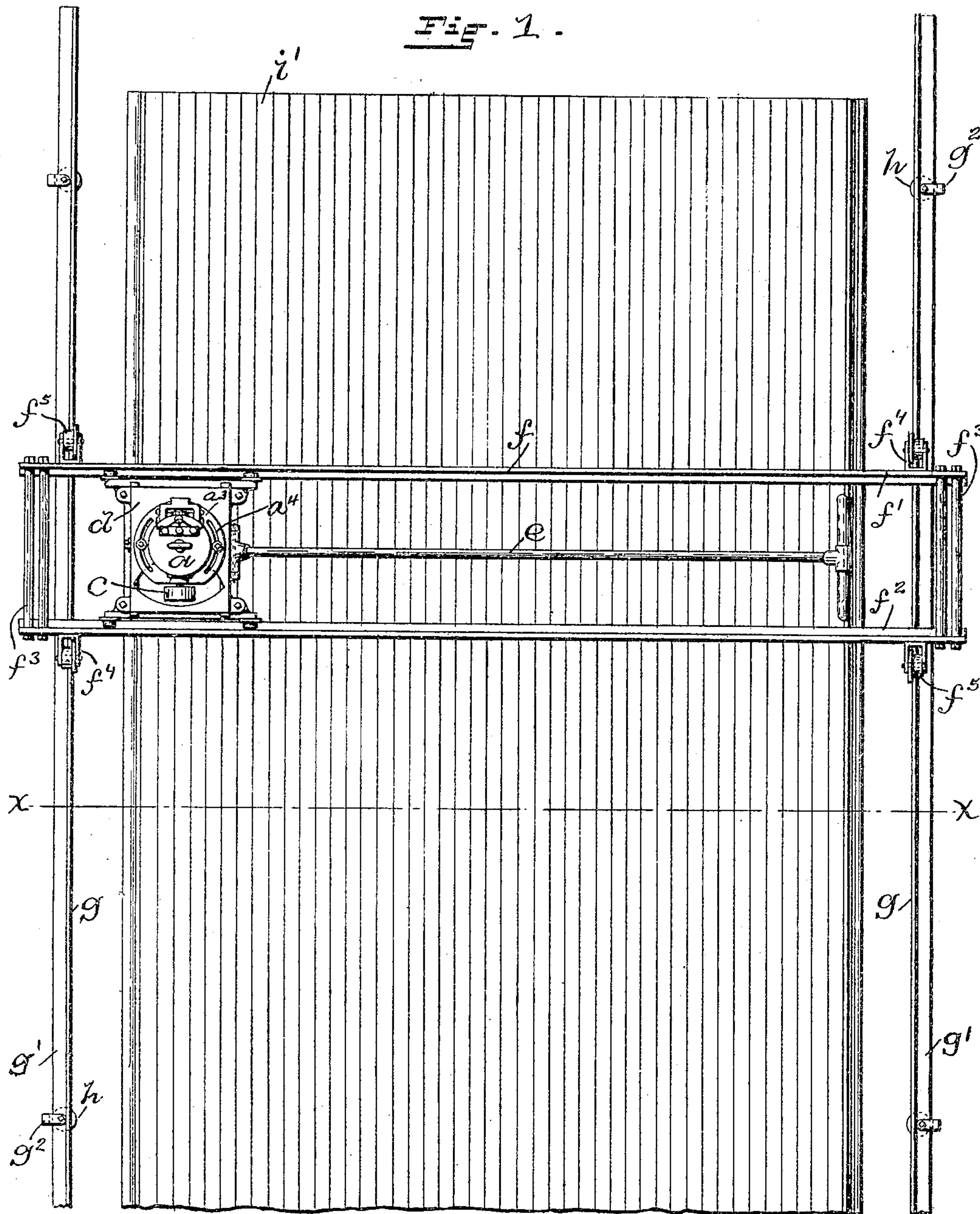


No. 800,962.

PATENTED OCT. 3, 1905.

C. B. WATTLES.
FLOOR DRESSING MACHINE.
APPLICATION FILED OCT. 7, 1903.

3 SHEETS—SHEET 1.



WITNESSES:

Chas. W. Luther Jr.
Ada E. Hagerly

INVENTOR:

Cyrus B. Wattle
by Joseph A. Miller & Co.
ATTORNEYS:

C. B. WATTLES.
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3 SHEETS—SHEET 2.

Fig. 2.

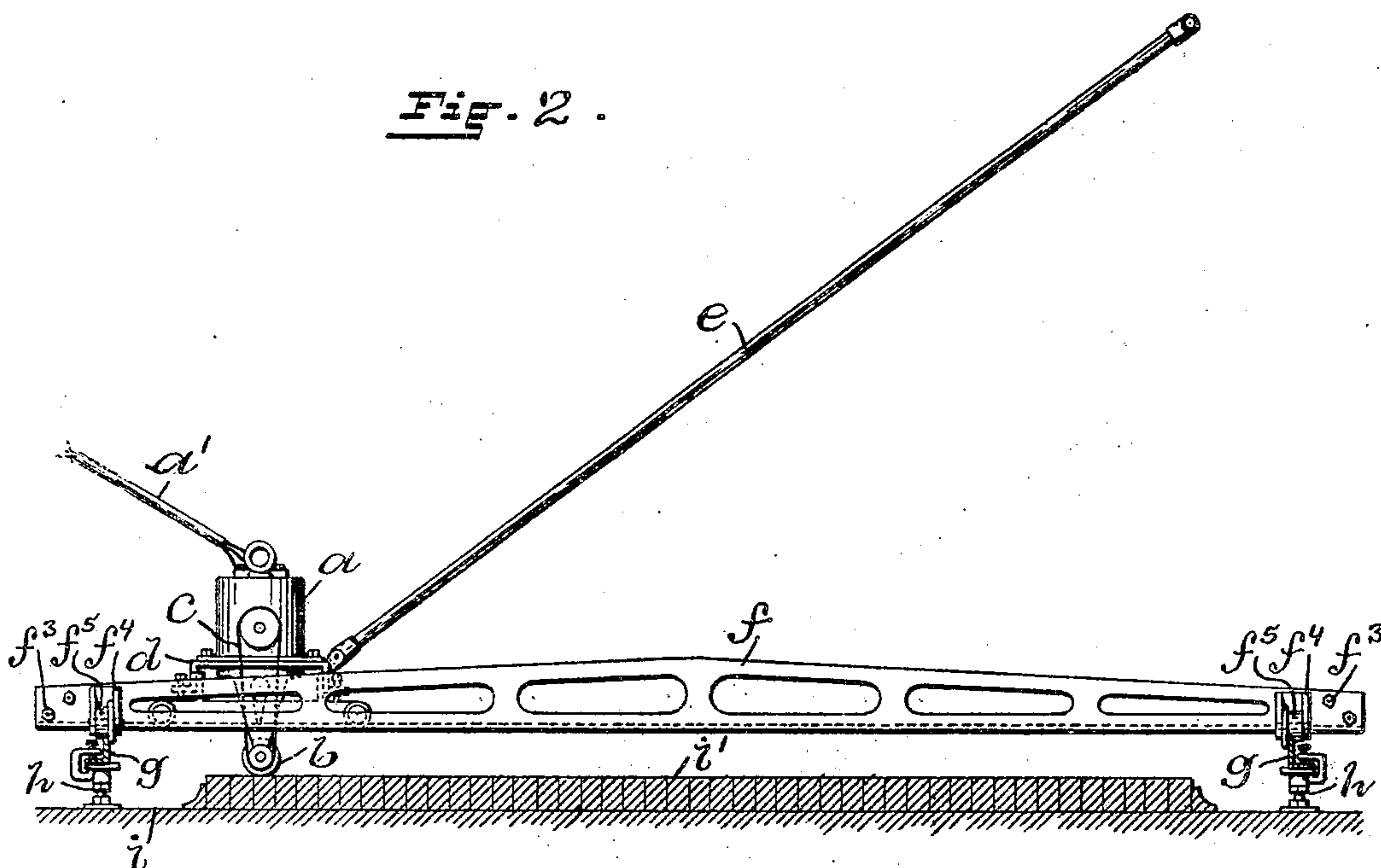
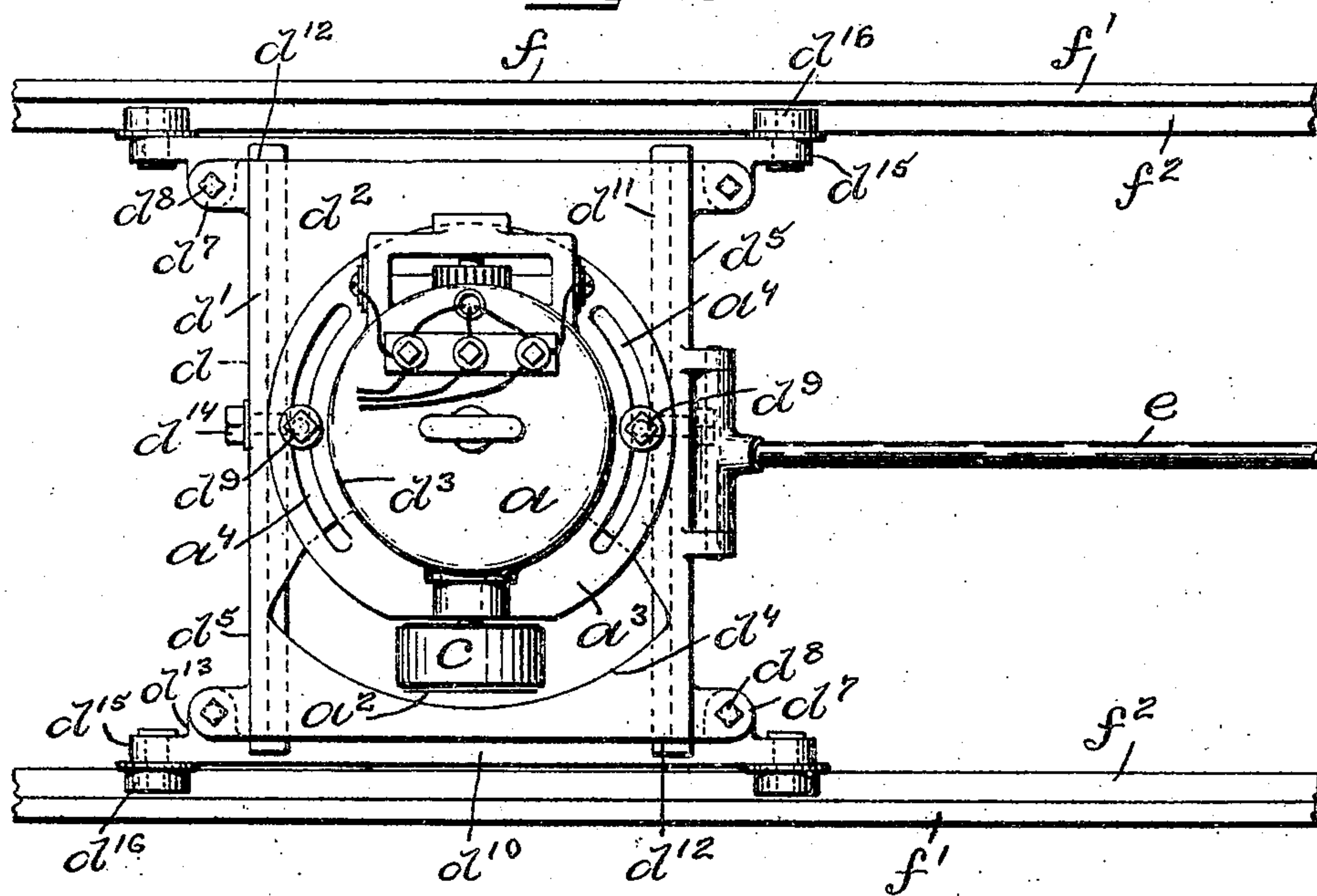


Fig. 3.



WITNESSES:

Chas. H. Lutter
Ada E. Hagerty

INVENTOR:

Cyrus B. Wattles
Joseph A. Miller & Co.
ATTORNEYS:

C. B. WATTLES.
FLOOR DRESSING MACHINE.
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3 SHEETS—SHEET 3.

Fig. 4.

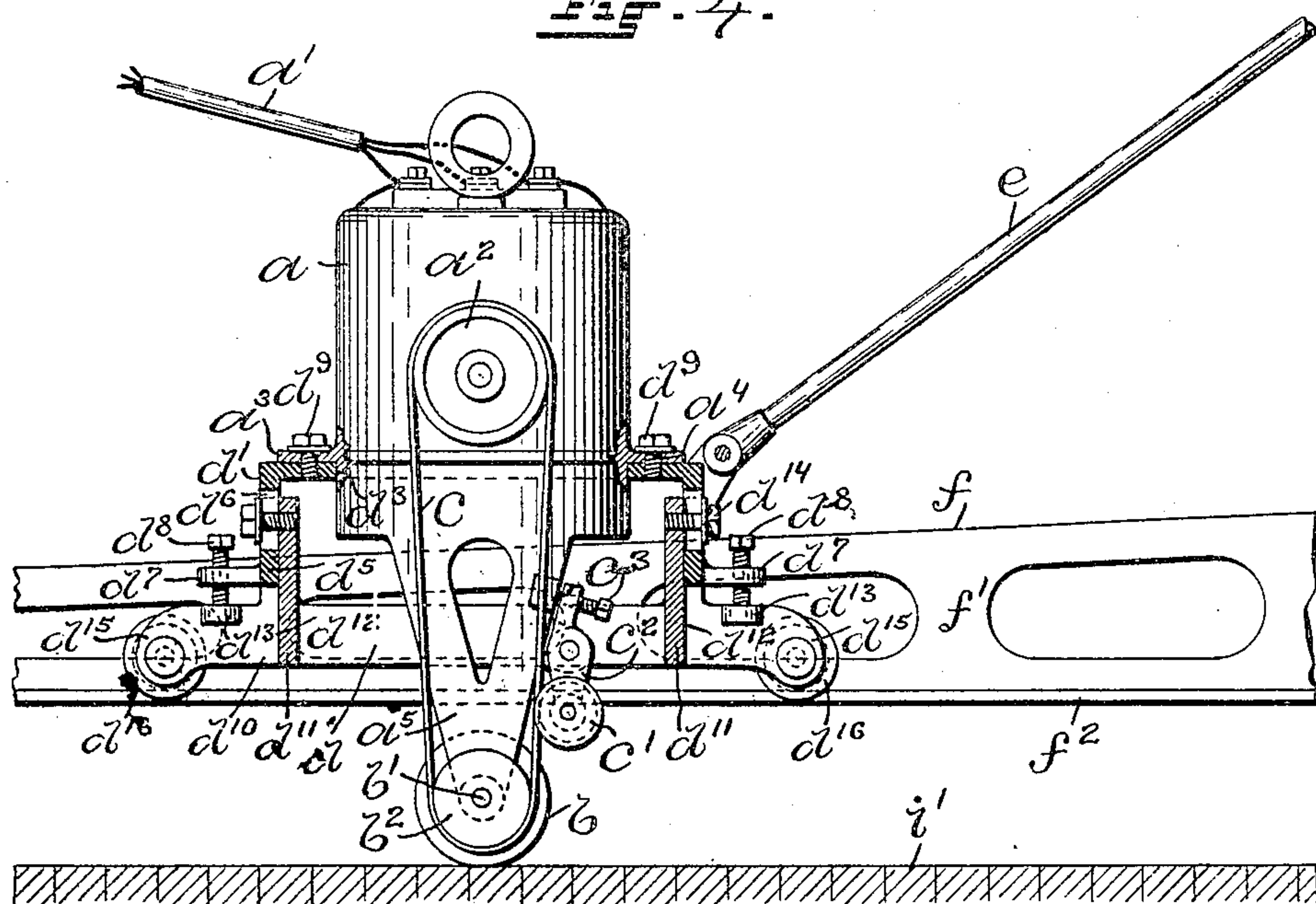
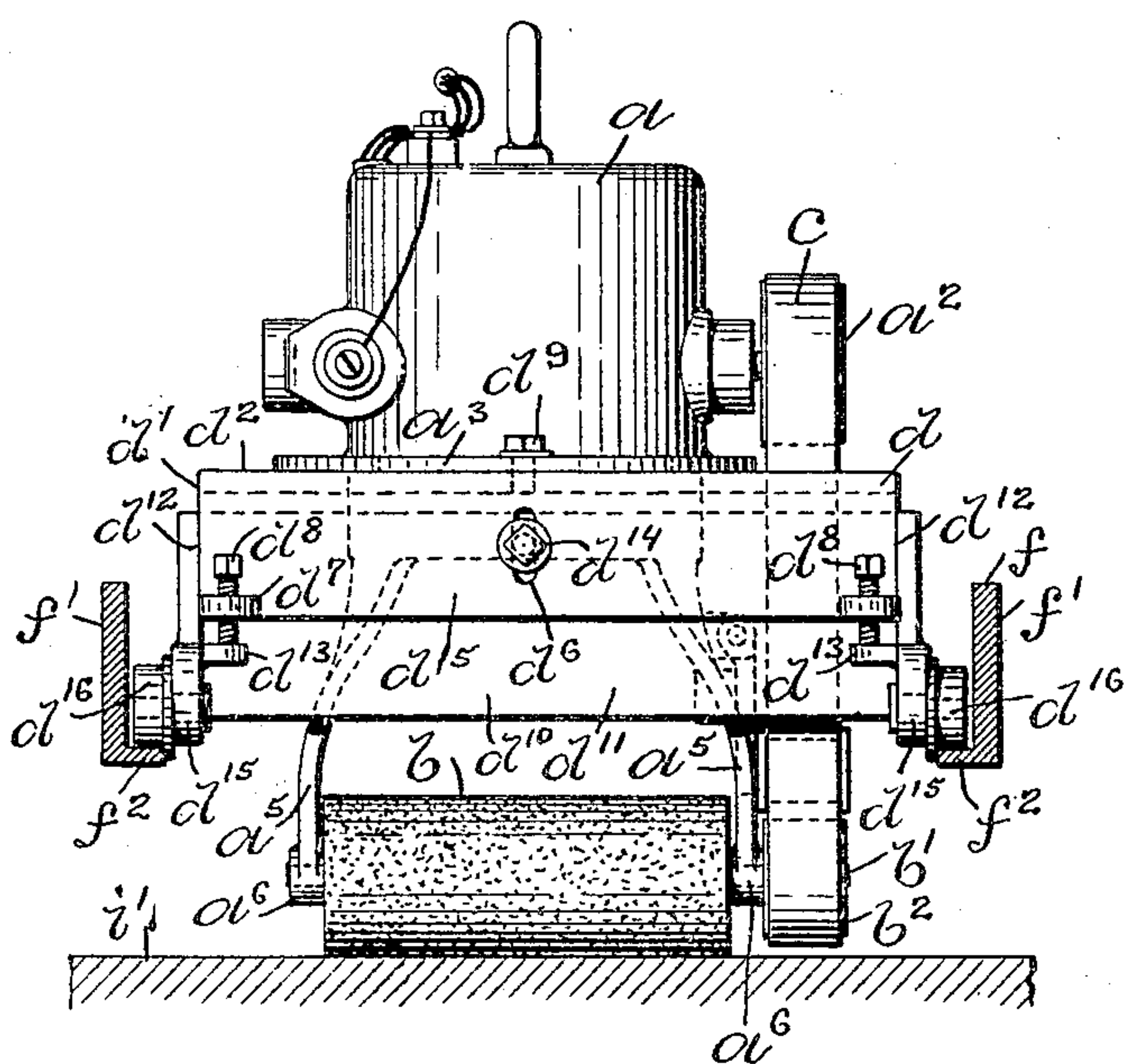


Fig. 5.



UNITED STATES PATENT OFFICE.

CYRA B. WATTLES, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO SURFACING MACHINE COMPANY, OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF RHODE ISLAND.

FLOOR-DRESSING MACHINE.

No. 800,962.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Application filed October 7, 1903. Serial No. 176,091.

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-Dressing Machines, of which the following is a specification.

This invention has reference to an improvement in floor-dressing machines, and more particularly to an improvement in floor-dressing machines used for leveling, dressing, finishing, and polishing the raised surface of bowling-allevs.

Bowling-allevs have ordinarily heretofore been leveled, dressed, finished, and polished with tools operated by hand. These operations when done by hand are slow and laborious, requiring great skill on the part of the mechanic to give approximately a level and true surface to the raised floor of the alley.

The object of my invention is to operate the tool by power, the tool in this instance being a roller covered with an abrasive material, such as sandpaper for surfacing or cloth having a loop pile or nap for polishing, and to move the tool supported on guideways over the raised surface of the bowling-alley by hand.

My invention consists in the peculiar and novel construction of a floor-dressing machine adapted to level, dress, finish, and polish the raised floors of bowling-allevs, said machine having a motor to revolve the dressing-roller, means for adjusting the roller to the angle desired, means for raising and lowering the dressing-roller, and means for supporting and guiding the motor and dressing-roller crosswise and lengthwise of the raised surface of the bowling-alley consisting of a carriage supporting the motor and dressing-roller adapted to run on ways in a frame extending across the alley, which in turn is adapted to run on rails extending lengthwise of the alley to give an absolute level and true surface to the raised floor of the alley, as will be more fully set forth hereinafter.

Figure 1 is a plan view of my improved floor-dressing machine in its operative position over the raised floor of a bowling-alley. Fig. 2 is a transverse sectional view through the bowling-alley, taken on line X X of Fig. 1, showing the dressing-roller engaging with

the raised floor of the alley. Fig. 3 is an enlarged plan view of the carriage supporting the motor and dressing-roller and part of the frame forming the guideways for the carriage. Fig. 4 is an enlarged vertical sectional view showing the carriage, motor, dressing-roller, and part of the guideway-frame and raised surface of the bowling-alley. Fig. 5 is a vertical sectional view through the guideway-frame, showing the dressing-roller covered with sandpaper and in its operative position on the raised floor of the bowling-alley. Fig. 6 is an enlarged detail sectional view of the adjustable support for the rails on which the frame forming the guideways for the carriage is supported and runs; and Fig. 7 is a detail sectional view of the permanent coupling in the floor for the adjustable support, showing the screw-threaded opening in the coupling closed when not in use by a screw-plug.

In the drawings, *a* indicates an electric motor; *b*, the dressing-roller; *c*, the belt connecting the motor with the dressing-roller; *d*, the carriage supporting the motor and dressing-roller; *e*, a T-shaped handle pivotally secured to the carriage; *f*, the transverse frame forming the guideways for the carriage; *g g*, the rails supporting the transverse frame; *h h*, the adjustable supports for the rails, and *i* the floor having the raised surface *i'*, forming the floor of the bowling-alley.

The electric motor *a* derives its power from a source of electric energy through the flexible cable *a'* and has the pulley *a*² on the armature-shaft. The casing of the motor *a* is constructed to have the annular flange *a*³, with the semicircular slots *a*⁴ *a*⁴, and the downwardly-extending arms *a*⁵ *a*⁵ with the bearings *a*⁶ *a*⁶. The dressing-roller *b* is secured to the shaft *b'*, supported in the bearings *a*⁶ *a*⁶, and is revolved by the pulley *b*², secured on the end of the shaft *b'*. The pulley *b*² derives its power from the pulley *a*² on the shaft of the motor through the belt *c*. The belt *c* is adjusted to prevent slipping by the idler-pulley *c'*, pivotally secured on the lower end of the arm *c*², which in turn is pivotally secured near its center to a boss on the arm *a*⁵. The adjusting-bolt *c*³ is screw-threaded through the upper end of the arm *c*² and bears on a lug extending outward from the arm *a*⁵, as shown in Fig. 4.

The carriage d consists of an upper frame supporting the motor a , adjustably secured to the lower frame. The upper frame d' has the flat top d^2 , with the semicircular central opening d^3 for the cylindrical motor and the opening d^4 for the belt c , the downwardly-extending leaves d^5 d^5 with the slots d^6 d^6 , the outwardly-bent lugs d^7 d^7 on the leaves for the adjusting-bolts d^8 d^8 , and the locking-bolts d^9 d^9 , extending through the slots d^4 d^4 in the flange a^3 on the motor-casing. The lower frame d^{10} has the upwardly-extending cross-bars d^{11} d^{11} , forming the guideways d^{12} d^{12} for the leaves d^5 d^5 of the upper frame, the bosses d^{13} d^{13} , forming supports for the adjusting-bolts d^8 d^8 , the locking-bolts d^{14} d^{14} , extending through the slots d^6 d^6 in the leaves d^5 d^5 , and the outwardly-extending arms d^{15} d^{15} , forming supports for the flanged wheels d^{16} d^{16} . The T-shaped handle e is pivotally secured to the carriage d by a pin passing through a fitting on the lower end of the handle and lugs on the upper frame d' of the carriage. The transverse frame f consists of the two side frames f' f' , constructed to form a rigid support for the carriage d and secured together at the ends a predetermined distance apart by the rods f^3 f^3 . On the lower edge of the side frames are the inwardly-bent lips f^2 f^2 , forming guideways for the flanged wheels d^{16} d^{16} on the carriage d , and on the sides near the ends are secured at right angles the bearings f^4 f^4 for the flanged wheels f^5 f^5 . The rails g g have the outwardly-turned flange g' g' , forming the bottom of the rail. These rails are placed at each side parallel with the raised floor of the bowling-alley and support the transverse frame f through the flanged wheels f^5 f^5 on the frame engaging with the rails. The adjustable support h for the rails consists of the base h' , with the screw-threaded post h^2 , the lower part of which is in the form of a nut, the flat head h^3 , with the annular groove h^4 in the under side, and the downwardly-extending sleeve h^5 in screw-thread engagement with the post h^2 , the lock-nut h^6 , and the downwardly-extending stud h^7 in screw-thread engagement with the coupling h^8 , permanently secured in the floor i by the screws h^9 h^9 . The opening in the coupling h^8 when not in use is closed by the screw-plug h^{10} . The rails g g are secured to the adjustable supports h h by the clamps g^2 g^2 , having the clamping-screw g^3 engaging with the flange g' of the rail, and the upwardly-turned lower end g^4 engaging with the annular groove h^4 in the under side of the head h^3 of the support, as shown in Fig. 6..

The raised floor i' of the bowling-alley is constructed of boards laid on edge and running lengthwise of the alley. These boards are usually made of maple secured to the main floor of the alley.

The rails g g are adjusted and leveled by turning the head h^3 of the adjustable support

h . The head is lodged in the adjusted position by the lock-nut h^6 and the rail secured to the head by the clamp g^2 . The transverse frame f is now placed on the rails over the raised floor of the bowling-alley and the carriage d , with the motor and dressing-roller, placed in the transverse frame f . If it is required to have the dressing-roller at an angle, the motor a is turned in the frame d' to bring the dressing-roller to the angle required and secured by tightening the bolts d^9 d^9 , extending through the flange a^3 on the motor-casing. The depth of cut required is attained by adjusting the upper frame d' up or down on the lower frame by the adjusting-bolts d^8 d^8 . The upper frame is then locked in the adjusted position by tightening the bolts d^{14} d^{14} , extending through the slots d^6 d^6 in the upper frame. The belt c is tightened by adjusting the bolt c^3 to force the idler c' against the face of the belt.

In the operation of my improved floor-dressing machines for bowling-alleys the first or rough cut on new alleys is usually made by a roller composed of a plurality of circular saws. Rollers covered with coarse, medium, and fine sandpaper are now used in succession for dressing and finishing, and for polishing a roller covered with felt or cloth having a loop pile or nap may be used. The dressing-roller is revolved at a high rate of speed on the surface of the raised floor of the bowling-alley; the operator by the handle e moving the carriage d , with the motor and dressing-roller, across the raised floor of the alley. At each forward-and-backward movement of the carriage the transverse frame f is moved lengthwise of the alley a distance approximately the length of the dressing-roller.

By the use of my improved floor-dressing machine for bowling-alleys the surface of the raised floor of the alley is given an absolute level and true surface in less time and at less cost than has heretofore been done.

It is evident that any form of a motor may be used adapted to this purpose and that a sprocket-chain and sprockets can be used to transmit power from the motor to the dressing-roller without materially affecting the spirit of my invention.

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

1. In a bowling-alley-floor-dressing machine, the combination with rails adjustably supported parallel with the raised floor of the bowling-alley, and a rigid frame movably supported on the rails, of a carriage movably supported on the rigid frame, a casing provided with downwardly-extending arms and adjustably supported on the carriage, an electric motor secured to the casing, a floor-dressing roller secured in bearings to the downwardly-extending arms of the casing, and a

belt connecting the motor to the dressing-roller, for the purpose described.

2. In a floor-dressing machine, mechanism consisting of a carriage supporting a motor and dressing-roller, means for adjusting the motor and dressing-roller at an angle to the line of movement of the carriage, means for supporting and guiding the carriage across the raised surface of a bowling-alley consisting of a rigid frame, and means for supporting and guiding the carriage and frame lengthwise of the bowling-alley consisting of rails parallel with the raised floor of the bowling-alley, for the purpose as described.

3. In a floor-dressing machine, mechanism consisting of a power-driven revolving tool, means for driving the tool, means for supporting and guiding the tool across the raised floor of a bowling-alley, means for adjusting the tool at an angle to the line of movement of the tool, means for raising and lowering the tool, means for guiding the tool lengthwise of the raised floor of a bowling-alley, and means for controlling the movement of the tool on the raised floor of a bowling-alley by the operator, for the purpose as described.

4. In a floor-dressing machine, a motor supporting a dressing-roller, means for transmitting power from the motor to the dressing-roller, a carriage supporting the motor, means for turning the motor in the carriage to adjust the dressing-roller at an angle to the line of movement of the carriage, means for adjusting the motor and dressing-roller vertically in the carriage, means for supporting and guiding the carriage across the raised floor of a bowling-alley, means for supporting and guiding the carriage lengthwise of the raised floor of a bowling-alley, and means for moving the carriage across and length-

wise over the raised floor of a bowling-alley to bring the dressing-roller into engagement with the raised floor of the bowling-alley, for the purpose as described.

5. The combination with a floor-dressing machine, of the electric motor *a* deriving its power from a source of electric energy through the flexible cable *a'*, the pulley *a*² on the armature-shaft, the flange *a*³ on the motor-casing having the semicircular slots *a*⁴ *a*⁴, the downwardly-extending arms *a*⁵ *a*⁵ with the bearings *a*⁶ *a*⁶, the dressing-roller *b* on the shaft *b'* in the bearings *a*⁶ *a*⁶, the pulley *b*² on the shaft *b'*, the belt *c* connecting the pulley *a*² with the pulley *b*², and the idler-pulley *c'* on the arm *c*² pivotally secured to the arm *a*⁵ and having the adjusting-bolt *c*³, as described.

6. The combination with a floor-dressing machine of the carriage *d* consisting of the upper frame *d'* having the flat top *d*² with the semicircular opening *d*³ and the opening *d*⁴, the downwardly-extending leaves *d*⁵ *d*⁵ with the slots *d*⁶ *d*⁶, the outwardly-bent lugs *d*⁷ *d*⁷ for the adjusting-bolts *d*⁸ *d*⁸ and the locking-bolts *d*⁹ *d*⁹; and the lower frame *d*¹⁰ having the upwardly-extending cross-bars *d*¹¹ *d*¹¹, the guideways *d*¹² *d*¹², the bosses *d*¹³ *d*¹³, the locking-bolts *d*¹⁴ *d*¹⁴, the outwardly-extending arms *d*¹⁵ *d*¹⁵ forming supports for the flanged wheels *d*¹⁶ *d*¹⁶, and the T-shaped handle *e* pivotally secured at its lower end to the carriage *d*, 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, Jr.