

(No Model.)

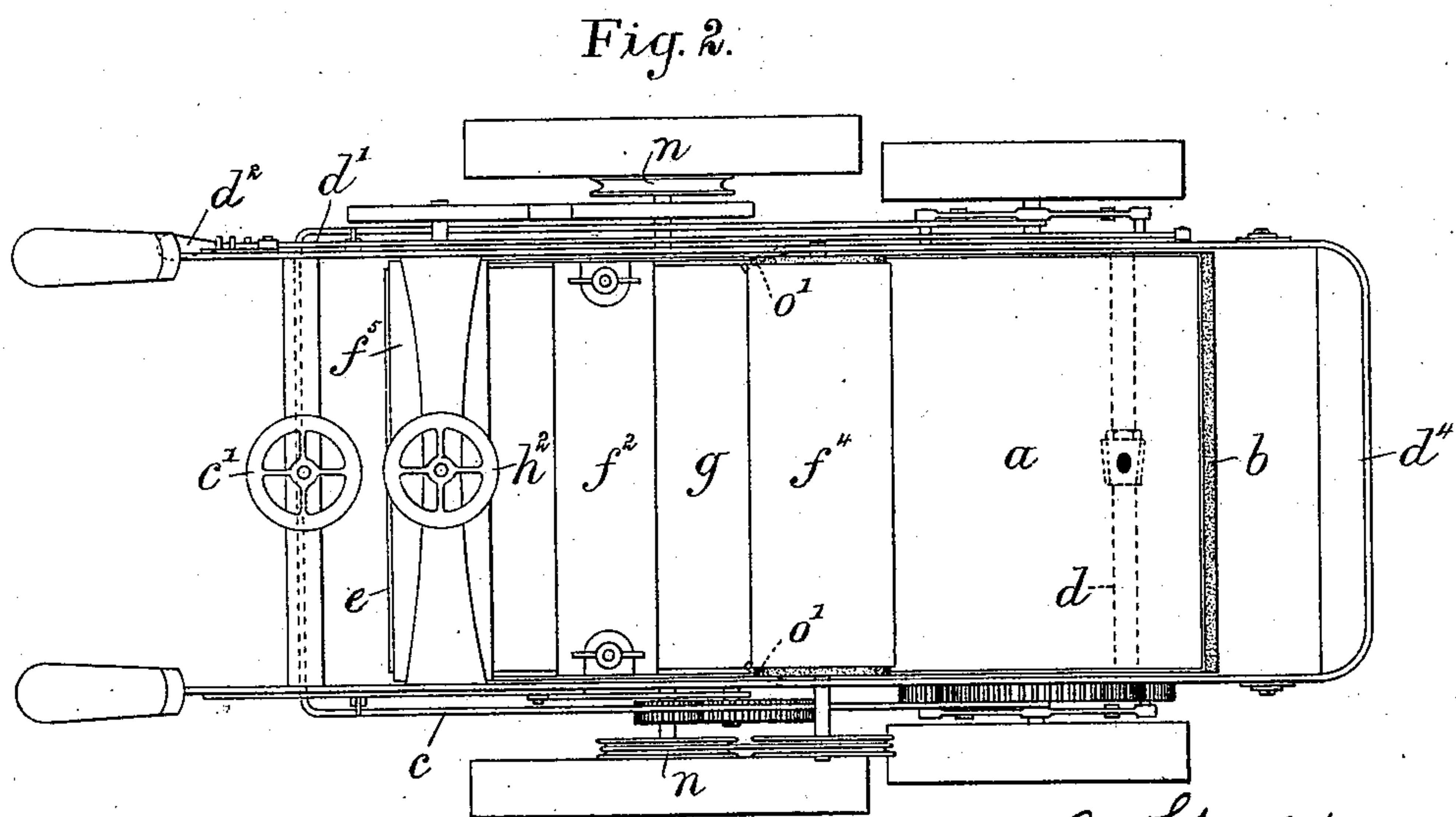
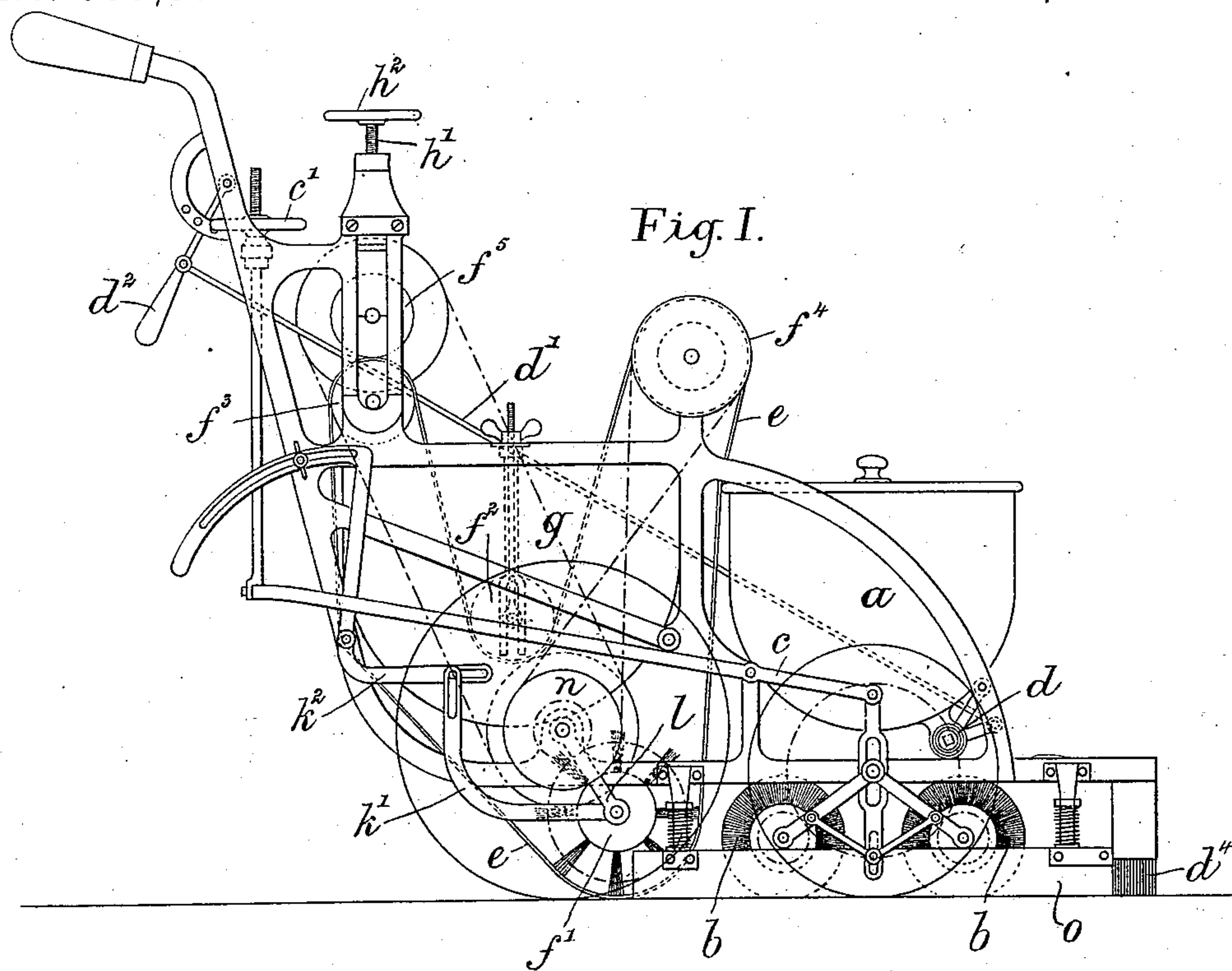
3 Sheets—Sheet 1.

J. E. & W. J. GEE.

MACHINE FOR WASHING, SCRUBBING, AND CLEANING FLOORS.

No. 557,377.

Patented Mar. 31, 1896.



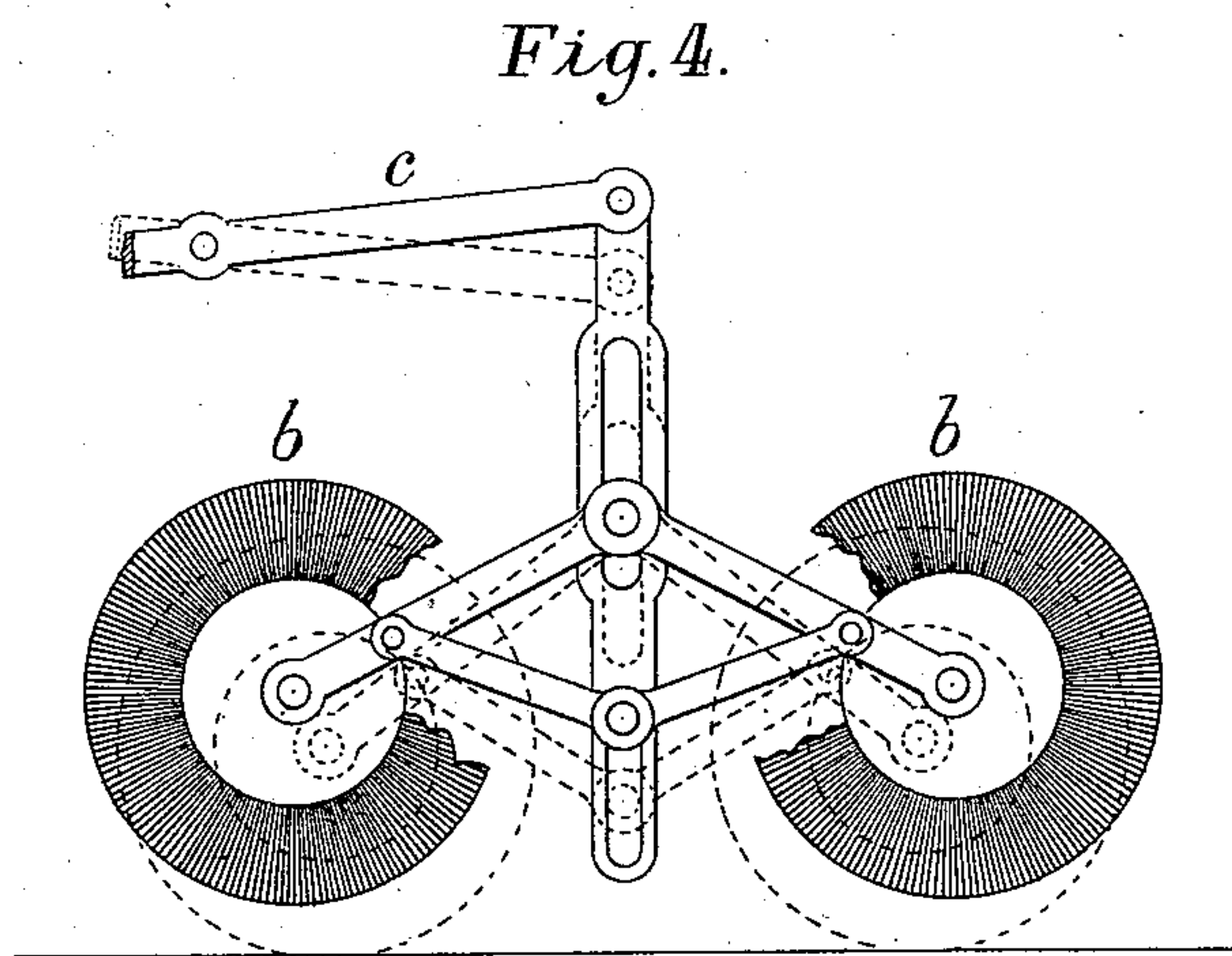
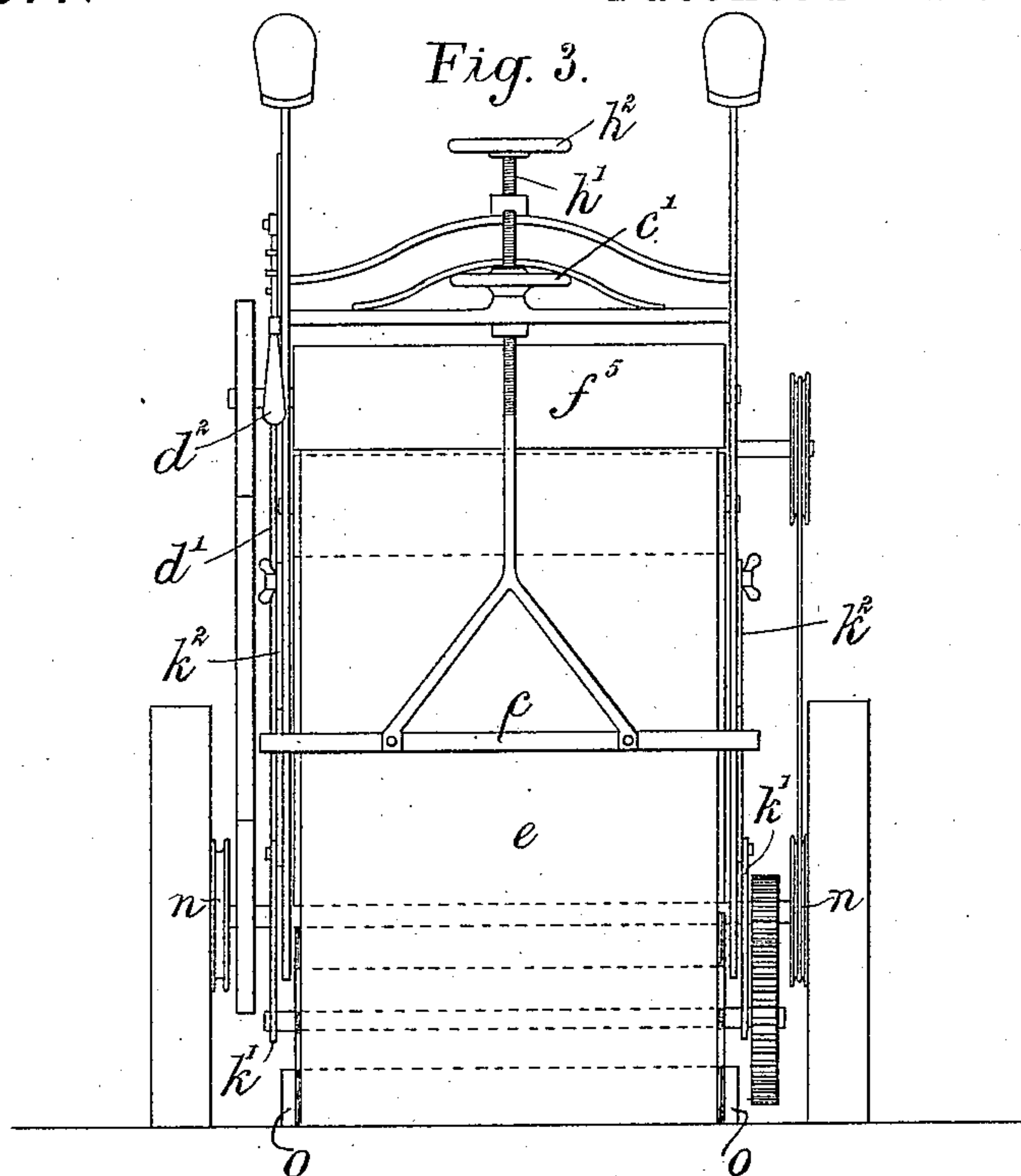
Witnesses.  
John C. Wilson  
John H. Volk.

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3 Sheets—Sheet 2.

# MACHINE FOR WASHING, SCRUBBING, AND CLEANING FLOORS.

Patented Mar. 31, 1896.



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(No Model.)

3 Sheets—Sheet 3.

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MACHINE FOR WASHING, SCRUBBING, AND CLEANING FLOORS.

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Fig. 5.

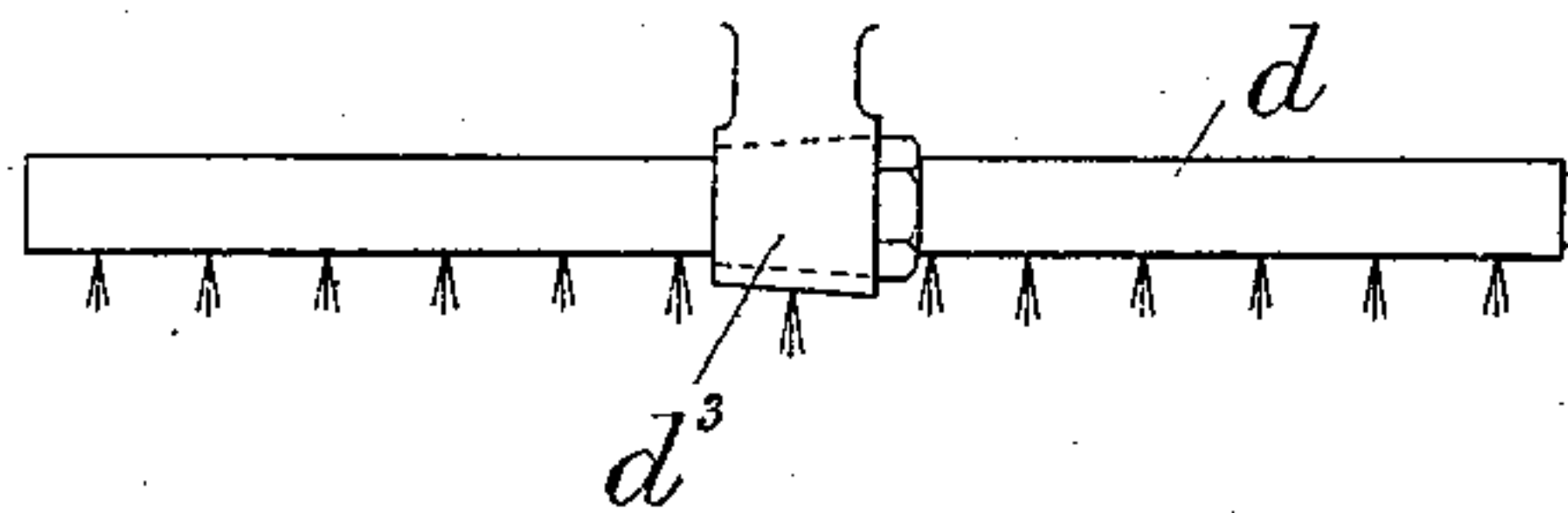


Fig. 6.

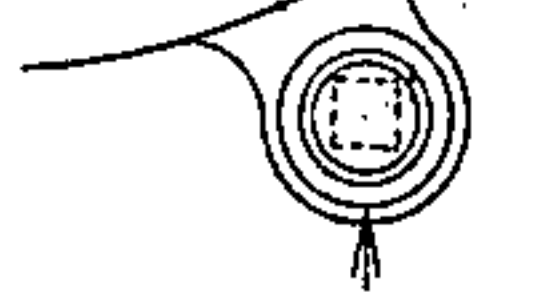


Fig. 7.

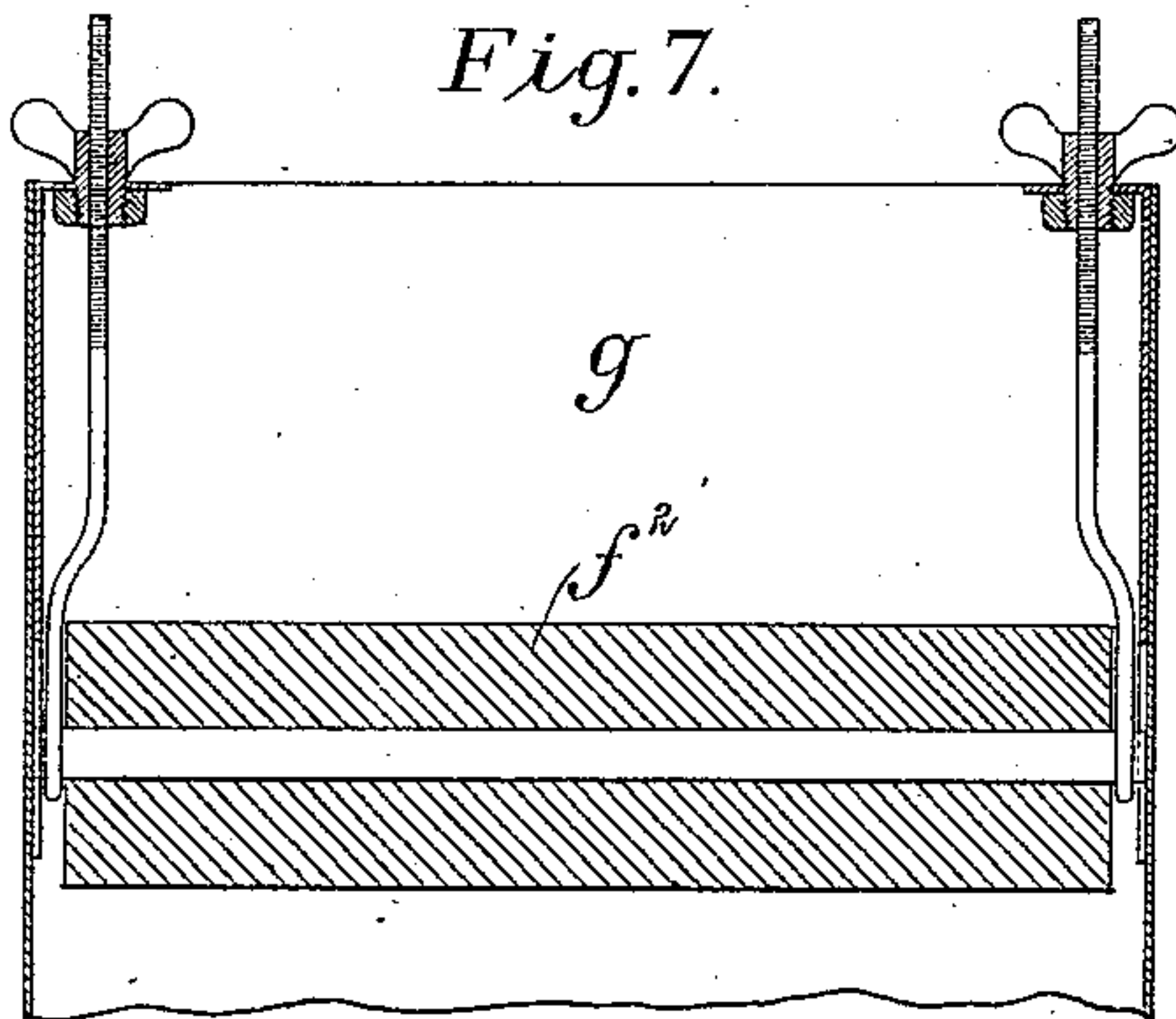


Fig. 8.

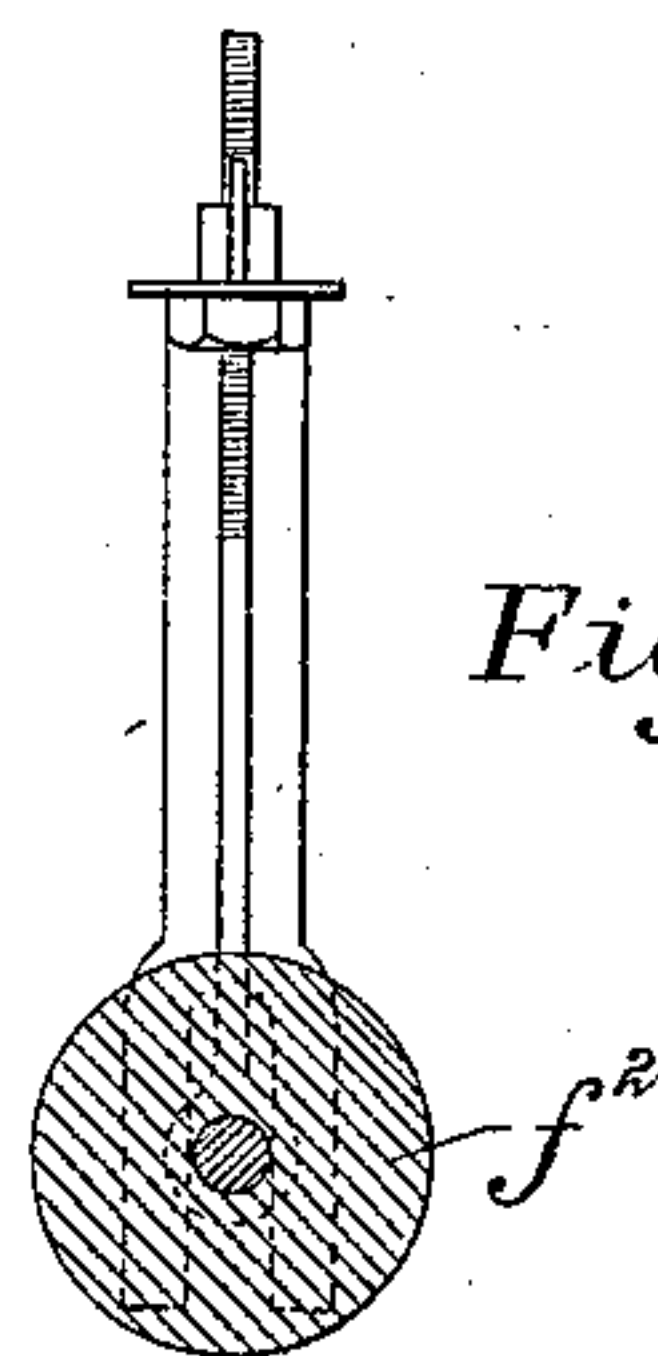


Fig. 9.

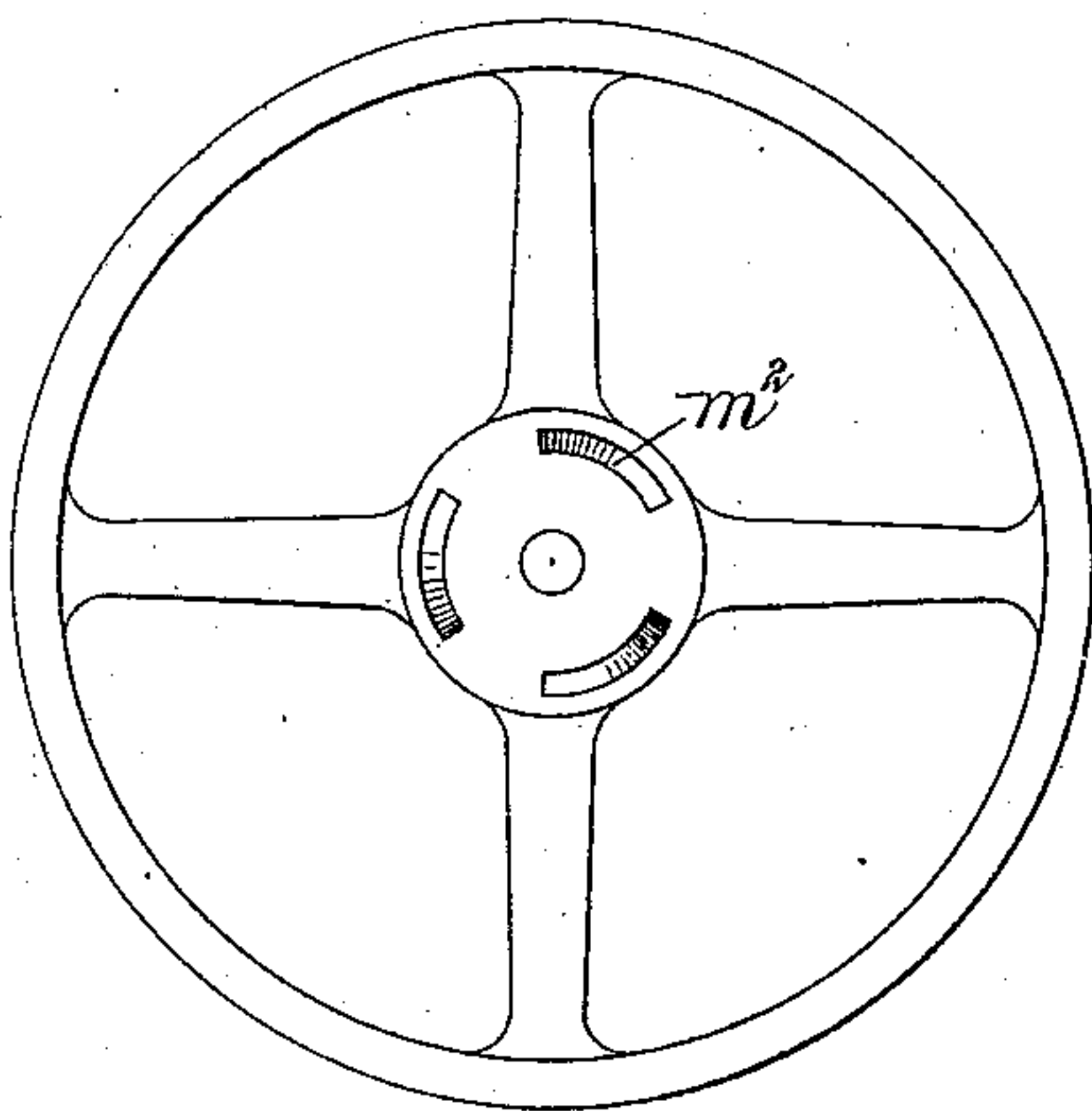


Fig. 10.

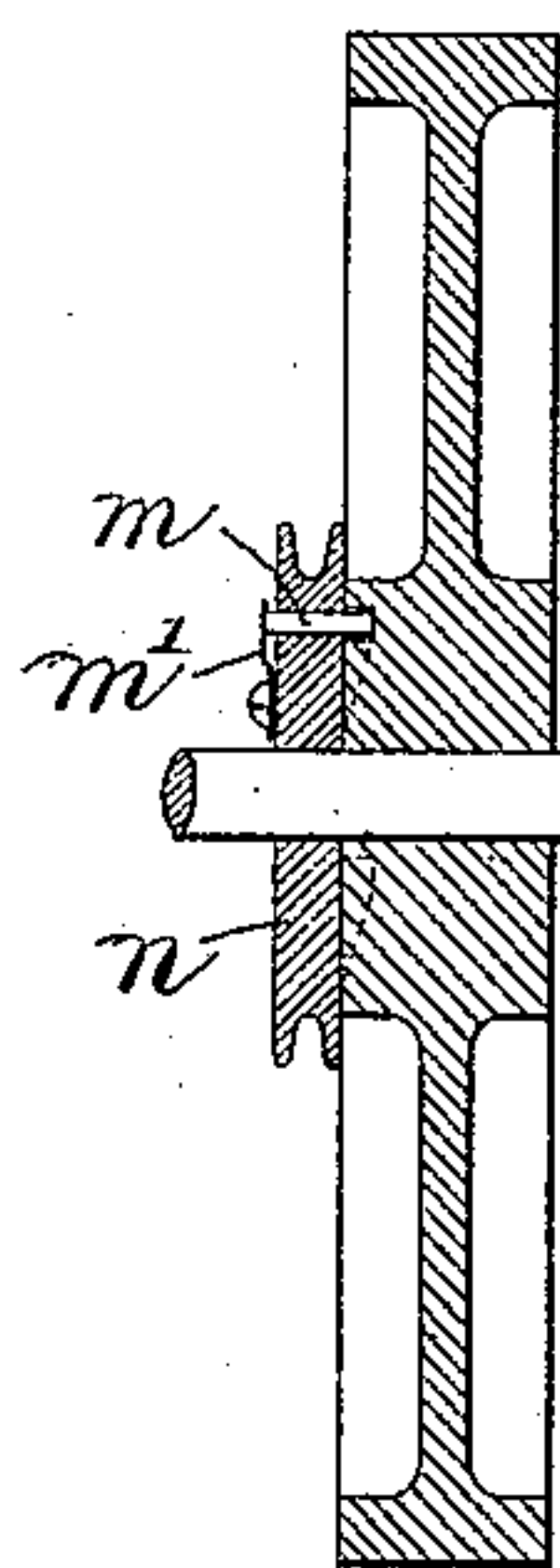


Fig. 11.

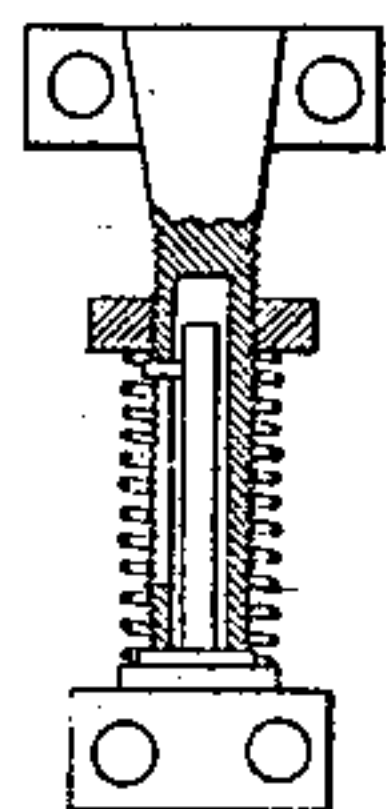


Fig. 12.



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# UNITED STATES PATENT OFFICE.

JAMES EDWIN GEE AND WILLIAM JOHN GEE, OF MIDDLESBROUGH, ENGLAND.

## MACHINE FOR WASHING, SCRUBBING, AND CLEANING FLOORS.

SPECIFICATION forming part of Letters Patent No. 557,377, dated March 31, 1896.

Application filed September 16, 1895. Serial No. 562,694. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES EDWIN GEE and WILLIAM JOHN GEE, subjects of the Queen of Great Britain and Ireland, residing at Middlesbrough, in the county of York, England, have invented certain new and useful Improvements in a Portable Machine for Washing, Scrubbing, and Cleaning Floors; and we 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.

Our invention relates to a machine for washing, scrubbing, and cleaning floors, the object in view being to construct a machine which is portable by hand-power and which carries with it the water or cleansing agent for washing the floor, the means for effectually applying the cleansing agent, and in combination with these the means to swab up and collect the slop and dirt, leaving the floor in a condition in which it can be left to dry in the usual manner.

In the construction of a machine embodying our invention a general or main frame is mounted upon wheels, the front wheels being secured to the front axle and the rear wheels fitted to the rear axle in a manner capable of gearing or interlocking with other parts, so that the rotation of the carrier-wheels in the forward direction imparts the requisite action to the several moving parts of the machine in the manner hereinafter described; but it is to be understood that in carrying out this invention we do not limit ourselves to the precise means shown in the accompanying drawings for operating the mechanism, as it will be readily seen how such mechanism can be modified and varied according to the general design of the machine, but an arrangement of mechanism constituting the several details of the machine is shown, which is to be taken as indicating what is suitable for the purposes of our invention and with which the essential features thereof can be conveniently combined.

In the accompanying drawings, Figure 1 is a side elevation of a machine embodying our invention. Fig. 2 is a plan, and Fig. 3 an end elevation. Fig. 4 represents a detail view, in

side elevation, of the two cylindrical brushes and the system supporting them; Fig. 5, a detail view of the perforated tube for supplying water to the brushes; Fig. 6, an end elevation of the same; Fig. 7, a detail view, in section, of the straining-roller; and Fig. 8, an end elevation, partly in section, of the same. Fig. 9 represents in side elevation one of the driving-wheels provided with the feather-edged slots; and Fig. 10 is a vertical section of the same, showing the position of the pins carried by the pulley. Figs. 11 and 12 represent detail views of the side guard, showing the position of the spring which holds the guard in contact with the floor.

The same letters of reference indicate the same parts in all the figures.

Beneath a tank or cistern *a*, containing the cleansing agent, such as clean water, are placed the scrubbing-brushes *b b* rotating in contact with the floor. The brushes *b b* are geared to and derive their rotation from the axle of the front carrier-wheels, preferably in the reverse direction to the advance of the machine, and are furnished with rows of bristles arranged spirally, like the blades of a lawn-mower. A suitably-regulated discharge of water from the tank or cistern *a* is supplied to the brushes and utilized by them as the cleansing agent. The lever *c*, with the hand-wheel *c'* for adjusting it, operates the system of links and levers shown in Fig. 4 as connected to the brushes *b b*. This arrangement is intended to enable the brushes to be set farther apart or nearer together, as required, and thereby adjusting the degree of pressure with which they should be applied to the floor.

*d* is a tube for discharging the water onto or in front of the brushes, and is controlled by the levers *d' d''*. A form of pipe adapted for this purpose is illustrated both in side view and end view in Figs. 5 and 6, the part *d'''* being in the form of a cock, so that by turning the tube about its axis water is turned on or off.

*d<sup>4</sup>* is a drip-brush carried in front of the machine in contact with the floor to promote an equal distribution of water in front of the scrubbing-brushes.

An endless towel or slop-cloth *e*, passing round a series of rollers *f' f<sup>2</sup> f<sup>3</sup> f<sup>4</sup>*, wipes the



floor behind the scrubbing-brushes, swabbing up and collecting the slop into another tank or cistern *g*. The rollers by which the towel or slop-cloth is operated and strained derive their rotation from the axle of the rear wheels, which is geared to the bottom roller *f'* and by an endless band with the upper roller *f*<sup>4</sup>. Roller *f'* is furnished with tufts of bristles adapted to press the slop-cloth effectually into the inequalities of the floor, and is preferably mounted on its axis in front of the axis of the rear carrier-wheels for the reason hereinafter given.

*f*<sup>2</sup> is the straining-roller, which is shown in sectional views in Figs. 7 and 8 suspended from adjustable hanger-bolts.

The slop is strained out of the cloth *e* by means of the roller *f*<sup>3</sup>, which is driven by an endless chain, or its equivalent, from the axle of the rear wheels and adjusted to its work by the set-screw and hand-wheel *h'* *h*<sup>2</sup>, so as to mangle the cloth against roller *f*<sup>3</sup>.

The system of levers *k'* *k*<sup>2</sup> are arranged to adjust the bottom roller *f'* to the floor, the radial hanger-bars *l* admitting of the requisite movement for this purpose.

The slop-cloth *e* must be both non-elastic and absorbent, such as when made up of a back or frame of hemp, jute, or the like unstretchable material, lined or covered with a surface of wool or the like absorbent material.

In combination with the above-described construction of machine, in which the wheels are made to drive all the moving parts, we provide means for enabling the machine to be readily guided or turned round or to be drawn back on the rear wheels without setting the operating machinery in motion. The device employed to attain this end is illustrated in Figs. 9 and 10, and consists of a pin *m*, forced under the constant pressure of the spring *m'* into a slot *m*<sup>2</sup>, but the slots *m*<sup>2</sup> being feather-edged—that is, taper to nothing in one direction—the pin *m* can only interlock the carrier-wheel to the pulley or chain wheel *n* in one direction, the slots slipping past the pin in the reverse direction. The pulley or chain wheel *n* is secured to the main axle, and the rear carrier-wheels are loose, so that they will only drive the operating mechanism in one direction and run free in the other direction. The machine being suitably balanced is readily tilted off the front wheels and drawn back or turned round on the rear wheels alone, which are advantageously larger in diameter than the front wheels to the extent shown in the drawings.

It may here be observed that the reason why the bottom slop-cloth roller *f'* is preferably mounted in front of the axis of the rear carrier-wheels is that when the machine is tilted to turn it round this roller is lifted clear of the floor, which prevents the slop-cloth being disarranged each time the machine is turned round.

All the wheels are furnished with rubber

soles roughened with ridges and serrations to give an increased grip on the floor.

To confine the slop within the track covered by the machine, instead of oozing onto the already-cleaned or adjacent parts of the floor, we provide what are termed “squeegees” or slop-guards *o* extending along and in contact with the floor on both sides of the machine, to which they are attached by devices constructed to apply an elastic pressure so that the soles of the squeegees may accommodate themselves to an uneven floor. A device adapted for this purpose is shown in Figs. 11 and 12, in which a piston-and-cylinder arrangement is combined with a spiral spring adjusted to the requisite pressure by a nut. The squeegees or slop-guards follow the contour of the frame of the machine in front, but are preferably curved inward at their tail ends, as shown at *o'* *o'* in Fig. 2.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a machine for washing, scrubbing and cleaning floors, the combination with a pair of cylindrical brushes rotatably mounted on shafts adapted to be adjusted vertically and horizontally by a system of levers, a tank or reservoir mounted on the frame of the said machine and carrying the water or other cleansing liquid, means for drawing the water or cleansing liquid from the said tank and supplying the same to the brushes, a second tank mounted on the framework of the said machine and affording a receptacle for dirty water, means for wiping the floor immediately passed over by the said revolving brushes and depositing the dirty water thus taken up, in a tank, the said machine mounted on four wheels and means for transmitting power from the wheels to the other moving parts, substantially as described.

2. In a machine for washing, scrubbing and cleaning floors, the combination, with a pair of cylindrical brushes rotatably mounted on shafts adapted to be adjusted vertically and horizontally by a system of levers, a tank or reservoir mounted above said brushes and carrying the clean water or other cleansing liquid, a horizontal perforated tube attached to the outlet of said tank and adapted to supply the water to the aforesaid revolving brushes, means for governing the outflow of water from the said tank, a second tank or reservoir mounted on the framework of the said machine and affording a receptacle for dirty water, an endless towel passing over a series of rollers and coming in contact with the floor immediately passed over by the aforesaid revolving brushes, means for adjusting the said endless towel to the inequalities in the floor, a straining-roller mounted on adjustable hanger-bolts and in contact with the endless towel, means for depositing the dirty water taken up by the said towel into the receptacle supplied therefor, a drip-brush mounted on the front of said machine, and a



pair of side guards adapted to be held in elastic contact with the floor and the whole mounted on four wheels and means for transmitting power from the said wheels to the  
5 other moving parts of the machine, only when the machine is carried in a forward direction, substantially as described.

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

JAMES EDWIN GEE.

WILLIAM JOHN GEE.

Witnesses:

GEORGE JAMES CLARKSON,

EDWARD THOMAS ELCOAT.