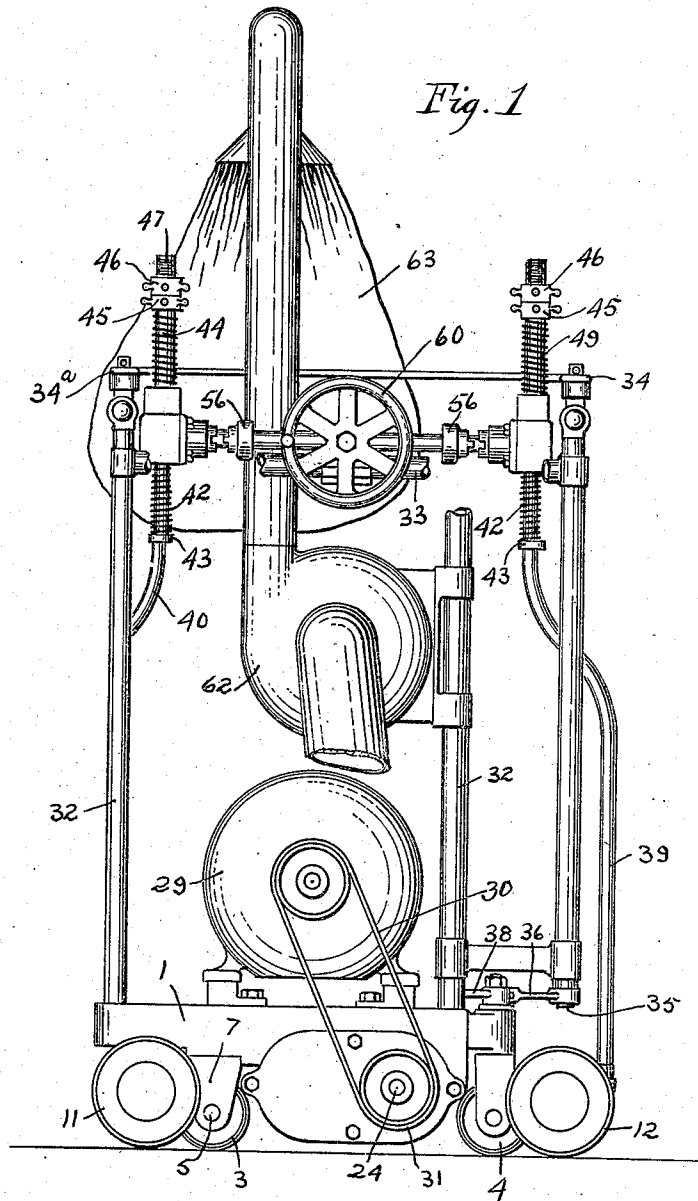


A. H. WHATLEY.
SURFACING MACHINE.
APPLICATION FILED DEC. 23, 1907.

939,363.

Patented Nov. 9, 1909.
3 SHEETS—SHEET 1.



Witnesses

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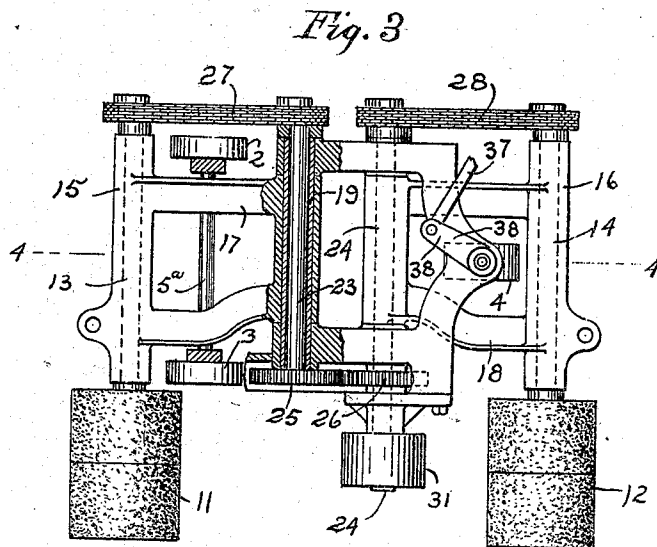
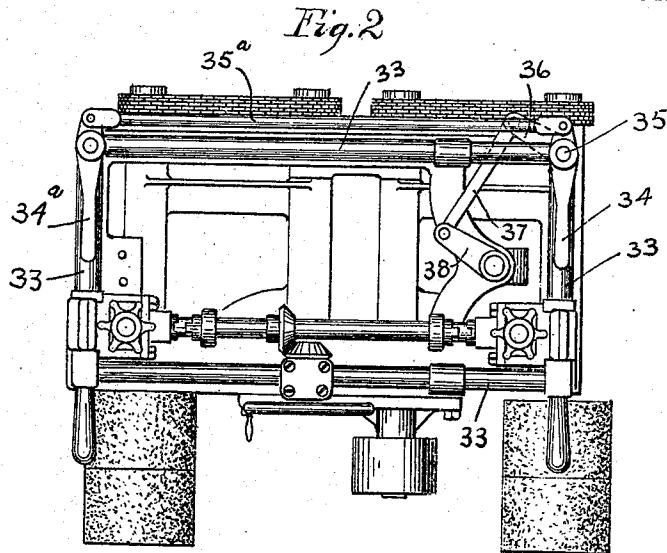
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Witnesses

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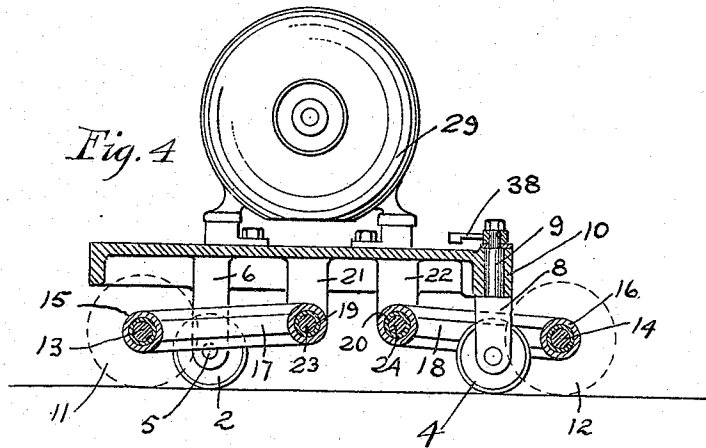
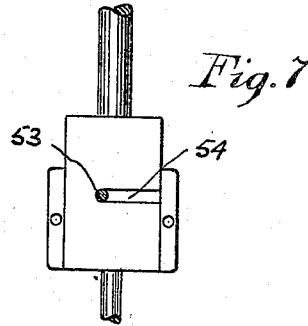
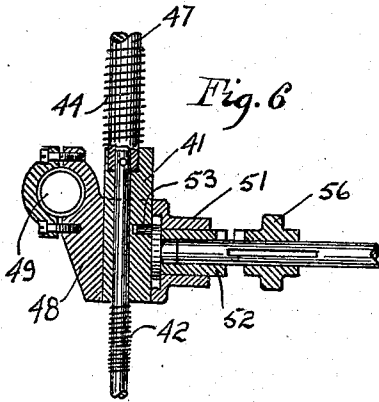
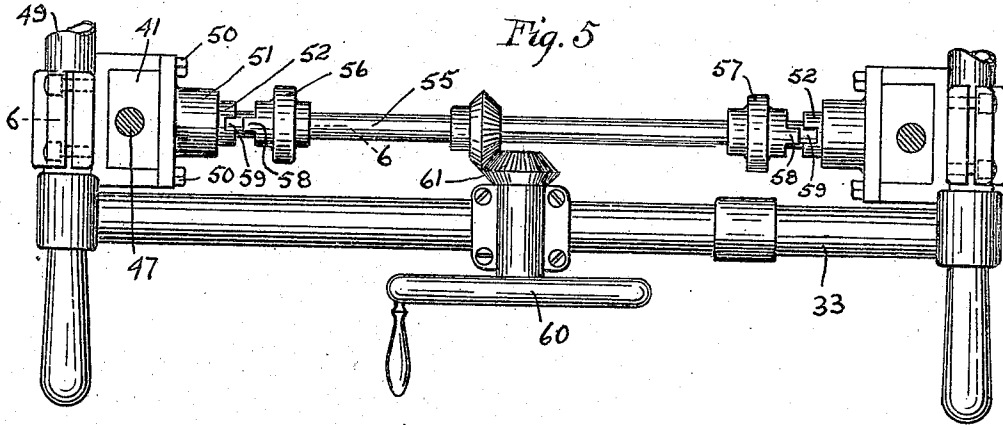
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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SURFACING-MACHINE.

939,363.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed December 23, 1907. Serial No. 407,753.

To all whom it may concern:

Be it known that I, ALFRED H. WHATLEY, a citizen of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Surfacing-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to floor surfacing machines and has for its object to provide a machine having one or more surfacing rolls, the ends of which extend out or overhang the body portion, whereby the machine is adapted to operate on the floor of a room close along the mop-board on the sides.

Another feature of the invention is the means whereby both of the rolls may be lowered or raised in unison, or either one of said rolls may be so operated independently of the other by the movement of a single operating hand wheel, to regulate the pressure on the surface being dressed or to raise the rolls entirely clear therefrom.

25 Another feature of the invention is the simple and effective means whereby the machine may be guided and nicely controlled by the movement of a single hand lever.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 35 1— is a side elevation of my improved surfacing machine showing the general construction, a portion of the framework being broken away to better illustrate some of the parts. Fig. 2— is a plan view of the machine showing the surfacing rolls extending out beyond the side of the machine. Fig. 3— is a plan view showing the upper portion of the machine removed to better illustrate the driving mechanism. Fig. 4— is a sectional view on line 4—4 of Fig. 3. Fig. 5— is an enlarged plan view of the mechanism for raising and lowering the rolls. Fig. 6— is a sectional elevation on line 6—6 of Fig. 5. Fig. 7— is a detail showing the front view of one of the sliding blocks slotted to receive the crank pin for the purpose of raising and lowering the rolls.

Referring to the drawings at 1 is the base or body of the machine which is mounted

on three wheels 2, 3 and 4 to be more readily moved about. The wheels 2 and 3 at one end of the body are mounted on the shaft 5 which in turn is mounted on the bearings 6 and 7 depending from the body. The forward wheel 4 is mounted on the yoke 8 and adapted to swing or turn on the swivel pin 9 which passes up through suitable bearings 10 in the frame 1. The surfacing rolls 11 and 12 are mounted on their respective shafts 13 and 14 in the bearings 15 and 16. These bearings are supported on arms 17 and 18, which arms are pivotally mounted at their opposite ends, said ends being provided with hubs which are adapted to engage and rock on the tubular supporting members 19 and 20, said members being supported from the frame 1 at either end in the depending ears or brackets 21 and 22. Shafts 23 and 24 are adapted to pass through and rotate in these tubular members, said shafts being connected together at one end through the gears 25 and 26 and the opposite ends of these shafts are connected to their respective surfacing rolls 11 and 12 through the drive chains 27 and 28 and their respective roll shafts 13 and 14. Motion is transmitted to these rolls from the motor 29 through the belt 30 to the pulley 31 fixed on the end of shaft 24.

In order to support the roll adjusting mechanism and the waste collecting device I have provided a frame constructed of four posts 32—32, one secured at each corner of the base or body portion and all connected together near their upper ends by means of a railing 33.

A simple and effective means for guiding the machine has been provided which includes the steering handle 34 connected to the swivel wheel 4 through the upright shaft 35, arm 36, connection 37 and arm 38, which latter arm is fixed to the head of the wheel yoke 8. This handle 34 is connected to the handle 34^a on the opposite side of the machine through the connecting rod 35^a whereby the direction may be controlled from either end of the machine.

An essential feature of the invention is the means by which the operating rolls are raised and lowered and by which the necessary pressure is given to them while acting on the surface to be dressed. To accomplish this I have provided upwardly extending

rods 39 and 40 connected to the outer end of their respective swinging arms.

The upper end of each rod is passed through its slidable block 41 and has a larger rod 47 attached to its upper end. One end of a small spring 42 rests against the underside of the block, the opposite end of said spring engaging the collar 43 fixed to the rod, while one end of a larger and heavier spring 44 rests against the upper side of the block, the opposite end of said spring engaging an adjustable screw collar 45 which is adapted to be set into the desired position to regulate the tension of said springs. After said collar is set the same is locked by means of the upper locking or jam nut 46, and the pressure of the roll on the floor is the result of the difference between the pressure of said two springs. The end of the rod 47 serves to limit the relative movement of block 41 and its supporting rod. This block 41 is held to slide vertically in a bearing 48 which is supported on the rod 49 in the frame. Secured to the outer face of this bearing by means of the bolts 50 is the journal 51 which incloses the sleeve 52 on which the crank pin 53 is mounted. This crank pin is adapted to enter the slot 54 in said block whereby when said sleeve is rotated the pin will work in said slot to raise and lower said block.

All of the above-mentioned mechanism is duplicated on the opposite side of the machine for operating the rod 39. These two mechanisms are joined together by means of the shaft 55 which is journaled at either end in the sleeves 52—52. The clutches 56 and 57 have outwardly projecting lugs or teeth 58 from one face thereof adapted to enter corresponding slots 59 in the ends of the sleeves 52. Said clutches are mounted on feather-keys in said shaft 55 to slide endwise thereon and may be caused to connect one or both of said sleeves to the shaft which is adapted to be rotated by means of the hand wheel 60 through the medium of the miter gears 61.

The operation of the machine may be more fully described as follows: The rolls on this machine project or extend beyond the side of the frame so that the machine may work along close by the mop-board around a room, which cannot be accomplished by other machines where the rolls are provided with supporting bearings at both ends.

Another feature in the construction of my device is that the rolls are driven by a positive or chain drive from a shaft at the point where said rolls are pivoted. In other words the raising and lowering of the rolls does not affect the tension of the driving belt.

When it is desired to either raise or lower roll 11 without moving roll 12, clutch 57 is withdrawn from connection with its sleeve

52 leaving clutch 56 in mesh. The hand wheel 60 is then rotated and the roll 11 raised or lowered into the desired position. When it is desired to operate both rolls simultaneously both of the clutches 56 and 57 are caused to engage their respective sleeves.

The springs 42 and 44 lend to the rolls a certain amount of flexibility and allow them to raise and lower slightly as they pass over the uneven surface operated upon and adjust themselves thereto.

The machine may be readily steered or guided in any direction by turning the swivel roll 4 through the movement of either one of the hand levers 34 and 34^a. By this construction the machine may be guided by the operator from either end.

A feature in the construction of this machine is that two rolls are used, each being driven in opposite directions, whereby the frictional resistance of both on the floor is balanced, to facilitate the guiding of the machine.

Hoods, not shown, have been provided for incasing the rolls which hoods are connected together by pipes and to the blower 62, which draws the dirt and dust removed from the floor and deposits the same into the cloth bag 63 above, supported from the upper portion of the machine.

The upwardly extending frame forms a neat and convenient construction of carrying the controlling mechanism and brings the same within easy reach of the attendant. This frame also serves as a convenient means by which the machine may be pushed about the floor by the operator.

The construction of the machine is practical and its operation efficient.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A floor surfacing machine comprising a base, a plurality of power shafts mounted therein, a horizontal frame pivotally mounted at one side to each shaft, each frame being provided at the opposite side with a bearing sleeve parallel with said shafts, surfacing rolls each having a shaft mounted in one of said bearing sleeves, and rods engaging the free end of each frame and means for raising or lowering said rods independently or in unison.

2. A floor surfacing machine comprising a base, a plurality of power shafts mounted therein, a horizontal frame for each shaft having one side pivotally mounted upon the shaft and provided at its opposite side with a sleeve parallel with said shaft, a shaft mounted in each sleeve, a surfacing roll at one end of each shaft, power mechanism connecting the other end of each surfacing roll shaft with its power shaft, and rods engaging the free end of each frame and means for raising and

lowering said rods independently or in unison.

3. A floor surfacing machine comprising a frame, a rotatable surfacing roll mounted therein, a slidable block, means for guiding the same, means for raising and lowering said block, a rod passed through said block and suspended from the latter, said rod being connected to said frame, and means for permitting a limited relative movement between said rod and said block.

4. A floor surfacing machine comprising a frame, a rotatable surfacing roll mounted therein, a slidable block, means for guiding the same, a rotatable shaft for raising and lowering said block, a rod passed through said block and suspended from the latter, said rod being connected to said frame, and means for permitting a limited movement between the rod and said block.

5. A floor surfacing machine comprising a frame, a rotatable surfacing roll mounted therein, a slidable block, means for guiding the same, means for raising and lowering said block, a rod passed through said block and suspended from the latter, said rod being connected to said frame and free to move relatively to said block, and springs carried by said rod and arranged to engage opposite ends of said block.

6. A floor surfacing machine comprising a frame, a rotatable surfacing roll mounted therein, a slidable block, means for guiding the same, a rotatable shaft for raising and lowering said block, a rod passed through said block and suspended from the latter, said rod being connected to said frame and free to move relatively to said block, and springs carried by said rod and arranged to engage opposite ends of said block.

7. A floor surfacing machine comprising a frame, a rotatable surfacing roll mounted therein, a slidable block connected to said roll and provided with a slot means for guiding said block, a rotatable shaft, and a crank pin carried by said shaft arranged parallel with the axis of the latter and engaging said slot.

8. A floor surfacing machine comprising a frame, a rotatable surfacing roll mounted therein, a slidable block connected to said roll, means for guiding the same, a crank member normally in engagement with said block, an operating shaft normally disengaged from said crank member, and means for operatively connecting said crank member and said shaft.

9. A floor surfacing machine comprising a frame, a plurality of rotatable surfacing rolls mounted therein, a slidable block connected with each roll, and means for raising and lowering said blocks simultaneously or independently.

10. A floor surfacing machine comprising a frame, a plurality of rotatable surfacing

rolls mounted therein, a slidable block connected with each roll, a rotatable shaft, and means operated by said shaft for sliding said blocks simultaneously or independently.

11. A floor surfacing machine comprising a frame, a plurality of rotatable surfacing rolls mounted therein, a slidable block connected with each roll and provided with a slot, a rotatable shaft, crank members carried by said shaft and engaging said blocks, and means for operating said crank members simultaneously or independently.

12. In a floor surfacing machine, the combination of a base, a swinging arm pivotally supported in said base, a surfacing roll rotatably supported in said arm, an operating rod connected to said arm, a slidable block on said rod, springs connecting said block to said rod, and means for moving said block up and down to raise and lower said roll.

13. A floor surfacing machine comprising a base, a drive shaft mounted therein, a bearing sleeve pivotally supported by said shaft and parallel with said drive shaft, a roll shaft mounted in said sleeve, a surfacing roll mounted on one end of said roll shaft and projected to one side of said base, a slidable block, a rod connecting said block and said sleeve, means for limiting the relative movement of said rod and block, and means for raising and lowering said block.

14. In a floor surfacing machine, the combination of a base, a swinging arm pivotally supported in said base, a surfacing roll rotatably supported in said arm, an operating rod connected to said arm, a slidable block on said rod and constructed to have a limited movement relative to the latter, springs connecting said block to said rod, a rotatable member for moving said block up and down to raise and lower said roll, and a clutch for controlling said rotatable member.

15. A floor surfacing machine comprising a frame, a plurality of surfacing rolls mounted therein, rods connected to said rolls, means connected to said rods for exerting a yielding pressure upon said rolls, and means connected to said rods for raising and lowering said rolls independently or simultaneously.

16. A floor surfacing machine comprising a frame, a plurality of parallel shafts mounted therein, a surfacing roll on one end of each shaft, rods connected to said shafts, means connected to said rods for exerting a yielding pressure upon said rolls, and means connected to said rods for raising and lowering said rolls independently or simultaneously.

17. In a floor surfacing machine, the combination of two swinging arms pivotally supported therein, a surfacing roll supported in each arm, an operating rod connected to each arm, a slidable block loosely mount-

ed on each of said rods, springs supporting
each of said blocks on the rods, means for
moving each block up and down to raise
and lower the roll, means for guiding said
5 block, means for limiting the relative move-
ment of said block and its rod, and means
for connecting and disconnecting the block
from said moving means.

18. In a floor surfacing machine, the com-
10 bination of a swinging arm supported there-
in, a surfacing roll mounted in said arm, an
operating rod connected to said arm, a slid-
able block, springs of different strength

above and below said block and acting there-
upon to prevent the roll from bounding 15
while operating on an uneven surface, means
for regulating the tension of said springs,
and means for raising and lowering said roll
independent of said pressure adjusting
means. 20

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

ALFRED H. WHATLEY.

Witnesses:

HOWARD E. BARLOW,
E. I. OGDEN.