

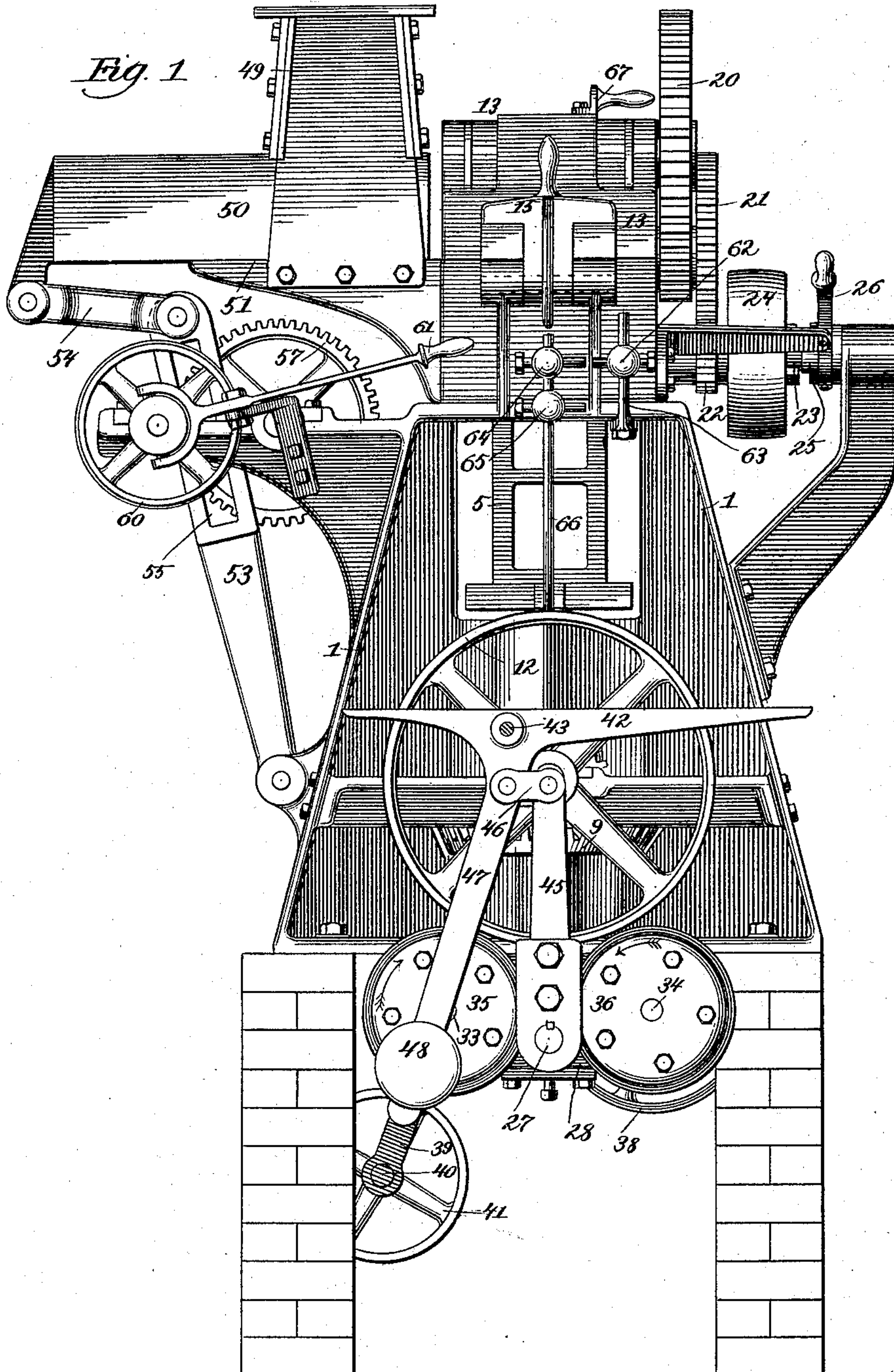
(No Model.)

5 Sheets—Sheet 1.

W. BURKMAN.  
BRICK MACHINE.

No. 406,562.

Patented July 9, 1889.



Witnesses:

Albert H. Adams,  
Harry T. Jones.

Inventor:

Walter Burkman  
By West & Bond Attys.

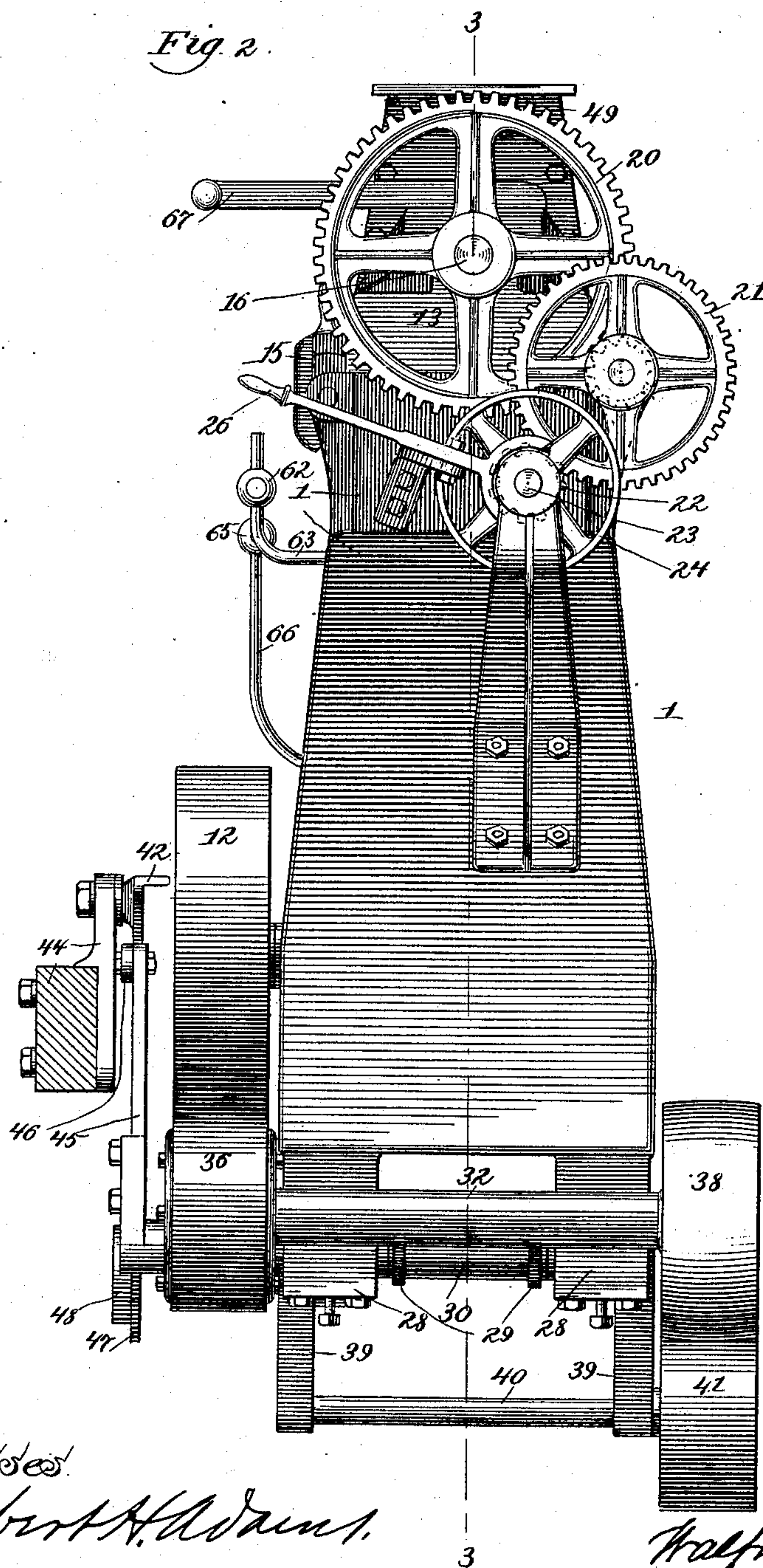
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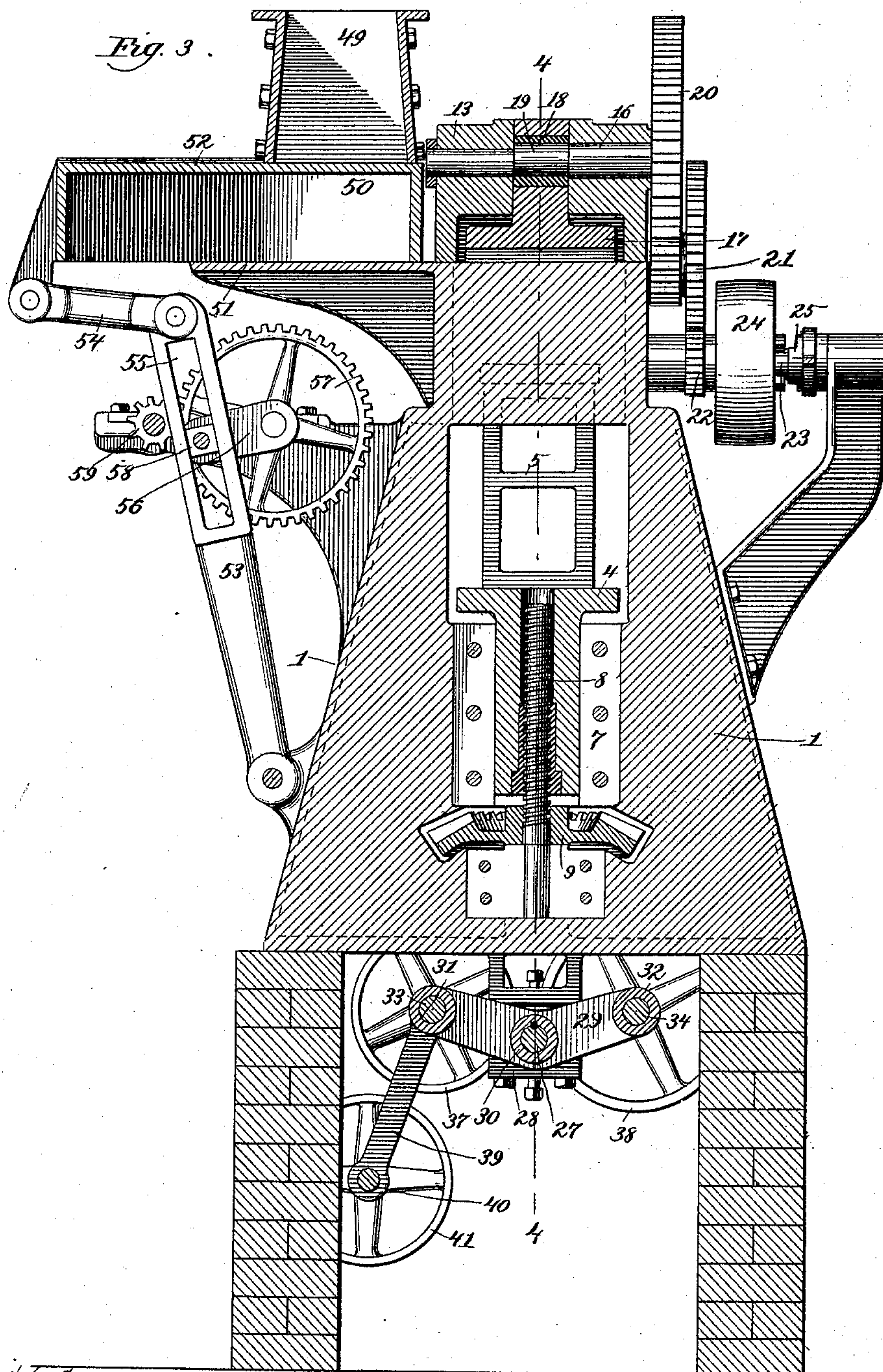
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Inventor:

Wesley Burkman  
By W. L. & B. D. Atty



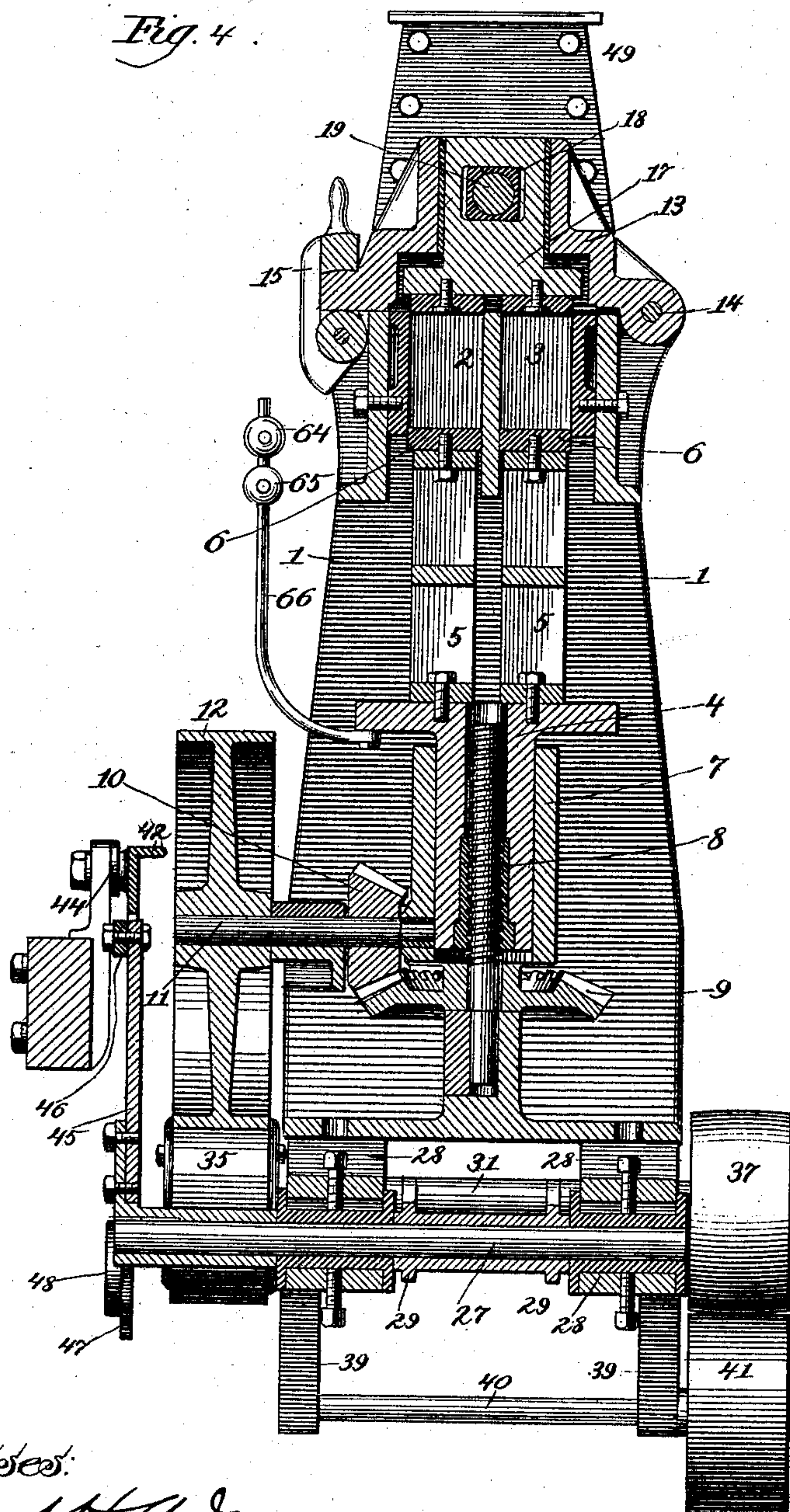
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Halfrid Burkman  
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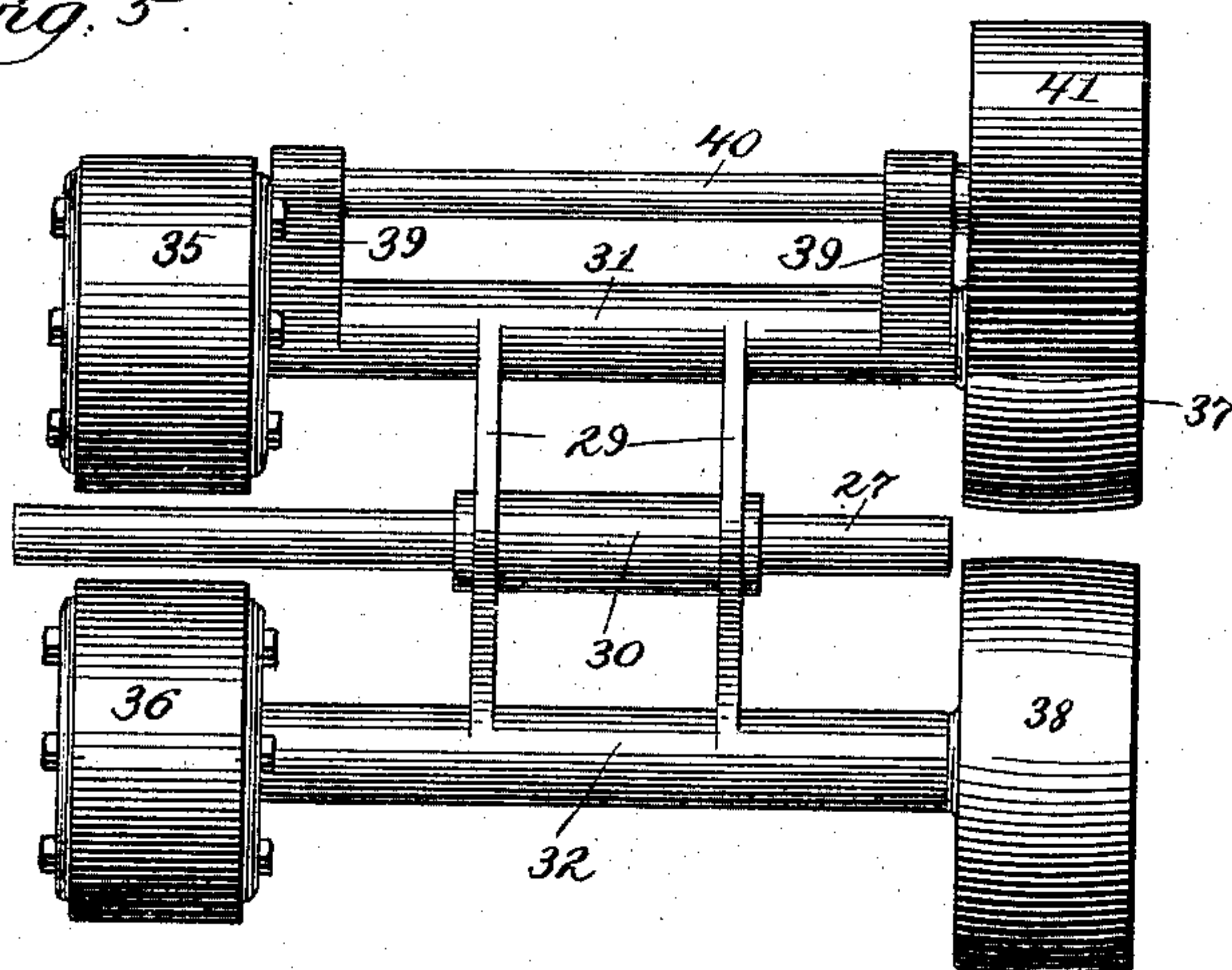
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*Fig. 5.*



*Witnesses:*

*Albert H. Adams.*  
*Harry F. Jones.*

*Inventor:*

*Malfrid Burkman*  
*By West & Bond Attys*



# UNITED STATES PATENT OFFICE.

WALFRID BURKMAN, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO  
CHARLES H. FROST, OF SAME PLACE.

## BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 406,562, dated July 9, 1889.

Application filed February 18, 1889. Serial No. 300,388. (No model.)

*To all whom it may concern:*

Be it known that I, WALFRID BURKMAN, residing at Los Angeles, in the county of Los Angeles and State of California, and a citizen of the United States, have invented a new and useful Improvement in Brick-Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is an end view. Fig. 3 is a central longitudinal section at line 3 of Fig. 2. Fig. 4 is a cross-section at line 4 of Fig. 3. Fig. 5 is an under side view of the rocker-frame, with the rollers and pulleys connected therewith.

This invention is an improvement upon a machine primarily designed to be used in making ornamental and molded work, for which Letters Patent of the United States were granted to me, dated June 7, 1887, and numbered 364,395.

The machine described in that patent was to be operated by hand.

It is well known that perfectly dry powdered clay cannot be worked practically at all, and it is customary and desirable in making brick by the so-called "dry process" to work the clay as nearly dry as possible. It is practically impossible to keep the clay in exactly the best condition, the clay being affected by the varying humidity of the air and other conditions, and hence the product is not uniform in character.

The leading objects of my invention are to adapt a machine, similar to that shown in my former patent, to be operated by power and to secure greater uniformity in the character of the product, which I accomplish as illustrated in the drawings and hereinafter described.

That which I claim as new will be pointed out in the claims.

In the drawings, 1 represents the main frame.

2 and 3 are two mold-boxes located in the upper part of the main frame, which are provided with suitable linings, as usual.

4 is the lower plunger, to which is secured a frame 5, which may be considered a part of the plunger, on the top of which are two die-plates 6, which are removable and have upon

their upper faces the shape or ornament which the required brick is to have.

7 is a guide for the lower plunger.

8 is a screw by which the lower plunger is operated. The screw is keyed to a beveled wheel 9, which is driven by a gear-wheel 10 on the shaft 11, supported in two bearings and carrying a friction-drum 12.

13 is a cover over the mold-boxes, which cover is hinged to the main frame at the point 14, and has a hole in its top for the upper plunger.

15 is a lock which holds the cover in its closed position.

16 is a shaft supported in bearings in the cover.

17 is the upper plunger.

18 is a block in a hole in the plunger 17, the hole being a little larger than the block, so that it can have a little motion. The shaft 16 passes through this block, and that portion 19 of the shaft which is in the block is a little eccentric. The under side of this plunger 17 is provided with two removable plates which fit the interior of the mold-boxes. (See Fig. 4.)

20 is a gear-wheel on the shaft 16, which extends out to one side of the cover.

21 is a gear-wheel which is supported on a stud or pin at the point 14. Connected with this gear-wheel 21 is a pinion (indicated by dotted lines in Fig. 2) with which the gear-wheel 20 engages.

22 is a pinion with which the gear-wheel 21 engages. This pinion is fast on the shaft 23.

24 is a pulley which is loose on the shaft 23 and is provided with a clutch.

25 is a clutch movable on the shaft 23, which clutch is operated through a yoke and hand-lever 26.

27 is a shaft supported in two bearings beneath the frame.

29 are arms secured to a sleeve 30, which is keyed to the shaft 27.

31 32 are two long sleeves or journals in which the shafts 33 34 revolve.

35 is a friction-roller on one end of the shaft 33.

36 is a friction-roller on one end of the shaft 34.



37 is a pulley on the opposite end of the shaft 33.

38 is a pulley on the opposite end of the shaft 34.

39 are two arms extending downward from the shaft 33, the lower ends of which arms carry a shaft 40, on which there is a loose pulley 41.

42 is a lever pivoted at 43 to a support 44.

45 is another lever keyed to the shaft 27.

46 is a link which connects the two levers 42 and 45.

47 is a long arm extending downward from the lever 42, on the lower end of which arm there is a weight 48, which balances the rocker.

Arrows indicate the direction in which the friction-rollers 35 and 36 revolve.

49 is a hopper to receive the clay.

50 is the clay-filler which moves upon a fixed table 51 on one side of the frame. This filler is provided with receptacles for clay, into which receptacles clay falls from the hopper when the filler is in the proper position. The rear ends of the side pieces of the filler are provided with a plate 52, which is arranged to pass beneath the hopper to cut off the flow of clay therefrom when the filler is moved forward over the molds. The construction of this filler is similar to that in the machine shown in my former patent and need not be more fully described.

53 is a swinging bar which is connected with the rear end of the filler by means of a pivoted link 54.

55 is a long slot in the bar 53.

56 is a crank on a shaft which carries the gear-wheel 57. On this crank is a block 58, which slides in the slot 55.

59 is a pinion which engages with the wheel 57. This pinion is secured to a shaft on which there is a loose pulley 60, to be driven in any suitable manner, and it is provided with a clutch.

61 is a lever connected with a sliding clutch which is arranged to engage with a clutch on the pulley 60 when it is desired to operate the crank 56. The filler 50 is moved back and forth by the rotation of the wheel 57 and the action of the crank 56, which, as the wheel 57 rotates, causes the bar 53 to move back and forth. The pinion 59, pulley 60, and the clutch, used in connection with other devices for operating the filler, are similar to the pinion, pulley, and clutch used in giving movement to the eccentric-shaft in the cover shown in Fig. 1.

62 is a gage which can be adjusted and held in any desired position upon its support 63 upon the frame.

64 and 65 are two other gages, adjustable upon their support 66, which is connected at its lower end with the lower plunger.

67 is a handle for opening and closing the cover. The shaft 27, sleeve 30, arms 29, and journals 31 32 form a rocker. These parts and other parts connected therewith can be

moved by rocking the shaft 27 in its bearings by the movement of the lever 45.

The gage 62 is to be adjusted on its support so that it will be in line with the upper surface of the lower plunger when the molds are to be filled, which will determine the quantity in the molds. The gage 64 is to be so adjusted that when the molds are being filled it will be in the same horizontal plane as the gage 62. The gage 65 is to be adjusted at a distance below the gage 64 equal to the distance which the lower plunger is to move to give the pressure upon the lower side of the brick. By these devices uniformity in the quantity of clay in the molds and uniformity of pressure by the lower plunger can be secured.

The lever 42 can be operated at either end.

The operation, so far as not already described, is as follows: When the molds are to be filled, the cover is to be opened and the lower plunger is to be brought down so that the gages 62 and 64 will be in the same horizontal plane. The devices which operate the clay-filler are then to be brought into action, and the filler will advance over the molds and the contents will be dropped into the molds, and the filler will then be immediately returned under the hopper or spout, from which clay will pass to the filler for the next operation. The cover is then to be closed and locked by the device 15, and the cover will then be held securely in place against the resistance of the pressure upon the clay. The operator then by pressing upon the right-hand end of the foot-lever 42, as shown in Fig. 1, can, through such lever, the link 46, and the lever 45, give motion to the rocker and bring the friction-roller 36 in contact with the friction-drum 12, and then the screw will be brought into operation and the lower plunger will advance upward, and when the gage 65 comes in the same horizontal plane with the gage 62 the lever 42 is to be released, the required pressure then having been given upon the under side of the brick. The lower plunger then remaining stationary, the upper plunger is to be brought into action by means of the clutch 25 and other devices shown in Figs. 1 and 2, and the rotation of the eccentric-shaft 16 will operate such upper plunger. When, by the movement of the shaft 16, the upper plunger is returned to its highest point, the clutch 25 must be released, and the upper plunger will then be in position for the next operation. The cover is then to be swung open and the operator, by pressing again upon the right-hand end of the lever 42, can again bring the friction-wheel 36 into contact with the friction-drum 12, and an upward movement will again be given to the lower plunger, and the brick will be brought to the tops of the molds and then can be removed from the machine. Now, by pressing upon the opposite end of the lever 42 the friction-roller 35 will be brought into contact with the friction-drum 12, and a downward movement will be given



to the lower plunger, and when the gage 64 is again brought into the same horizontal plane as the gage 62 the parts will be in proper position for again filling the molds.

5 The slotted bar 53 may be regarded as a pitman.

It is evident that the support for the gage 62 might be secured to some fixed part other than the main frame.

10 What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a brick-machine, a main frame, one or more mold-boxes supported in the main frame, a cover, as 13, for the mold-boxes, an eccentric-shaft, as 16, journaled in said cover, 15 and a plunger, as 17, in combination with gear-wheels, a pulley, and clutch for operating said shaft and plunger, substantially as and for the purpose specified.

20 2. In a brick-machine, a main frame, one or more mold-boxes supported by the frame, and a gage, as 62, supported by the frame, in combination with a lower plunger and gages 64 and 65, supported by such plunger, sub- 25 stantially as and for the purpose specified.

3. In a brick-machine, a main frame, one or more mold-boxes, a lower plunger, a screw, gear-wheels, and friction-drum for operating the plunger, in combination with a rocker 30 carrying friction-rollers 35 and 36 and belt-pulleys through which the friction-rollers are put into motion, substantially as and for the purposes specified.

4. In a brick-machine, a main frame, one 35 or more mold-boxes, a lower plunger operated by a screw and gear-wheels, a friction-drum, as 12, and a rocker carrying pulleys and friction-wheels, in combination with a foot-lever 42, through which the lower plunger can be 40 brought into operation or stopped at will, substantially as and for the purposes specified.

5. In a brick-machine, a main frame carrying one or more mold-boxes and a clay-filler, as 50, in combination with a pitman-crank, gear-wheels, pulley, clutch, and lever through 45 which the clay-filler is moved and stopped at will, substantially as and for the purposes specified.

6. In a brick-machine, the combination of a main frame, one or more mold-boxes, a hinged 50 cover, as 13, an eccentric-shaft, as 16, upper plunger, as 17, lower plunger, as 4, a screw, as 8, a rocker carrying friction-pulleys, as 35 and 36, a friction-drum, as 12, and a foot-lever, as 42, gage 62, supported by the frame, 55 and gages 64 and 65, supported by the lower plunger, substantially as and for the purposes specified.

7. In a brick-machine, the combination of a main frame, one or more mold-boxes, a plun- 60 ger, as 4, and a gage, as 64, supported by the said plunger, substantially as and for the purposes specified.

8. In a brick-machine, the combination of a main frame, one or more mold-boxes, a plun- 65 ger, as 4, a gage, as 62, supported by some fixed part, and a gage, as 64, supported by said plunger, substantially as and for the purposes specified.

9. In a brick-machine, a rocking shaft, as 70 27, in combination with arms 29, sleeve 30, sleeves 31 and 32, shafts 33 and 34, friction-wheels, as 35 and 36, and driving-pulleys, as 37 38, substantially as and for the purposes specified.

WALFRID BURKMAN.

Witnesses:

A. H. TROTTER,  
JAS. S. MACKENZIE.