

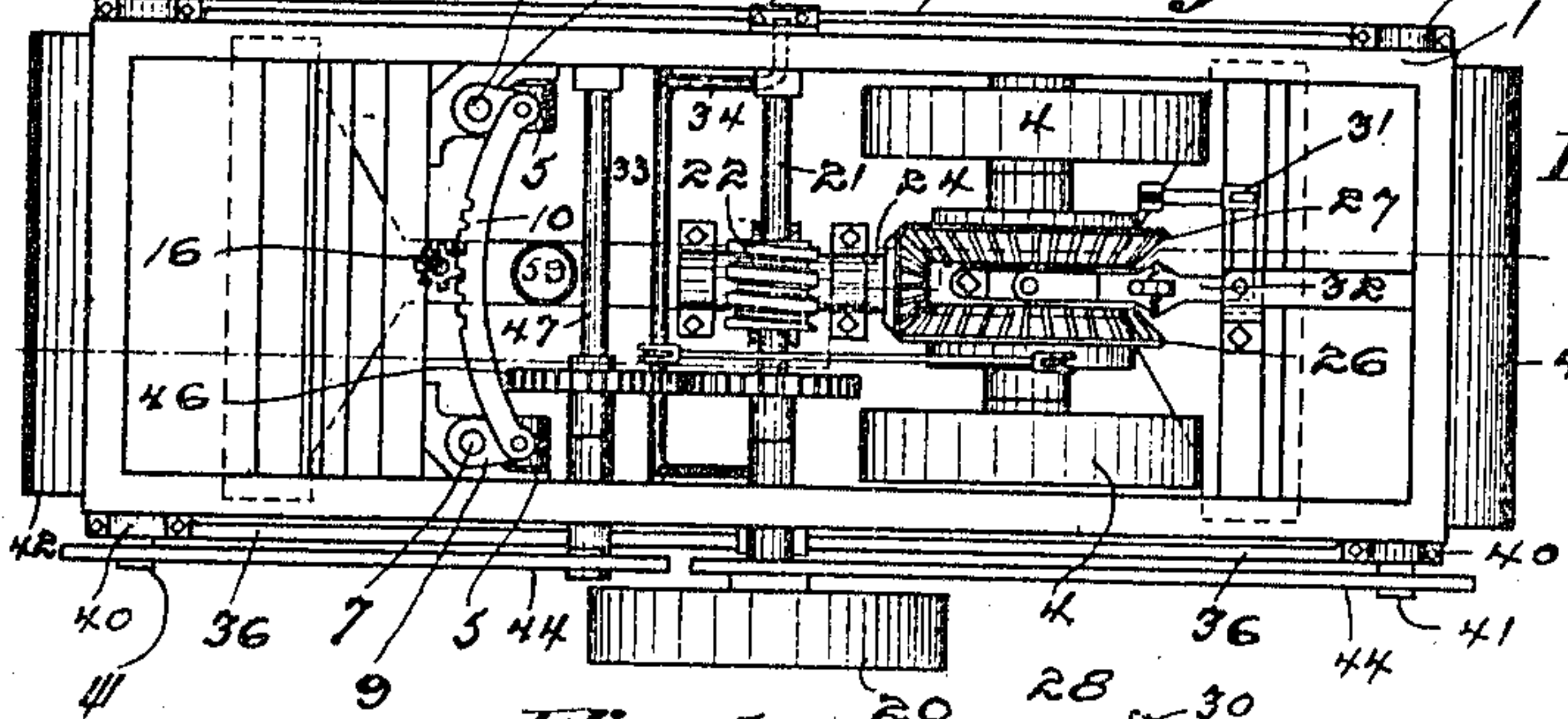
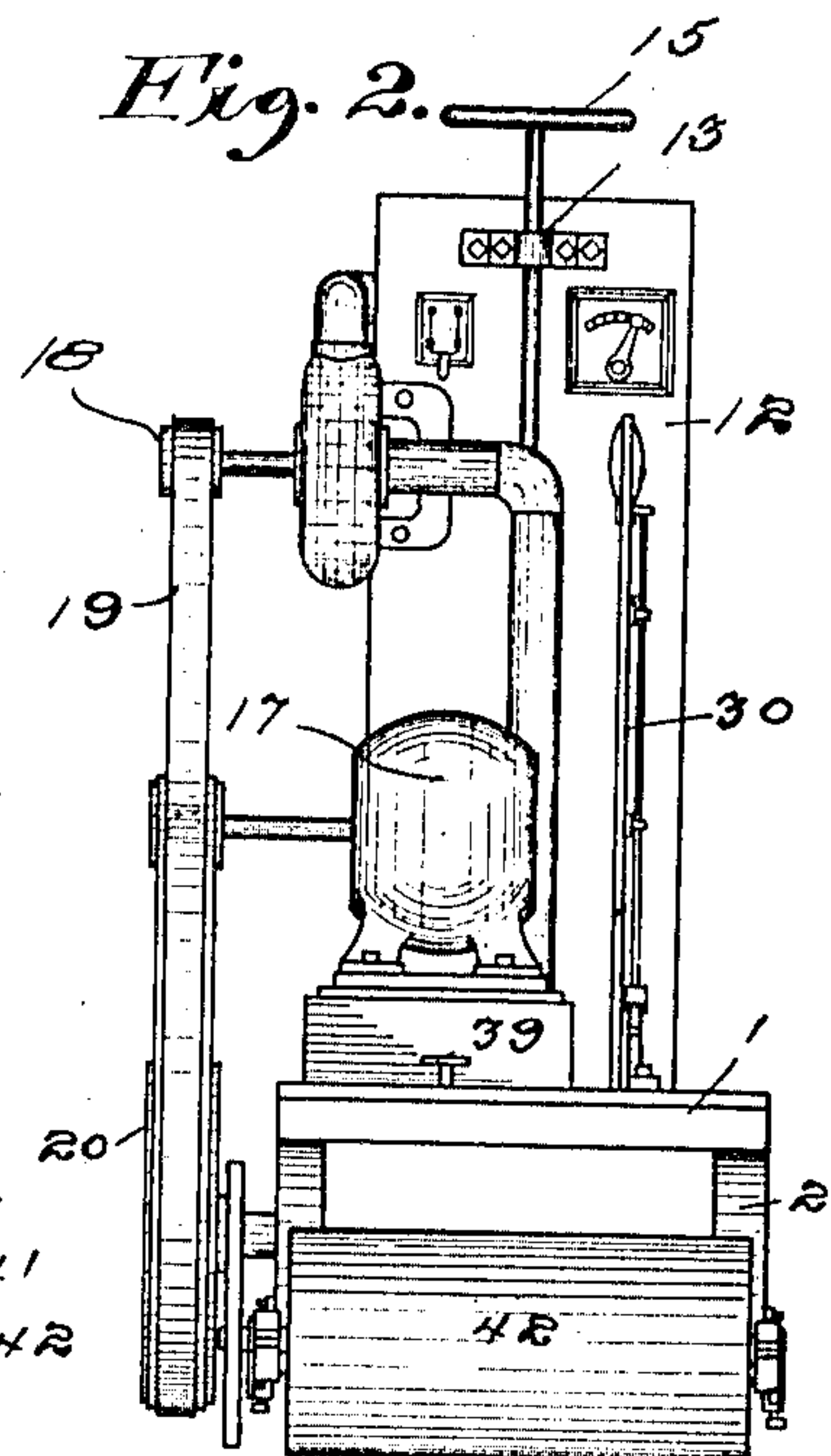
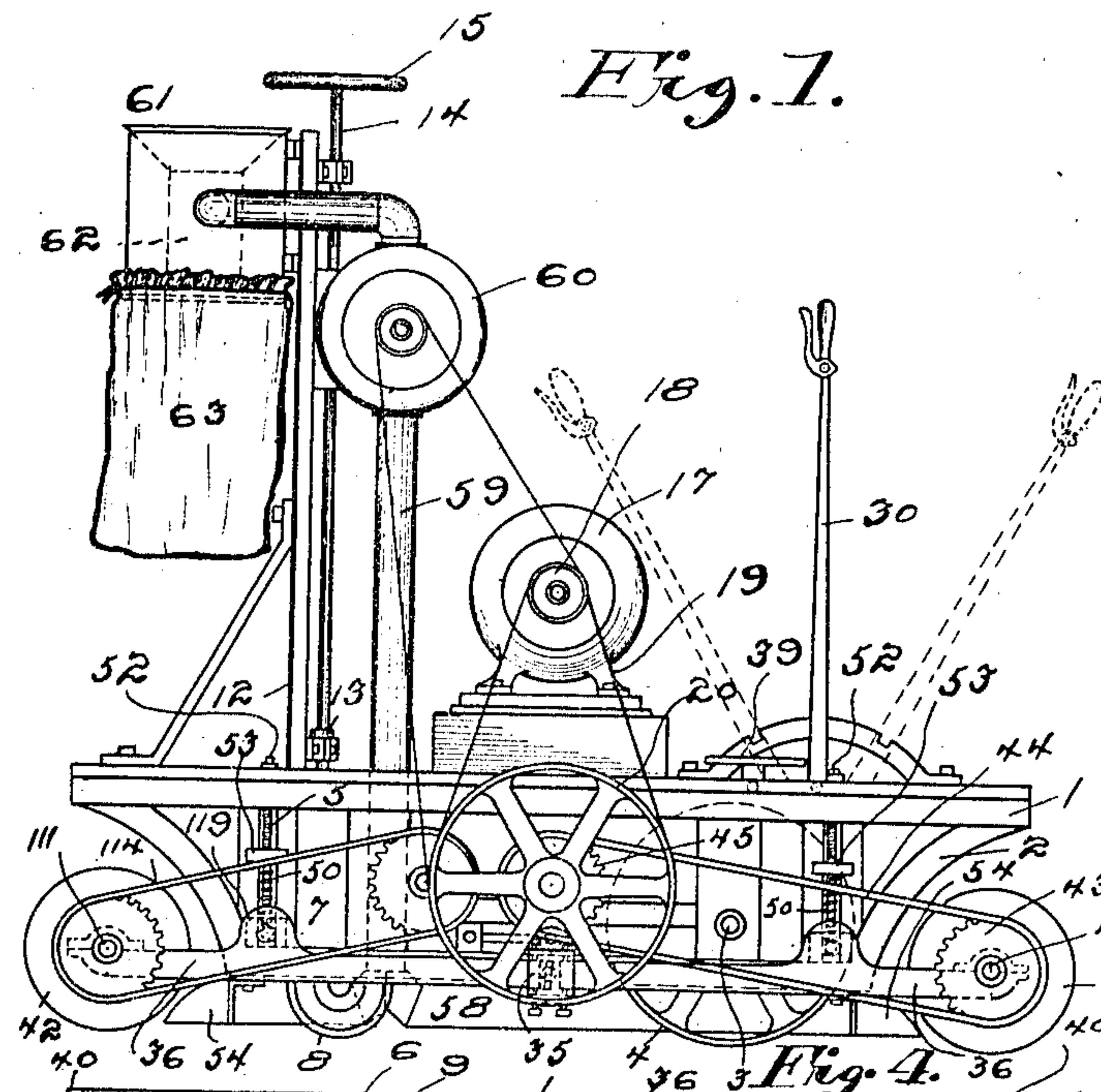
R. & W. STIPE.
FLOOR SURFACING, CLEANING, AND POLISHING MACHINE.

APPLICATION FILED APR. 6, 1909.

984,501.

Patented Feb. 14, 1911.

4 SHEETS—SHEET 1.

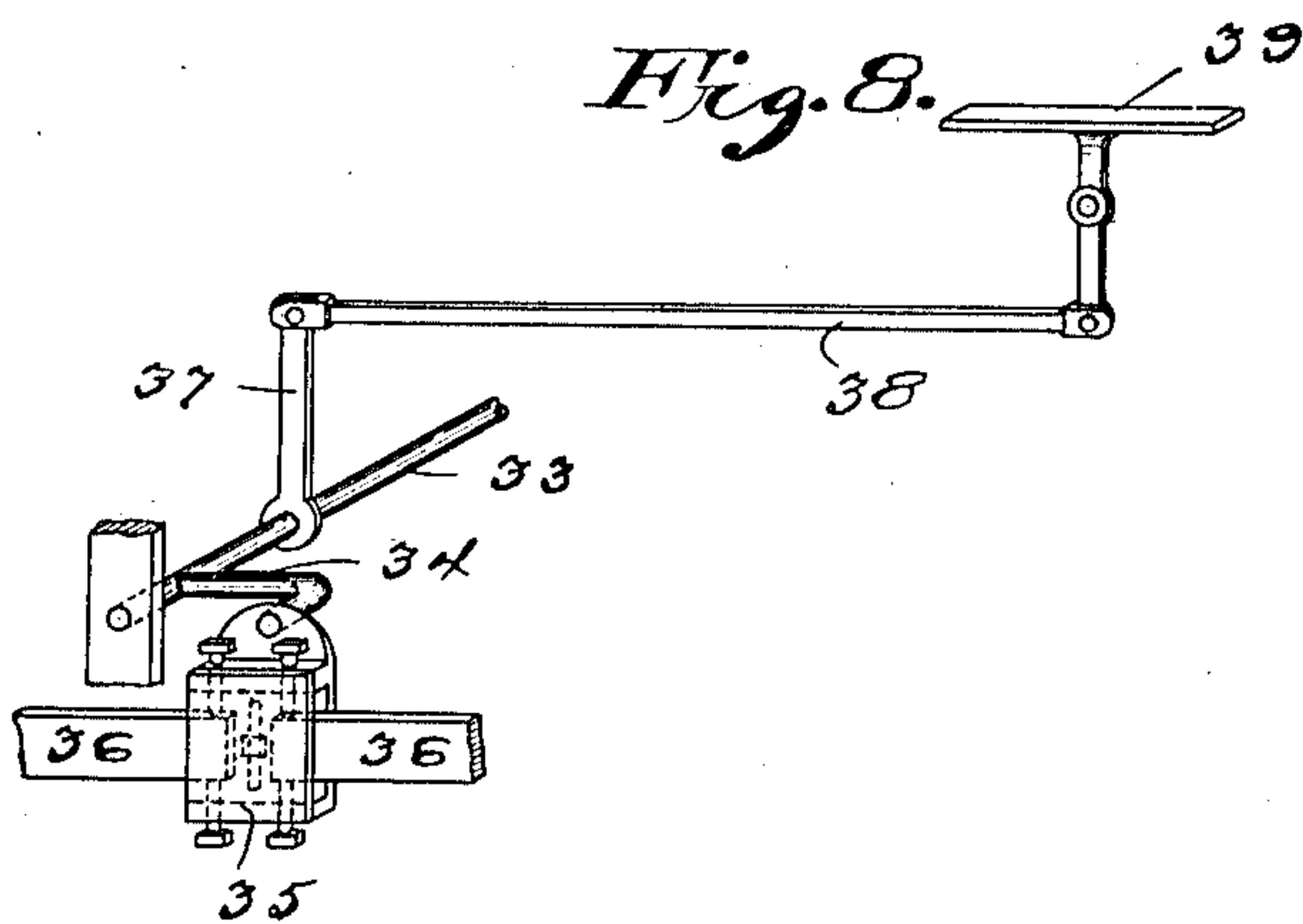
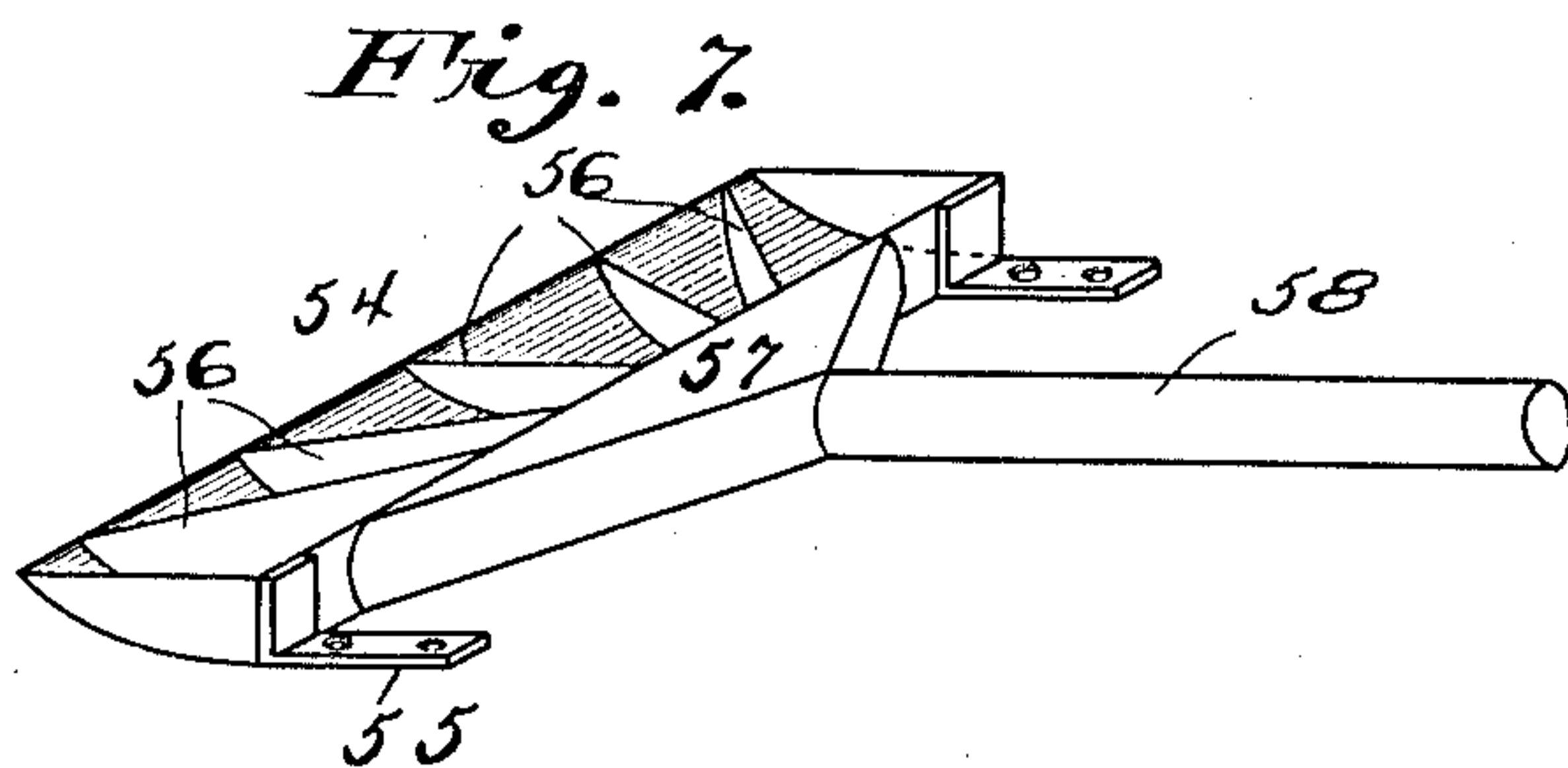
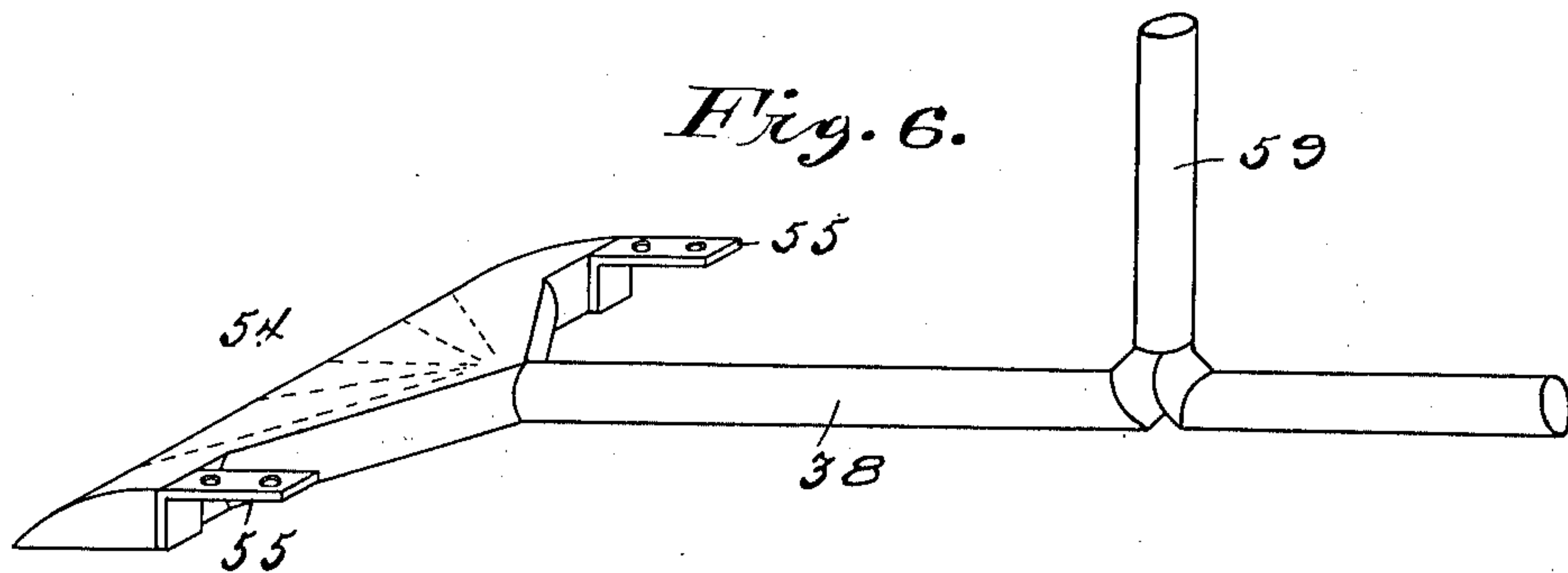


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WITNESSES:
J. D. McLaughlin

H. J. Gowan Doyle

INVENTORS
Robert Stipe
and William Stipe.

BY

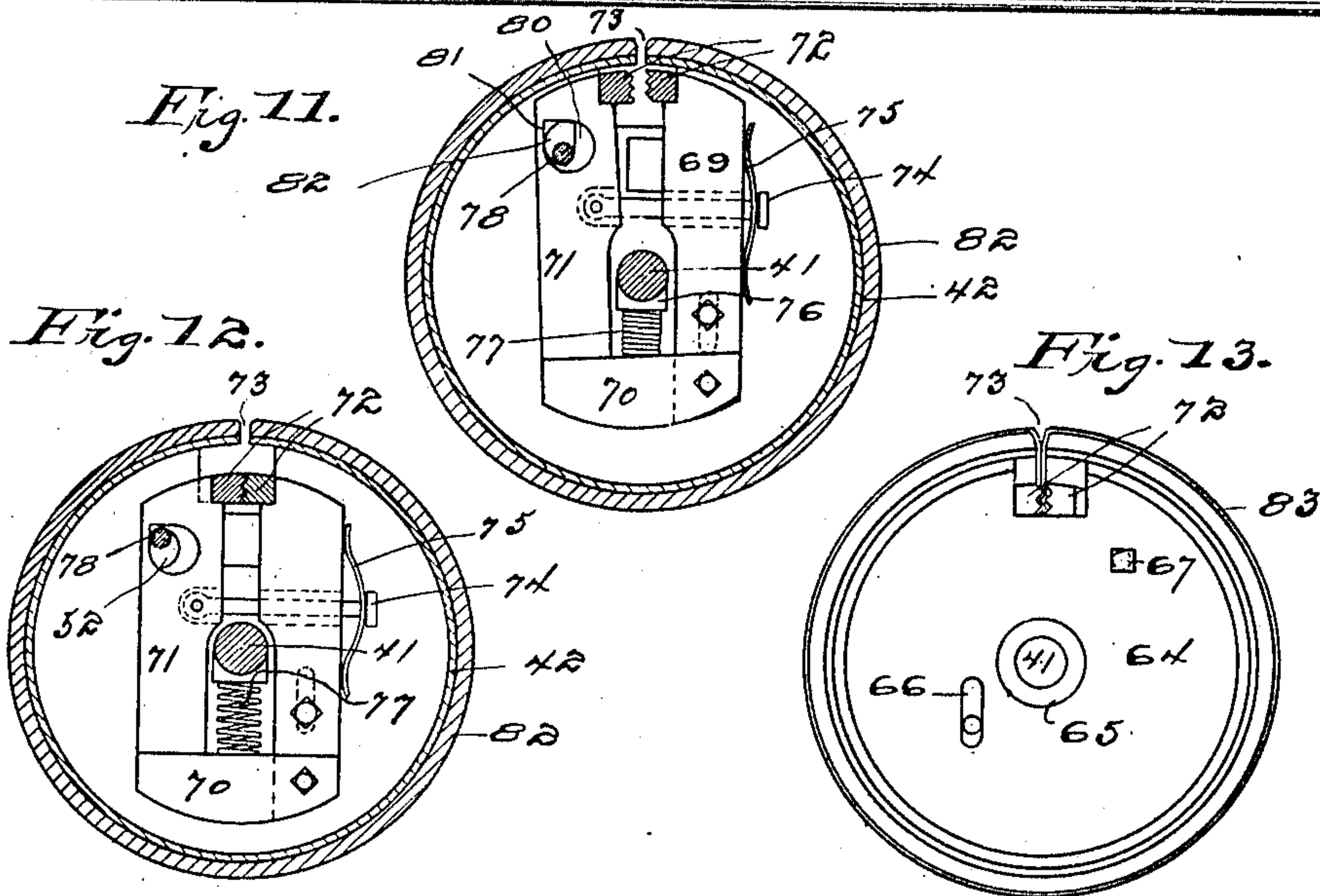
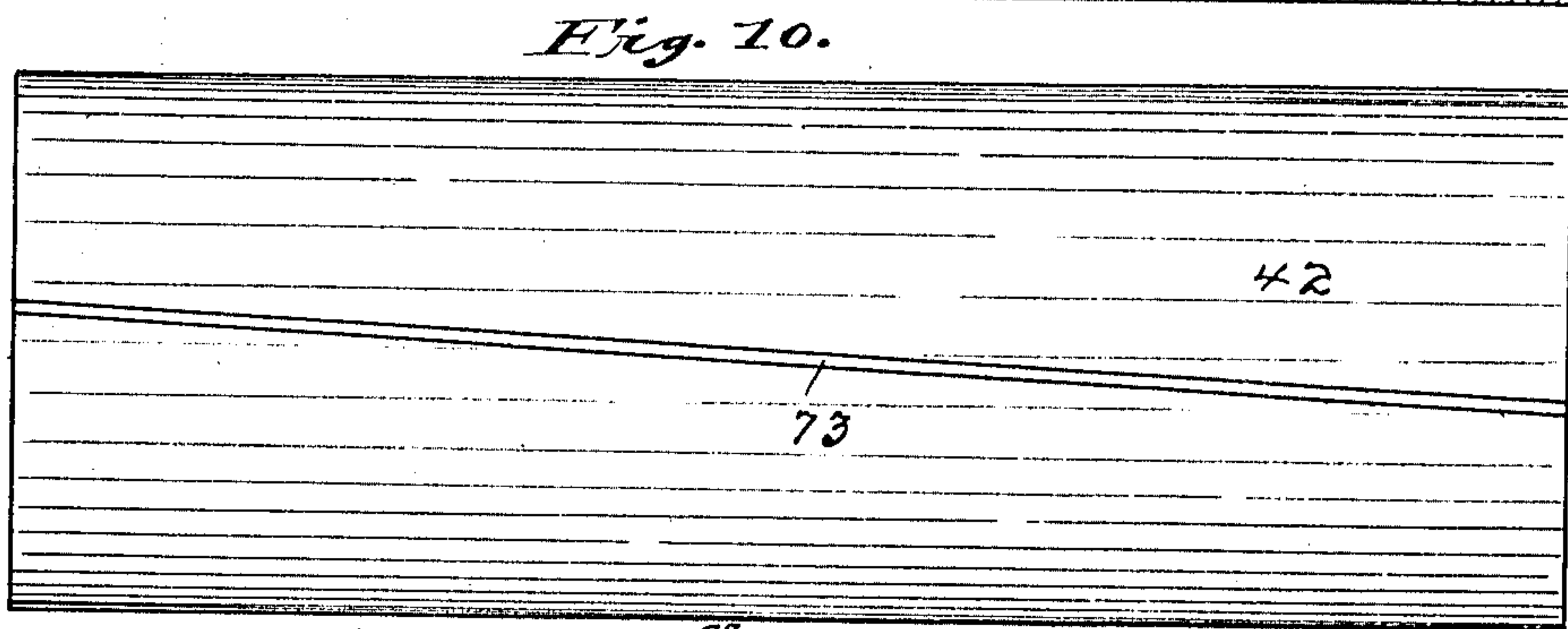
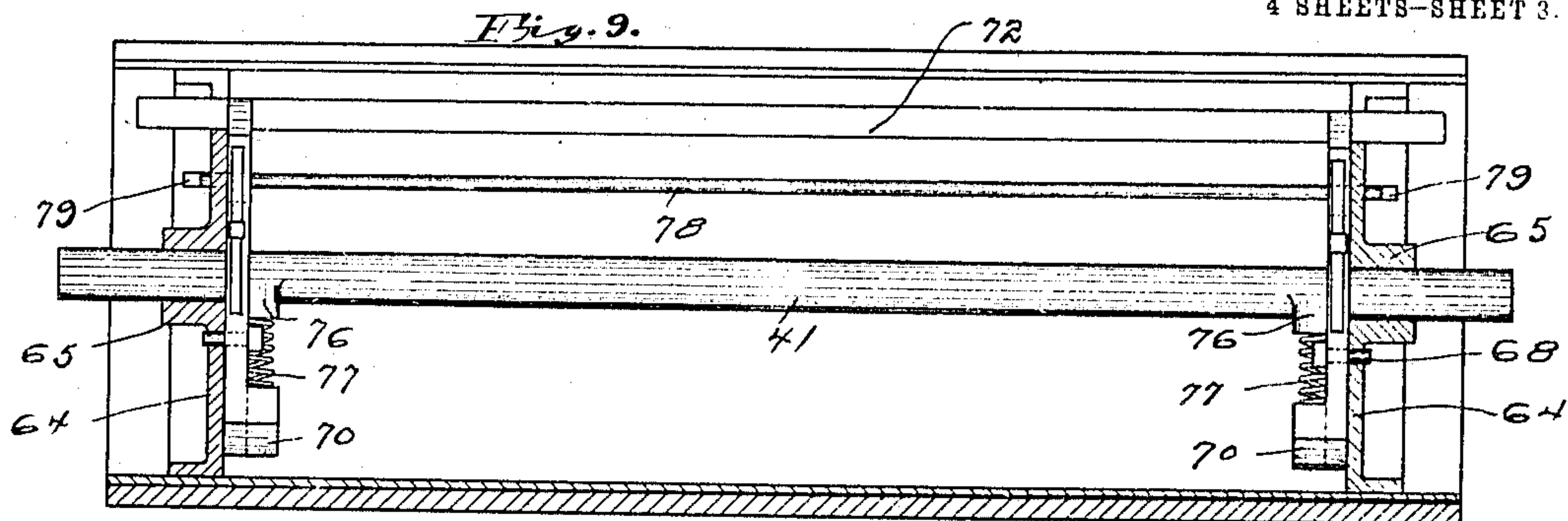
E. J. Freeman
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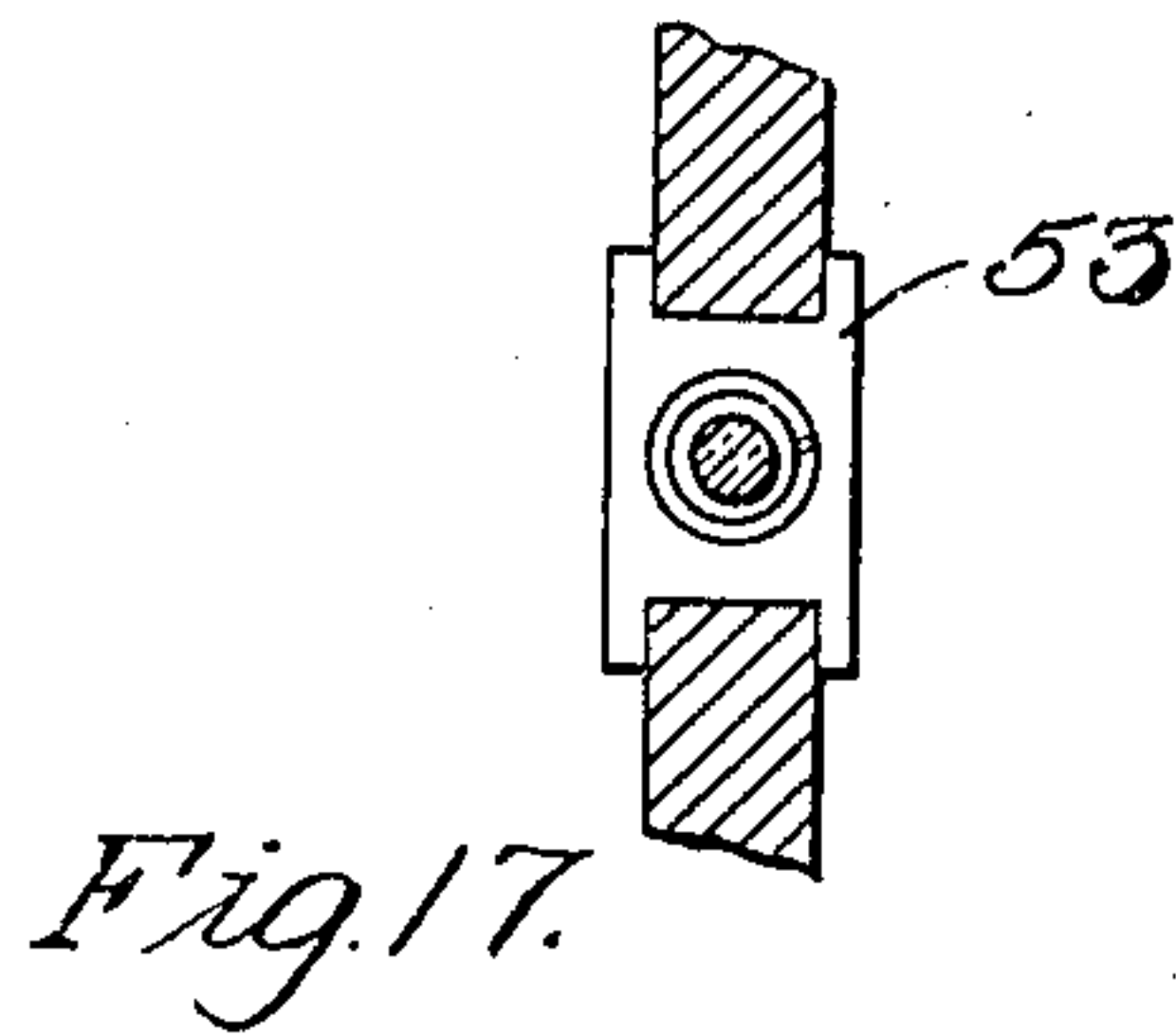
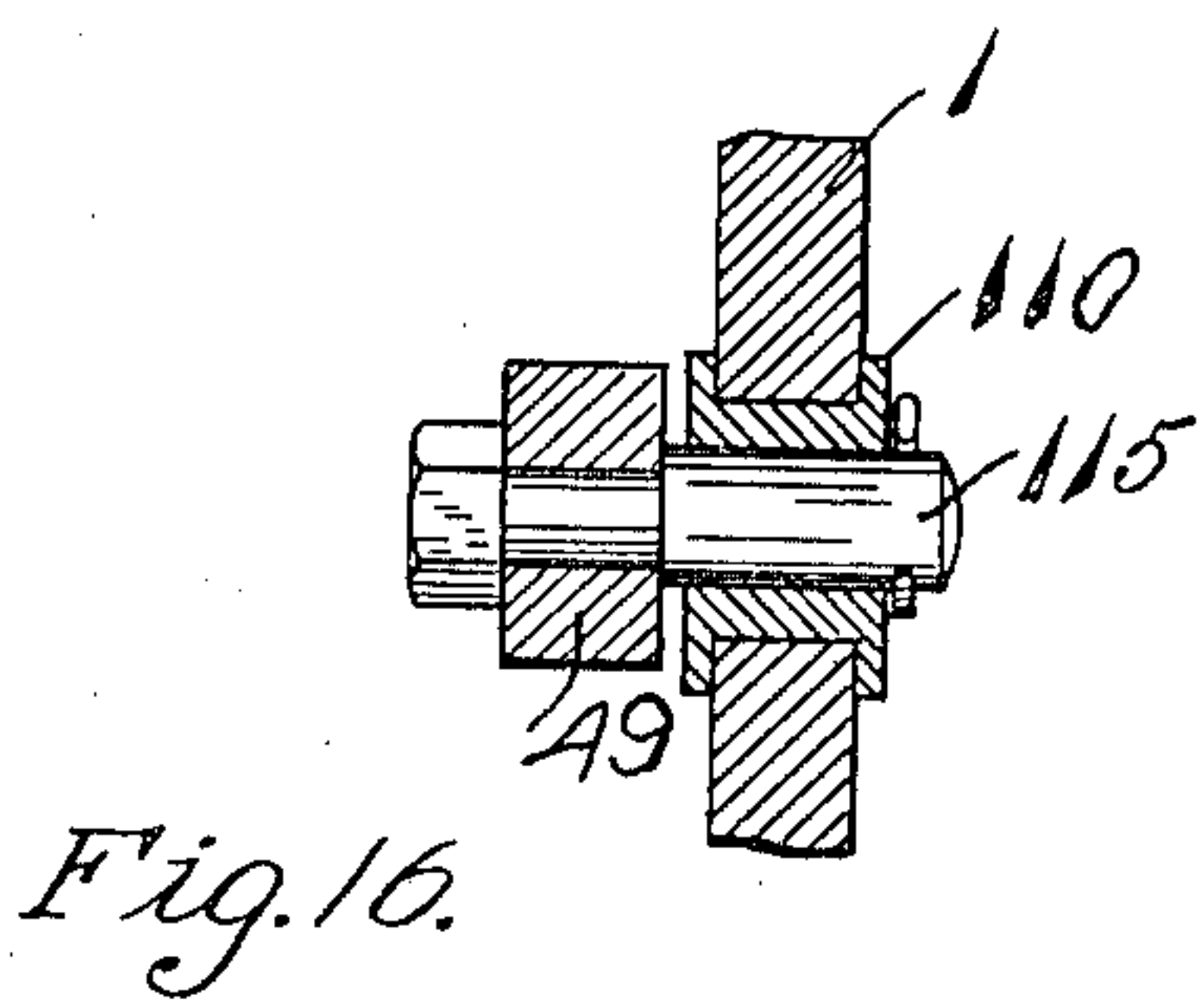
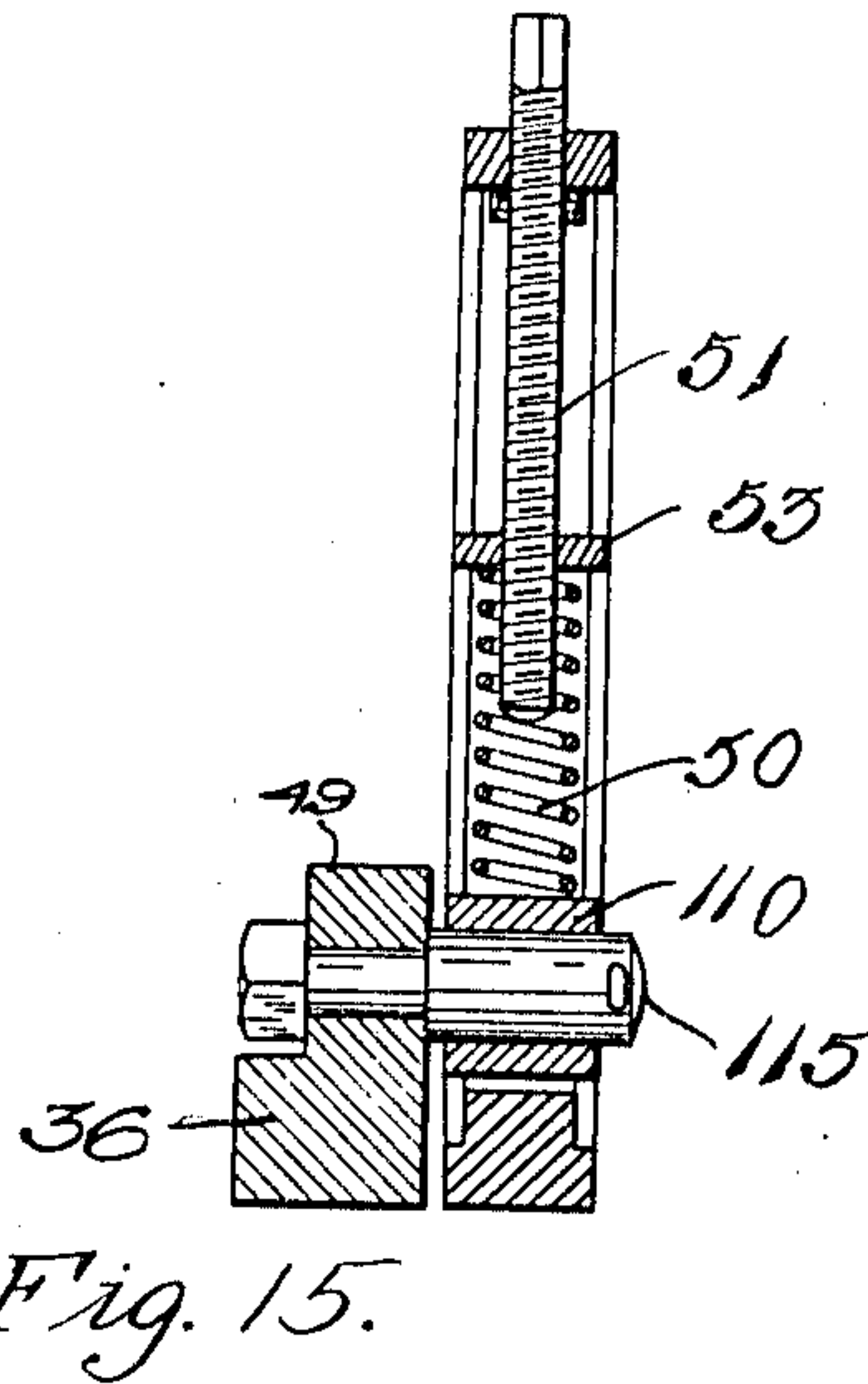
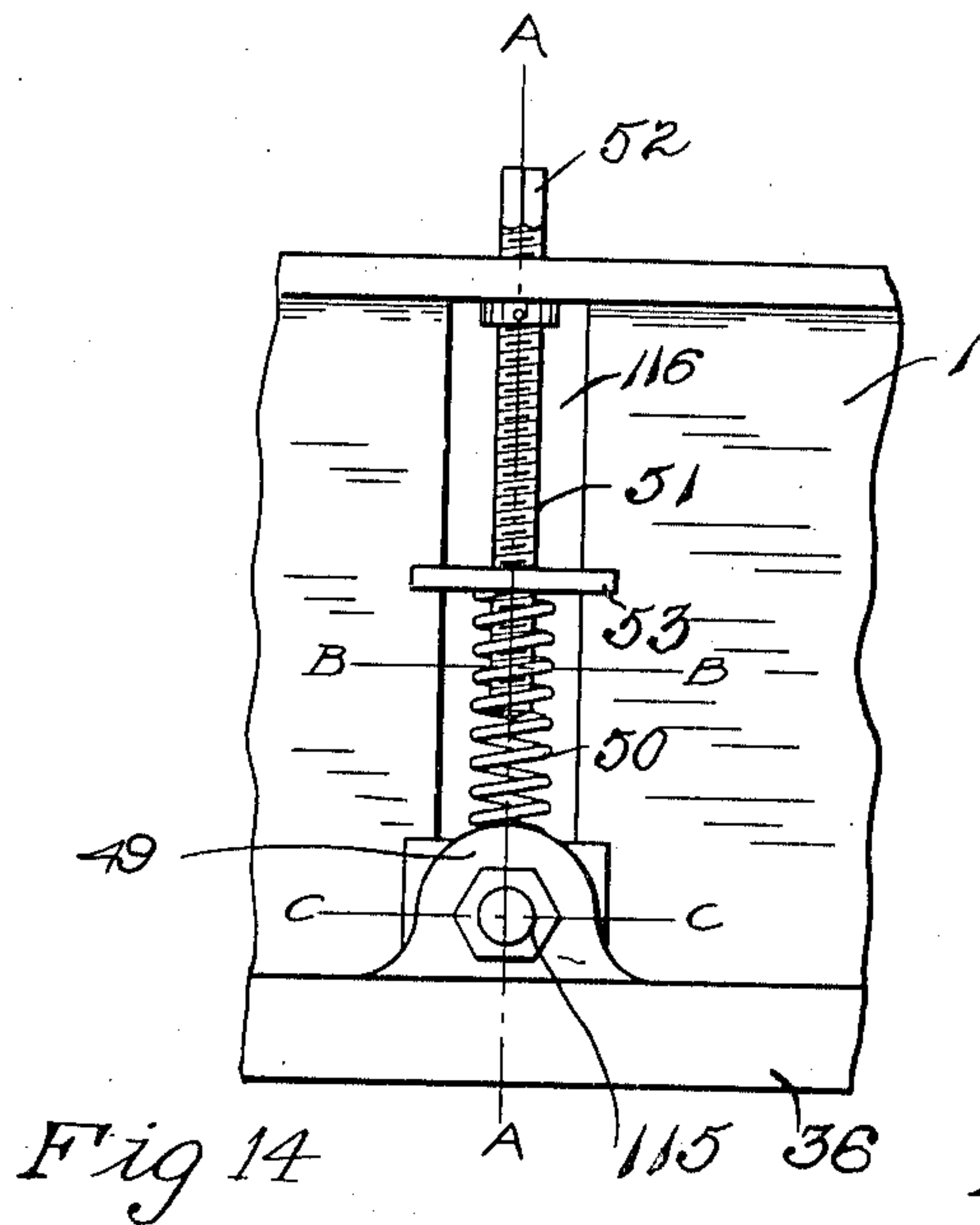
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4 SHEETS—SHEET 4.



Inventors
Robert Stipe and
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Witnesses

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Attorney

UNITED STATES PATENT OFFICE.

ROBERT STIPE AND WILLIAM STIPE, OF OAKLAND, CALIFORNIA, ASSIGNORS OF ONE-FOURTH TO ANGELO J. BOITANO, OF OAKLAND, CALIFORNIA, AND ONE-FOURTH TO LOUISE D. FIELD, OF SAN FRANCISCO, CALIFORNIA.

FLOOR SURFACING, CLEANING, AND POLISHING MACHINE.

984,501.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed April 6, 1909. Serial No. 488,216.

To all whom it may concern:

Be it known that we, ROBERT STIPE and WILLIAM STIPE, citizens of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Floor Surfacing, Cleaning, and Polishing Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to surfacing machines, and has specially in view a machine of the character described which is adapted for surfacing, cleaning, and polishing floors.

The invention is employed in a machine of the aforesaid character which is propelled by a motor, in which means are provided for readily changing the movement of the machine; means for regulating the pressure of the abrading rolls for cushioning the same and means for collecting and delivering dust into receptacles.

Figure 1 is a side elevation of a surfacing machine. Fig. 2 is an end elevation. Fig. 3 is a top plan view. Fig. 4 is a similar view the upper part of the machine being removed. Fig. 5 is a central vertical sectional view taken on the line 5—5, Fig. 1. Fig. 6 is a detail perspective view of the dust collector and its conveyer pipe. Fig. 7 is a similar view of the dust collector, shown inverted. Fig. 8 is a detail perspective view of the mechanism for adjusting the abrading rollers. Fig. 9 is a vertical longitudinal sectional view of one of the abrading rollers. Fig. 10 is a side elevation thereof. Fig. 11 is a vertical sectional view taken on the line 11—11, Fig. 10, the gripping jaws thereof being shown open. Fig. 12 is a similar view showing the jaws closed. Fig. 13 is an end elevation of one of the rollers. Fig. 14 is a view in side elevation showing in detail the method of supporting the sand rollers upon the frame of the machine. Fig. 15 is a sectional view taken on line A—A of Fig. 14. Fig. 16 is a view in section taken on line C—C of Fig. 14, and Fig. 17 is a sectional view taken on line B—B of Fig. 14.

Referring to said drawings by numerals 1 designates a substantially rectangularly shaped frame having pendant sides 2 provided with bearings for the main shaft 3 upon which the propelling wheels 4 are mounted, said shaft 3 being mounted adja-

cent to one end of said frame. The other end portion of said frame is provided with side bearings 5 which are vertically arranged and through which the stub shafts 6 of the standards 7 pass which have their lower ends provided with casters or rollers 8. The upper ends of each stub shaft 6 projects above its bearing and has mounted thereon a crank arm 9 which has a pivotal connection with a curved rack bar 10 extending transversely across the said frame 1. A standard 12 is vertically arranged on the said frame and is provided with bearings on one side, as indicated at 13, for a steering shaft 14 the upper end of which carries a hand wheel 15. The lower end of said shaft projects through the top or platform of the frame and carries a pinion 16 which is at all times in mesh with said rack bar 10 and which when rotated by said shaft actuates the same to cause the casters or rollers 8 to be shifted so as to change the direction of movement of machine, as will be obvious.

A motor 17 is mounted on the frame and has a pulley 18 having a belt connection 19 with a pulley 20 mounted on a transversely extending shaft 21. Said shaft 21 has a worm or other gear 22 mounted thereon which meshes with a worm pinion 23 carried by a longitudinally extending shaft 24 suitably journaled in said frame. One end of said shaft 24 carries a miter gear 25 which is held in mesh with two oppositely disposed gears 26—27 loosely mounted on the main shaft 3. Said gear wheels 26—27 each carries a spring pressed clutch lever 28 adapted for engagement with opposite sides of a clutch collar 29 fast on said shaft 3. The clutch levers are actuated by means of a hand lever 30 pivotally mounted on the top of said frame and having a bell crank connection 31 at its lower end with a sliding lever 32 connected to said levers 28, whereby when said hand lever is rocked in one direction, one of said gear wheels will be clutched with and rotate with the shaft 3, and when rocked in the other direction the other gear will be clutched to said shaft and caused to rotate with the shaft. As will be readily understood, this causes the machine to be propelled either forward or backward.

The intermediate lower portion of each of the pendant sides carries a shaft 33 pro-

vided with a crank arm 34 adjacent to each end and which supports a box or block 35 the forward and rear edge of which is open for the admission of the ends of oppositely projecting arms 36. Said shaft 33 is also provided with an upstanding intermediate crank arm 37 which has its outer end connected by means of a pivot bolt to a rod 38 extending longitudinally of the frame 1 beneath the floor or platform thereof, said rod in turn having its end connected to the lower end of a vertically arranged lever having its intermediate portion pivotally connected to the said platform of the frame and provided with an upstanding end carrying a foot plate 39 whereby when said plate is pushed in one direction the arms 34 will be raised and when pushed in the opposite direction said arms will be lowered and thereby raise or lower said arms 36. The outer ends of said arms 36 project beyond the ends of the frame and are provided with end bearings 40 for the reception of a transversely extending shaft 41 having an abrading roller 42 fast thereon. Said shafts 41 also carry a gear wheel 43 having a sprocket chain connection 44 with gear wheels 45 and 46 respectively, the gear 45 being mounted on the shaft 21 and the gear 46 being mounted on a shaft 47 extending transversely of the frame, said last mentioned gear wheel 46 being actuated by a gear 48 mounted on shaft 33. By this arrangement of gearing, it will be seen that the abrading rollers are positively driven by the motor.

The arms 36 each carries an upstanding recessed boss 49 which is engaged by a coiled spring 50 coiled about the lower portion of a bolt 51 the upper threaded portion of which extends through the platform of the frame and is provided with a nut shaped head 52 whereby the same may be readily manipulated to adjust the tension of the spring 50. Said bolt is also provided with an abutment plate 53 against which said spring bears. It will be seen that through this manner of connecting the intermediate portions of said arms 36 to the frame, the abrading rollers carried by said arms will be cushioned so as to compensate for any uneven surface over which they may be working.

A dust receptacle 54 is held adjacent to the inner sides of the rollers, said receptacles extending across the ends of the frame and having end brackets 55 which connect them to the said arms 36. Said receptacles are in the form of inverted scoops and are provided with a plurality of converging partition plates 56 which divide the same into channels which deliver the dust into a chamber 57 having its outlet in communication with a conveyer pipe 58. As will be understood the conveyer pipes

extend from each end of the frame beneath the same and their inner ends are connected to a vertically arranged suction pipe 59 which projects through the frame 1 and at its upper portion is in communication with a suction fan or the like 60 which is supported by the standard 12. Said standard also supports a dust receiving drum 61 provided with a vertical air deflecting pipe 62 which receives the full force of the air and dust from the discharge pipe 62 of the fan 60, so that the volume of said air is destroyed and the dust permitted to fall into a dust sack 63 carried by said drum and which is formed of material the mesh of which is thick enough to retain the dust therein, but readily permits the air to escape. By providing the air deflecting pipe 62 it will be seen that when the same breaks the force of the air, the said air will readily escape from the sack without agitating the dust therein.

The end rollers of the machine are of duplicate construction and are shown in detail in Figs. 9, 10, 11, 12 and 13 of the accompanying drawings. By reference to said figures it will be seen that each roller is in the form of a cylinder and may be of cast metal and is provided with the heads 64. Said heads are provided with central out-standing bearings or hubs 65 for the shaft 41 to which said heads are fast. Said heads on one side of the hub are each provided with a guide slot 66 and on the opposite side with an opening 67. A guiding bolt 68 projects through said guide slot 66, said bolt being fastened to a lever 69 one end of which is pivoted to an end arm 70 of an oppositely disposed lever arm 71, said levers 69 and 71 being provided on their free ends with oppositely disposed gripping jaws 72 which are disposed beneath a slot 73 extending longitudinally, and preferably slightly inclined, of the roller. The lever 69 is provided with a sliding bolt 74 which extends transversely through the same and has its outer end in pivotal engagement with the lever 71. A spring 75 is interposed between the head of said bolt 74 and the lever 69 the tension of which is exerted to draw the two levers together. The shaft 41 is provided with lugs 76, one of the same being adjacent to each head of the roller, said lug carrying a spring 77 which bears upon the arm 70 and whose tension is constantly exerted to draw both levers away from the slot 73 of the roller. A rod 78 extends through the roller and has its nut shaped ends 79 projecting beyond each head 64, said rod being passed through the openings 67 formed in each head, and also through a cavity 80 formed in the levers 71. Said cavities are provided with flat portions 81. Eccentrics or cams 82 are fast on said rod 78, one of said cams being located within each cavity

80 and when turned to the position shown in Fig. 11 hold said levers apart and in a raised position against the tension of the springs 75 and 78, but when turned to the position shown in Fig. 12 permits said springs to hold said jaws closed and also lowered or away from the slot formed in the roller. As has been stated before, the rollers may be formed of cast metal, and preferably they are provided with a coating or covering of resilient material 82.

In Fig. 11 the roller is shown ready to receive the abrading material 83. The same may be of sand paper or the like and is placed over the roller and its ends are tucked through the opening or slot 73 and between the gripping jaws of the levers 69 and 71. The rod 78 is then rotated to cause the cams to release the levers 69, whereupon the springs 75 and 78 will move said levers to a position to cause said jaws to tightly clamp the ends of the paper between them. An opposite movement of said rod will, of course, release the abrading material so that the same may be removed.

It will be seen from the foregoing that the present invention provides a machine in which the operator may stand upon the platform of the frame and control the move-

ments of the machine both as to steering and direction of movement, and also regulate the pressure of the abrading rollers. And it will also be seen that the type of rollers used assure of the abrading material being properly held about the rollers, yet at the same time readily detachable. Other distinctive features of the invention reside in the type of dust receptacle and the means for preventing agitation of the dust in the dust sack, and in the manner of cushioning the rollers.

What we claim as our invention is:—

A machine of the character described comprising a frame, roller supporting arms carried thereby, rollers supported by said arms, and a cushion for each arm composed of an adjustable screw carried by the frame, a spring coiled about the same and bearing upon each arm, and a buffer plate carried by the screw and against which said spring bears.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

ROBERT STIPE.
WILLIAM STIPE.

Witnesses:

JOHN D. McLAUGHLIN,
H. C. SCHROEDER.