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PATENTED MAY 17, 1904.

A. J. THOMAS.
TUMBLER OR RATTLE BARREL.

APPLICATION FILED NOV. 19, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.

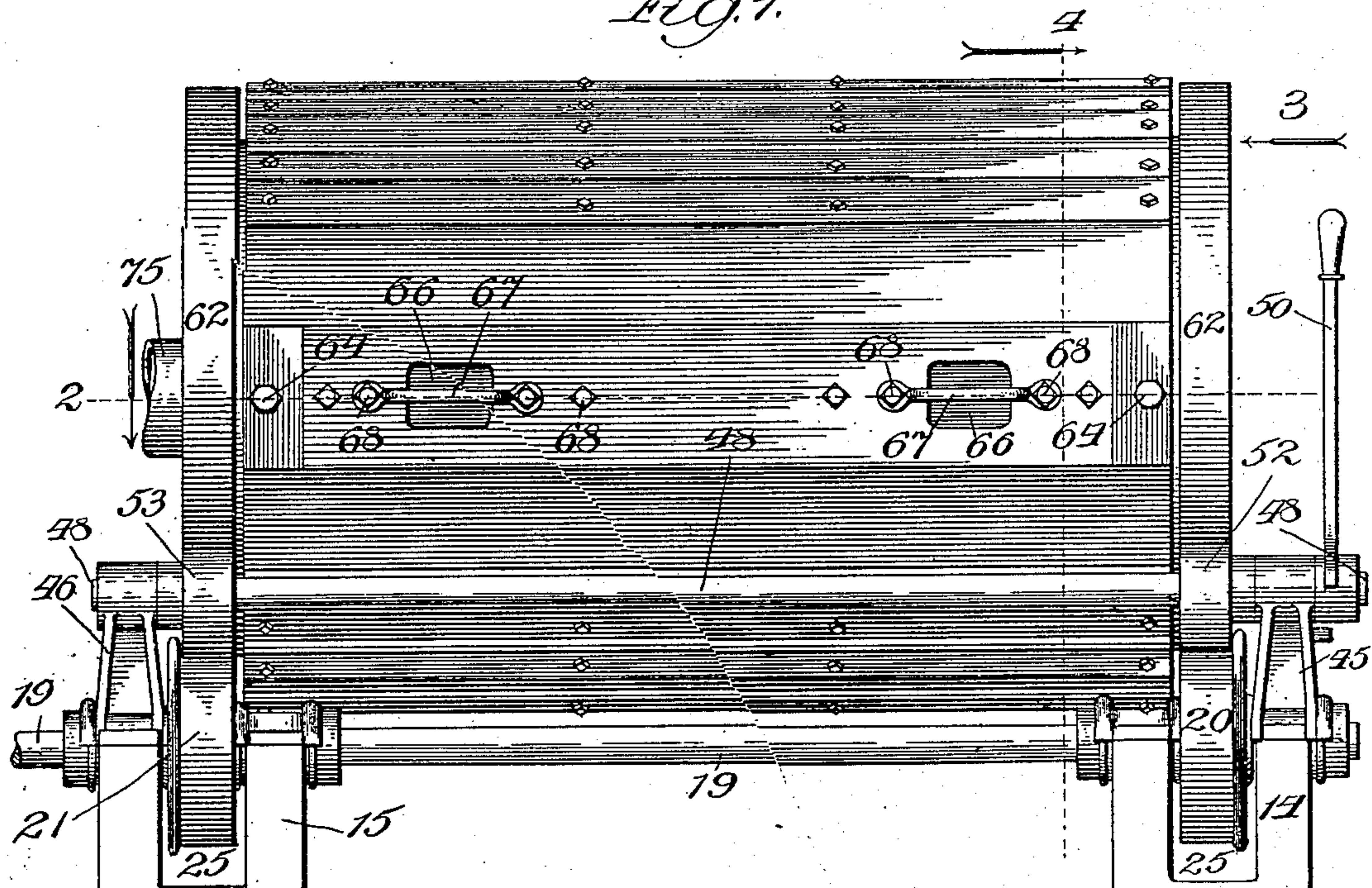
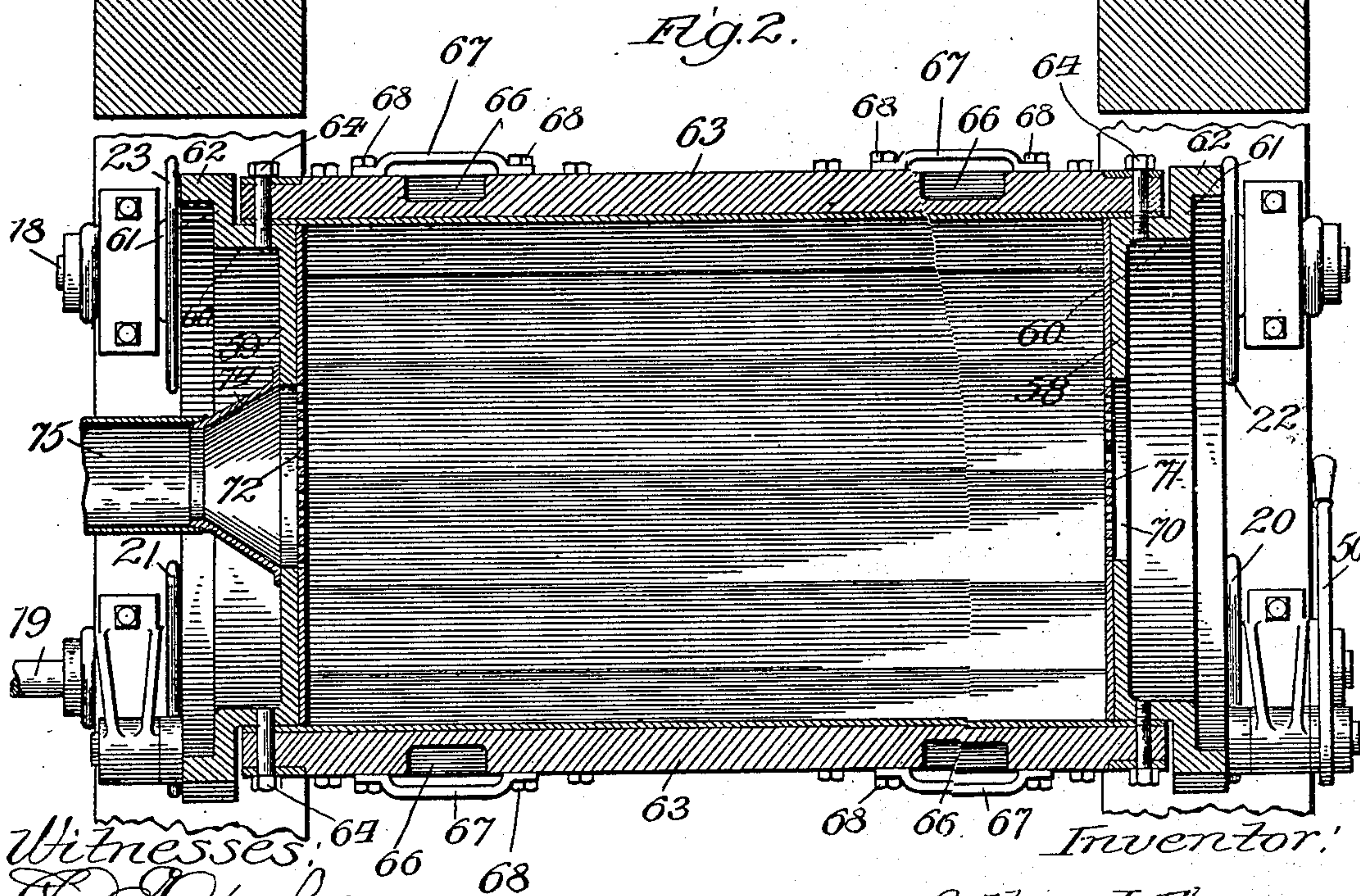


Fig. 2.



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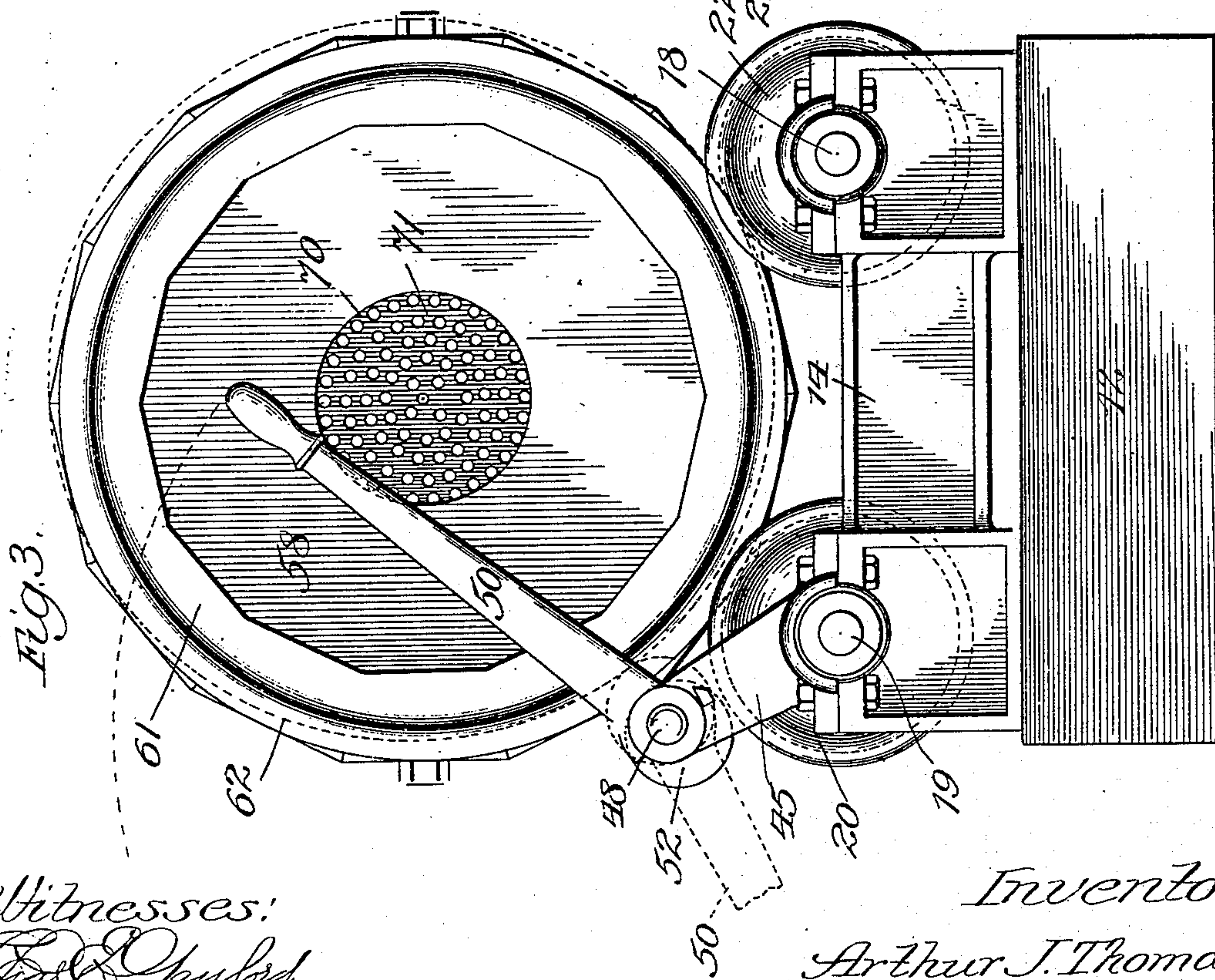
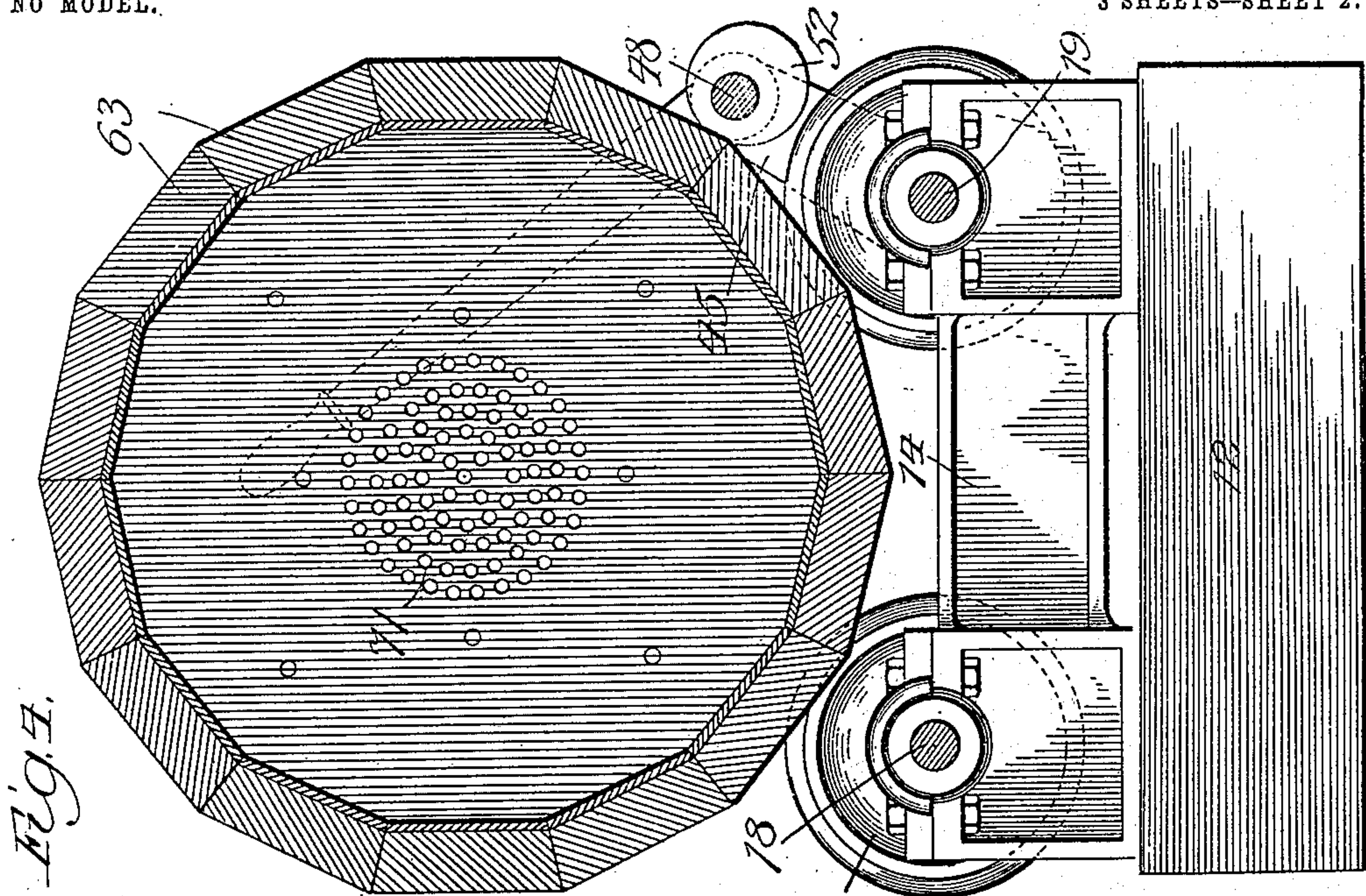
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3 SHEETS—SHEET 2.



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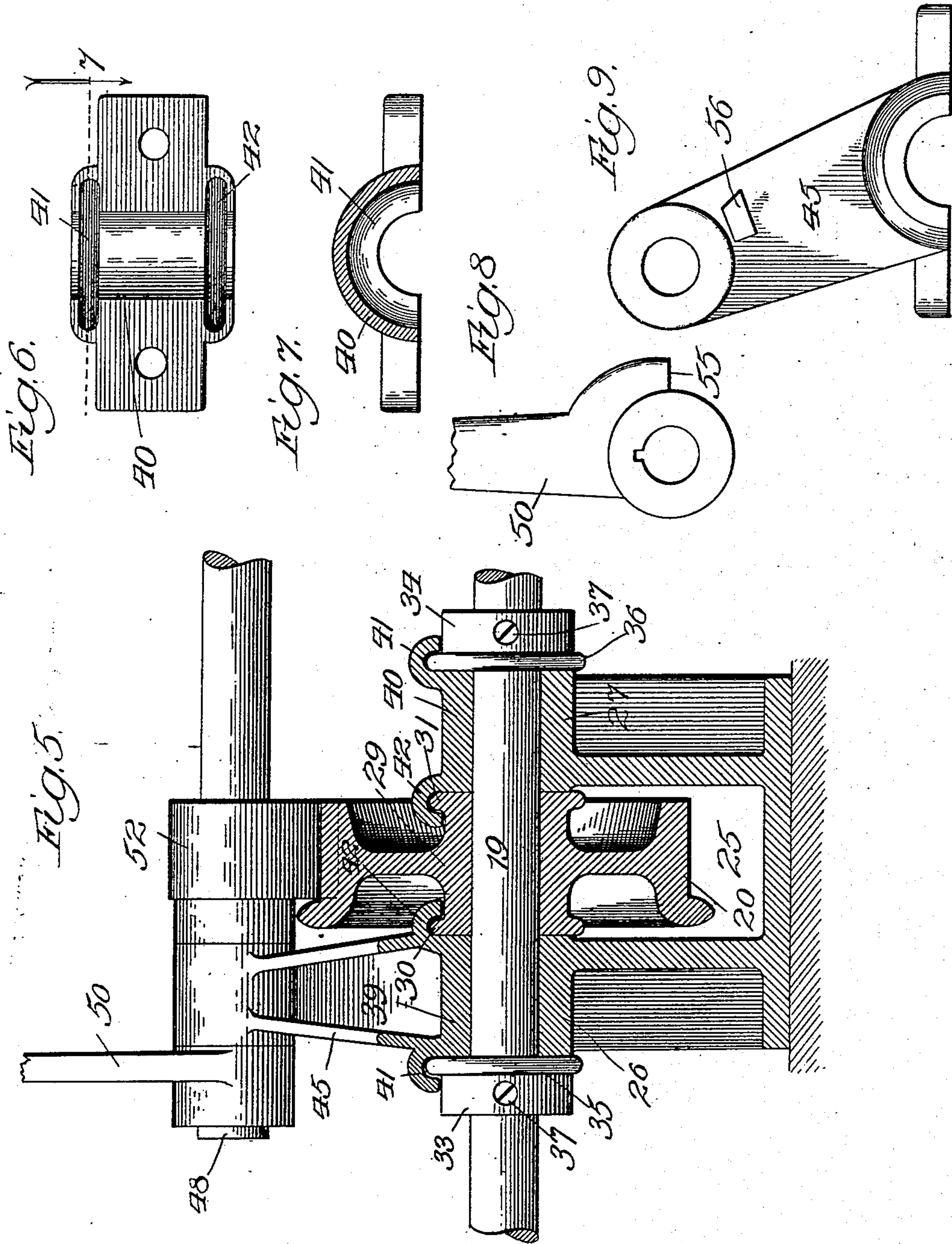
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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TUMBLER OR RATTLE-BARREL.

SPECIFICATION forming part of Letters Patent No. 759,939, dated May 17, 1904.

Application filed November 19, 1903. Serial No. 181,762. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. THOMAS, a citizen of the United States, residing at Harvey, in the county of Cook and State of Illinois, have invented a new and useful Tumbler or Rattle-Barrel, of which the following is a specification in its best form now known to me, reference being had to the accompanying drawings, in which similar numerals indicate the same parts throughout the several views.

My invention relates to mechanism for tumbling or rattling cast pieces of iron or other material for the purpose of removing from their surfaces any molding-sand adhering thereto and the rough edges and corners of the castings themselves.

The object of my invention is to provide such a mechanism by which a removable rattle-barrel may be placed in operative position and rotated, the stopping and starting of the rotation of the barrel being always under the control of the operator.

My invention consists in a novel mechanism for accomplishing this object which can be easily and cheaply constructed, which is efficient in operation, and which is not liable to readily get out of order.

My invention also consists in many details of construction, which will be hereinafter more fully described and claimed.

In the drawings, Figure 1 is a side view of the mechanism, illustrating my invention in its preferred form. Fig. 2 is a plan sectional view taken on line 2 of Fig. 1. Fig. 3 is an end view in the direction of arrow 2 of mechanism shown in Fig. 1. Fig. 4 is an end sectional view taken on line 4 of Fig. 1. Fig. 5 is a detail view of a driving-wheel, the mechanism for removing the barrel to and from contact with said wheel, thereby stopping and starting it, and the protecting devices for the journals of the driving-wheel. Fig. 6 is a detail view of the journal-protecting cap, and Fig. 7 is a sectional view taken on line 7 thereof. Fig. 8 is a plan view of the casting.

On suitable foundation-blocks 12 and 13 made of any suitable material, I mount base castings 14 and 15, the same being placed parallel to each other and, as shown in Fig. 1, at a distance from each other approximately equal to the length of the rattle-barrel itself. On one side of said base-castings 14 and 15 I journal a shaft 18, and on the opposite side I journal a similar shaft 19. Rigidly secured to shaft 19 are two flanged wheels 20 and 21, and rigidly secured to shaft 18 are two similar flanged wheels 22 and 23. This idle shaft may be made in two short shafts, one for each wheel, in line with each other, if desired. The respective base-castings on which these shafts 18 and 19 are journaled have U-shaped recesses 25 cut in them, in which these wheels rest, as shown in Figs. 1 and 5, the tops of the U-legs forming journal bearings or boxes 26 and 27 on the opposite sides of each wheel for the shaft supporting said wheel. (See Fig. 5.) In order to protect the bearings of these wheels from dust and dirt falling from the rattle-barrel, I provide the hub 29 of each wheel with two flanges 30 and 31, as shown in Fig. 5, and I secure to each shaft outside of the journal-boxes 26 and 27 collars 33 and 34, having similar flanges 35 and 36. These collars are secured to the shafts by screws 37 or other suitable means. I make stationary tops or cups 39 and 40 on the journal-boxes 26 and 27, with downwardly-turned hooks 41 and 42, adapted to fit over the flanges 30 and 35 or 31 and 36, thereby, as shown, completely closing the journal-boxes of said wheel against the entrance of dust falling from the rattle-barrel to be hereinafter described. In the mechanism of my invention one shaft, as 18, with the wheels upon it, is an idle one, or, in other words, is not directly driven by power, while the opposite shaft, with the wheels upon it, is so driven.

Rigidly secured to the casting having

and adapted to be brought into contact with the barrel are two eccentric cams 52 and 53, as shown in Fig. 3. These cams are, as shown in Fig. 3, so placed that, as will be hereinafter more fully described in detail, when in one position the cam clears the rattle-barrel and allows it to rest on and be rotated upon the wheels 20, 21, 22, and 23, heretofore described, and when in the reverse position (the dotted-line position of Fig. 3) lifts the barrel off from the driving-wheels 20 and 21, thereby causing it to stop its rotation. On hand-lever 50 is, as shown in Fig. 2, a stop 55, adapted to engage in lug or stop 56 on the supporting-arm 45, and thereby limit the motion of said hand-lever 50.

The rattle-barrel proper consists of two chilled-iron heads 58, having their flanges made in the form of a Z 60, 61, and 62. The outer rim portion 62 is made circular and smooth and adapted to run upon the driving-wheels 20 to 23, inclusive, heretofore described. Inserted in the angular notches 60 61, heretofore described, are staves 63, secured to the head of the barrel by screws 64 or other suitable means. In the construction shown in Fig. 4 the part 60 is made fourteen-sided and fourteen staves are provided; but manifestly a barrel may be made in which a different number of staves is used. In order to provide means for easily lifting a loose stave from the barrel and for lifting the barrel from the machine, I cut in some or all of the staves, as seems desirable, recesses 66 somewhat larger than a person's hand and place on them handles 67, secured to the staves by bolts 68. In the end of head 58 of the barrel I cut an opening 70 and close it with a perforated plate 71. I make a similar construction in the head 59, using a perforated plate 72. The perforations in the two plates 70 and 71 should be of approximately equal area. To the head 59 I rigidly secure a funnel 74, terminating in and freely rotatable in the pipe 75, to which a hose (not shown) is attached, connecting with an exhaust-fan. The area of the pipe 75 should be approximately equal to the area of the perforations in plates 71 and 72.

In the operation of my invention I start with the barrel entirely removed from the driving mechanism. I remove the screws 64 from one or more of the staves, take hold of the handles 67, and remove said staves entirely from the barrel. I then place the castings to be rattled within the barrel and replace said removed staves and the securing-screws 64. I then throw the hand-lever 50 to the position shown in the dotted line of Fig. 3. I now start the source of power, (if it has not been running already the case,)

in the wheel 20

line of Fig. 4, resting upon wheels 22 and 23 and cams 52 and 53, but clear of wheels 20 and 21. I now take hold of hand-lever 50, which, as has been heretofore described, is in the dotted-line position of Fig. 3, and move it to the full-line position of Fig. 3. By this movement the cams 52 and 53 are rotated to the full-line position of Fig. 3, and the barrel is allowed to settle down upon the rotating wheels 20 and 21. The motion of these wheels 20 and 21 is now communicated to the barrel, and it is rotated continuously as long as desired. While this rotation is in progress the exhaust-fan (not shown) attached to pipe 75 is kept in operation, thereby sucking air into the barrel through the perforated plate 70 and out of the barrel through perforated plate 72, carrying with it dust, sand, and other dirt from the castings removed in the process of rotation. When the rattling is completed, I take hold of the hand-lever 50 and move it from the full-line position of Fig. 3 to the dotted-line position of Fig. 3, thereby lifting the barrel off from the driven wheels 20 and 21 and causing it to stop. I now lift the barrel from the wheels, remove the staves, and take out the contents. I then refill the barrel and repeat the operation.

I do not wish to be limited to the exact details of construction, which may be varied within reasonable limits without departing from the principle of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In mechanism of the class described, the combination of a removable rattle-barrel, mechanism adapted to support said rattle-barrel in rotatable position, continuously-moving mechanism adapted to communicate power to said rattle-barrel, and means adapted to separate said barrel and said power mechanism while said barrel is still on said supporting mechanism, whereby said barrel may be rotated and stopped at will.

2. In mechanism of the class described, the combination of a removable shaftless rattle-barrel, mechanism adapted to support said rattle-barrel in rotatable position, continuously-moving mechanism adapted to communicate power to said rattle-barrel, and means adapted to separate said barrel and said power mechanism while said barrel is still on said supporting mechanism whereby said barrel may be rotated and stopped at will.

3. In mechanism of the class described, the combination of a removable rattle-barrel, mechanism adapted to support said rattle-barrel in rotatable position, continuously-moving mechanism adapted to tractively communicate power to said barrel, and means adapted to move said barrel, while on said supporting mechanism, out of contact with said

4. In mechanism of the class described, the combination of a rattle-barrel, a series of wheels adapted to support said barrel, means for applying power to one or more of said wheels for the purpose of rotating said barrel and a cam adjacent to said power-supplied wheels and to said barrel and means for operating said cam whereby as it is moved from one position to another the barrel is lifted from or allowed to settle upon said power-supplied wheels.

5. In mechanism of the class described, the combination of four wheels arranged in a rectangle, two of said wheels being on an idle shaft or shafts and not supplied with power and the remaining two of said wheels being on another shaft and driven by mechanical power, a detachable rattle-barrel adapted to rest upon said wheels, a shaft carrying two similar cams journaled in such a position that each of said cams is adjacent to a driven wheel and to the rattle-barrel, the shape of said cams and their location being such that in one position they allow the barrel to rest upon the four wheels and be driven by the driven wheels and in being moved to the opposite position they lift

the said barrel from the driven wheels, and a hand-lever adapted to move said cams from one of said positions to the other.

6. In mechanism of the class described, the combination of four wheels arranged in a rectangle, two of said wheels being on an idle shaft or shafts and not supplied with power and the remaining two of said wheels being on another shaft and driven by mechanical power, a detachable rattle-barrel adapted to rest upon said wheels, a shaft carrying two cams journaled so that each of said cams is adjacent to a driven wheel and to the rattle-barrel, the shape of said cams and their location being such that in one position they allow the barrel to rest upon the four wheels and be driven by the driven wheels and in being moved to the opposite position they lift the said barrel from the driven wheels, a hand-lever adapted to move said cams from one of said positions to the other, and stop mechanism adapted to limit the motion of said hand-lever.

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Witnesses:

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