No. 848,275. PATENTED MAR. 26, 1907.

C. B. WATTLES.

FLOOR BRUSHING AND WAXING MACHINE.

APPLICATION FILED FEB. 5, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

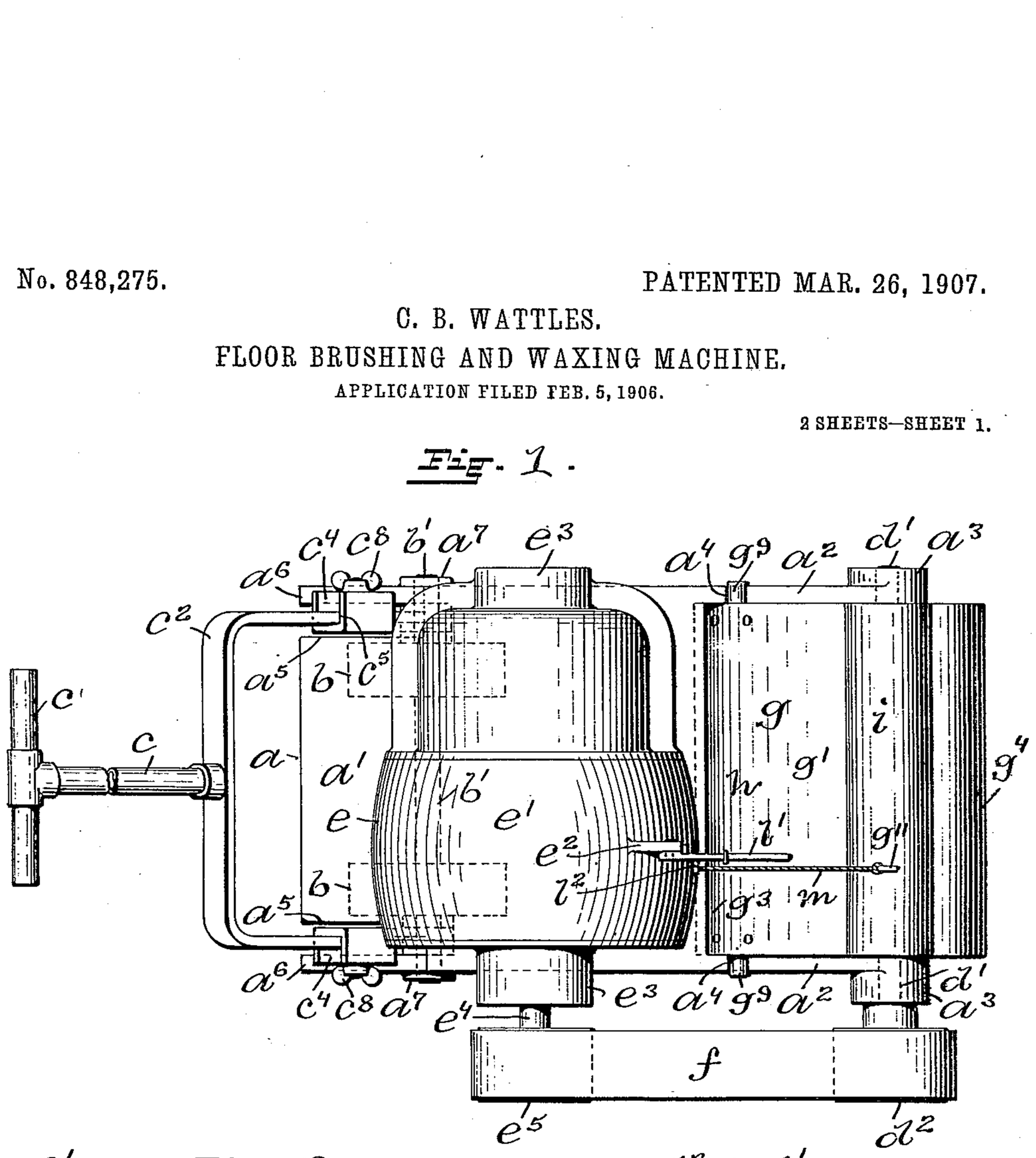
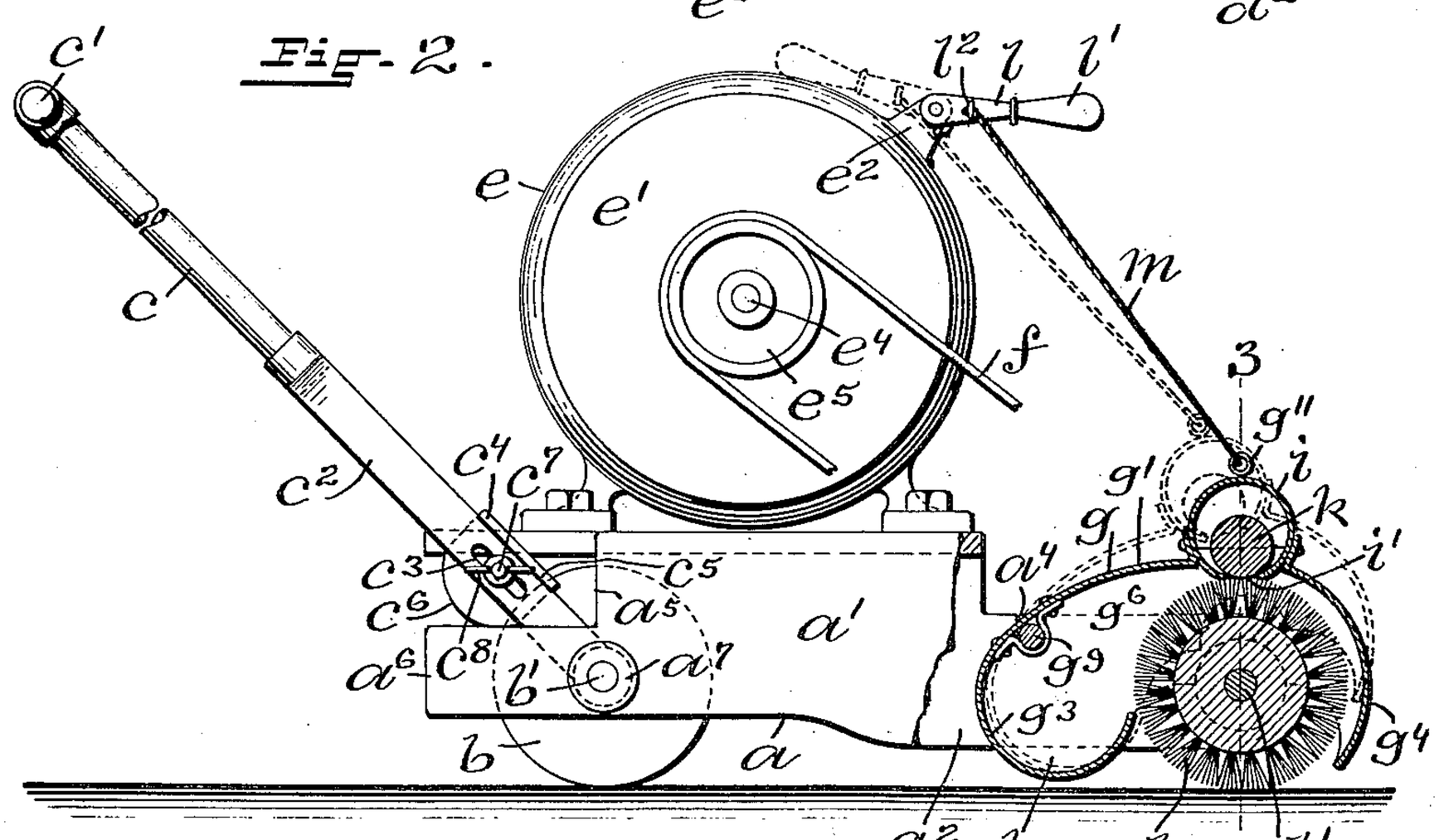


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

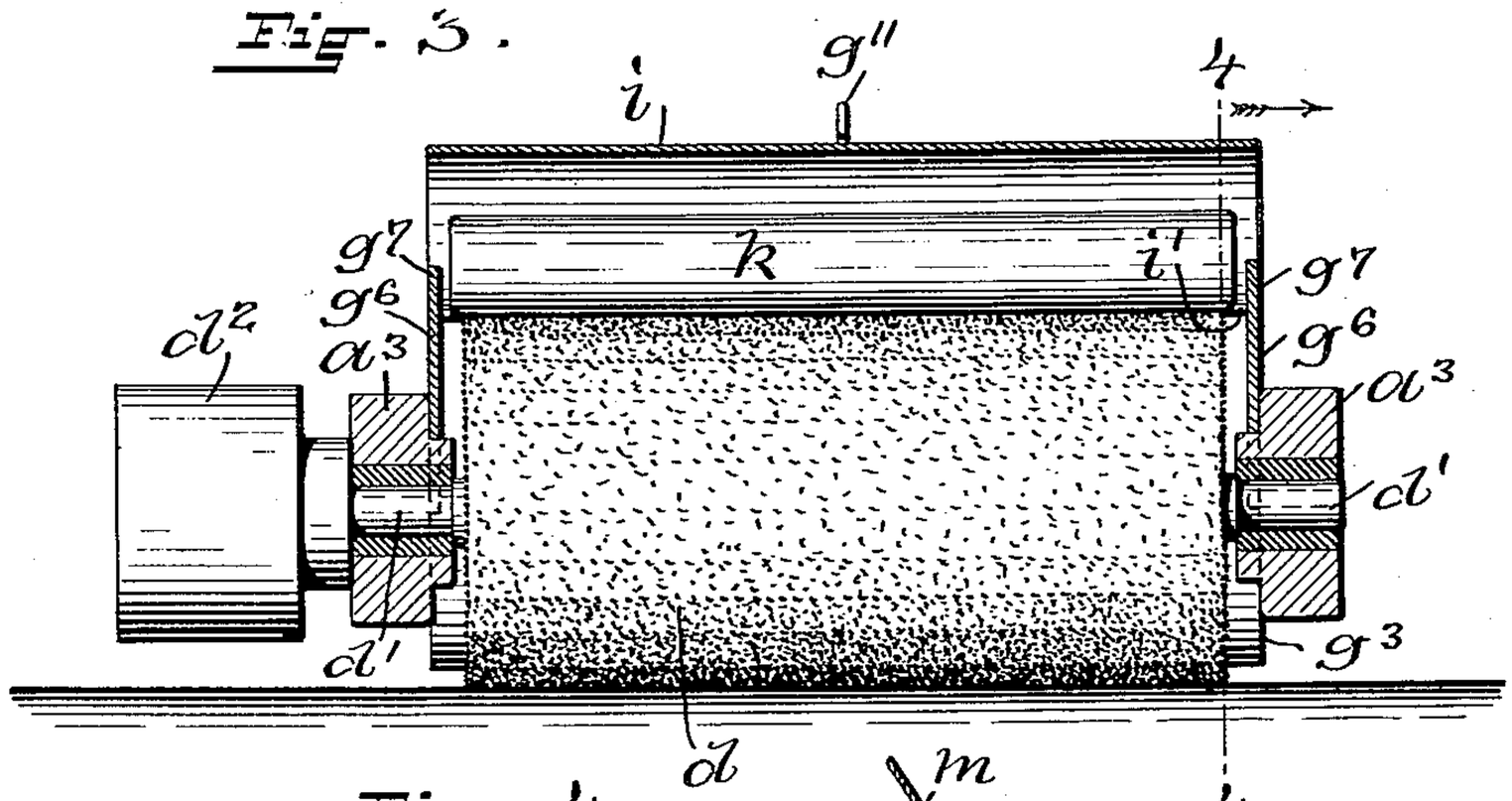


Fig. 4.

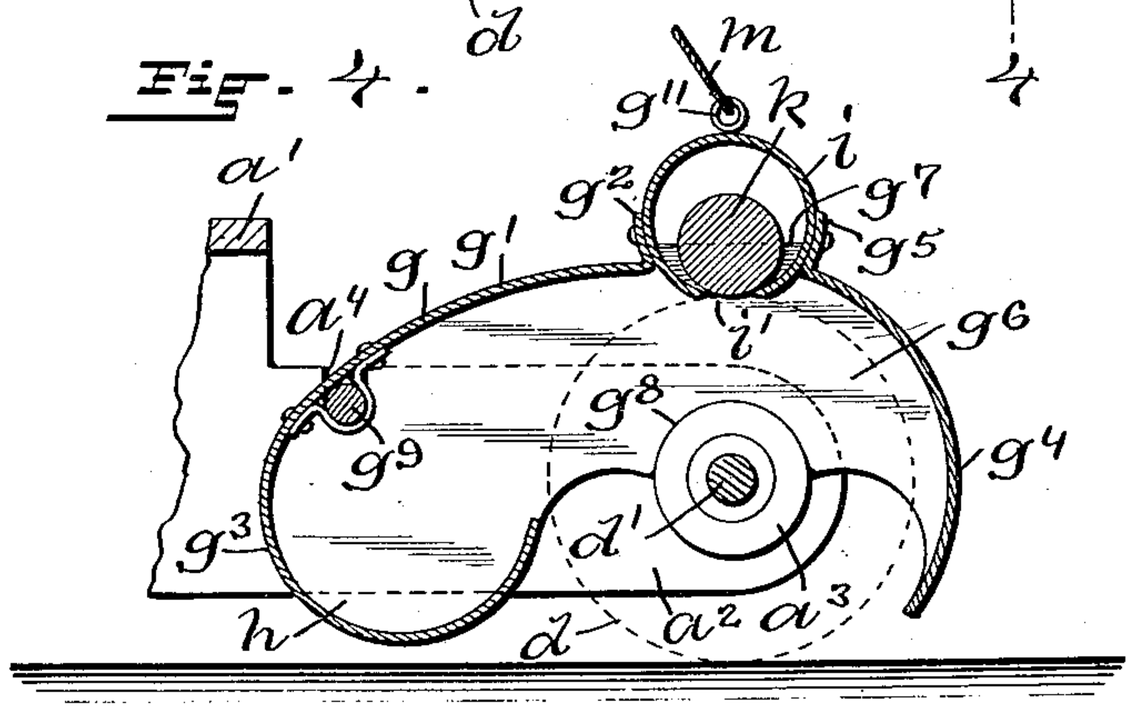
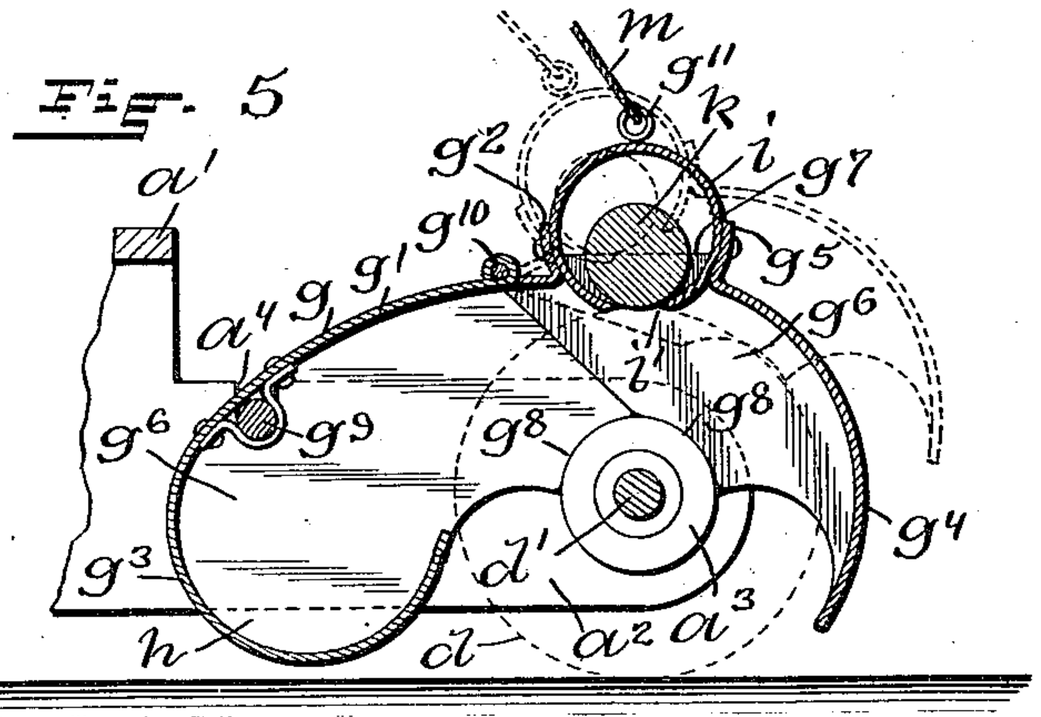


Fig. 5



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UNITED STATES PATENT OFFICE.

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FLOOR BRUSHING AND WAXING MACHINE.

No. 848,275. Specification of Letters Patent. Patented March 26, 1907.

Application filed February 5, 1906. Serial No. 299,596.

To all whom it may concern:

Be it known that I, CYRA B. WATTLES, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Floor Brushing and Waxing Machines, of which the following is a specification.

This invention has reference to an improvement in floor-polishing machines, and more particularly to an improvement in a machine adapted to brush and polish wood floors.

The object of my invention is to improve the construction of a floor-waxing machine whereby the functions of brushing and polishing a floor with wax may be done in separate operations or in one continuous operation, as desired.

Further objects of my invention are to reduce the cost of brushing and polishing wood floors with wax or other homogeneous substances and to polish a floor more perfectly and expeditiously than has heretofore been done.

My invention consists in the peculiar and novel construction of a floor brushing and waxing machine comprising a frame, wheels supporting the rear portion of the frame, a handle pivotally secured to the axle of the wheels, means for adjusting the position of the handle relative to the frame, a roller-brush rotatably supported in bearings in the frame and supporting the forward end of the frame, a motor secured to the frame, means for operatively connecting the motor with the roller-brush to revolve the brush, a casing adapted to cover the upper portion of the roller-brush and having a dirt-compartment and a cylindrical wax-receptacle in the under side of which is a longitudinal slot, means for pivotally securing the casing to the frame in a position to bring the slot in the wax-receptacle over the roller-brush, a round bar of wax or other homogeneous substance adapted to enter the receptacle and frictionally engage with the roller-brush through the slot in the receptacle, and means for raising the casing to lift the wax out of engagement with the roller-brush, as will be more fully set forth hereinafter.

Figure 1 is a top plan view of my improved floor brushing and waxing machine, showing the motor operatively connected with the roller-brush shaft. Fig. 2 is a vertical side view shown partly in section to show the construction of the brushing and waxing mechanism. Fig. 3 is an enlarged vertical sectional view taken on line 3 3 of Fig. 2 through the bearings and casing of the brushing and waxing mechanism. Fig. 4 is an enlarged detail sectional view taken on line 4 4 of Fig. 3 and showing the construction of the casing, and Fig. 5 is an enlarged detail sectional view similar to Fig. 4 of a modified form of casing.

In the drawings, *a* indicates the frame; *b b*, the wheels; *c*, the handle; *d*, the roller-brush; *e*, the motor; *f*, the belt; *g*, the casing having the dirt-compartment *h* and the cylindrical wax-receptacle *i*; *k*, a cylindrical bar of wax or other homogeneous substance in the receptacle *i*; *l*, the casing-lifting mechanism on the motor, and *m* a cord connecting the casing with the lifting mechanism of my improved floor brushing and waxing machine.

The frame *a* is constructed to have a body portion a', adapted to hold the motor *e*, two forwardly-extending arms a^2 a^2, supporting on their ends the bearings a^3 a^3 for the shaft of the roller-brush *d* and having the notches a^4 a^4 in their upper edges adjacent the body a', the cut-away portions forming the openings a^5 a^5 for the handle *c*, the two rearwardly-extending arms a^6 a^6, and the bearings a^7 a^7 in the side of the frame adjacent the rear for the axle of the wheels *b b*, as shown in Figs. 1 and 2.

The wheels *b b* are secured to the axle b', which is rotatably secured in the bearing a^7 a^7, thus bringing the greater weight of the frame *a* and the motor *e* on the roller-brush *d*.

The handle *c* is constructed to have the T-shaped upper end c' and the yoke c^2 on its lower end, in the sides of which are the slots c^3 c^3, as shown in Fig. 2. The arms of the yoke c^2 are pivotally secured at their ends, through the openings a^5 a^5 in the frame, to the axle b'. The arms of the yoke c^2 are provided with the slides c^4 c^4, each slide having the recess c^5 for the arm of the yoke, the semicircular lower edge c^6, and the central bolt c^7 for adjustably securing the slide to the arm of the yoke in a position for the bolt to extend through the slot c^3 in the arm, where it is secured by the thumb-nut c^8 with the semicircular edge of the slide resting on the upper edge of the rearwardly-extending arm a^6 of the frame *a*, as shown in Fig. 2. The handle *c* is sufficiently long to bring the T-shaped upper end c' into a convenient position for the operator. By adjusting the slides c^4 c^4

up or down on the yoke c^2 of the handle c the position of the handle is adjusted relative to the machine and the leverage of the handle increased or decreased, as desired.

The roller-brush d is secured to the shaft d', which is rotatably supported in the bearings a^3 a^3. A pulley d^2 is secured to the end of the shaft d', coinciding with the pulley side of the motor e, as shown in Figs. 1 and 3.

The motor e may be of any kind desired. In the preferred form I use an electric motor connected to a source of electric energy by a flexible cable (not shown) and having a casing e' with the lug e^2 and the bearings e^3 e^3, rotatably supporting an armature-shaft e^4, on which is a pulley e^5, connected to the pulley d^2 on the shaft of the roller-brush by the belt f, as shown in Fig. 1. The motor e is rigidly secured to the body a' of the frame a in any well-known way.

The casing g is constructed, preferably, of sheet metal and shaped to have the curved top g' with the upwardly-extending lip g^2 and the downwardly and then upwardly extending semicircular rear portion g^3 forming the dirt-compartment h, the curved front portion g^4 having the upwardly-extending lip g^5, the cylindrical wax-receptacle i having the longitudinal slot i' in its under side and secured to the lips g^2 and g^5 intermediate the same by rivets or other means, and the closed ends g^6 g^6 shaped to conform to the contour of the casing and having the upwardly-extending portions g^7 g^7 adapted to close the open ends of the wax-receptacle from the bottom up approximately one-quarter the diameter of the receptacle, and the semicircular recessed portions g^8 g^8 in the lower edges adapted to bear on the bearings a^3 a^3 and support the forward end of the casing, as shown in Figs. 3 and 4. A rod g^9 is secured to the casing and extends through the ends g^6 g^6 into the notches a^4 a^4 in the arms a^2 a^2 on the frame a, thus pivotally supporting the rear of the casing on the arms a^2 a^2, as shown in Figs. 1 and 4. In the modified form of casing as shown in Fig. 5 the forward portion of the casing with the wax-receptacle i is constructed separate and secured to the rear portion by the hinges g^{10} g^{10}. In this construction the wax-receptacle may be lifted into the position as shown in broken lines without raising the entire casing.

The casing-lifting mechanism l consists of a lever l', having the eye l^2 and pivotally secured to the lug e^2 on the casing of the motor e. The cord m m is secured to the eye l^2 on the lever l' and to an eye g^{11} on the casing g, as shown in Fig. 2.

In the operation of my improved floor brushing and waxing machine the motor e revolves the roller-brush d on the floor at a high rate of speed through the driving-pulley e^5, the belt f, and the pulley d^2 on the roller-brush shaft d', while the operator moves the machine on the floor by the handle c. In brushing the floor to remove all extraneous substances before waxing the casing g is raised and the bar of wax k lifted out of engagement with the roller-brush d, by throwing the lever l' of the lifting mechanism l over against the motor e, as shown in broken lines in Fig. 2. The dust or dirt from the floor now collects in the dirt-compartment h, from which it is removed when required by lifting the casing from the machine and dumping the dirt out of the compartment h. In waxing the floor the casing is lowered into its normal position, as shown in full lines in Fig. 2. The cylindrical bar of wax k now extends partly through the slot i' in the receptacle i and rests on the bristles of the roller-brush d. The rapidly-revolving brush frictionally engaging the cylindrical bar of wax disintegrates the wax and deposits the same on the floor, where it is worked into the grain of the wood by the brush and the floor polished with the wax by the rapidly-revolving brush in one continuous operation of the machine. The brush revolving in frictional contact with the cylindrical bar of wax causes the wax to revolve in the receptacle and present continuously a new surface to the brush until the wax is practically worn away.

In practice I find that a much better polish is attained by running the machine lengthwise of the floor-boards or with the grain of the wood, and with the machine running in this position the cracks between the boards are more easily cleaned by the brush and the dust or dirt deposited in the dirt-compartment h in one continuous operation of the machine. The casing g, with the wax k, is raised when the roller-brush d is used for polishing only. The cylindrical rod k may be of wax, paraffin, or any other homogeneous substance adaptable for the purpose. The pressure of the brush on the floor may be varied by varying the pressure of the handle, or the brush may be lifted from the floor when required by a downward movement of the handle.

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

1. In a floor brushing and waxing machine, a frame, wheels rotatably secured to the frame, a handle pivotally secured to the axle of the wheels, means for adjusting the handle relative to the frame, a motor secured to the frame, a roller-brush rotatably secured in bearings in the frame, means for operatively connecting the motor with the brush to revolve the brush, a casing pivotally secured to the frame over the brush and having a dirt-compartment and a wax-receptacle in the under side of which is a slot.

2. A floor brushing and waxing machine comprising a frame, an axle rotatably se-

cured in bearings in the frame, wheels secured to the axle, a handle pivotally secured to the axle, means on the handle adapted to engage with the frame to adjust the handle relative to the frame, a motor secured to the frame, a roller-brush rotatably secured in bearings in the frame, means for operatively connecting the motor with the brush to revolve the brush, a casing pivotally secured to the frame over the brush and having a dirt-compartment and a wax-receptacle in the under side of which is a slot, and means for lifting the casing and the wax-receptacle out of engagement with the roller-brush.

3. In a floor brushing and waxing machine, the combination of a frame *a*, wheels *b b* secured to an axle *b'* which is rotatably secured in bearings in the frame, a handle *c* pivotally secured to the axle *b'*, means for adjusting the handle relative to the frame, a roller-brush *d* rotatably secured in bearings in the frame, a motor *e* secured to the frame, means for operatively connecting the motor with the roller-brush to revolve the brush, a casing *g* having the dirt-compartment *h* and the wax-receptacle *i* with the slot *i'* in its under side, means for pivotally securing the casing *g* to the frame *a* in a position for the roller-brush *d* to frictionally engage with the bar *k* of wax through the slot *i'* in the receptacle, and means for raising the casing *g* consisting of the lever *l'* pivotally secured to the motor *e* and the cord *m* connected to the lever *l'* and to the casing *g*, as described.

4. In a floor brushing and waxing machine, a casing *g* constructed to have the curved top *g'* with the upwardly-extending lip g^2, the downwardly and then upwardly extending semicircular rear portion g^3 forming the dirt-compartment *h*, the curved front portion g^4 having the upwardly-extending lip g^5, the wax-receptacle *i* having the longitudinal slot *i'* in its under side, and secured to the lips g^2 and g^5 intermediate the same, the closed ends g^6 g^6 shaped to conform to the contour of the casing, means for pivotally securing the casing to the frame of the machine, and means for lifting the casing, as described.

5. In a floor brushing and waxing machine, a casing *g* constructed to have the curved top *g'* with the upwardly-extending lip g^2, the downwardly and then upwardly extending semicircular rear portion g^3 forming the dirt-compartment *h*, the curved front portion g^4 having the upwardly-extending lip g^5, the cylindrical wax-receptacle *i* having the longitudinal slot *i'* in its under side and secured to the lips g^2 and g^5 intermediate the same, the closed ends g^6 g^6 shaped to conform to the contour of the casing, the front portion of the casing with the wax-receptacle *i* being constructed separate and pivotally secured to the rear portion of the casing by the hinges g^{10} g^{10}, means for securing the casing in the frame of the machine and means for raising the front portion of the casing with the wax-receptacle, as described.

6. In a floor brushing and waxing machine, a frame *a* having the rearwardly-extending arm a^6, a handle *c* having the T-shaped upper end *c'* and the yoke c^2 on its lower end in the side of which is the slot c^3, a slide c^4 having the recess c^5 for the arm of the yoke, the semicircular lower edge c^6 and the central bolt c^7 which extends through the slot c^3, in the arm of the yoke, means for adjustably securing the slide c^4 to the arm of the yoke consisting of the thumb-nut c^8 on the bolt c^7, and means for pivotally securing the yoke of the handle to the frame *a* in a position for the semicircular edge c^6 on the slide to engage with the upper edge of the arm a^6 on the frame, whereby the handle is adjustable relative to the frame, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CYRA B. WATTLES.

Witnesses:

ADA E. HAGERTY,

J. A. MILLER.