

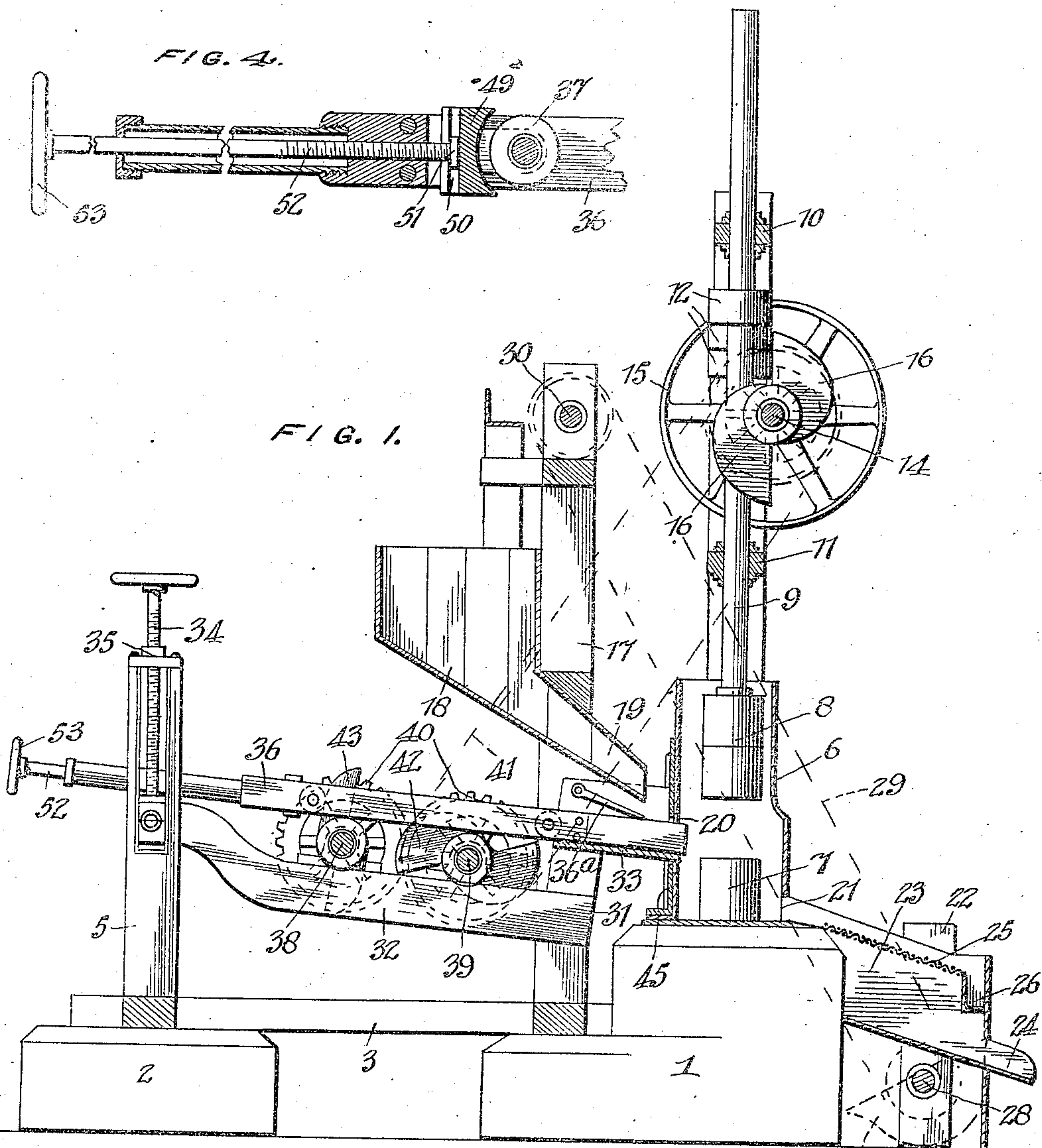
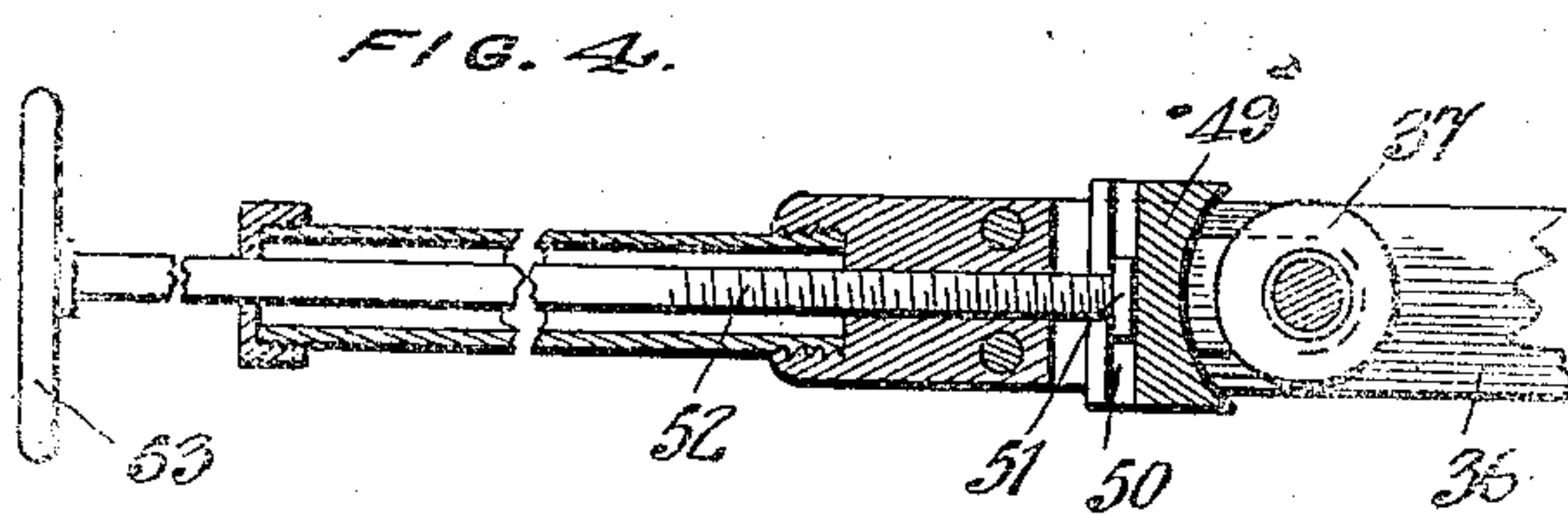
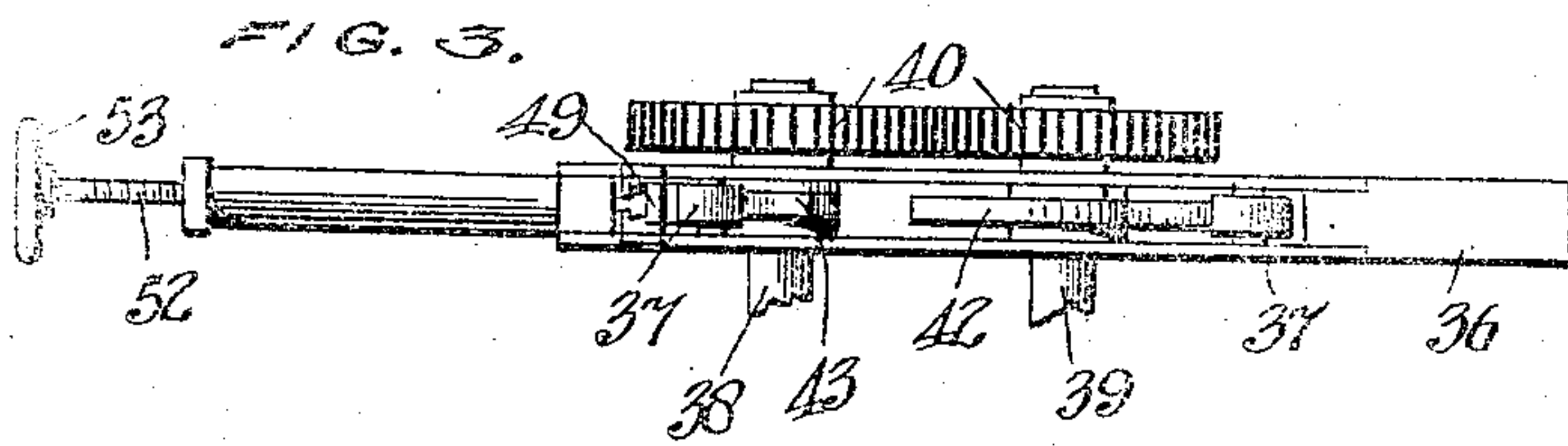
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STAMP MILL.

APPLICATION FILED AUG. 10, 1908.

929,328.

Patented July 27, 1909.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 2.

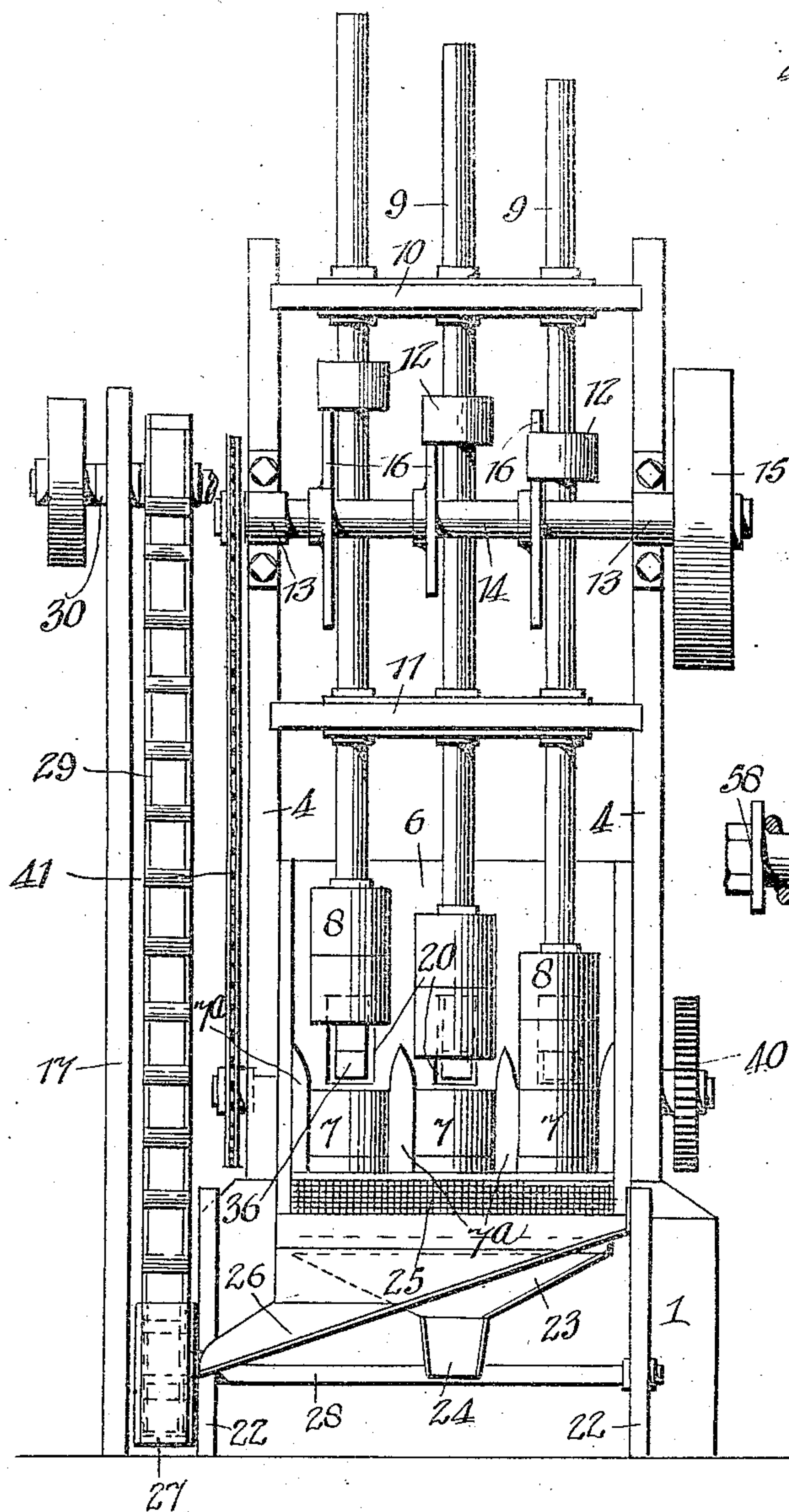


FIG. 3.

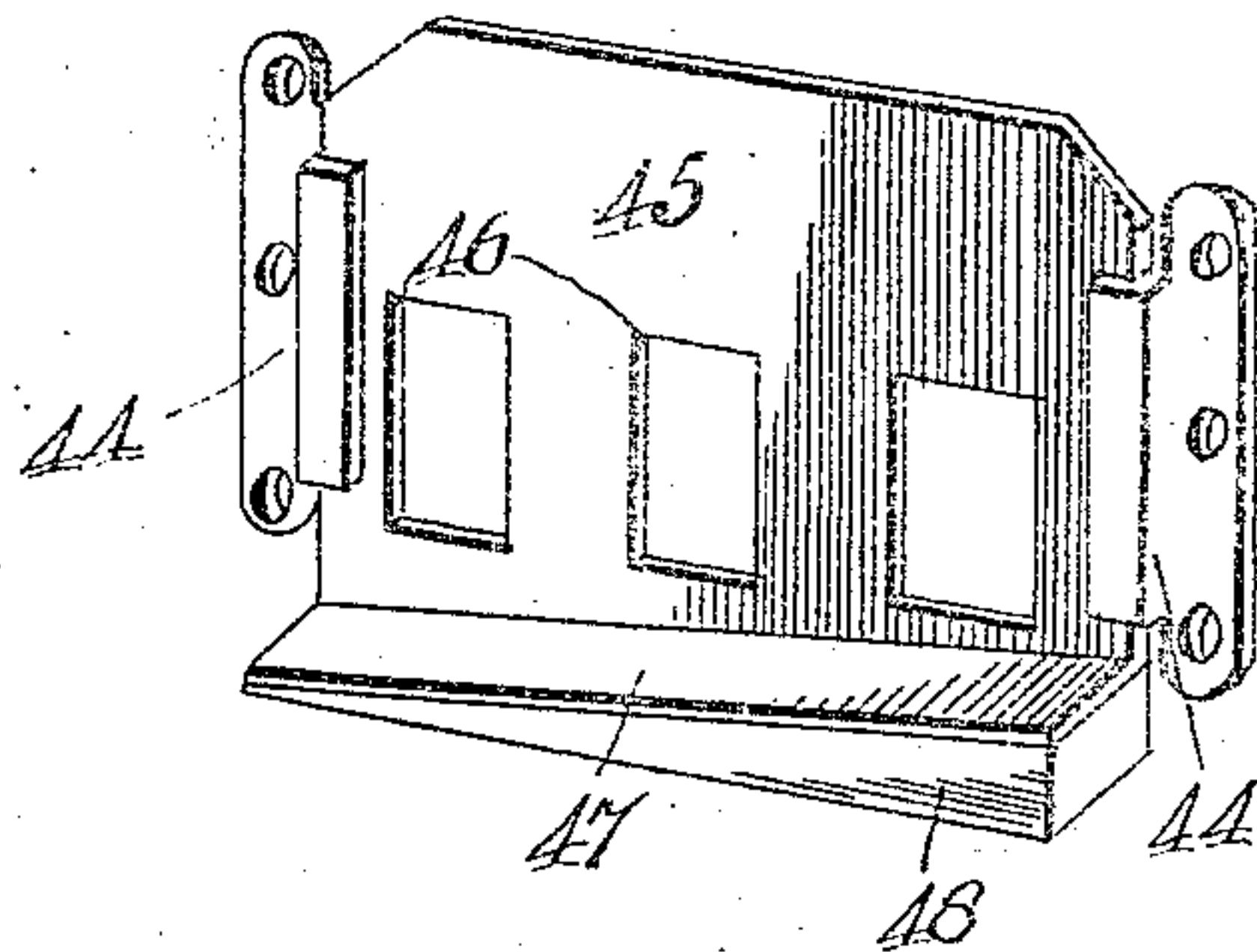
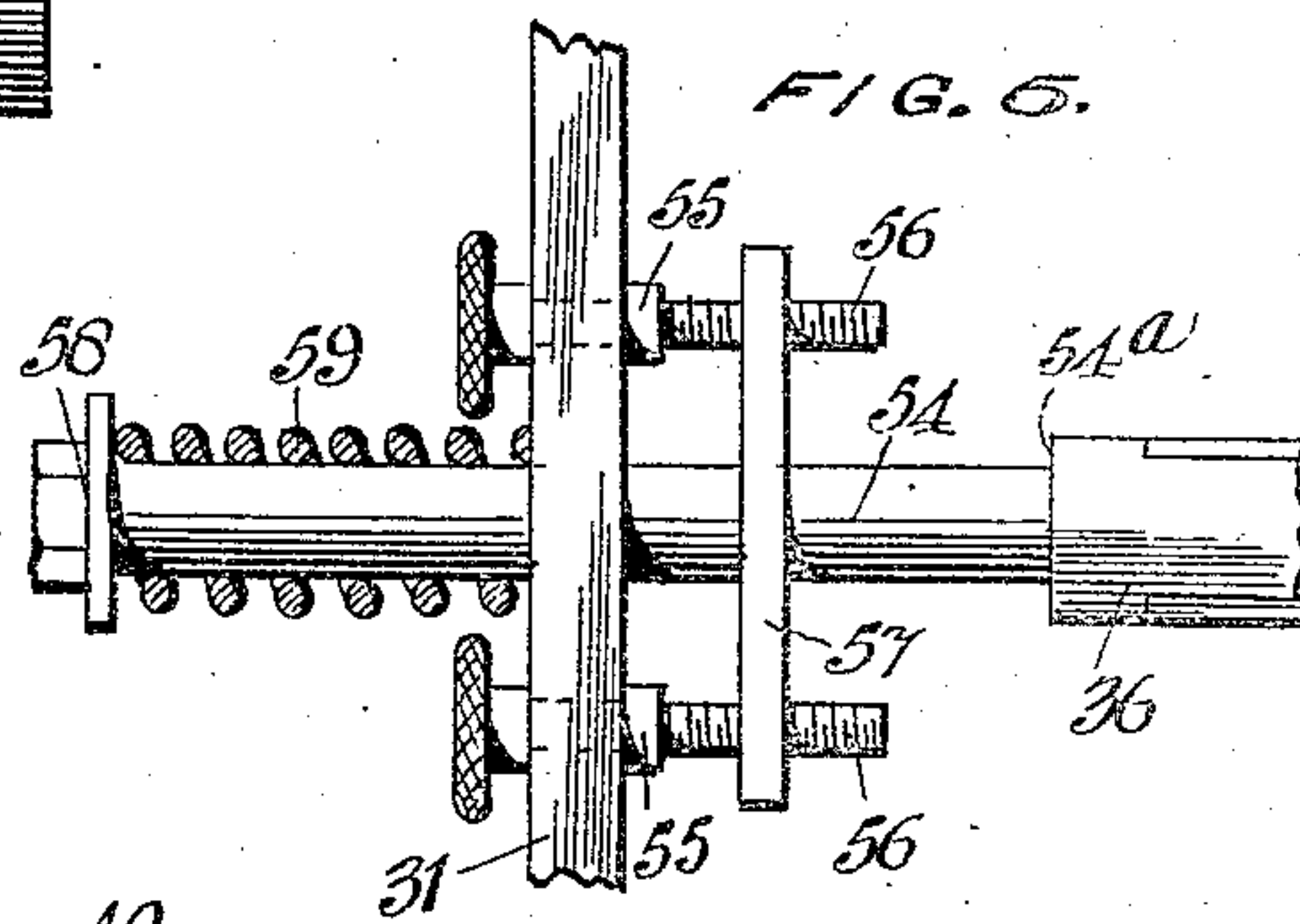


FIG. 4.



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# UNITED STATES PATENT OFFICE.

JOSEPH P. RINKER, OF TRES PIEDRAS, TERRITORY OF NEW MEXICO.

## STAMP-MILL.

No. 929,328.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed August 10, 1908. Serial No. 447,795.

*To all whom it may concern:*

Be it known that I, JOSEPH P. RINKER, citizen of the United States, residing at Tres Piedras, in the county of Taos and Territory of New Mexico, have invented certain new and useful Improvements in Stamp-Mills, of which the following is a specification.

My invention relates to stamp mills, and particularly contemplates the provision of a simple and inexpensive construction, embodying a positive feed to the die block, and automatically returning uncrushed material to the feeding hopper.

In the accompanying drawings, forming a part of this specification, and wherein like numerals are used to designate like parts throughout the several figures, Figure 1 is a sectional elevation of my improved stamp mill. Fig. 2 is a front elevation thereof. Fig. 3 is a plan view of one of my improved feed plungers. Fig. 4 is an enlarged vertical longitudinal sectional view taken through one end thereof. Fig. 5 is a perspective view of the feed plunger guiding frame, and, Fig. 6 is an elevation of one end of a modified form of feed plunger.

In the practical embodiment of my invention, I provide a stamp mill comprising a forward foundation block 1, and a rear foundation block 2, connected by horizontal spacing beams 3 and each provided with upright beams 4 and 5 respectively, extending from the sides thereof, and alined with one another.

Mounted upon the forward foundation block 1, is the usual metallic mortar box 6, between the upright beams 4, and provided with a plurality of dies 7 inclosed and separated by partitions 7<sup>a</sup> and alined below their respective stamps 8, the shafts 9 of which are slidably mounted through openings in the upper and lower horizontal guide beams 10 and 11 respectively extending between the upright beams 4. The stamp shafts 9 are further provided with collars 12 shrunk or otherwise rigidly secured thereto between said guide beams 10 and 11.

Journaled through brackets 13 upon the upright beams 4, is a horizontal stamp operating shaft 14, provided upon one projecting end thereof, with a pulley 15, by which the same may be rotated from a suitable source of power, and having rigidly secured thereon in alinement below the collars 12 of each of the stamp shafts 9, half-turn cams 16 to bear

against said collars and alternately raise and lower said stamp shafts to drop their stamps 8 upon the dies 7.

Extending from the foundation block 1, to the rear of the upright beams 4, are a pair of alined spaced upright beams 17, supporting a hopper 18 for the material to be crushed, provided with an angular downwardly extending discharge spout 19 directed toward apertures 20 in the rear wall of the mortar box 6, alined with each of the dies 7. The mortar box 6 is also provided with an elongated discharge opening 21, in the front wall thereof at its base, and below the surface of the dies 7 for the discharge of the crushed material.

Mounted forwardly of the foundation block 1, between short upright supporting beams 22, is a receptacle 23, leading from the discharge opening 21 of the mortar box 6, to receive the crushed material therefrom, provided with a central forward discharge spout 24, and with a cover 25 of foraminous material of the desired mesh to exclude from said receptacle 23, all material which has not been crushed to a degree necessary for passage through said foraminous cover. A chute 26 is arranged forwardly of the foraminous receptacle cover 25, and is adapted to receive the uncrushed material therefrom, said foraminous cover 25 being arranged to slope downwardly and forwardly to said chute 26, and said chute 26 being arranged to slope downwardly and to one side of said receptacle 23, and to discharge the uncrushed material therefrom into a receptacle 27 supported from a horizontal shaft 28 rotatively mounted between and through the short upright beams 22. The shaft 28 is provided with a sprocket wheel from which extends an endless bucket-on-chain conveyer 29, trained at its other end over a sprocket wheel upon a horizontal shaft 30 extending between the upper ends of the upright beams 17, supporting the hopper 18, and journaled therebetween above the level of said hopper in order to convey thereto and dump therein, the uncrushed material delivered to the receptacle 27 by the chute 26.

Extending from the upright beams 5, is a plunger supporting frame 31, comprising side bars 32, secured at their forward ends to a plate 33, constituting a platform, and provided with extension portions projecting slightly within the openings 20 in the rear wall of the mortar box 6. Thus, the plat-



form 33, receives the material from the discharge spouts 19 of the hopper 18, and its extensions projecting within the mortar box openings 20 support the forward end thereof, the rear end of said frame being vertically adjustably supported between the upright beams 5, vertical screw bars 34 mounted through threaded blocks 35 between the upper ends of said beams 5.

10 Mounted upon the supporting frame 32, to reciprocate toward and from the dies 7, through the mortar box openings 20, are horizontal plungers 36 provided with longitudinal slotted openings having rollers 37  
15 journaled transversely and at each end thereof. The plunger supporting frame 32, also rotatively supports transverse shafts 38 and 39 provided upon their ends with intermeshing pinions 40 whereby the same are rotated  
20 in opposite directions, the shaft 39 being driven by a sprocket-chain 41 from the stamp operating shaft 14. The shafts 38 and 39 are also provided with means to reciprocate the plungers 36, as shown in Figs. 1 and 3,  
25 which means comprises half-turn cams 42 mounted upon the shaft 39, extending within the longitudinally slotted openings in said plungers, and adapted to engage the forward rollers 37 thereof to reciprocate said  
30 plungers toward the dies 7, and quarter-turn cams 43 mounted upon the shaft 39 to engage the rear rollers 37 and the plungers to reciprocate the same rearwardly away from the dies 7. Thus it will be seen that the  
35 plungers 36 are reciprocated forwardly at a slow rate of speed, and rearwardly at a faster rate of speed.

In order to provide for the rolling away of the surface of the dies 7, and to maintain  
40 the plungers in alinement therewith, I provide the rear wall of the mortar box 6, with a pair of brackets 44, secured adjacent the sides thereof, and I mount between said  
45 brackets to slide vertically, a guide plate 45, provided with openings 46, of substantially the same dimensions as the ends of the plungers 36. To this end the openings 20  
50 in the rear wall of the mortar box 6 are of substantially greater dimensions than the guide plate openings 46, in order that said guide plate and the working end of the  
55 plunger 36 may be adjusted vertically and still allow said plunger to pass through said openings 20. The lower edge of the guide plate 45 is constructed slanting and provided with a continuous right angle flange  
60 47 beneath which may be suitably chocked upon the foundation block 1, a taper block 48, by the longitudinal movement of which the said guide plate 45 is raised or lowered dependent upon the direction of such movement. As will be readily seen, the forward  
65 movement of the plunger 36 cuts off communication between the hopper 18 and the interior of the mortar box 6, and positively

feeds therein upon the dies 7, the material previously fed from said hopper when the said plunger was engaged in rearward reciprocation, a spring plate 36<sup>a</sup> being provided below the hopper discharge spout 19,  
70 and bearing forwardly and downwardly upon the forward end of plunger 36 to hold the same downwardly upon the platform 33 and to prevent rearward movement of the material. In order therefore, to increase or  
75 decrease the amount of material fed, it is only necessary to respectively lengthen or shorten the stroke of plungers 36. I have shown a simple manner of performing this  
80 operation in Figs. 3 and 4 wherein the rear roller 37, engaged by the quarter-turn cams 43, is journaled to a block 49 provided with an end-cut channel 50 in its rear face, adapted to be engaged by the headed end 51 of a  
85 screw shaft 52 threaded axially through the rear end of the plunger 36. Thus, by the rotation of shaft 52, by means of its exterior handle 33, the said block 49 carrying the rear rollers 37 will be moved forwardly  
90 or rearwardly to respectively lengthen or shorten the stroke of plunger 36.

Another simple mechanism for accomplishing the above result is illustrated in the modification shown in Fig. 6 of the drawing, wherein the plungers 36 are shown provided  
95 with reduced rounded ends 54, forming a circular shoulder 54<sup>a</sup> at their inner ends, slidably mounted through the rear portion of the plunger supporting frame 31, through  
100 which are longitudinally immovably journaled shafts 55 on each side of said reduced ends 54. The shafts 55 have threaded extensions 56 engaging through threaded bars in an adjusting plate 57 which is provided  
105 with a central opening through which the said reduced ends 54 of the plunger 36 also pass. Thus by rotation of the shafts 55, the adjusting plate 57 may be moved toward or  
110 away from the adjacent portion of the frame 31 to limit the reciprocation of the plunger 36 by contact therewith of the circular shoulder 54<sup>a</sup> at the inner end of the reduced  
115 extensions 54. In this form, the quarter-turn cams 43 for the rearward reciprocation of the plungers 36, may be done away  
120 with by providing a notched cap 58 upon the end of the reduced plunger extensions 54, projecting rearwardly through the plunger supporting frame 31, and mounting an expansive coil spring 59 between said notched  
125 cap 58 and the adjacent beam of the plunger supporting frame 31.

Having described my invention, I claim:

1. In a stamp mill of the character described, the combination of a crushing stamp,  
125 a die upon which said stamp operates, a hopper adjacent and communicating with said die, a reciprocatory plunger mounted to feed material from said hopper to said die, a  
130 supporting frame for said plunger, means



within said frame for reciprocating said plunger, and adjustable supports for the forward and rear portions of said frame, substantially as described.

5 2. In a stamp mill of the character described, the combination of a mortar box, having an opening in its wall, a hopper mounted adjacent said mortar, a reciprocatory plunger mounted for movement to feed  
10 material from said hopper to said mortar, and having its forward end vertically adjustable within the wall opening thereof, and a vertically adjustable plate mounted upon the mortar wall having an opening  
15 forming the guide for said plunger, substantially as described.

3. In a stamp mill of the character described, the combination of a mortar box, a

hopper mounted adjacent thereto, a reciprocatory plunger mounted for movement to  
20 feed material from said hopper to said mortar, a supporting frame for said plunger, and means mounted within said frame for imparting movement to said plunger, relatively fast in one direction toward said mortar, and means for imparting relatively slow  
25 movement thereto in the opposite direction away from said mortar, substantially as described.

In testimony whereof I affix my signature  
30 in presence of two witnesses.

JOSEPH P. RINKER.

Witnesses:

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S. B. SEWARD.