

G. W. GOODIER.
FLOOR CLEANING MACHINE.
APPLICATION FILED FEB. 28, 1900.

899,725.

Patented Sept. 29, 1908.

2 SHEETS—SHEET 1.

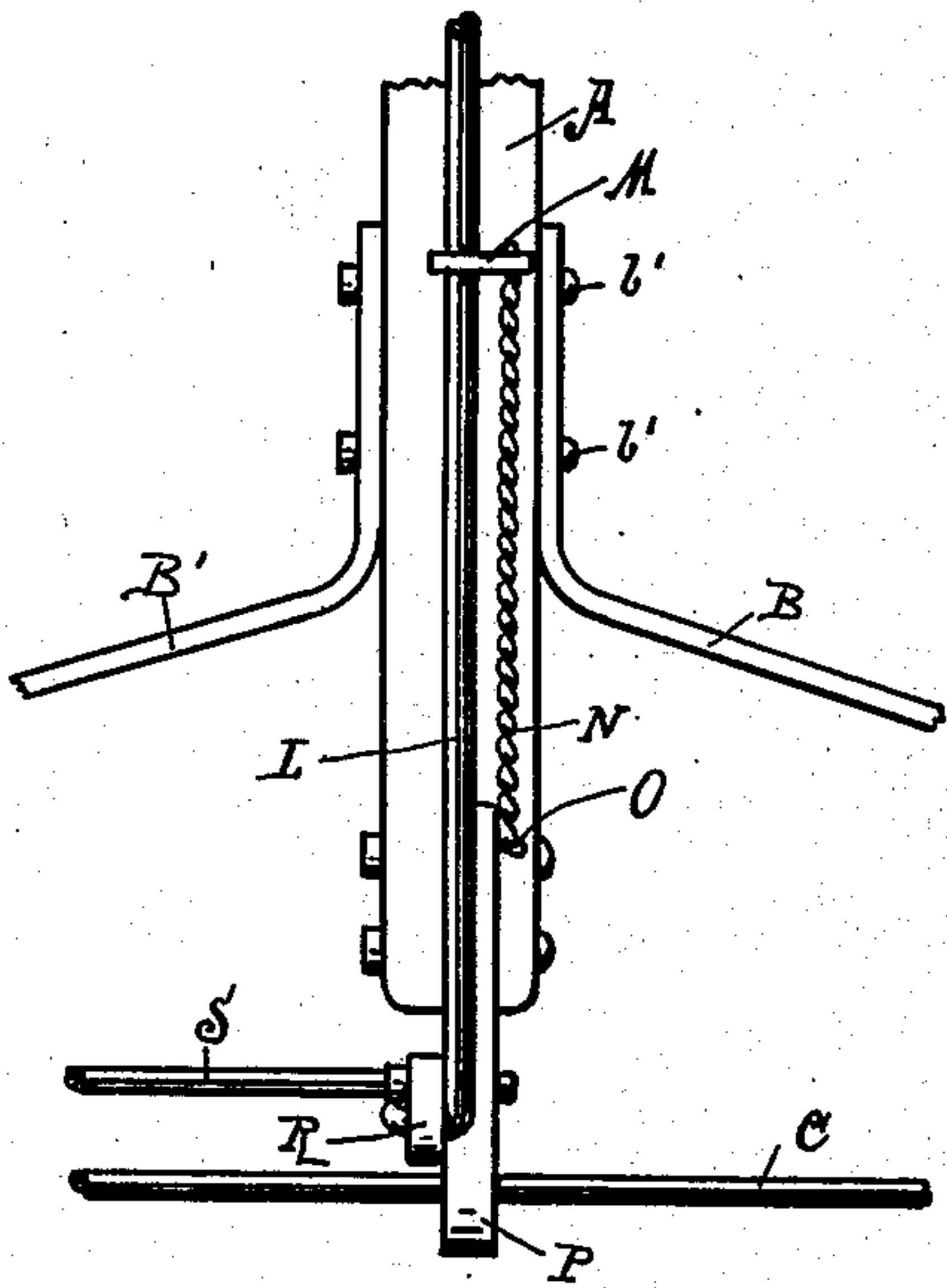


Fig. 4.

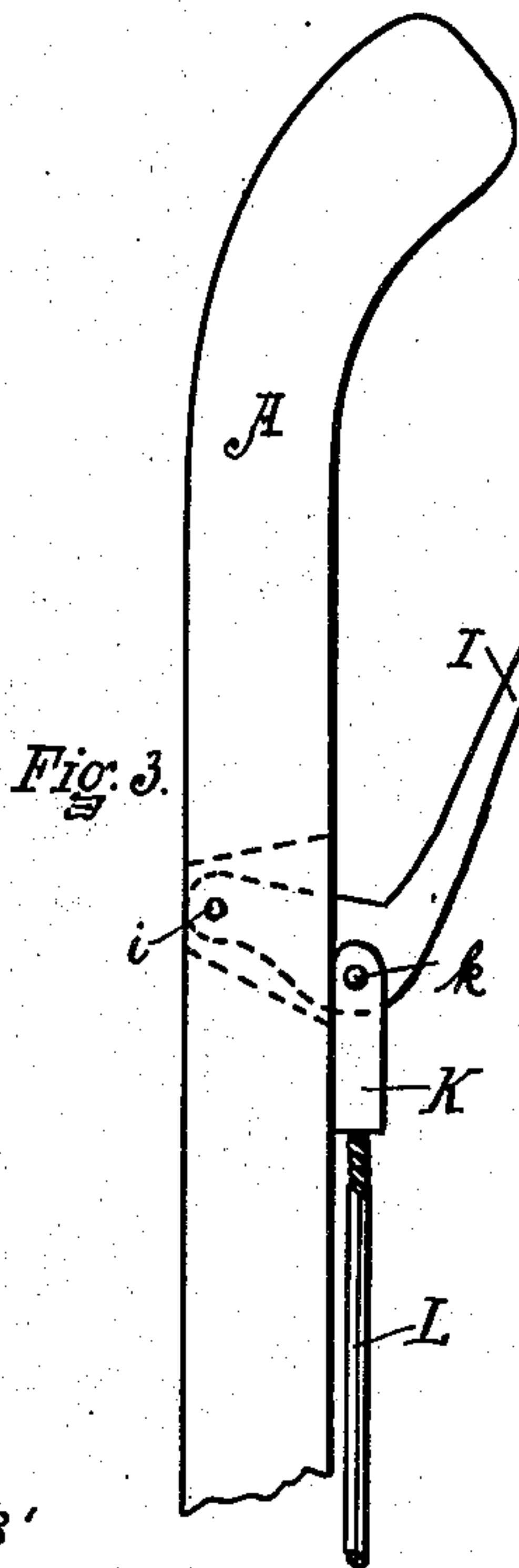


Fig. 3.

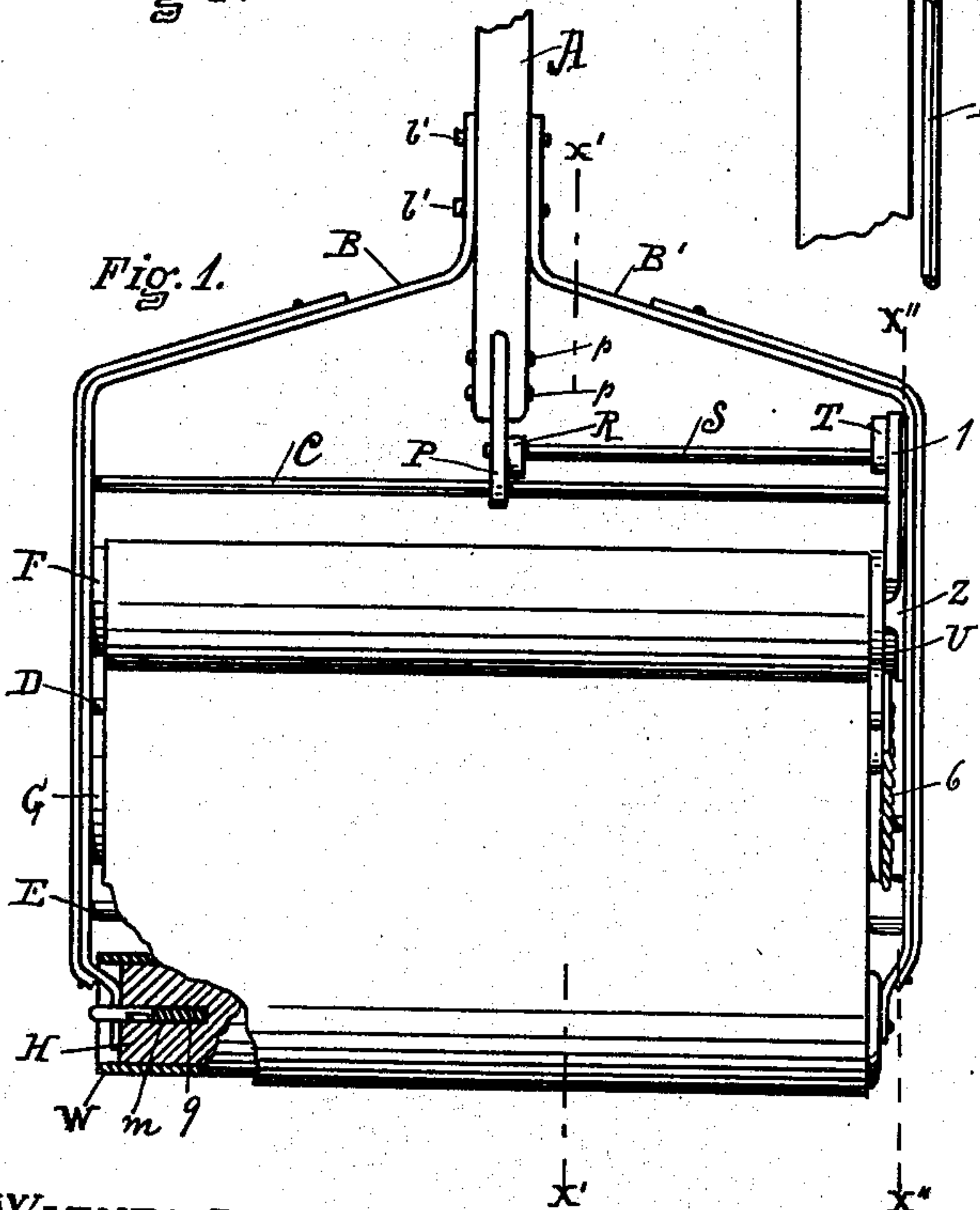


Fig. 1.

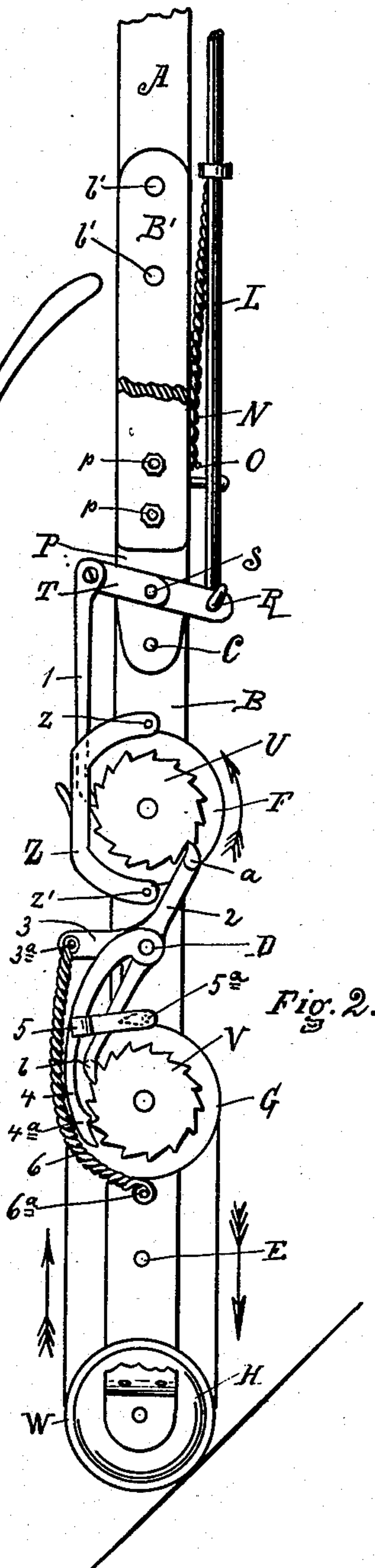


Fig. 2.

WITNESSES
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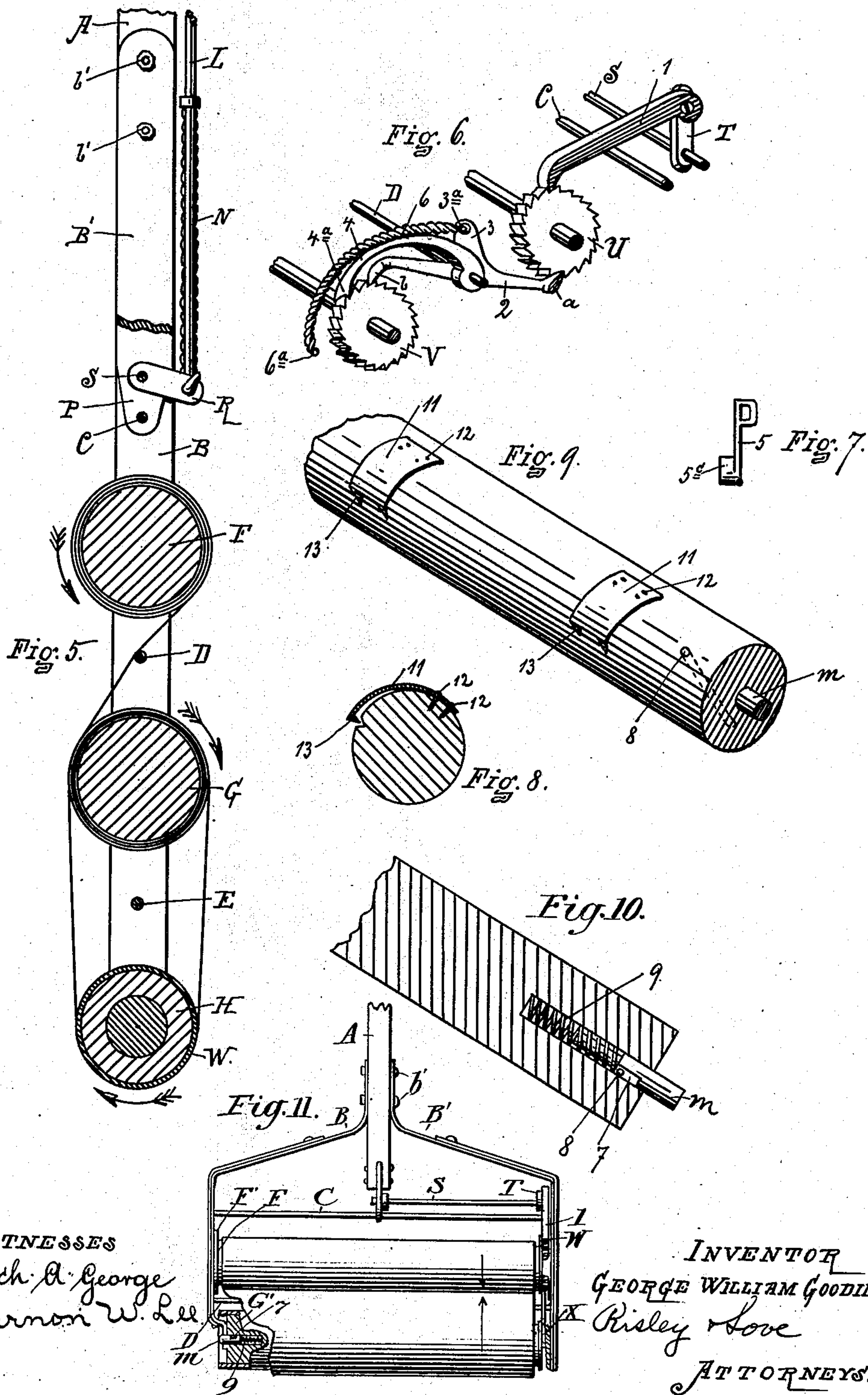
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By Ridley Howe
ATTORNEYS.

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WITNESSES

Rich. A. George
Vernon W. Lee

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UNITED STATES PATENT OFFICE.

GEORGE WILLIAM GOODIER, OF UTICA, NEW YORK, ASSIGNOR TO HYGIENIC FLOOR MACHINE COMPANY, OF UTICA, NEW YORK.

FLOOR-CLEANING MACHINE.

No. 899,725.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed February 28, 1900. Serial No. 6,808.

To all whom it may concern:

Be it known that I, GEORGE WILLIAM GOODIER, a citizen of the United States of America, and resident of Utica, Oneida county, New York, have invented certain new and useful Improvements in Floor-Cleaning Machines, of which the following is a specification.

My invention relates to an improvement in an apparatus for cleaning the surface of floors, windows &c., whereby the end may be accomplished rapidly and thoroughly and without noise or dust, and I do declare that the following is a full, clear and exact description thereof, such as to enable one skilled in the art to make and use the same, reference being had to the accompanying drawings in which like figures and letters refer to like parts throughout.

Figure 1 shows a top view of the cleaning portions of my apparatus. Fig. 2 is a side view on line $x'' x''$ of Fig. 1 with the frame B' removed. Fig. 3 is a side view of the handle showing the means by which the apparatus is operated. Fig. 4 is a bottom view of the portion of the handle where it is attached to the frame. Fig. 5 is a sectional view on the lines $x' x'$ of Fig. 1. Fig. 6 is a perspective view of a portion of the operating mechanism. Fig. 7 is a view of a particular member of the device for operating the detents. Fig. 8 is a sectional view of one of the rollers showing the means by which the cloth is attached thereto. Fig. 9 is a perspective view of the same. Fig. 10 is a longitudinal sectional view of the end of the roller showing its axle or bearing. Fig. 11 shows a modified construction.

Referring to the figures more in detail $B B'$ represents two strips of metal so shaped as to form the frame of my cleaning apparatus. They are attached to the handle A by the bolts $b' b'$ and from the sides of the handle they are bent outwardly for a suitable distance and then in the line of the length of the handle and each is terminated at a point where the front roller of the machine is supported therein by suitable bearings.

C, D and E are cross rods fixedly attached to the frame pieces so as to give stability to the structure. F, G and H represent rollers which are journaled in these frame pieces so as to turn freely on their bearings. The bearing m wherever employed, consists of a pin loosely inserted in an axial recess in the

end of the roller and is held in projection by coil spring 9. The side of the bearing or axis is cut away at 7 and the peg 8 is driven through the roller and the space 7 thereby preventing the pin from dropping out of its recess, but permitting free, longitudinal movement. The purpose of the bearing is to facilitate the removal of the rollers from the frame and one such bearing on each roller may be sufficient while the other end of the roller is secured to the frame in any manner which will answer the purpose and permit free movement.

P represents a projection of the handle, integral therewith or otherwise, and which I have represented as being a metal piece fastened into the end of the wooden handle A with the bolts $p p$. Through its outer extremity I pass the rod C , thus adding stability to the frame.

I is a lever pivoted in the handle A at i . This handle is formed with an elbow to which is connected at k a rod L which extends to the other end of the handle and is there attached to operate the mechanism as hereafter shown. In the form represented the rod L is not integral, but is attached to the lever I by a connecting piece K pivoted at k to the lever I and provided at the other end with screw threads for engaging the rod L before the connection piece is attached to the lever I . At a suitable place on the bottom of the handle A , is fastened a spiral spring N at O , the other end of which spring is attached to the dog M on the rod L and the effect of which is to hold the lever I in the position shown in Fig. 3. In the piece P is journaled one end of the rod S the other end of which is journaled in the frame on the side where the operating mechanism is to be placed. At the end of this rod which is journaled in piece P is fixedly attached an arm R , in the free end of which I have attached the end of the rod L . At the other end of the rod S is fixedly attached an arm T , which projects from the rod S opposite the arm R . At the outer extremity of the arm T is pivotally attached a pawl l . On the outer ends of the rollers F and G are fixedly attached ratchet wheels U and V respectively.

The action of the lever I when pressed to the handle A draws the rod L and the arm R to which it is attached and at the same time it thrusts forward the arm T and the pawl l , which being in engagement with the

ratchet wheel U, turns the roller F as indicated in Fig. 5 and thus actuates the connected parts. On the roller G is wound a strip of burlap or other suitable material properly prepared for cleaning purposes and from the under side of the roller G the end is brought forward and around the roller H and then backward to and under the roller F, where it is attached by suitable means, which I have represented by the clips or springs 11 which are fastened in the roller at 12 and are furnished with the teeth 13. The other end of the cloth has been likewise attached to the roller G when wound thereon. Any other suitable means for removably attaching the cloth may be employed. The cloth may be wound on the rollers in a different direction, but it is preferably wound so that when the apparatus is pushed over the surface to be cleaned, it will pass over the contact roller in the direction opposite to its frictional tendency.

The turning of roller F by the pawl *l* and ratchet U winds the cloth when arranged as I have shown on to the roller F from the roller G so that the soiled surface of the cloth is continually wound on the inside on roller F.

The third roller H is formed and mounted in the manner hereafter shown, and over it the cloth passes from the roller G before it is passed to the roller F. The roller H may be omitted in the construction without departing from the spirit and scope of my invention, as that roller while it performs a useful function in the completed machine is not essential to the operation. When that roller is not used the cleaning material may be wound on the roller G' and passed therefrom to roller F. This construction is shown in Fig. 11. In such case the front roller will be provided with the ratchet wheel connected to the operative parts and will have at its other end the particular construction indicated for roller H in Fig. 1 and roller G' in Fig. 11.

2 is an arm provided with a tooth at each end and which is pivotally mounted on the frame of the apparatus. At one end is a tooth *a* which engages with the ratchet wheel U and on the other end is a tooth, *b*, which engages with the ratchet wheel V. Integral with this arm 2 is a projecting arm 3 to which is applied tension as hereafter shown whereby the teeth *a* and *b* are held in contact with their respective ratchets. When the pawl *l* turns the ratchet U the tooth *a* is put out of engagement with its ratchet and correspondingly the tooth *b* is put out of engagement with its ratchet. The action of pawl *l* is to draw the cloth on to the roller F and this is permitted by the disengagement of the tooth *b* with its ratchet wheel which is accomplished by the passing of tooth *a* over the teeth on ratchet wheel U. When pawl *l* is drawn back the

teeth *a* and *b* reengage the teeth of their ratchet wheels and it is then impossible for the roller F to reverse on the roller G to unwind. When these teeth *a* and *b* are thus in engagement it is impossible that the cloth should pass from one roller to the other no matter in what manner or direction the apparatus is moved nor how great the friction may be, even though pawl *l* be out of engagement. If, however, when the pawl *l* is thrust forward and teeth *a* and *b* have been lifted out of close engagement with the ratchet teeth, the apparatus should be suddenly drawn backward, the roller G might release more cloth than would be taken up by the roller F. So, too, the movement given to roller G from roller F may produce the same result. To prevent this I provide detent 4, which is pivotally attached to the frame at a suitable point by the side of arm 2, the free end of which is provided with a blunt tooth 4^a which engages with the teeth on the ratchet V and retards the turning of roller G. This detent is not essential to the efficiency of the apparatus since the operation of the lever will at once take up any slack in the cloth.

6 is a spring fastened to the arm 3 at 3^a and at the other end attached to the frame at 6^a. The detent 4 and the spring 6 lie in substantially the same vertical plane and the spring passes over and rests upon the detent. The tension of the spring thus holds the teeth at *a* and *b* on the arm 2, and the tooth on the detent 4 each in its engagement.

5 is a lever pivotally attached to the side bar at the point 5^a. On its inner surface it has a lug 5^c. In Fig. 2 the teeth *b* and 4^a are shown in contact with the ratchet wheel V and in the position of lever 5 as shown in that figure, the lug 5^c is supposed and intended to come against arm 2 over which rests detent arm 4 with a slight space between the two. When lever 5 is turned to the right from the position shown in Fig. 2 the lug 5^c lifts arm 2 and presses it against detent 4 which results in raising the teeth *b* and 4^a out of engagement with the teeth of the ratchet V and also lifts tooth *a* out of engagement with ratchet U. In using the machine the action of pawl *l* raises teeth *a* and *b* and there is enough clearance room between tooth *b* and detent 4 to permit this and not lift detent 4 clear; but when it is desired to put teeth *a*, *b* and 4^a out of engagement lever 5 is to be used. When this is done and the teeth *a*, *b* and 4^a are out of engagement with their respective ratchets and when pawl *l* is raised out of engagement the cloth may be wound from one roller to the other interchangeably and by pushing in the bearing either roller and the cloth may be removed.

Z is a casing fastened to the side bar at *z z'*

in which pawl 7 operates and which prevents it from flying out of position and from slipping over the cogs when in operation. It also holds the pawl 7 closely against the ratchet when it has been thrust forward.

I do not wish to be understood as limiting myself to the employment and arrangement of the various operating parts of my apparatus nor to the use of the identical forms or combination of the same.

For the purpose of further protecting the furniture and woodwork from injury by the apparatus I construct the front roller somewhat differently from the others. The wooden portion of the roller is made shorter and the frame is bent inwardly to its bearing on the wooden portion of the roller. Around the wooden portion of the roller is a covering W of felt or other soft material of suitable thickness for the purpose and which extends beyond the end of the wooden portion of the roller where the frame is bent in. The result is that I have the cloth passing over the roller covering, which is made somewhat soft and flexible and the apparatus may be therefore crowded into the corners of the floor without doing any injury since the end of the frame has been bent in to its bearing within the end of the roller when thus completely put together.

What I claim as new and desire to secure by Letters Patent is:—

1. In a cleaning machine, a frame, rollers removably journaled therein, cloth removably attached to the rollers and passing between them, ratchet wheels on the rollers, a pawl adapted to engage one of the wheels, toothed levers engaging the ratchet wheels and adapted to limit the revolution of the rollers, means for holding the teeth in contact with the ratchet wheels and means for actuating the pawl, in combination, substantially as set forth.

2. In a cleaning machine, a frame, a handle attached thereto, rollers journaled in the frame, cleaning material wound between the rollers, a ratchet wheel on the end of one of the rollers, a pawl arranged to operate therewith, means for limiting the revolution of the rollers, and a lever attached to the handle connected with the pawl and adapted to operate the same, in combination, substantially as set forth.

3. In a cleaning machine, a handle, a frame, rollers journaled therein, a cleaning material attached at its ends to the rollers adapted to be wound from one roller to the other, ratchet wheels on the corresponding ends of the rollers, a pawl in engagement with the ratchet wheel of one roller, means for actuating the pawl by a lever provided at the handle of the apparatus, a toothed lever engaging at the ends with the teeth on the ratchet wheels, a spring adapted to hold the

teeth in contact with the rollers, and a detent adapted to retard the rollers, in combination, substantially as set forth.

4. In a cleaning machine, a frame, rollers journaled therein, cleaning material removably attached to the rollers, a handle, a lever provided on the handle in operative connection with and adapted to control the actuating mechanism of the rollers, said mechanism comprising a pawl engaging one of the rollers and connected with the handle and a pivoted arm toothed at its ends, engaging means on the rollers adapted to engage the teeth of the pawl and the arm, a spring adapted to press the teeth to their respective engagements, in combination, substantially as set forth.

5. In a cleaning machine, a handle, a frame, an actuating ratchet-bearing roller journaled therein, a pawl adapted to engage therewith, means to operate the pawl from the handle of the machine, a second roller journaled in the frame, cleaning material removably wound upon said second roller and adapted to be unwound therefrom and onto the actuating roller, and means for retarding the unwinding of the cleaning material to the speed of the actuating roller, in combination, substantially as set forth.

6. In a cleaning apparatus, a handle, a frame, rollers journaled therein, the front roller comprising a wooden core and a pliable covering extending at one end beyond the core to conceal the bearing of said roller within the end of said covering, a cleaning material removably attached to and adapted to be wound between the rollers, and means for actuating and controlling the rollers simultaneously, in combination, substantially as set forth.

7. In a cleaning apparatus, a frame, a handle, rollers journaled in the frame, cloth removably attached to the rollers and adapted to pass from one to the other, means for turning one of the rollers from the handle the other being turned by the winding of the cloth, and means for retarding the unwinding roller to correspond with the movement of the winding roller, in combination, substantially as set forth.

8. In a cleaning machine, a frame, rollers removably supported therein, a cleaning material wound interchangeably on the rollers, pawl-engaging means mounted on one of the rollers, a pawl, means for operating the pawl from the handle, a handle, and means for holding the rollers in fixed position when not actuated by the pawl, in combination, substantially as set forth.

9. In a cleaning machine, a frame, rollers journaled therein, a handle, a grip on the handle, a cleaning fabric removably attached to the rollers, members operatively connecting the rollers and the grip for winding the fabric on the rollers and means for prevent-

ing the winding of the fabric except as caused by operation of said grip, in combination, substantially as set forth.

10. In a device of the character described, 5 a plurality of rollers, one of the same being provided to carry the device upon the surface to be cleaned and being constructed with a wooden core and having a covering of pliable material extending at one end beyond the 10 wooden core, a frame supporting the said core and a cleaning material removably wound on the rollers and adapted to be wound from one roller to another, and means for actuating and controlling the rollers, 15 substantially as shown.

11. In a cleaning apparatus, a handle, a frame, rollers journaled therein, the front roller comprising a shortened wooden core and a pliable covering thereon of the same 20 length as the other roller, the adjacent end of the frame being bent inward to support

said roller by its core, a cleaning material removably attached to and adapted to be wound between the rollers, and means for actuating and controlling the rollers, in combination, substantially as set forth. 25

12. In a cleaning machine, a frame, rollers journaled therein, cleaning material removably attached to the rollers, a handle, and a lever provided on the handle at the 30 grip portion thereof, mechanism for actuating and controlling the rollers and operative connection between the same and the said lever whereby to revolve the rollers during the operation of the machine, substantially 35 as set forth.

Signed by me at Utica, New York, this 24 day of February 1900.

G. WILLIAM GOODIER.

Witnesses:

PHEBE A. TANNER,
E. M. ANTISDEL.