

Fig. 1.

Witnesses
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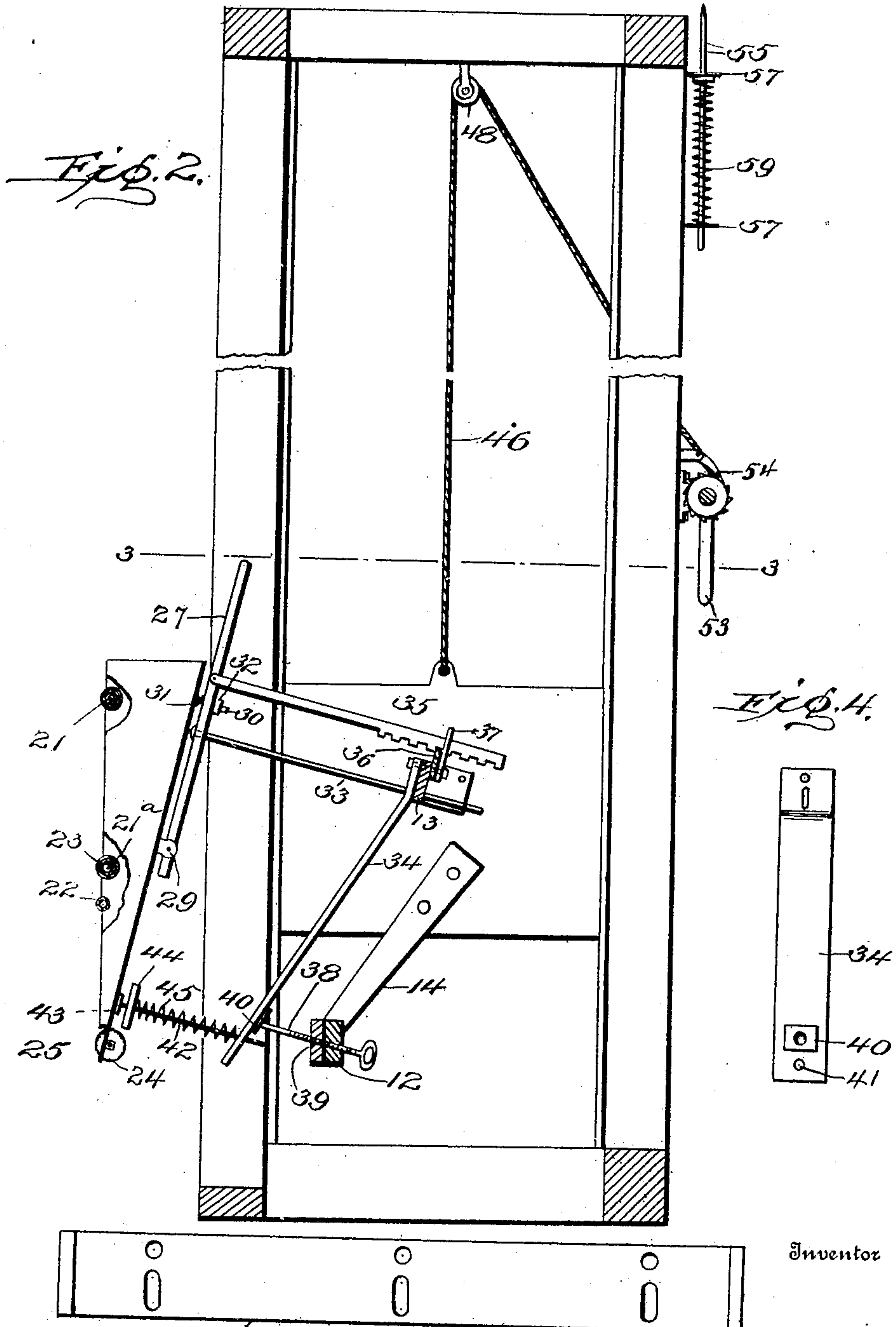
William A. Warson
 By Mason F. Lawrence,
 his Attorneys

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W. A. WARSON.
PLASTERING MACHINE.
APPLICATION FILED MAR. 20, 1908.

Patented Mar. 30, 1909.

3 SHEETS—SHEET 2.



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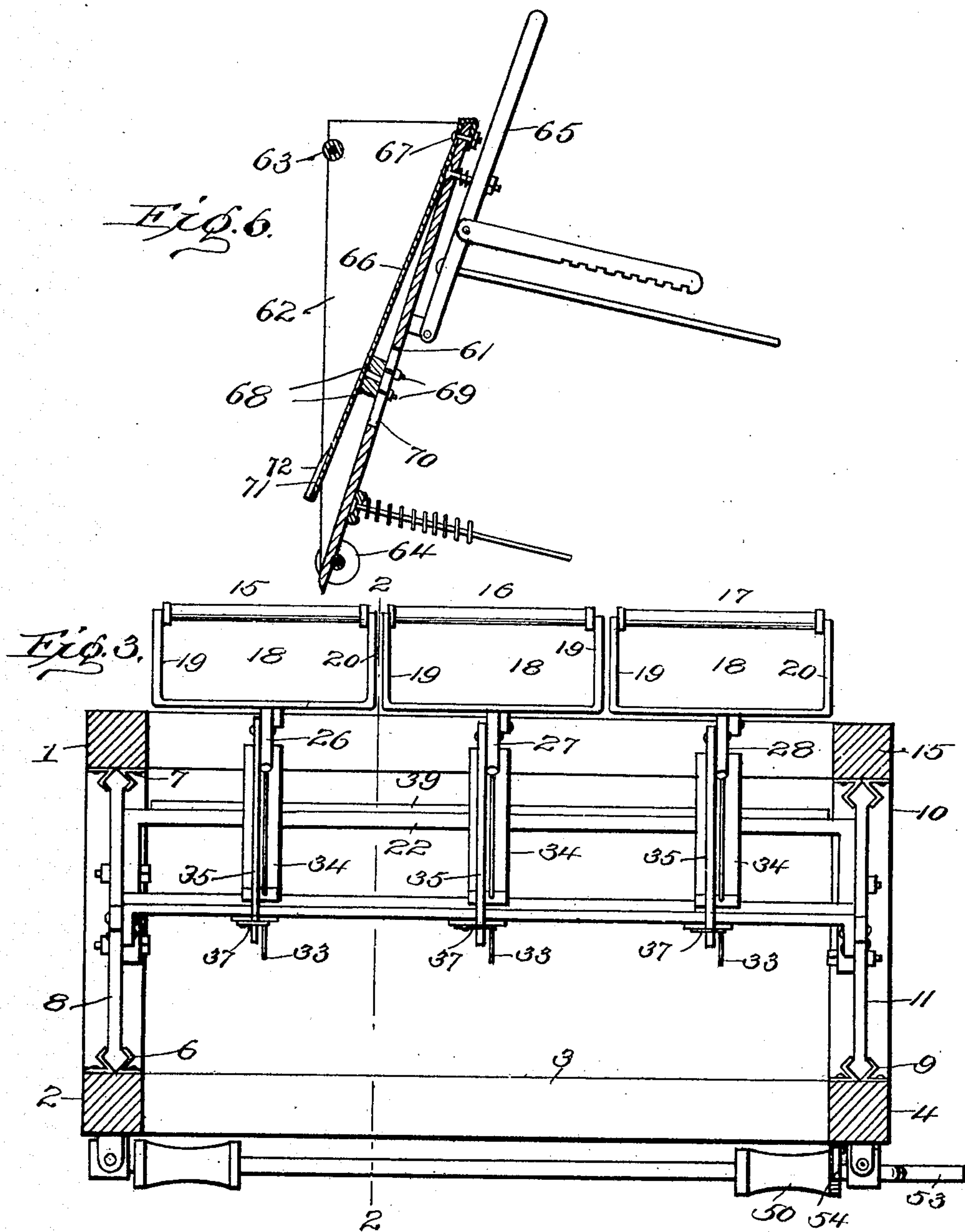
13 *Fig. 5.*

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UNITED STATES PATENT OFFICE.

WILLIAM A. WARSON, OF SEATTLE, WASHINGTON.

PLASTERING-MACHINE.

No. 916,811.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed March 20, 1908. Serial No. 422,336.

To all whom it may concern:

Be it known that I, WILLIAM A. WARSON, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Plastering-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in plastering machines, and has for an object the provision of a machine that may be moved from place to place and when operated apply plaster to a wall in the usual manner.

Another object of the invention is the provision of a plastering machine arranged with a framework adapted to be held rigidly in position and having associated therewith a moving hopper adapted to receive plaster, the hopper being arranged to be moved for distributing plaster upon the wall.

A further object in view is the provision of a plastering machine having a hopper yieldingly pressed against walls to be plastered and supporting means arranged for a vertical reciprocatory movement for moving the hopper along the wall, together with a framework for supporting the hopper and associated parts and for providing means for guiding the hopper in its reciprocatory movement.

With these and other objects in view the invention comprises certain novel constructions, combinations, and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a front elevation of a plastering machine formed according to the present invention. Fig. 2 is a section through Fig. 3 on line 2—2. Fig. 3 is a section through Fig. 1 on line 3—3. Fig. 4 is a detail view of a fulcrum bar. Fig. 5 is a detail view of a supporting bar. Fig. 6 is a section through a slightly modified form of hopper.

Referring to the drawing, 1 and 2 indicate uprights on one side of a framework 3, and 4 and 5 another set of uprights as clearly seen in Fig. 3. The uprights 1, 2, 4

and 5, together with any desired number of cross beams or braces, form a framework that is adapted to receive and support the movable part of the plastering machine. Upon uprights 1 and 2 are provided ways 6 and 7 respectively which may be formed in any way, preferably by being formed from sheet metal and bent in to the desired shape. A slide 8 is arranged to extend from guide way 6 to guide way 7 and be guided in its movements thereby. Uprights 4 and 5 are provided with guide ways 9 and 10 similar to guide ways 6 and 7 and also have positioned for engaging the same a slide 11 similar to slide 8. The slides 8 and 11 have secured thereto cross beams or members 12 and 13. Cross beam 12 is formed with a pair of arms 14—14 for engaging the slides 8 and 11 respectively. The arms 14 are provided in order that cross beam or bar 12 may be positioned a considerable distance from cross beam or bar 13.

Supported by beams or bars 12 and 13 are any desired number of hoppers or trowels 15, 16 and 17. The trowels 15, 16, and 17 are arranged with a bottom member 18 and side members or flanges 19 and 20. The trowels are provided with tubular rollers 21, 21^a and 22 and also wheels 23, and 24, roller 21 being provided for holding the trowels evenly upon the wall and wheels 23 and 24 being adapted to hold the edge of the trowels spaced a short distance from the wall, and prevent friction of trowels upon laths or wall. Roller 21^a as clearly seen in Fig. 2 is not as large as roller 21 and does not extend out toward the wall as far, but sufficiently to come in contact with the plaster and spread and press the same upon the wall. As the trowels move over the wall roller 22 will further spread the mortar upon the wall and force the mortar in between the laths sufficiently to form a shoulder or clench on the back side of the laths, and as the trowels continue to move the lower edge 25 will press against the mortar to a limited extent for smoothing the same and leave the plaster as thick as the width of the ends of the flange positioned on each side of the trowels.

Secured to the trowels or hoppers are handles 26, 27 and 28 respectively that are

pivotaly mounted at 29 thereto. A bolt 30 held by the hoppers is designed to pass through the handles 27 and 28 respectively and hold the same in position. A spring 31 is provided for giving a continuous tendency to the levers 26, 27 and 28 to press against a tensioning member or nut 32 and to form a yielding means through which power may be yieldingly supplied from the respective handles to their respective trowels or hoppers. Fastened to the handles or levers 26, 27 and 28 are guiding rods 33 which pass through a fulcrum bar or member 34 and cross beam 13. Pivotaly mounted to levers or handles 26, 27 and 28 above their respective guiding rods 33 is a plurality of adjusting members 35. The adjusting rods 35 are arranged to engage projections 36, secured to cross bar or beam 13. Retaining members 37 are provided for moving over and engaging members 35 in the manner of a hook, as clearly seen in Fig. 1 for holding members 35 in engagement with their respective lugs or engaging members 36. By this construction whenever it is desired to vary the angle of the trowels or hoppers the retaining members 37 are moved off their respective adjusting members 35 and then the adjusting members 35 are moved in a direction toward or from the hoppers. This will force the handles 26, 27 and 28 toward their respective trowels or hoppers and from their respective handles power will be communicated through springs 31 to the hoppers for pressing the upper end of the hoppers more firmly against the wall or adjusting the angle thereof. When it is desired to cause the hopper to press more firmly against the wall an adjusting member, as set screw 38, is provided that passes through bar 12 and also auxiliary bar 39 and engages the lower end of fulcrum 34. If desired a friction member 40 may be provided on fulcrum 34 against which the adjusting member 38 will act.

Formed in the lower end of fulcrum 34 is an aperture 41 that is adapted to have passed therethrough rods 42 which are secured at 43 to the hoppers 15, 16 and 17 respectively. Rods 42 also pass through a connecting bar 44 that is positioned for engaging all of the trowels or hoppers as clearly seen in Fig. 1, so as to more correctly adjust the same for acting in proper relation to each other. Surrounding rods 42 are springs 45 that press at one end against fulcrum 34 and at the other end against the connecting bar 44. Whenever set screw 38 is moved for pressing springs 45 a greater tension is brought to bear against the lower end of the trowels. If the adjusting member 35 is moved also, it will be evident that a greater pressure is being used against the trowels or hoppers.

By this construction and arrangement springs 45 and 31 together with associated parts may be so regulated and positioned as to cause the trowels to press against the plastering properly for evenly applying and spreading the same upon the wall.

Cables or ropes 46 and 47 are provided for raising and lowering the slides 8 and 11 and the parts connected thereto. The cables are designed to pass over pulleys 48 and 49 and then downward and over drums 50 and 51 that are mounted upon a shaft 52. Shaft 52 is provided with a crank 53 for rotating the same and a pawl and ratchet wheel 54 for preventing a reverse rotation of the drum.

Secured to the upper ends of uprights 2 and 4 are reciprocating pins 55 and 56. Pins 55 and 56 are adapted to slide in guiding members 57 and 58 respectively and to be normally pressed by springs 59 and 60 for normally forcing the ends of the pins 55 and 56 into the ceiling of the room that is being plastered. It will be evident that pins 55 and 56 may be of any length so as to engage the ceiling of rooms of varying heights. It will also be evident that pins similar to pins 55 and 56 may be positioned upon the bottom of the uprights for engaging the floor and preventing any movement of the frame 3. The pins 55 and 56 engage the ceiling to prevent the pressure of the trowels against the mortar in applying the mortar from forcing the frame and consequently the trowels away from the wall.

In Fig. 6 will be seen a slightly modified form of trowel or hopper that is especially designed to be used for giving what is known as a "sand finish" to plaster. This hopper is formed with a bottom 61 and side members 62 similar to the bottom 18 and side members 19 and 20. A roller 63 is provided similar to roller 21 that extends the full width of the hopper and is adapted to space the hopper from the wall and to hold the same evenly against the wall. At the lower end of the hopper is provided a bearing wheel 64 preferably roughened on its periphery for more easily engaging the wall being plastered, the same being adapted to extend out to a point substantially even with roller 63. The hopper shown in Fig. 6 is provided with a handle 65 and surrounding parts similar to the handles of the preferred construction and surrounding parts, and will therefore need no further description. Secured to the upper end of the bottom 61 is a strip of sheet metal 66 that is preferably of springy material and is firmly secured in position by any desired means as bolts 67. The narrow flanges 72 on the lower end of 66 and on either side thereof govern the thickness of the finish. Fulcrum bars 68—68 are secured to the bottom 61 of

the hopper against which sand finishing member 66 is adapted to rest. The fulcrum bars 68—68 may be adjusted by moving their securing members 69—69 in aperture 5 70 formed in bottom 61. The sand finishing member 66 may be provided on the end with a smooth or roughened surface as the case may be for giving the desired finish to the wall as the hopper moves across the same.

10 In operation the machine is placed in proximity to the wall with roller 21 and wheels 23 and 24 in engagement with the walls. The sliding members 8 and 11 are then lowered, if not already in a lowered

15 position, until the bottom of the hoppers or trowels engage the floor or trimming board, the ends of pins 55 and 56 having been previously permitted to enter the ceiling. When in this position the machine is ready

20 for operation and all that is necessary to do to plaster the wall is to shovel plastering material into the trowels or hoppers and then turn the crank 53. This will cause ropes or cables 46 and 47 to pull slides 8 and 11 up-

25 ward. As the slides move upward the same will move the trowels or hoppers upward and as the trowels or hoppers move upward the plaster is distributed over the surface of the wall. The roller 22 that extends from

30 one side of the trowel to the other forces the plastering material between the laths sufficiently for the same to clench on the other side and also distribute plastering evenly over the surface of the wall, the lower

35 edge 25 of the trowels being adapted to additionally smooth the plaster as the same passes thereover, and leaves the plaster as thick as the width of the lower ends of trowel flanges, which serve as guides there-

40 for. The trowels or hoppers are moved until the upper edges touch the ceiling and when moved to that position all the wall that they have passed over is coated with plaster of the proper thickness. In coating

45 the walls with plaster in this way, if it is found that the plaster is not being properly applied by reason of a deficiency in pressure the adjusting members 35 may be moved for pressing spring 45. This will cause the

50 rollers 22 and the edges 25 to be pressed more firmly against the plaster. In using the modified form seen in Fig. 6 the same is moved upward over the wall in a similar manner and the member 66 will spread and

55 smooth the plaster in the usual manner. If desired a roller, as 21, may be placed upon the modification shown in Fig. 6 for assisting in spreading and applying the plaster.

As will be evident the trowels or hoppers

60 will not apply plaster to the walls entirely to the ceiling, but will leave a small strip or margin with no plaster. Also there will be left usually a small strip not plastered be-

tween the trowels, by reason of the thickness of the sides 19 and 20, though this is 65 ordinarily very small as the sides are made very thin. In fact this space is merely a thin gutter left in the plaster and may be filled in by a hand trowel in the ordinary way. The strip left along the upper edge of 70 the wall also may be filled in by hand in the usual manner. After the trowels have made one trip to the ceiling the machine is moved slightly from the wall at that point and moved over against the wall at another 75 point and the operation repeated, the moving being facilitated by casters 73 on the bottom of the uprights. This moving of the plastering machine from one point to another is continued until all the walls have 80 been applied with plaster. The walls are then touched up or finished by hand.

What I claim is:

1. In a plastering machine, a framework, slides mounted in said framework, means for 85 guiding said slides in their movement, a supporting frame secured to said slides, trowels connected with said supporting frame, and a spring for yieldingly holding said trowels to their work. 90
2. In a plastering machine, a frame, sliding members mounted in said frame, an auxiliary frame rigidly secured to said sliding members, a trowel connected with said auxiliary frame and supported thereby, adjust- 95 ing means for regulating the position of said trowel, and springs for yieldingly holding said trowel to its work.
3. In a plastering machine for applying plaster to a lathed surface, a frame, slides 100 mounted therein, an auxiliary frame rigidly secured to said slides, trowels connected with said auxiliary frame, means for guiding said trowels in their work, cylinders for distributing the plastering and for forcing the same 105 between said laths, and a smoothing edge for smoothing the plastering.
4. In a plastering machine, a frame slide ways secured thereto, slides slidably engaging said slide ways therein, an auxiliary 110 frame rigidly secured to said slides, trowels connected with said auxiliary frame, inclined spacing flanges on each side of each of said trowels, means for guiding said trowels in their work, cylinders extending across the 115 face of the trowel for distributing the plastering upon the wall and for forcing the same between the laths thereof, and means for smoothing the plastering after the same has been applied. 120
5. In a plastering machine, a framework slide ways secured to said framework, an auxiliary frame slidably mounted in said slide ways, trowels secured to said auxiliary frame, a roller positioned on each of said 125 trowels for guiding the same, cylinders se-

cured to each of said trowels for distributing and clenching plaster, and means for yieldingly holding the trowels to their work.

6. In a plastering machine, a frame, movable trowels, means for gaging the thickness of plaster being applied, means for guiding the trowels, means for lessening the friction of trowels against the walls, means for distributing the plaster upon the wall, and

means for forming a shoulder or clench of plaster on the opposite side of the lathing or sheathing.

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

WILLIAM A. WARSON.

Witnesses:

G. WARD KEMP,
H. F. WHEATON.