-box, a shaft therefor rigidly secured to, and located within, said tumbler-box, said shaft having its bearing at one end in the wall of said hopper, and a water-supply pipe located longitudinally within said tumbler-box and supported loosely at its inner end, and means for rotating said tumbler-box, substantially as set forth.

10. The herein-described concrete-mixer having a hopper and a tumbler-box, a feeder-screw located in said hopper and having its shaft extended into said box, a cross-bar within said box supporting said shaft, and a water-pipe extended into said box and supported at its inner end by said shaft, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM COCKBURN BARR.

Witnesses:

WM. H. SEEBECK,
JAMES SMELLIE.