

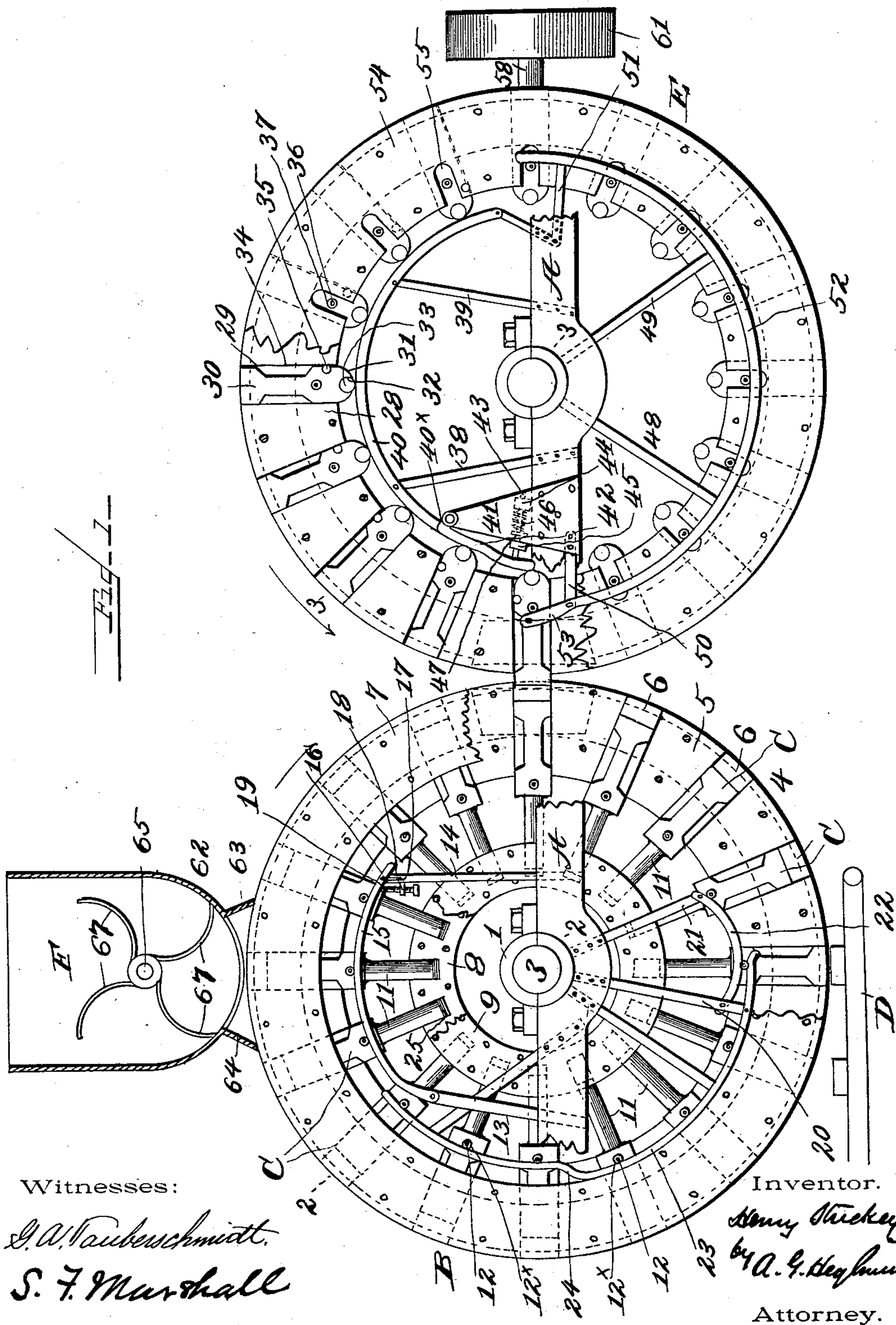
(No Model.)

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H. STUCKEY.  
BRICK MACHINE.

No. 521,349.

Patented June 12, 1894.



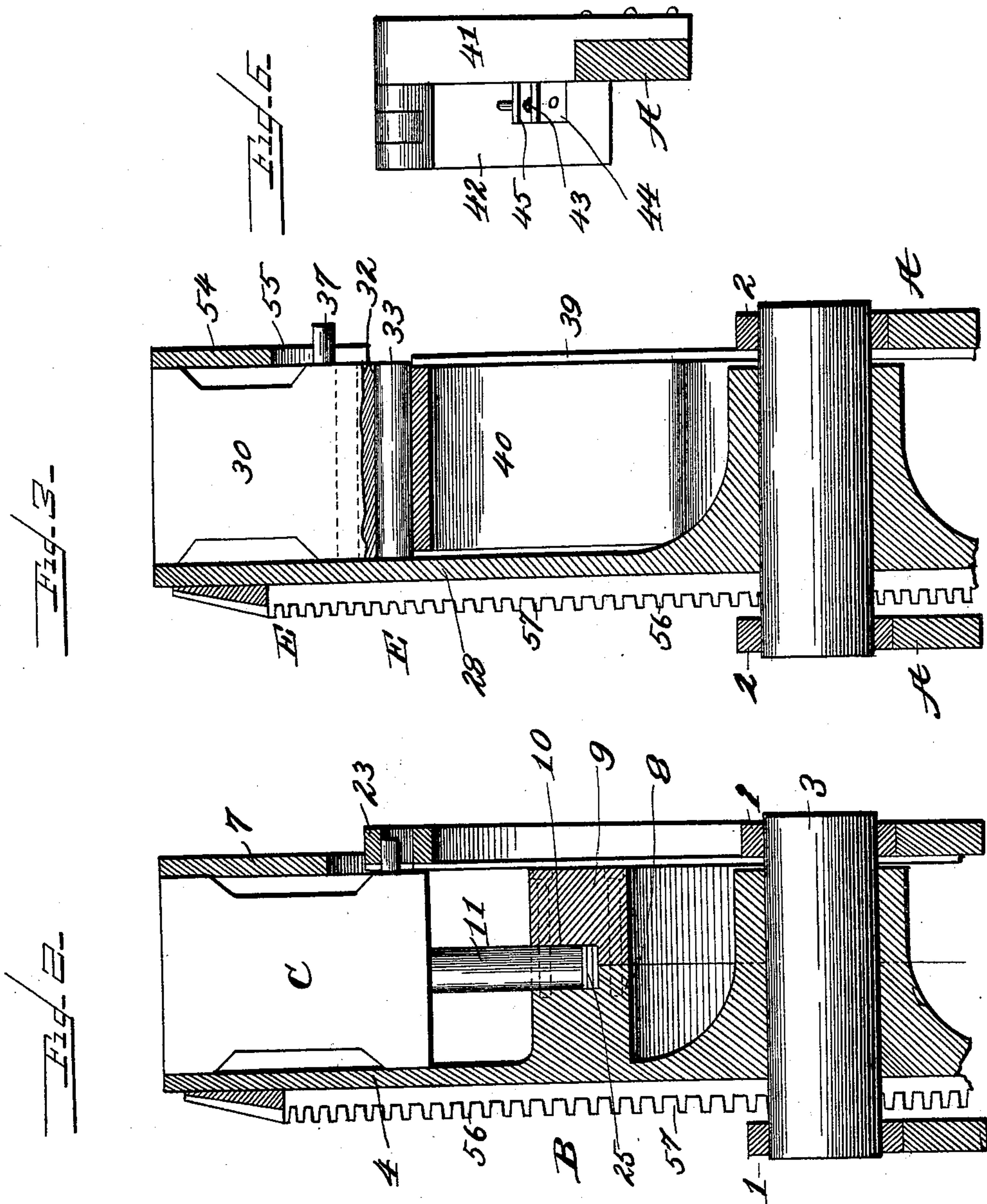
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Witnesses:

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Inventor.

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Attorney.



(No Model.)

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Fig. 7 - F

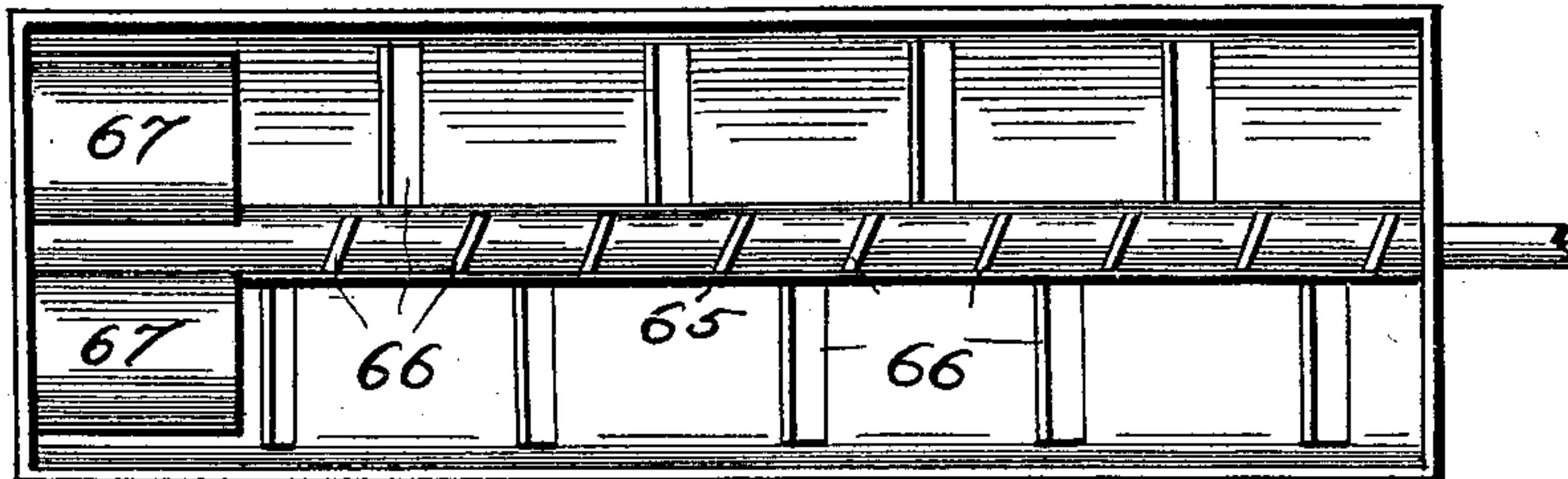


Fig. 8 -

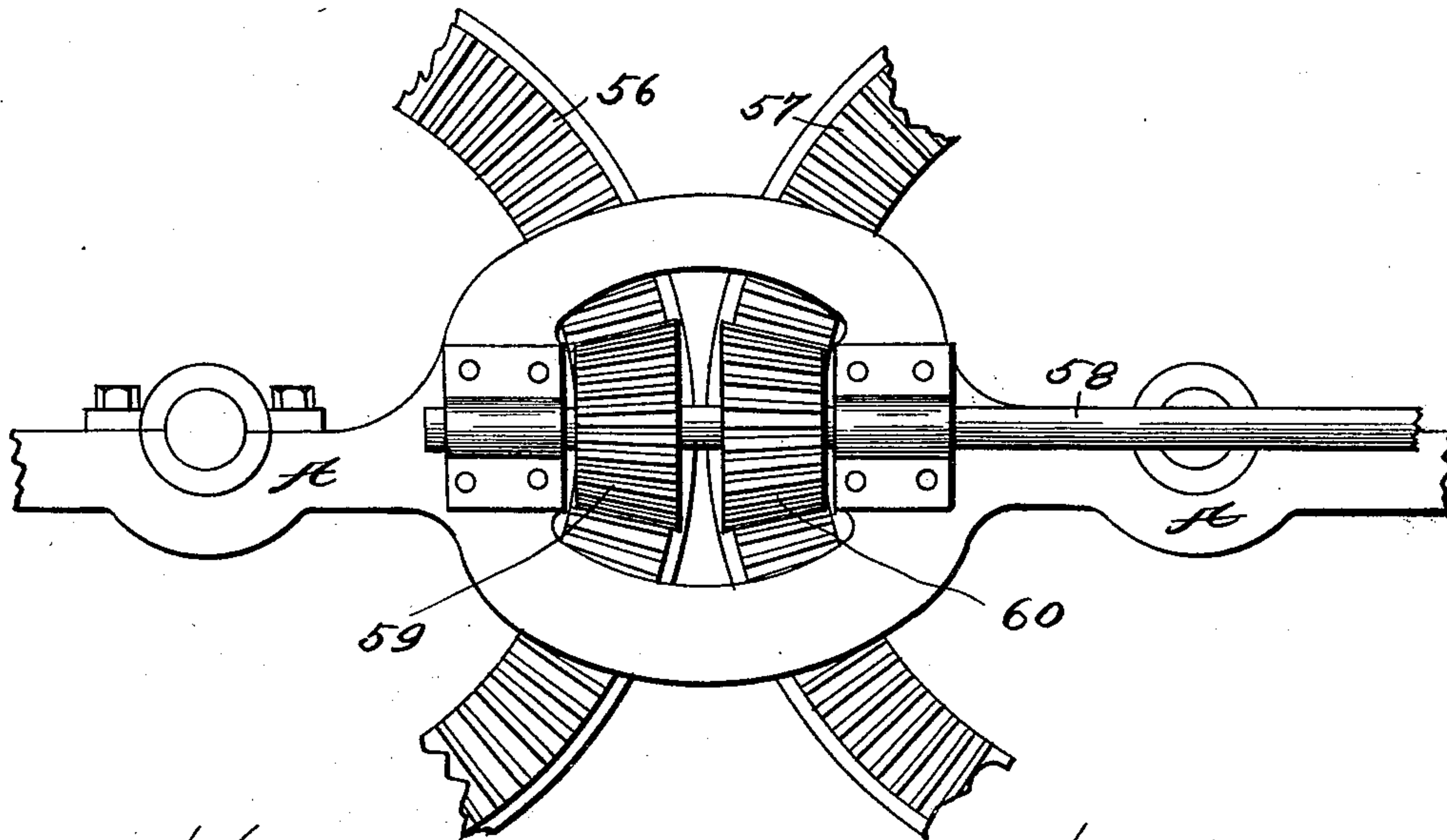
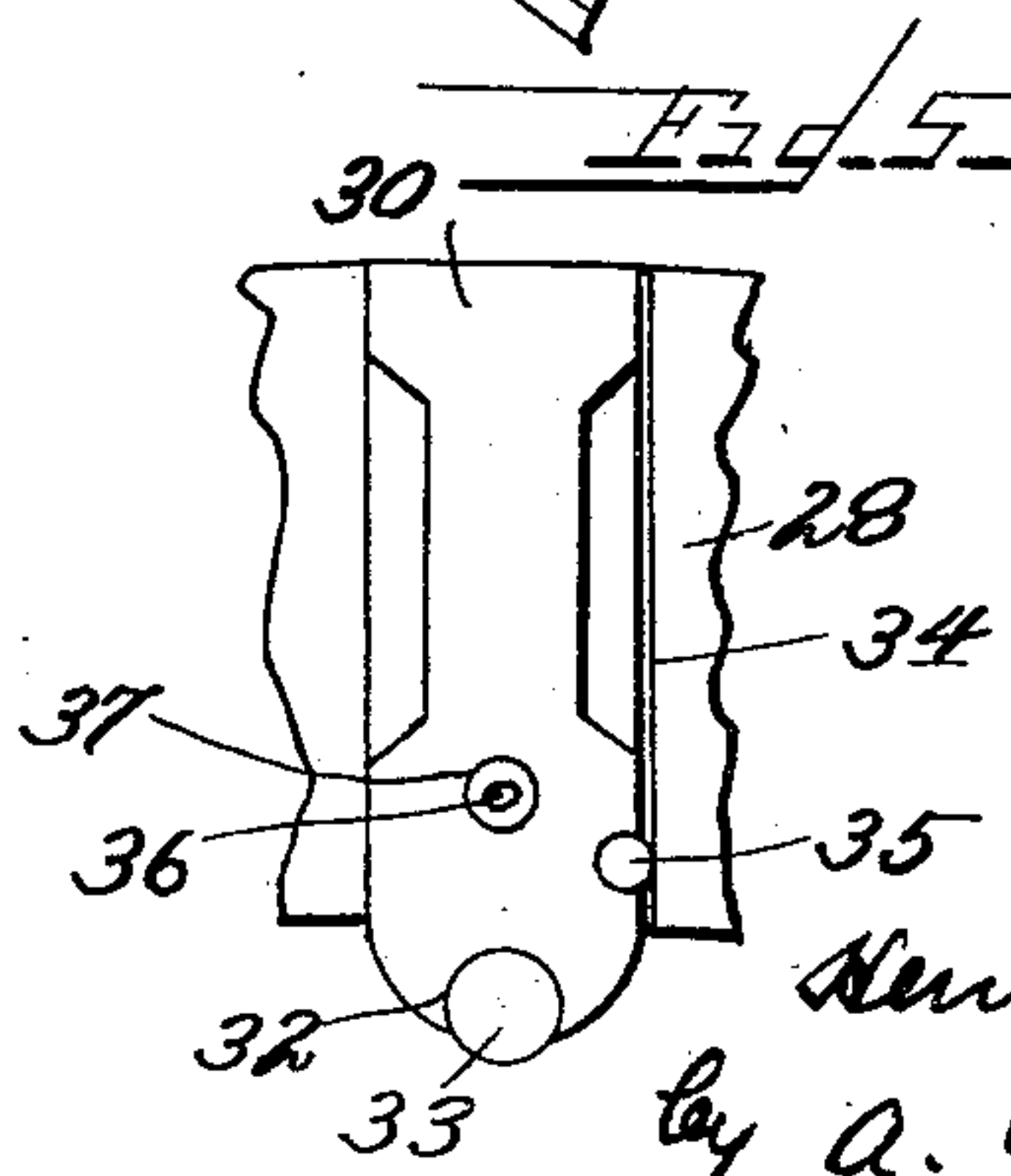
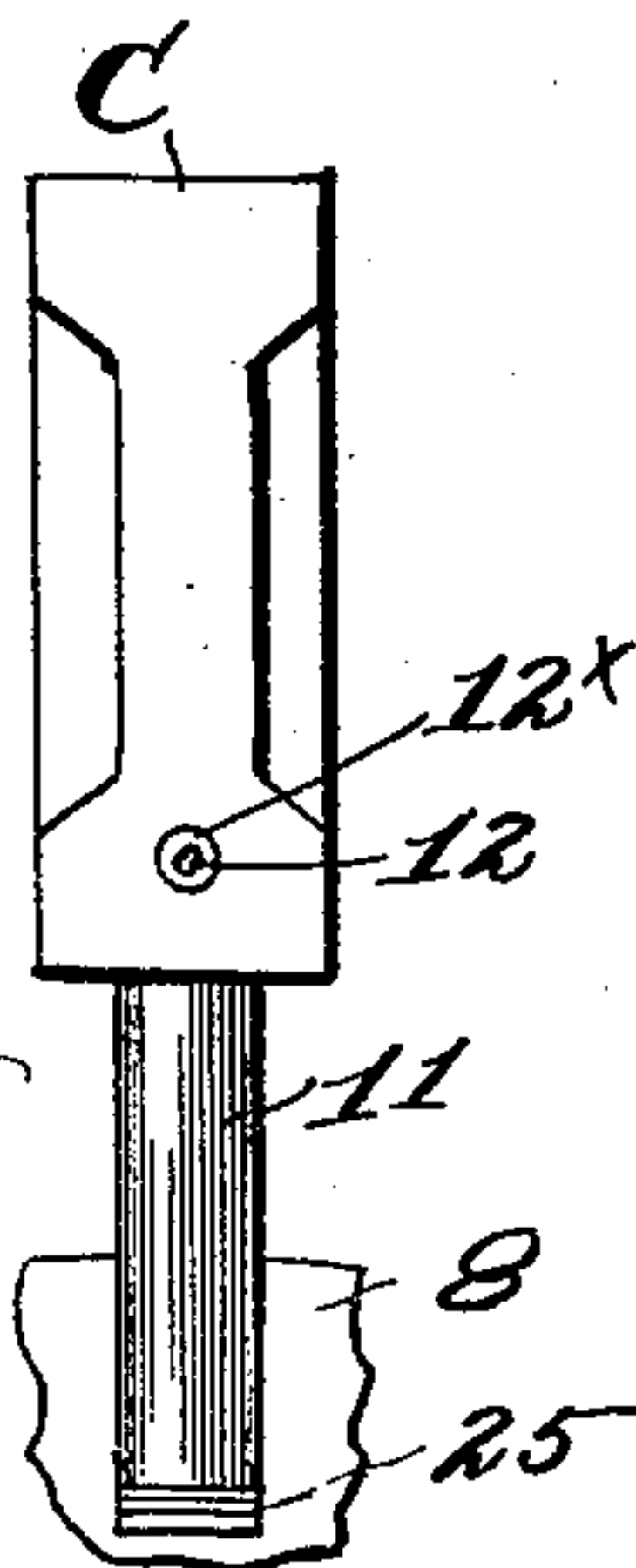


Fig. 4 -



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# UNITED STATES PATENT OFFICE.

HENRY STUCKEY, OF BUCYRUS, OHIO.

## BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 521,349, dated June 12, 1894.

Application filed January 10, 1894. Serial No. 496,361. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY STUCKEY, a citizen of the United States of America, residing in Bucyrus, in the county of Crawford, in the State of Ohio, have invented a new and useful Brick-Machine, of which the following is a specification.

My invention has relation to improvements in rotary brick machines, and the object is to operatively combine a vertically rotating mold-wheel with a similarly mounted rotating press-wheel provided with co-acting plungers, whereby the bricks or forms are molded in the mold-wheel and pressing in the molds thereof before being discharged therefrom on to the carrying-off table or apron.

In the accompanying drawings, illustrating my invention, Figure 1, is a side view in elevation of the machine, showing the mold-wheel and pressing-wheel with the respective plungers, a part of the covering-plate being broken away to show the plungers, and also showing the pug-mill in end-view, the end plate of the mill-casing being removed to show the shape of the curved-wings of the screw. Fig. 2, is a sectional view on the line 2—2 of Fig. 1, showing one of the plungers of the mold-wheel. Fig. 3, is a section on the line 3—3 of Fig. 1, showing one of the plungers of the pressing-wheel and the cam-plate or support over which the inner ends of the pressing-plungers travel. Fig. 4, is a detail of one of the plungers of the mold-wheel. Fig. 5, is a detail of one of the plungers of the pressing-wheel. Fig. 6, is a detail of the adjusting-device for the hinged-cam piece of the pressing-plungers. Fig. 7, is a longitudinal section through the pug-mill casing, showing the auger with the blade and curved-wings. Fig. 8, is a detail of the gears and pinions for rotating the mold-wheel and the pressing-wheel and showing a portion of the supporting-frame and line-shaft of the pinions.

A, designates a strong and substantial supporting-frame, of any suitable construction to sustain the respective wheels and mechanism to be carried by it. This frame is provided with two side rails or plates (see Figs. 2 and 3) in each of which are formed suitable bearings 1, 2, to take the shafts of the respective wheels. In the bearings 1, is a shaft 3 on

which is mounted the mold-wheel B, as seen in Fig. 1 of the drawings. The mold-wheel B consists of a disk-plate 4 having a substantial annular flange 5, projecting laterally around it, and having formed therein a number of brick-molds 6, extending radially through the flange or rim, and opening at the perimeter. The brick-molds 6, are preferably cut or formed as ways extending radially from one side of the flange inward far enough to constitute the length of the form to be molded, and of such width as may be required. Over the side-face of the flange is bolted a ring-plate 7, which extends over the open sides of the motor and forms one side thereof. The hub 8 of the mold-wheel is enlarged, and on the shaft is fitted a hub-cap 9, of the same diameter as the fixed hub of the wheel; and between the meeting faces of the hub-end and the hub-cap are found sockets 10, to take the stems of the plungers, as shown in the drawings.

In the radial ways forming the mold-boxes, are fitted the plungers C, the upper end-face of which constitutes the bottom of the molds. The plungers C are formed with stems 11 the lower portions of which are set in the sockets of the wheel-hub. In each plunger of the mold-wheel is fixed a pin 12, having a roller 12<sup>x</sup> mounted thereon, which engages the respective cam-bars hereinafter described, and moves the plungers into position for receiving the clay and rejecting the form or brick. On the frame are secured strong supports 13, 14, to the upper ends of which is secured a cam-bar 15, mainly concentric to the axis and mold-flange of the wheel. This cam-bar 15 is placed so that the ends of the stems of the plungers of the mold-boxes being supplied with clay, will not quite reach to the bottom of the sockets of the hub, in order that when the filled mold is carried around to be repressed the plunger may yield or move inward to compensate for any variations of supply that may be occasioned in filling, and the bricks always be of substantially the same thickness. The cam-bar 15 is jointed to the end of the support 13, and the other end is adjustably secured to the end of the support 14, by a bolt 16, engaging in a slab 17, in the support 14. To make the adjustment of the cam-bar 15, a lug 18 is formed on the support



14, having a screw-bolt 19, projected through it, so that by adjusting the bolt the cam-bar may be raised or let down, and the position of the plunger thus regulated to any desired size of brick. To the frame are secured suitable supports 20, 21, having an eccentric cam-bar 22, which is engaged by the pins on the plungers, and the plungers thereby pushed outward and the brick discharged on to the carrying-apron D, as shown in Fig. 1 of the drawings. Another cam-bar 23, is secured in the position substantially as shown in Fig. 1 of the drawings, the lower and upper portions of which are united by a step 24; the lower part of this cam-bar carries the plungers and prevents them from dropping out too far, and the step moves them inward to be carried by the upper portion of the cam-bar at the proper distance to make the mold, as seen in the drawings. It will thus be perceived that when the mold-wheel is rotated the upper cam-bar holds the plungers at the proper position to receive the clay, and from thence the molds are carried around to receive the action of the pressing-plunger, after which the plungers are brought into contact with the lower cam-bar and the forms discharged, then the side cam-bar is engaged by the pins on the plungers and are eventually presented in position to receive the clay into the molds. To provide for making bricks of different thickness, washers 25, may be placed loosely in the sockets of the hub, as shown in the drawings.

E, designates the brick pressing-wheel, consisting of a disk of the same diameter as the mold-wheel, having formed thereon a broad annular rim-flange 28, having radial-ways 29, formed thereon, and arranged at the same distances apart as the molds in the mold-wheel, and to register therewith when the wheels are rotated. In the radial-ways 29, are fitted the pressing-plungers, 30. These pressing-plungers 30 consist of rectangular bars having rounded lower or inner ends 31, having bearings 32 formed thereon, wherein are fitted anti-friction rollers 33, as shown in the drawings, to bear on the cam-bars. To lessen the friction in the reciprocations of the pressing-plungers, bearings 34, are formed in the sides of the plungers in which are arranged anti-friction rollers 35, and to carry the pressing-plungers inward pins 36, having rollers 37, thereon are provided, which act as hereinafter specified.

38, 39 designate supports secured to the side of the supporting-frame, and having secured to their upper ends a curved-plate 40, arranged concentric to the axis of the wheel and extending well around the upper portion, substantially as shown. The end 40<sup>x</sup> of this curved-plate 40 rests on a support 41, secured to the frame as shown in Figs. 1 and 6, and to the top of the support 41, is hinged a cam-plate 42, on which the lower ends of the plungers bear, and by which they are pushed outward when in the operation of pressing the

brick. To adjust the hinged cam-plate 42 to the desired position and relation to the plungers, a bar 43, is mounted in sleeves 44, 45, on the support 41, provided with a spring 46, and adjusting-nut 47, the end of the bar 43 bearing against the under face of the hinged cam-plate.

On suitable supports, as 48, 49, and end braces 50, 51, is mounted a bearing-bar 52, running for the greater portion of its length concentric with the rim-flange of the wheel and axis thereof, and having the end 53, directed tangentially to the rest of the bar. Over the side-face of the rim-flange is secured a ring-plate 54, which retains the plungers in the ways. The ring-plate 54, has radial slots 55 opening into it from the inner edge, as shown, to make room for the pins of the plungers to slide in.

It will be perceived from the foregoing description, that when the pressing-wheel is rotated the plungers bear with their ends on the upper cam-plate as shown in Fig. 1 of the drawings, with their outer ends even with the perimeter of the rim-flange or wheel, until they reach the hinged cam-plate when they are moved outward, entering the mouth of the molds and effecting the requisite compression of the brick. When the pressing-plunger is pushed out and has accomplished the work of pressing the brick, the pin on the plunger engages the inclined or tangential part 53 and carries the plunger back, on the bar 52, on which they are carried by the pins, as shown in Fig. 1 of the drawings.

On the face of the disks of both wheels is formed or secured a face-gear 56, 57, and on the frame is mounted a line shaft 58, carrying two pinions 59, 60, in mesh with the face-gears of the respective wheels. Power may be communicated through the agency of a belt (not shown) on a pulley 61, on the line shaft 58. The gearing is arranged to turn the wheels synchronously, to bring the plungers of the pressing-wheel in accurate registration with the molds of the mold-wheel.

F, designates the pug-mill which feeds the clay to the molds, and is specially constructed to apply to machines of the character herein described. The feed-box 62, of the pug-mill sets over the perimeter of the mold-wheel, and has the sides inclined, as seen at 63, 64, the edge of the former tending to retain the clay from being thrown out, and the latter serving as a cleaner of the top surface of the mold. The screw of the pug-mill consists of a suitable shaft 65, having paddles 66 arranged as usual to push the clay forward, and the feed-wings 67, which are curved to sweep over the molds and push the clay compactly therein.

What I claim is—

1. The combination with the mold-wheel, and pressing-wheel, each having radial ways and plungers arranged therein, of an adjustable cam for operating the mold-wheel plungers, and a yielding cam for operating the pressing-plungers, substantially as described.



2. The combination with the mold-wheel, having radial slots, of plungers arranged therein and a cam device for operating said plungers, a pressing-wheel having radial slots, 5 a series of plungers arranged in said slots, and provided with anti-friction rollers on their inner ends, and a cam device provided with a hinged yielding end, substantially as described.

10 3. The combination with the mold-wheel, of a pressing-wheel provided with radial ways, plungers arranged in said ways, and provided with lateral pins, cams for operating said plungers, and a radially slotted rim or casing, 15 substantially as described.

4. The combination of the mold-wheel, formed with molds in its rim, plungers in the molds, stationary cam-bars to move the plungers out and in the molds, a pressing-wheel 20 formed with radial-ways in its rim, pressing-

plungers in the ways, a cam-plate to carry the pressing-plungers around the upper portion of the wheel, a hinged cam-plate to push the plungers out, and a cam-bar to draw the plungers inward, as set forth.

5. The combination of the mold-wheel, reciprocating plungers in the molds thereof, means substantially as described to push the plungers outward and inward, the pressing-wheel, reciprocating plungers therein, cams 25 to operate the plungers, and a yielding and adjustable cam to press the plungers on the form in the mold-wheel. 30

In witness whereof I have hereto set my hand in the presence of two attesting witnesses. 35

HENRY STUCKEY.

Attest:

A. G. HEYLMUN,  
CHARLES N. LARNER.