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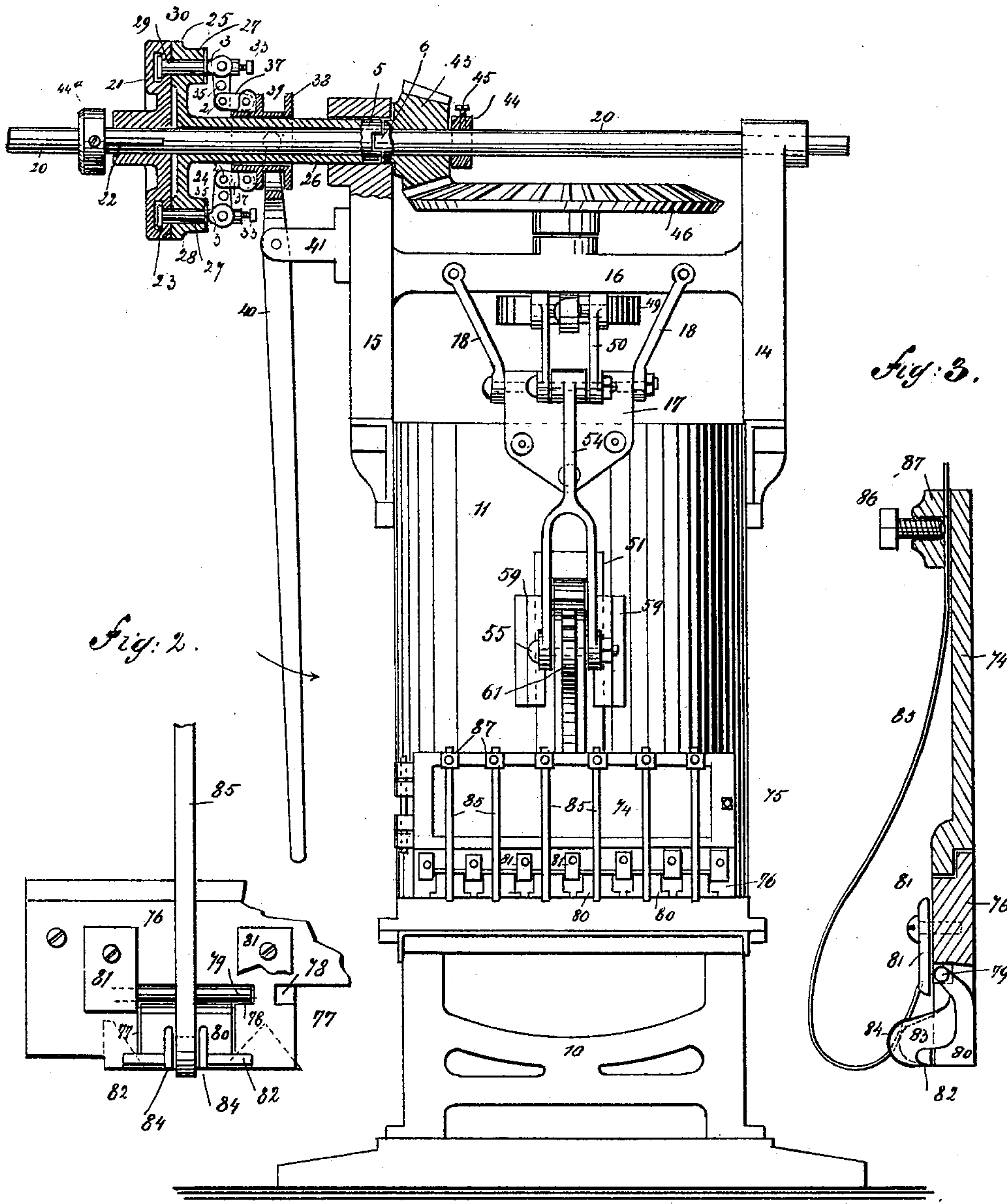
W. E. TALLCOT.

BRICK MACHINE.

No. 389,338.

Patented Sept. 11, 1888.

*Fig: 1.*



WITNESSES:

*Chas. Nida*  
*C. Sedgwick*

INVENTOR:

*W. E. Tallcot*

BY

*Munn & Co*

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(No Model.)

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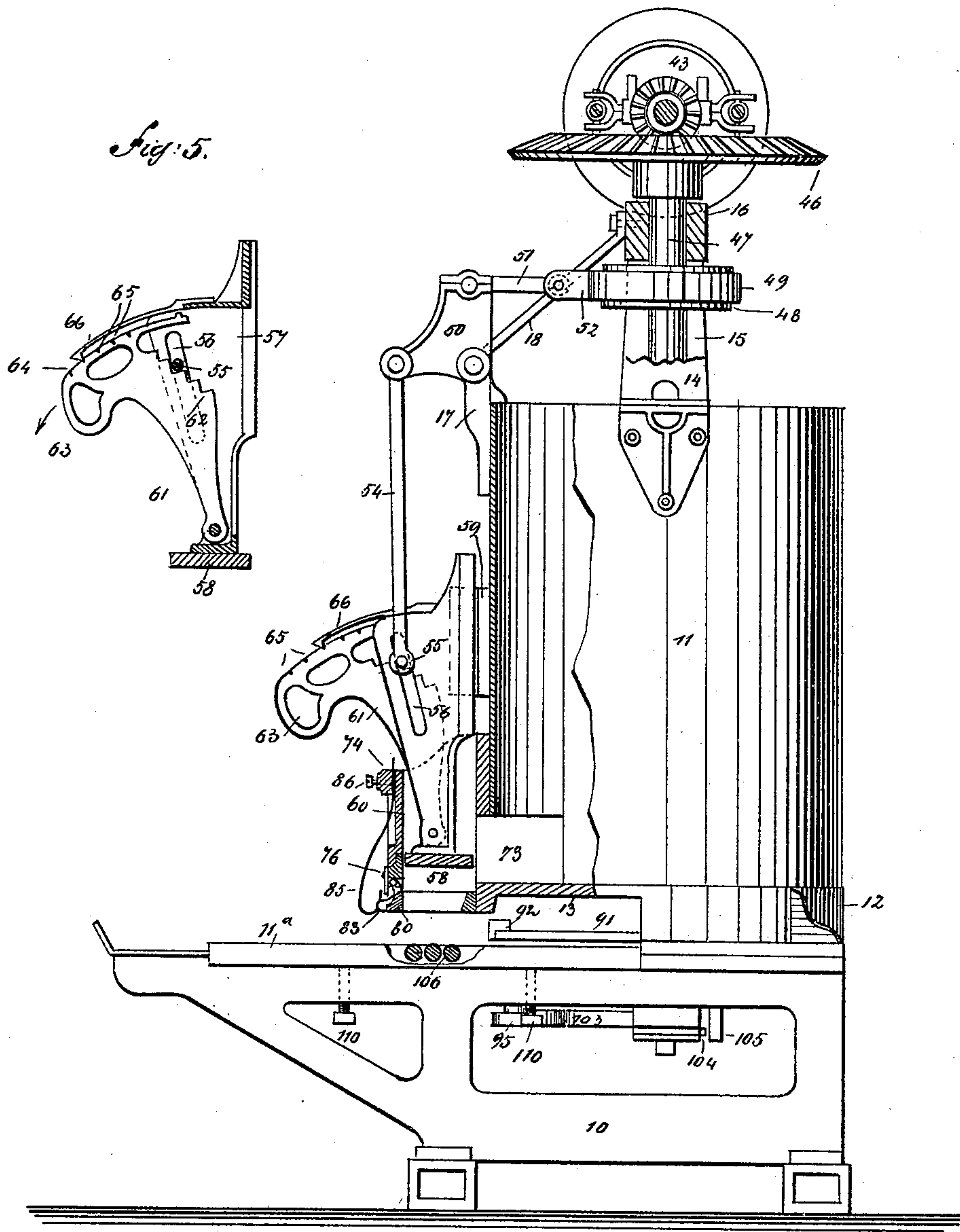
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Fig: 4



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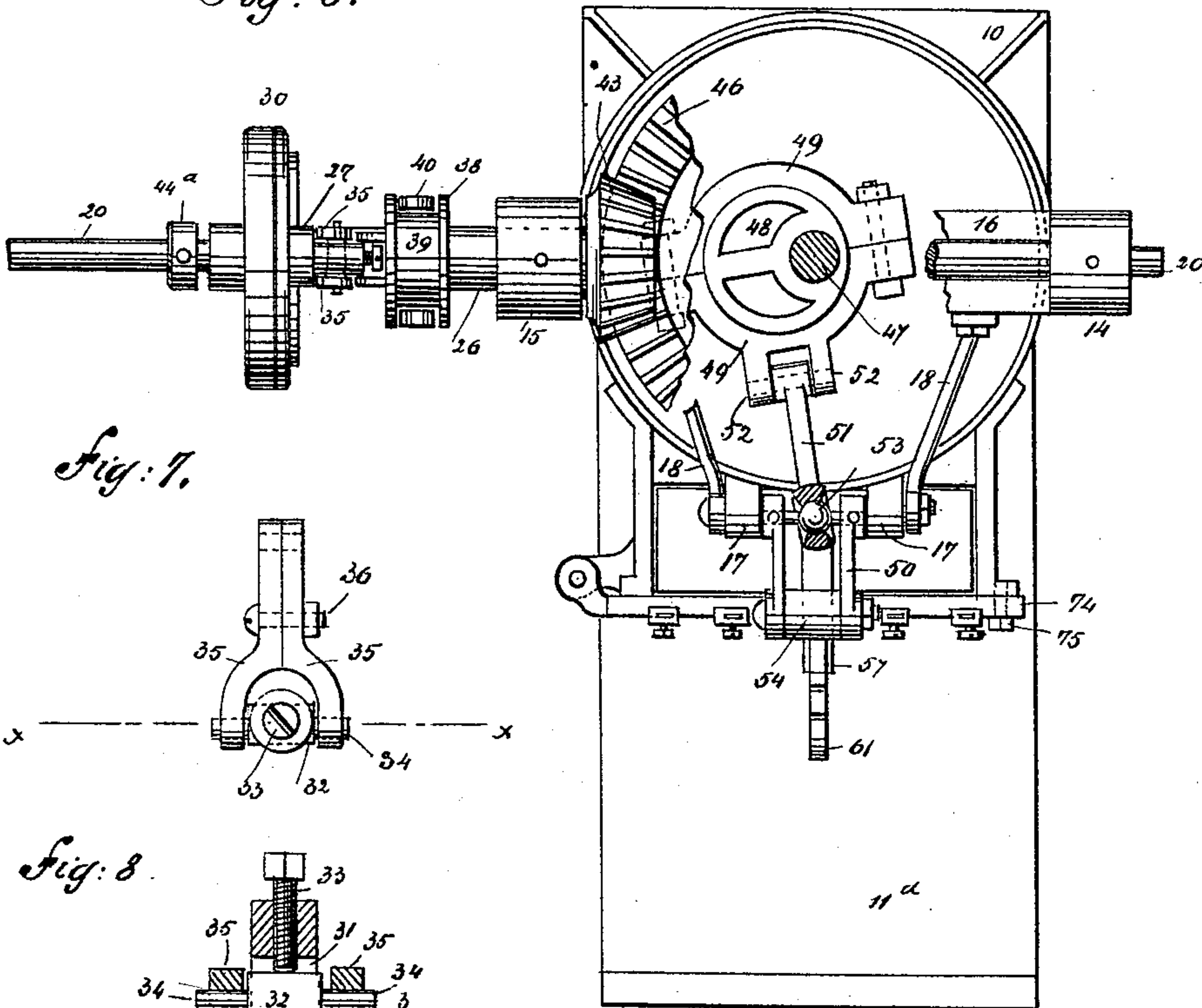
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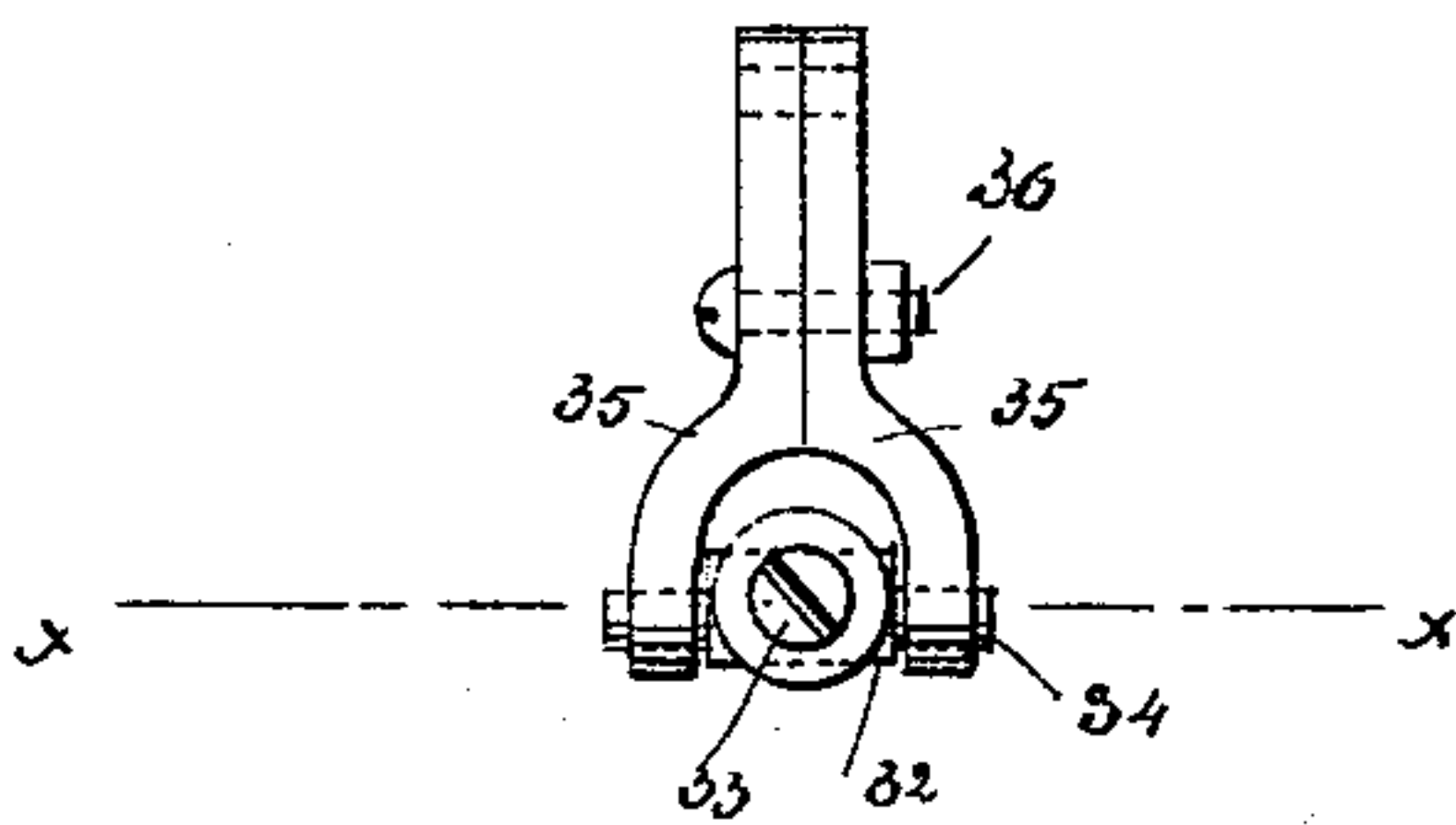
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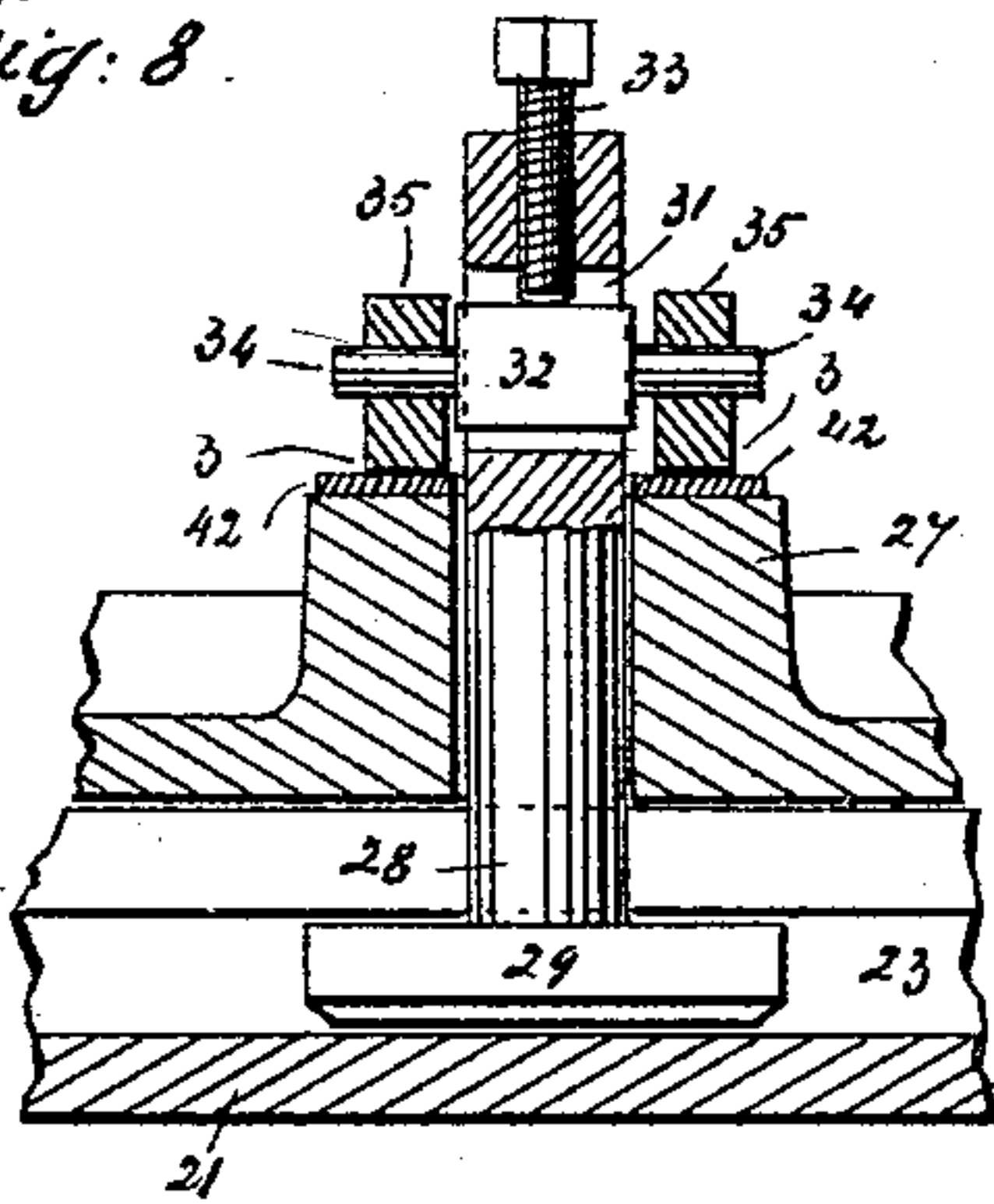
*Fig. 6.*



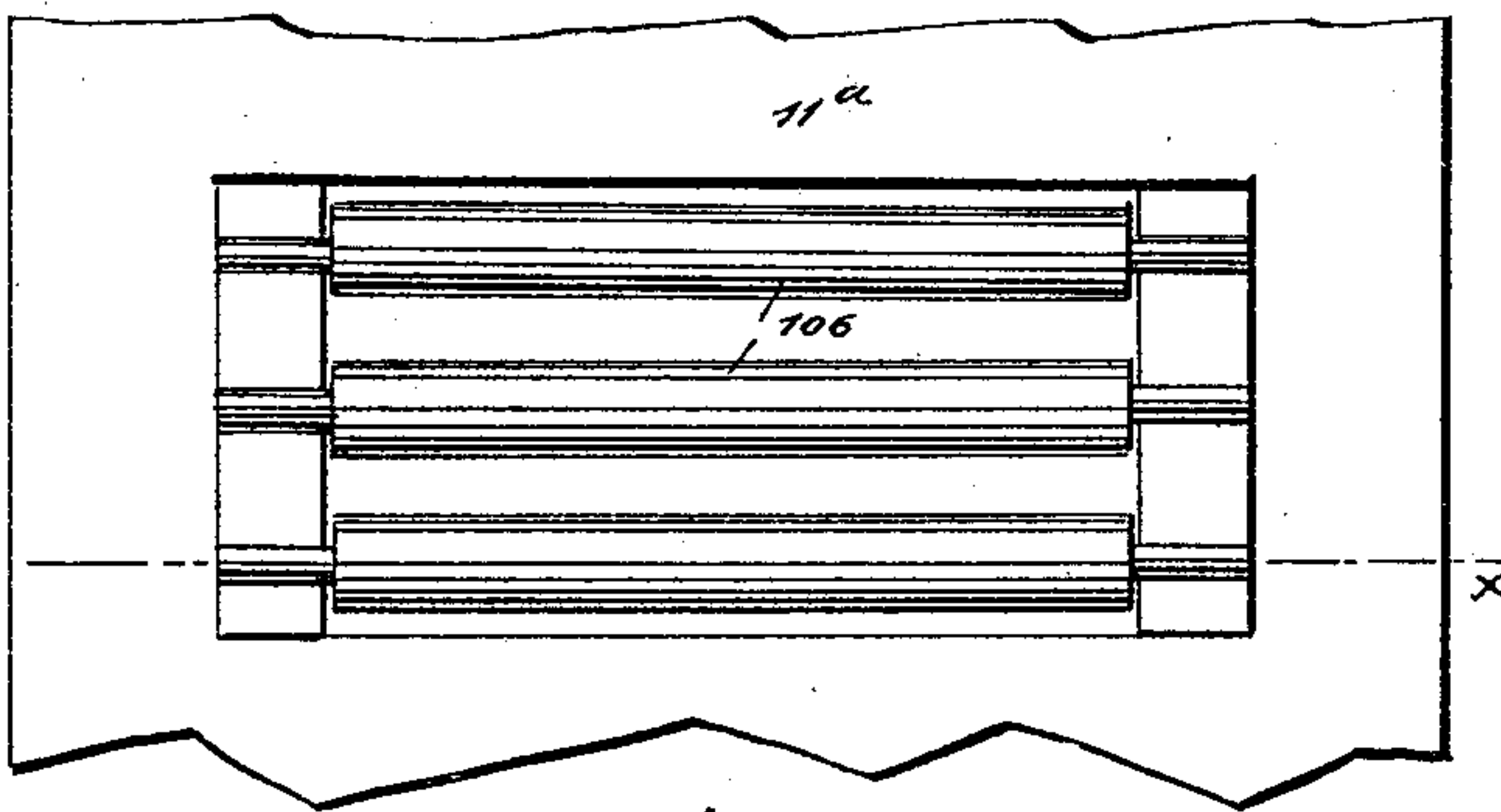
*Fig. 7.*



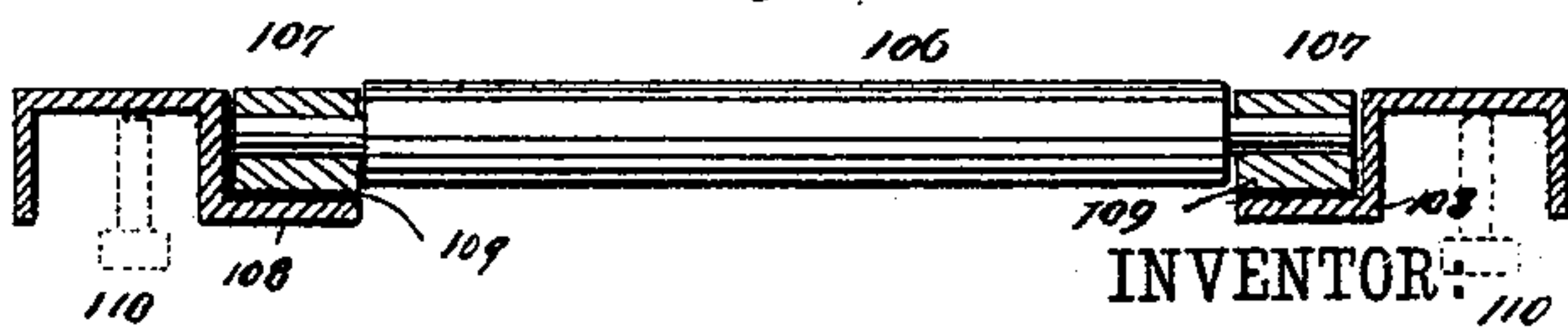
*Fig. 8.*



*Fig. 9.*



*Fig. 10.*



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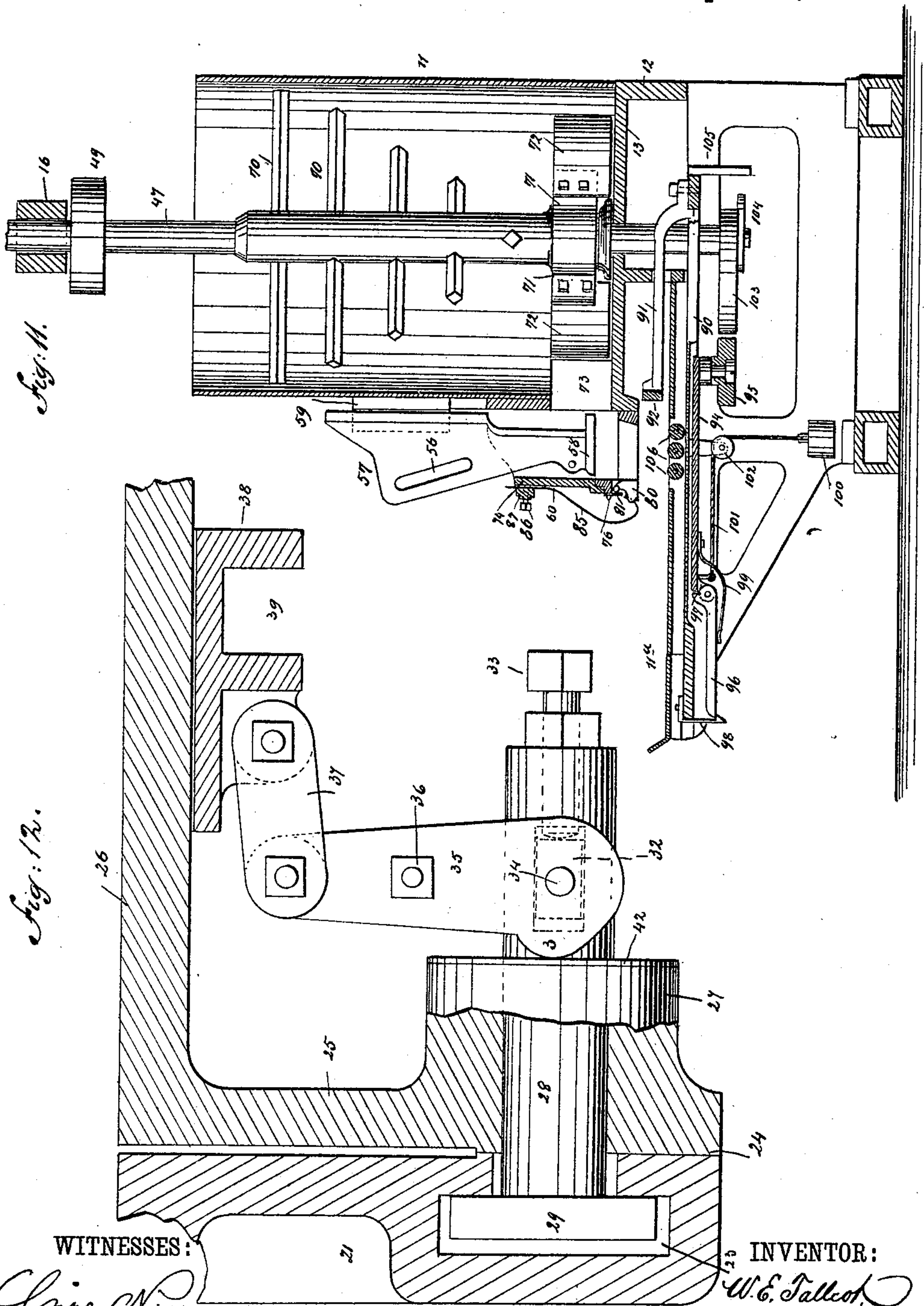
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W. E. TALLCOT.  
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# UNITED STATES PATENT OFFICE.

WILLIAM E. TALLCOT, OF CROTON LANDING, NEW YORK.

## BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 389,338, dated September 11, 1888.

Application filed May 24, 1887. Serial No. 230,232. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. TALLCOT, of Croton Landing, in the county of Westchester and State of New York, have invented a new and Improved Brick-Machine, of which the following is a full, clear, and exact description.

This invention relates to brick-making machines, the main objects of the invention being as follows: to provide an improved mechanism for starting, driving, and stopping the operating portions of the brick-making machine, to improve the construction of the press-box by providing the same with yieldingly mounted traps that are held closed by adjustable springs, to provide for the adjustment of the plunger even at times when the machine is in operation, and to provide for the automatic return of the safety-slide arranged in connection with the feed-table at times when said slide is forced forward by the operation of its actuating-cam.

Although I have enumerated certain specific objects, I wish it to be distinctly understood that many other objects are aimed at and accomplished by the novel constructions and combinations illustrated in the drawings and to be hereinafter described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of my improved brick-machine, the clutches and connections upon the driving-shaft being shown in section. Fig. 2 is an enlarged detail view of a portion of the front of the press-box. Fig. 3 is an enlarged detail view in section, taken through the main door and trap-supporting bar of the press-box. Fig. 4 is a side elevation of the machine, parts being broken away and parts being shown in section. Fig. 5 is a detail view of the plunger-adjusting attachment, a portion of the case being broken away. Fig. 6 is a plan view of the machine, the upper cross-bar, driving-shaft, and a portion of the main gear being broken away to disclose the arrangement of the plunger-operating eccentric, the universal joint arranged in connection

with the plunger-pitman or connecting-rod being shown in section. Fig. 7 is a detail view of the head of the shank of one of the clutch-clamping bolts and its connections. Fig. 8 is a sectional view taken on line *xx* of Fig. 7. Fig. 9 is an enlarged plan view of a portion of the mold-table. Fig. 10 is a sectional view taken on line *xx* of Fig. 9. Fig. 11 is a central sectional elevation of a portion of the machine; and Fig. 12 is an enlarged detail view, in partial section, of a portion of the friction-clutch.

In the drawings above referred to, 10 represents the base-frame of the machine, above the main portion of which frame 10 the mud-cylinder 11 is mounted, said cylinder being directly supported by a semi-cylindrical base, 12, which carries the bottom 13 of the mud-cylinder 11. Vertical posts or standards 14 and 15 are connected to opposite sides of the cylinder 11, said posts being connected by a cross-bar, 16, which is rigidly connected to a bracket, 17, by braces 18. The posts or standards 14 and 15 are provided with bearings for the driving-shaft 20, upon which shaft there is mounted a friction-clutch, 30, of which the section 21 rides upon a feather, 22, that is formed upon the shaft 20. This section 21 is formed with an undercut groove, 23, and with a flat or conical bearing-face, 24. The other section of the clutch is shown at 25, and consists of a disk that is made integral with a sleeve, 26, which rests loosely about the shaft 20.

The section 25 is formed with two or more bosses or projections, 27, that are centrally apertured to receive the shanks 28 of the clutch-clamping bolts 29, the heads of these bolts 29 riding in the under-cut groove 23 of the clutch-section 21. The extending ends of the shanks 28 are formed with slots 31, in which there are placed trunnioned blocks 32, said blocks being adjustable toward the head of the bolt by means of set-screws 33, which engage with threaded apertures that are formed in the extreme ends of the shanks 28.

To the trunnions 34 of the blocks 32, I connect arm-sections 35, which sections are united by a bolt, 36, and the ends of each pair of these arm-sections are apertured in order that they may be engaged by a bolt, 2, which passes



through the arms of a link, 37, the opposite ends of which links are connected to a sleeve, 38, said sleeve being mounted upon the sleeve 26 and being formed with a groove, 39, that is entered by the bifurcated end of an operating-lever, 40, said lever being pivotally connected to a bracket, 41, that is secured to the vertical post or standard 15.

The arm-sections 35 are formed with cam-bearing faces 3, and between said cams and the faces of the projections 27, I place wear-plates 42, the arrangement being such that if the lever 40 be thrown in the direction of the arrow shown in connection therewith the two clutch-sections will be firmly clamped together, for such movement of the lever 40 will force the cams 3 to bear hard against the wear-plates 42, and the bearing-faces of the two clutch-sections will be firmly clamped together, imparting motion to the operating-shaft.

The sleeve 26 is formed with a clutch-section, 5, which engages with another clutch-section, 6, that is formed upon a bevel-pinion, 43, said pinion being held in engagement with the sleeve 26 by means of a collar, 44, that is held to the shaft 20 in advance of the pinion by a set-screw, 45, a second collar, 44<sup>a</sup>, being arranged in connection with the clutch-section 21. The pinion 43 engages with a large bevel-gear, 46, that is carried by the main operating-shaft 47, said shaft being stepped upon the bottom plate, 13, and being guided by a bearing formed in the cross-bar 16.

Below the cross-bar 16 the shaft 47 carries an eccentric, 48, upon which there is mounted a sectional eccentric-strap, 49, which strap is connected to a bell-crank rocker, 50, by means of a connecting-rod, 51, said rod being pivotally mounted at one end between jaws 52, that are formed upon the strap 49, while at the other end the rod is connected to the rocker 50 by means of a universal joint, 53. Between the outwardly-extending arms of the bell-crank rocker 50, I mount a pitman or connecting-rod, 54, the lower end of which rod is bifurcated and carries a pin or bolt, 55, which rides in slots 56, that are formed in the side walls of a case, 57, the lower end of said case being connected to the plunger 58, which plunger is mounted to reciprocate in the press-box 60, the case being guided by ways 59, that are secured to the peripheral face of the cylinder 11.

Within the case 57, I pivotally mount an adjuster, 61, said adjuster being formed with a number of bearing-faces, 62, which bearing-faces recede step by step from the pivotal connection of the adjuster. Upon the extending portion of the adjuster there is formed a handle, 63, and the upper face of the adjuster is circular, being formed upon a curve that is concentric with the axis of the pivot or bolt upon which the adjuster is mounted, and this circular or curved face, which is shown at 64, is formed with recesses or notches 65, that are engaged by a spring-catch, 66, that is carried

by the case 57, the arrangement being such that by grasping the handle 63 and forcing the adjuster inward the pin 55 will be caused to bear upon one of the steps 62, that is more remote from the pivotal connection of the adjuster than the step against which the pin or bolt 55 would bear when the adjuster was pulled outward in the direction of the arrow shown in Fig. 5. In this way it will be seen that the downward throw of the plunger 58 may be so adjusted that the plunger will act properly irrespective of the character of the clay within the feed-box.

The shaft 47 is provided, as usual, with a series of spirally-arranged radial arms, 70, and below these arms shoes 71 are formed upon the shaft, wiper-plates 72 being bolted to the shoes, which wiper-plates act to force the mud through the opening 73 and into the press-box 60.

The front wall of the upper portion of the press-box 60 consists of a door, 74, said door being hinged at one end of the press-box and being held to place at the other by a swinging bolt, 75. Beneath the door 74 there is a cross-bar, 76, which is formed with an opening, 77, for each of the molds or forms that are placed upon the mold-table beneath the press-box, and at each side of these openings 77 there are recesses 78, in which there rest the trunnions 79 of traps 80, the trunnions of said traps being held to place by plates 81, that are secured to the bar 76 and arranged to overlap the recesses 78, thus serving to hold the trunnions within the recesses. The traps 80 are formed with side lugs or projections, 82, which bear against the bar 76 at either side of the opening 77, and from the longitudinal center of each trap there is a forwardly-extending boss or projection, 83, which is formed with a central channel, upon either side of which there are ribs 84.

Flat springs 85, formed with curved lower ends, are held to the door 74 by set-screws 86, which engage with apertured bosses 87, between which bosses and the door the springs 85 pass. The lower curved ends of the springs 85 rest in the grooves or channels between the ribs 84, the springs thus acting to hold the traps in a closed position with a yielding pressure, which pressure may be increased by lowering the springs or diminished by raising the springs. The action of this spring tends to hold the trap open after the trap passes a horizontal position, but will close it from any point below a horizontal position.

Beneath the mold-table there is mounted a frame, 90, the side edges of which slide in grooves formed in the inner faces of the frame 10. To the upper side of the rear end of this frame 90 are attached two bars, 91, which extend upward and forward above the table 11<sup>a</sup>, said table being longitudinally slotted to provide for the movement of these bars. To the forward ends of the bars there is attached a cross-bar, 92.

Within the frame 90 there is mounted a bar,



94, upon which there is mounted a roller, 95, and the forward end of this bar normally engages a shoulder formed upon a lever, 96, that is pivotally connected to a support, 97, that is carried by the frame 90. A spring-catch, 98, engages the forward end of the lever 96, and a spring, 99, arranged as best shown in Fig. 11, acts to throw the lever into engagement with this catch. To the bar 94, I connect a weight, 100, by means of a cord or chain, 101, which passes over a sheave, 102.

The shaft 47 carries two cams, 103 and 104, the cam 103 being arranged to bear against the roller 95 as the shaft is revolved, while the cam 104 is arranged to bear against a downwardly-extending projection, 105, that is carried by the frame 90, the arrangement being such that as the shaft 47 is revolved, as above stated, the frame 90 will be forced forward by the action of the cam 103 and backward by the action of the cam 104; but should any obstruction be encountered the tension of the spring-catch 98 and of the spring 99 will be overcome, and the bar 94 will be forced forward without moving the frame 90.

In order that the molds, which, it will be understood, are placed upon the table 11<sup>a</sup> beneath the press-box 60, may be forced forward with a minimum amount of friction, I mount rollers 106 in boxes 107, that are supported by flanges 108, the upper peripheral faces of the rollers being just above the level of the table 11<sup>a</sup>, liners, as 109, being employed to adjust the bearings 107 of the rollers 106, while the table 11<sup>a</sup>, which carries the rollers, is adjusted by means of set-screws 110.

I am aware that it is not new to operate the press-box plunger by means of a vertically-reciprocating pitman connected to a bell-crank lever operated by a rod having a strap at its opposite end surrounding an eccentric mounted on a shaft parallel with the main shaft. The throw of the plunger was regulated by a swinging stepped adjuster having a cross bar riding over an arc and held in its adjusted position by means of a locking-pin entering any one of a series of apertures in the top of the arc. I do not claim such prior construction as of my invention.

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

1. In a brick-machine, the combination, with the cylinder, the press-box, plunger, and main operating shaft 47, of a horizontal eccentric, 48, secured to the main shaft, the strap 49, surrounding the eccentric and having longitudinal and lateral movement imparted to it by said eccentric, the vertically-swinging bell-crank lever 50, the link 51, pivoted to the strap 49 and connected at its outer end to the upper part of the bell-crank lever by a universal joint, and a pitman connecting the horizontal arm of the bell-crank lever with the plunger, substantially as set forth.

2. The combination, with the cylinder 11, the press-box, the plunger therein, and the

main operating-shaft 47, having a horizontal eccentric, 48, secured thereon, of the strap 49, surrounding the eccentric and having longitudinal and lateral movement imparted to it thereby, the link 51, pivoted at its inner end to the eccentric-strap to swing vertically and having its outer end socketed transversely, the vertically-swinging bell-crank lever 50, having a horizontal pivot in the upper end of its vertical arm, said pin carrying a ball, 53, held in the socket of the arm 51, and the pitman 54, connecting the horizontal arm of the bell-crank lever with the plunger, substantially as set forth.

3. The combination, with the press-box of a brick-machine, of a plunger working therein and having guides working in the ways 59 above the operating end or face of the plunger, the swinging stepped adjuster pivotally connected at its lower end with the plunger and having a curved series of apertures, and a spring-catch carried by the plunger and snapping into any one of said apertures, and a pitman or connecting device having a transverse pin engaging any one of said steps, substantially as set forth.

4. In a brick-machine, the plunger 58, the adjuster-case 57, carrying the plunger and having slots in its side walls and an outward-extending spring-catch, 66, on its upper open end, and the outward-swinging adjuster 61, pivoted at its lower end within said case, formed on its inner face with the steps 62, curved on its top edge, 64, and there provided with the aperture 65 under the spring-catch 66, substantially as set forth.

5. In a brick-machine, the combination, with the bottomless press box 60, open at its front side, and a cross-piece, 76, extending across said open front and having openings 77 in its lower edge, of a door closing the open front above said cross-bar, a series of vertically-swinging traps hinged at their upper ends to said cross-piece, and the springs 85, secured at their upper ends to said door and bearing at their lower ends against the outer faces of the traps, substantially as set forth.

6. In a brick-machine, the combination, with the press-box open at its front side and provided with a transverse cross-piece, 76, having openings 77 in its lower edge and recesses 78 in its outer face at the upper corners of each opening 77, of the door closing the open front above of the cross-piece, the traps 80, formed at their upper corners with trunnions 79, entering the recesses 78, and the stop-shoulders 82, the plates 81, secured to the cross-piece 76 and closing the recesses 78 over the trunnions, and the springs bearing on the said traps, substantially as set forth.

7. In a brick-machine, the combination, with the press-box open at its front side and provided with a cross-piece, 76, having mold-openings 77 in the lower edge and a door above the cross-piece, of the traps 80, hinged at their upper ends to said cross-piece to swing vertically and formed on their lower outer edges



with forwardly - extending bosses 83, having vertically-ranging channels forming opposite ribs 84, and the springs 85, secured at their upper ends to the door and curved inwardly and upwardly at their lower ends through the said channels and holding the traps either fully open or closed, substantially as set forth.

8. In a brick-machine, the combination, with the press-box having a transverse cross-piece, 76, across its open front, said cross-piece having openings 77 in its lower end, of the vertically-swinging traps 80, formed with bosses 83, having vertically - ranging channels in their front faces, the horizontally swinging door 74 above the cross-piece and provided on its outer face with vertically-apertured bosses 87 and set-screws 86, and the springs 85, held at their upper ends in said bosses and curved at their lower ends inwardly and upwardly through the channeled bosses 83, substantially as set forth.

9. The combination, with the pusher-frame 90, its spring 98, and operating mechanism, of the inner sliding frame or bar, 94, the lever 96, pivoted to the frame 90, provided with the shoulder 97, engaged by the bar or frame 94, and engaging the spring-catch 98 at its forward end, and the spring 99, secured to the bar or

frame 94 and pressing the lever 96 upward, whereby after the disengagement of the lever 96 from its catch the spring will automatically throw the lever into engagement with said catch when the bar or frame 94 is moved inward, substantially as set forth.

10. The combination, with the pusher-frame 90, having the depending spring-catch 98 at its forward end, and the lever 96, pivoted to the under side of said frame, provided with a shoulder, 97, at its pivotal end and engaging the catch 98 with its free end and automatically swinging upward after its release, of the inner sliding frame or bar, 94, a spring pressing the lever 96 upward, and means for automatically moving the inner frame, 94, rearward after it has caused the disengagement of the lever 96 and catch 98, whereby when frame or bar 94 has been thrown forward and the lever disengaged from its catch the said inner frame will be automatically moved rearward and the lever again thrown into engagement with its spring-catch, substantially as set forth.

WILLIAM E. TALLCOT.

Witnesses:

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