

No. 612,688.

Patented Oct. 18, 1898.

C. WALKDEN.
SWEEPING MACHINE.

(Application filed Nov. 11, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 3.

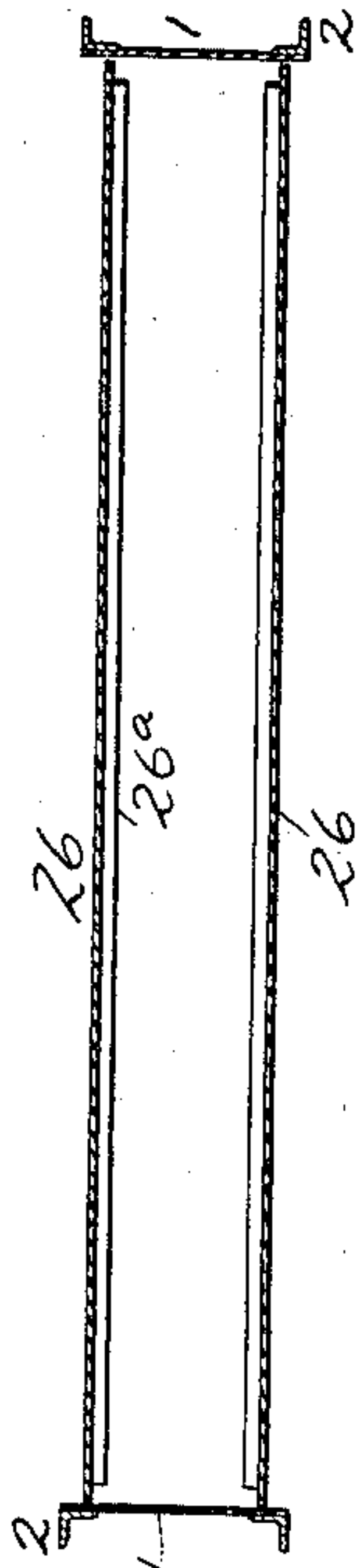


Fig. 1

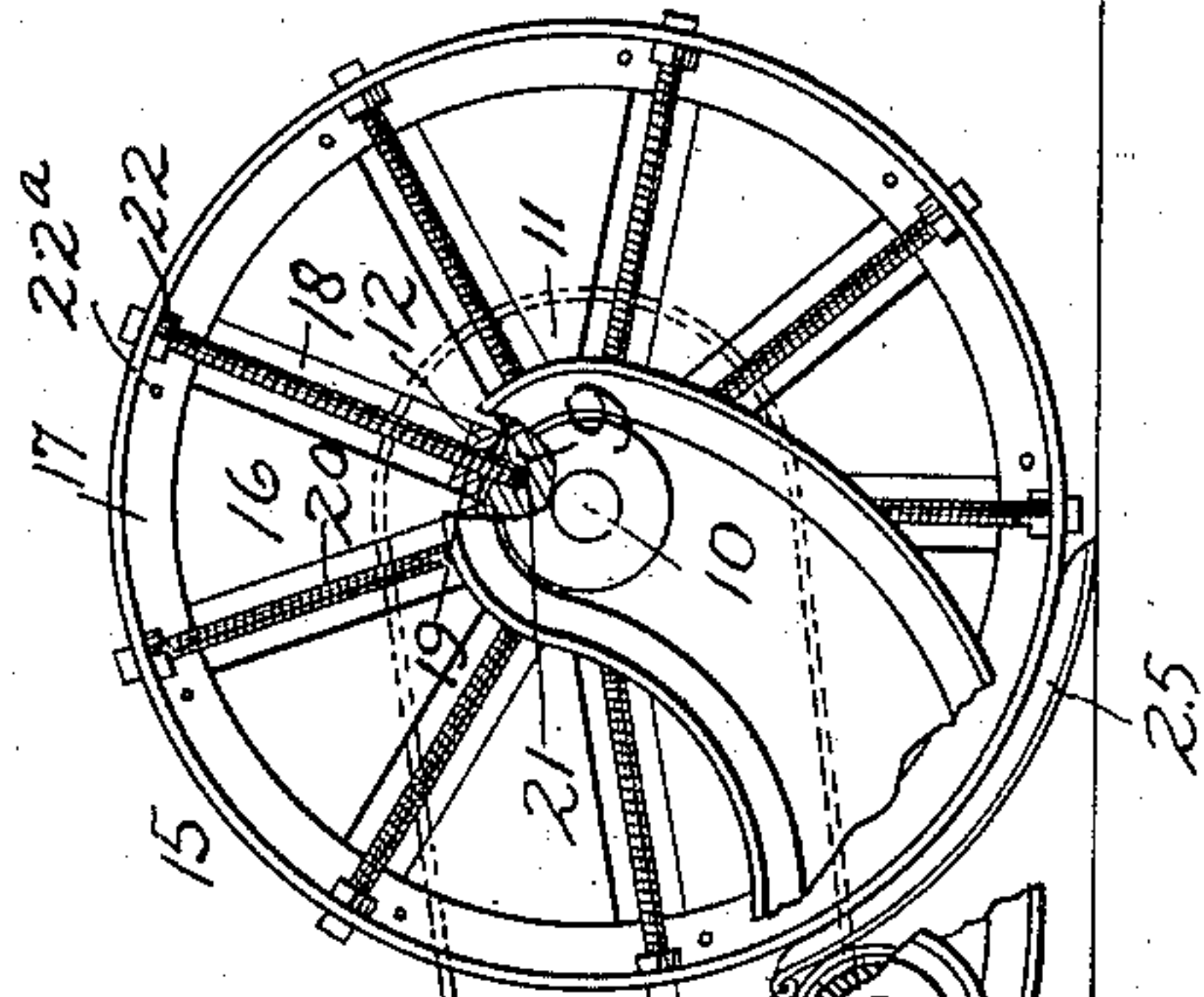


Fig. 5

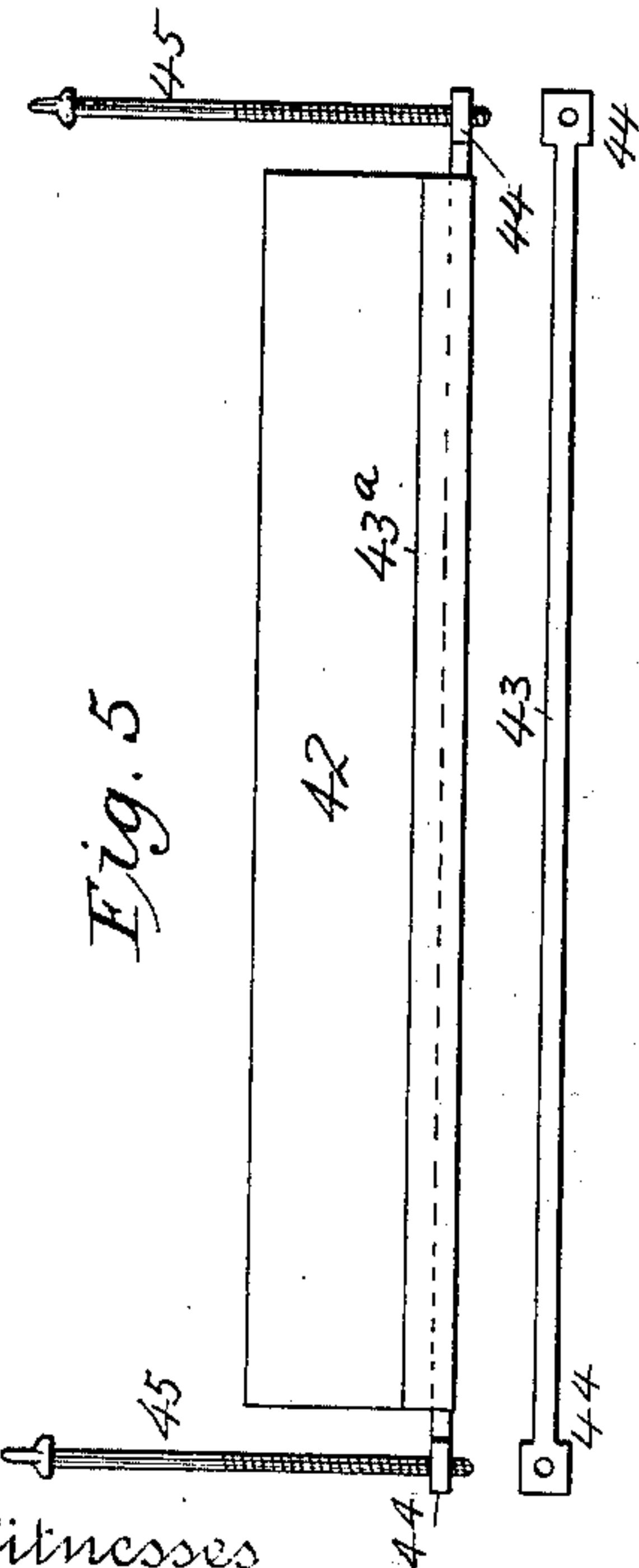


Fig. 5a

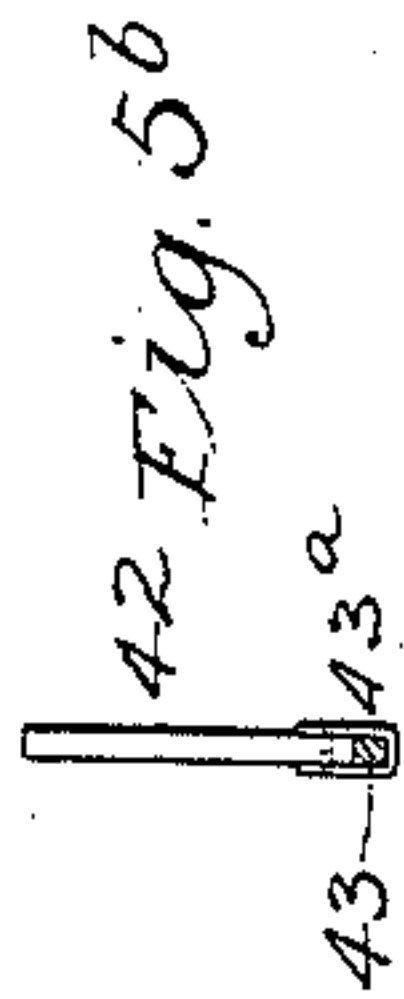
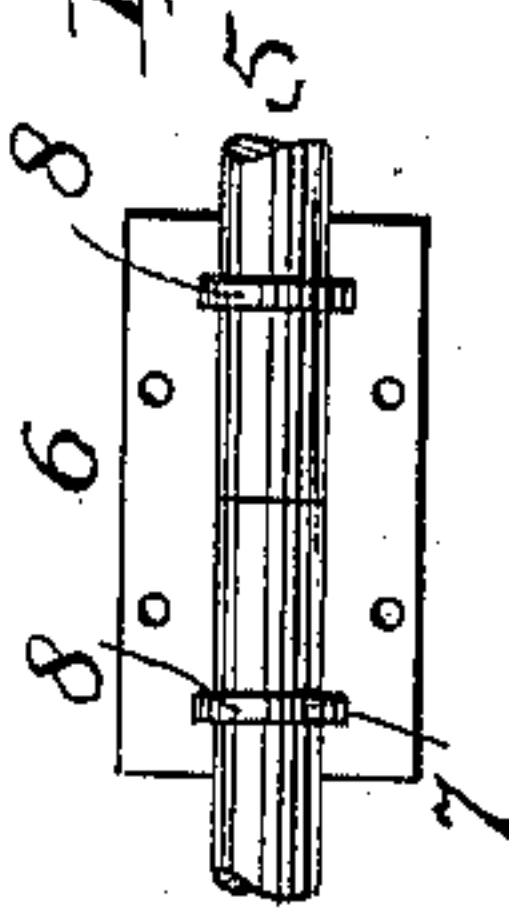


Fig. 4



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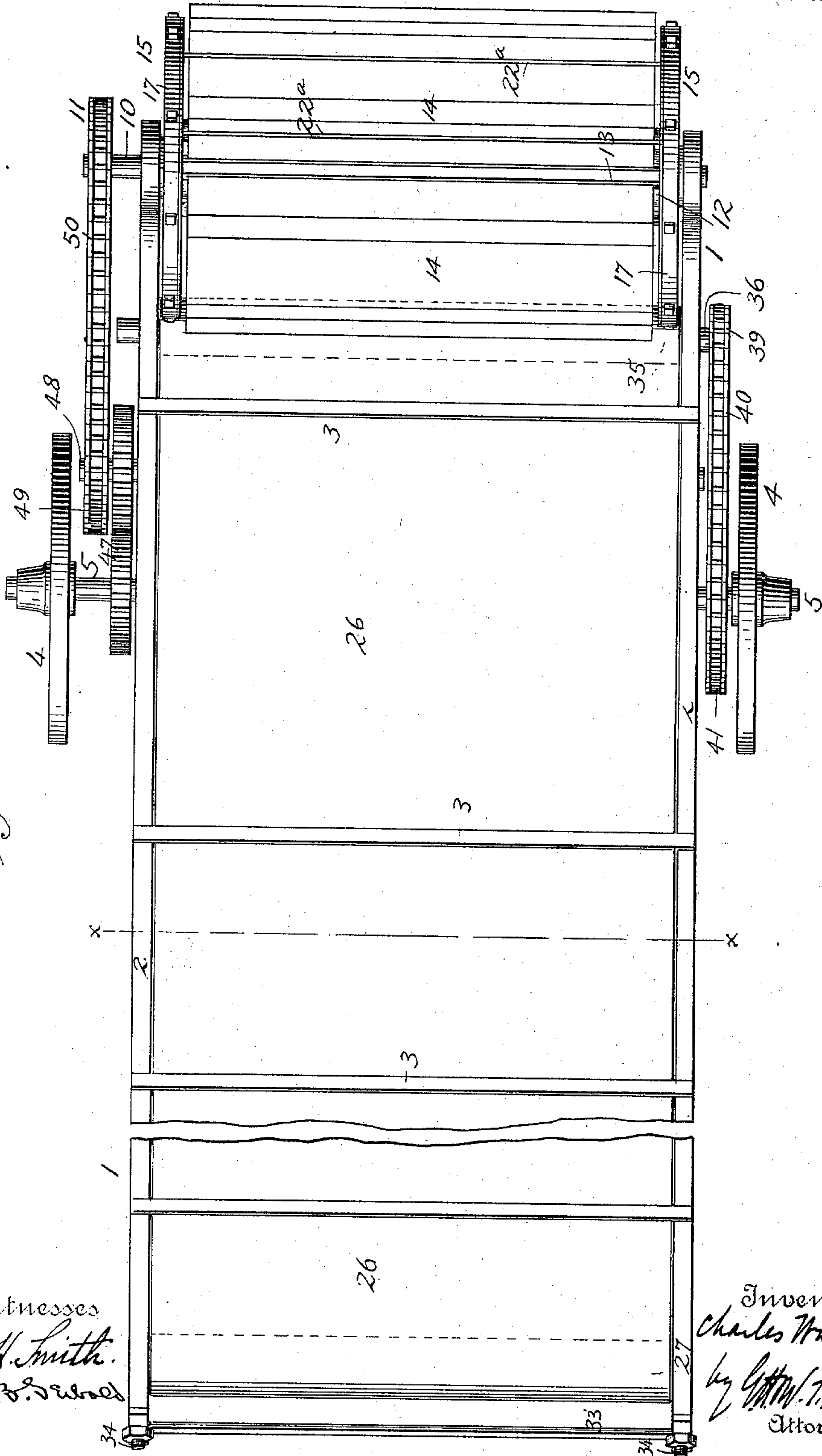
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2 Sheets—Sheet 2.

Fig. 2



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UNITED STATES PATENT OFFICE.

CHARLES WALKDEN, OF CAPE TOWN, SOUTH AFRICAN REPUBLIC.

SWEEPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 612,688, dated October 18, 1898.

Application filed November 11, 1897. Serial No. 658,151. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WALKDEN, a citizen of Cape Colony, residing in Cape Town, South African Republic, have invented certain new and useful Improvements in Mud-Scavengers, of which the following is a specification, reference being had to the accompanying drawings and to the numerals of reference marked thereon.

My invention relates to improvements in mud scavengers or machines, also known as "street or road sweeping" machines, and more particularly to that class employing a revolving broom and an endless apron onto which the dirt is thrown by the broom, the dirt being elevated by the apron and dumped in a receptacle connected to the front of the machine, which when filled may be detached so that another may be put in its place. The revolving broom is located at the rear of the machine and by means of suitable gearing is driven in a direction the reverse of that of the movement of travel of the machine. This broom is provided with adjustable brushes—that is to say, the brushes are so mounted in the frame carrying them that they can be adjusted outwardly when their wearing-faces become so worn as not to effectually perform their work and also be entirely removed from the frame when worn out. The endless apron on which the dirt is thrown by the revolving broom is mounted on rollers in the frame of the machine, one of the rollers being journaled in sliding journal-boxes provided with means for adjusting them so that the endless apron may always be kept at a proper tension to prevent its slipping on the rollers, and thereby interfering with the proper performance of its work. The frame also carries at its front end and on the under side thereof an adjustable scraper adapted to bear against the endless apron and remove therefrom any dirt or mud adhering thereto.

In the drawings, Figure 1 is a side elevation of a street-sweeping machine constructed in accordance with my invention and showing a portion of a detachable cart at the front of the machine. Fig. 2 is a top or plan view of the same. Fig. 3 is a section on the line $x x$, Fig. 1. Fig. 4 is a detail of the coupling of the main driving-axle. Fig. 4^a is a vertical section of the same. Figs. 5, 5^a, and 5^b

are details of the adjustable scraper for removing any mud or dirt adhering to the endless apron.

Referring to the drawings, in which like numerals of reference show corresponding parts in all the figures, 1 indicates the side frames of the machine, their outer edges being provided with angle-plates 2 for stiffening them, these side frames being connected by the brace-bars 3, secured to the angle-plates at the upper and lower edges of the same. The machine is mounted on wheels 4, keyed to the axle 5, journaled in the side frames 1. This axle is made in two sections, the inner ends being incased in a two-part coupling 6, provided with grooves 7 to receive an annular rib or flange 8, near the end of each of the said sections. It will be seen that by means of this construction when the machine is driven forward the coupling 6 will revolve with the axle 5; but when the machine is turning to one side or the other the section of the axle toward which the machine is turning will remain substantially stationary, while the other section will revolve in the coupling.

The side frames at their rear ends are turned upwardly, and journaled therein is an axle or broom-base 9, fixed to a shaft 10, at one end of which is located a sprocket-wheel 11 for communicating motion to the rotary broom. Arranged about the broom-base 9 is a series of brush-holders 12, provided with grooves 13, extending nearly their length, and in these grooves are secured the butt-ends of the fibers from which the brushes or brooms 14 are made. At each end the broom-base 9 carries a wheel 15, having segmental spokes 16 and an angle-iron rim 17, riveted to the outer ends of the spokes.

The brush-holders 12, the ends of which extend between the spokes of the wheel, are rectangular in cross-section and adapted to slide in the slots 18, formed by the spokes to adjust the brushes or brooms outwardly. To accomplish this, the holders 12 are provided with threaded apertures 19 at their ends, and through these apertures are passed threaded screw-bolts 20, the ends of the bolts being seated in sockets 21 in the broom-base. The outer ends of these screw-bolts pass through the angle-iron 17 and are locked in the sock-

ets in the broom-base by nuts 22, which screw up against the inner face of the rim. The rims 17 of the wheels are coupled together by rods 22^a, one being located at the rear and
 5 near the outer end of each of the brooms 14, and these rods also serve as supports for the brushes when sweeping, keeping them from bending, which, if allowed, would interfere with the thorough sweeping of the ground.

10 In front of the revolving broom and hinged to a rod 24 is a series of curved plates 25, and up these plates the dirt is swept by the revolving broom. The free ends of these plates rest upon the ground and are so arranged
 15 that should the machine meet with a stone or other obstruction only the plate coming in contact with the obstruction will rise from the ground, the other plates continuing to act with the revolving broom.

20 The endless apron 26, carrying the dirt from the revolving broom to the receptacle located at the front of the machine, is made of canvas or other material and is kept distended by the transverse parallel rods 26^a,
 25 riveted to the inner face of the same. Located at the upper ends of the side frames of the machine is a roller 27, keyed to a shaft 28, and this shaft is journaled in sliding boxes 29, the sides of which are formed with grooves
 30 30, and these boxes slide in the bifurcated ends 31 of the side frames, the grooves in the boxes receiving the tongues 32 in the bifurcations. The open ends of the frames 1 are closed by cross-bars 33, through which pass
 35 screws 34, screwing into and adapted to adjust the journal-boxes 29. The endless apron 26, passing around the roller 27, is thus kept at a proper tension, preventing its sagging and slipping on the rollers. The endless
 40 apron also passes around a roller 35, fixed to a shaft 36, journaled in the side frames 1 immediately under the rod 24, to which the plates 25 are hinged, and the upper end of the apron projects into a cart 37, detachably
 45 connected to the machine by means of a hinged bail 38 at the bottom of the machine. To keep the apron from sagging under the weight of the dirt carried by it, a roller 38^a is located in the side frames midway of the
 50 end rollers, and the upper face of the apron rides over this roller.

The shaft 36 has at one end a sprocket-wheel 39, and motion is imparted to this shaft, and consequently to the endless apron 25,
 55 through the medium of a chain 40, driven by a sprocket 41, secured to the main driving-axle 5.

In order to keep the endless apron free from dirt or mud which is likely to adhere thereto,
 60 an adjustable scraper 42 is provided near the upper end of the side frames at the under

side of the apron, the said scraper being made of vulcanized rubber or other material suitable for the purpose. This scraper, which is of a length equal to the width of the endless
 65 apron, is secured to a bar 43 by the strips 43^a, the bar 43 having a screw-eye 44 at each end thereof, and through these screw-eyes are passed turn-bolts 45, held in place by the eyes 46, located in the angle-irons at the edges of
 70 the side frames 1.

It will be seen from the foregoing that the scraper may be readily adjusted by means of the turn-bolts 45, so that it will effectually
 75 clean the endless apron should any dirt adhere thereto, the dirt falling into the cart at the front of the machine and under the scraper, and if it be desired not to use the scraper it can be moved out of contact with
 80 the apron by turning the thumb-nuts in the opposite direction.

Motion is imparted to the revolving broom through the medium of the gearing 47, driven by the axle 5, and this gearing communicates
 85 motion to the sprocket-wheel 49, keyed to a shaft 48, and the chain 50, driving the sprocket-wheel 11 at the end of the shaft 10, the gearing 47 reversing the action of the broom in opposition to the travel of the machine.
 90

I claim as my invention—

1. In a street-sweeping machine, the combination of a revolving broom, an endless apron mounted in the side frames of the machine, a scraper for cleaning the apron located
 95 at the upper end of said apron, and threaded bolts held on the side frames and screwing into the scraper-rod for adjusting the scraper, substantially as described.

2. In a street-sweeping machine, the combination of side frames having angle-irons
 100 riveted to the outer edges of the same, a revolving broom located at one end of the frames, an endless apron carried by rollers journaled in the frames, and a scraper located
 105 at one end of the endless apron and adjusted by thumb-bolts passing through eyes in the angle-irons of the side frames and into screw-eyes at the ends of the rod to which the scraper is secured, substantially as set forth.
 110

3. In a device for cleaning endless aprons, the combination of the scraper, a rod, having screw-eyes at its ends, to which the scraper is secured, and thumb-bolts passing through
 115 the eyes in the rod for adjusting the scraper to and from the apron to which it is secured, substantially as set forth.

Signed this 13th day of October, 1897.

CHARLES WALKDEN.

Witnesses:

WILLIAM SYDNEY CHARLES HARSANT,
 CHARLES FREDERICK BROWN.

It is hereby certified that the residence of the patentee in Letters Patent No. 612,688, granted October 18, 1898, upon the application of Charles Walkden, for an improvement in "Sweeping-Machines," was erroneously written and printed "Cape Town, South African Republic," whereas said residence should have been written and printed *Cape Town, Cape Colony*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 24th day of January, A. D., 1899.

[SEAL.]

WEBSTER DAVIS,
Assistant Secretary of the Interior.

Countersigned:

C. H. DUELL,
Commissioner of Patents.