

M. F. WICKERSHAM.
STREET SWEEPING MACHINE.

No. 95,177.

Patented Sept. 21, 1869.

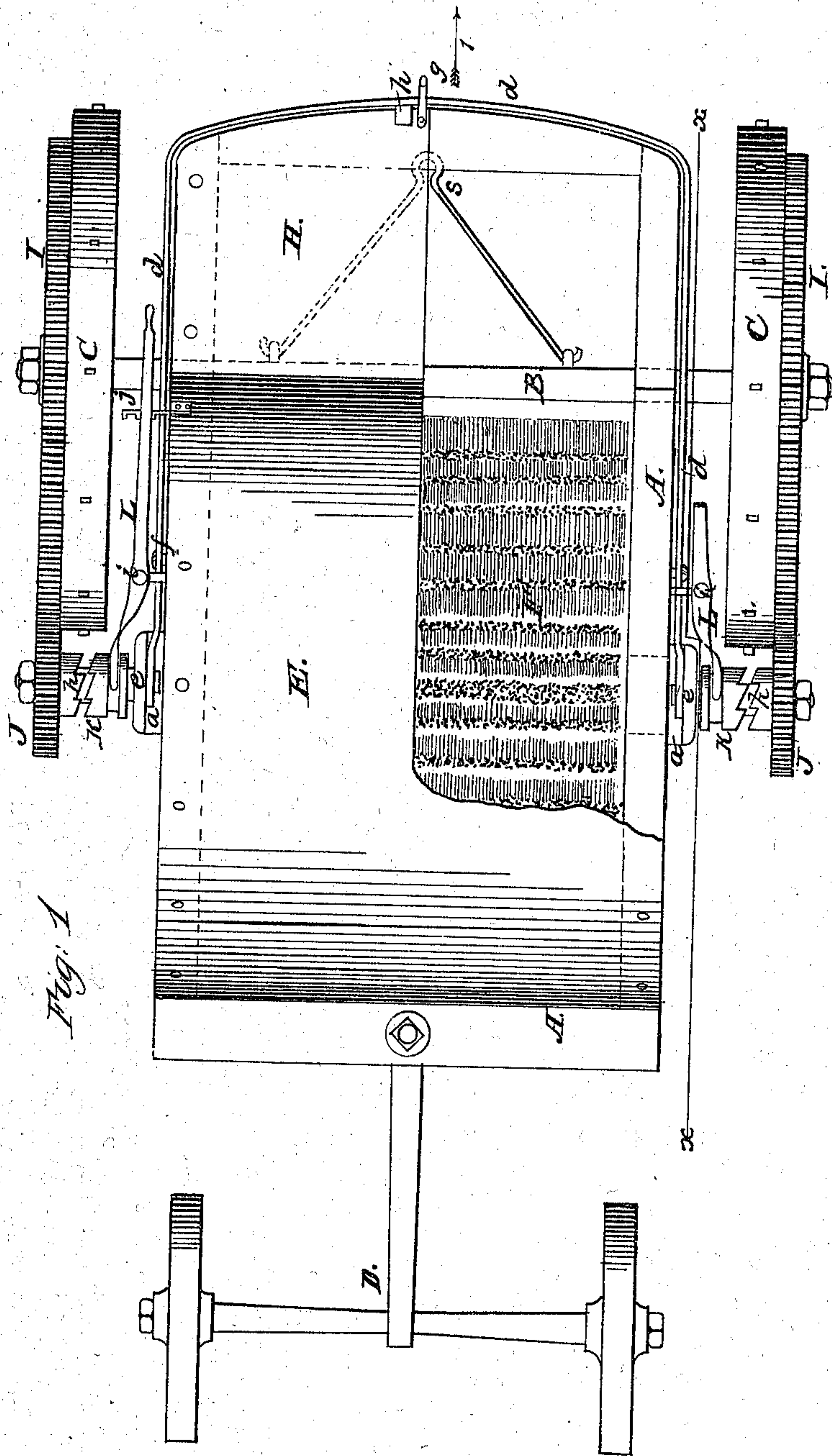


Fig. 1

Witnesses.

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Fig. 2.

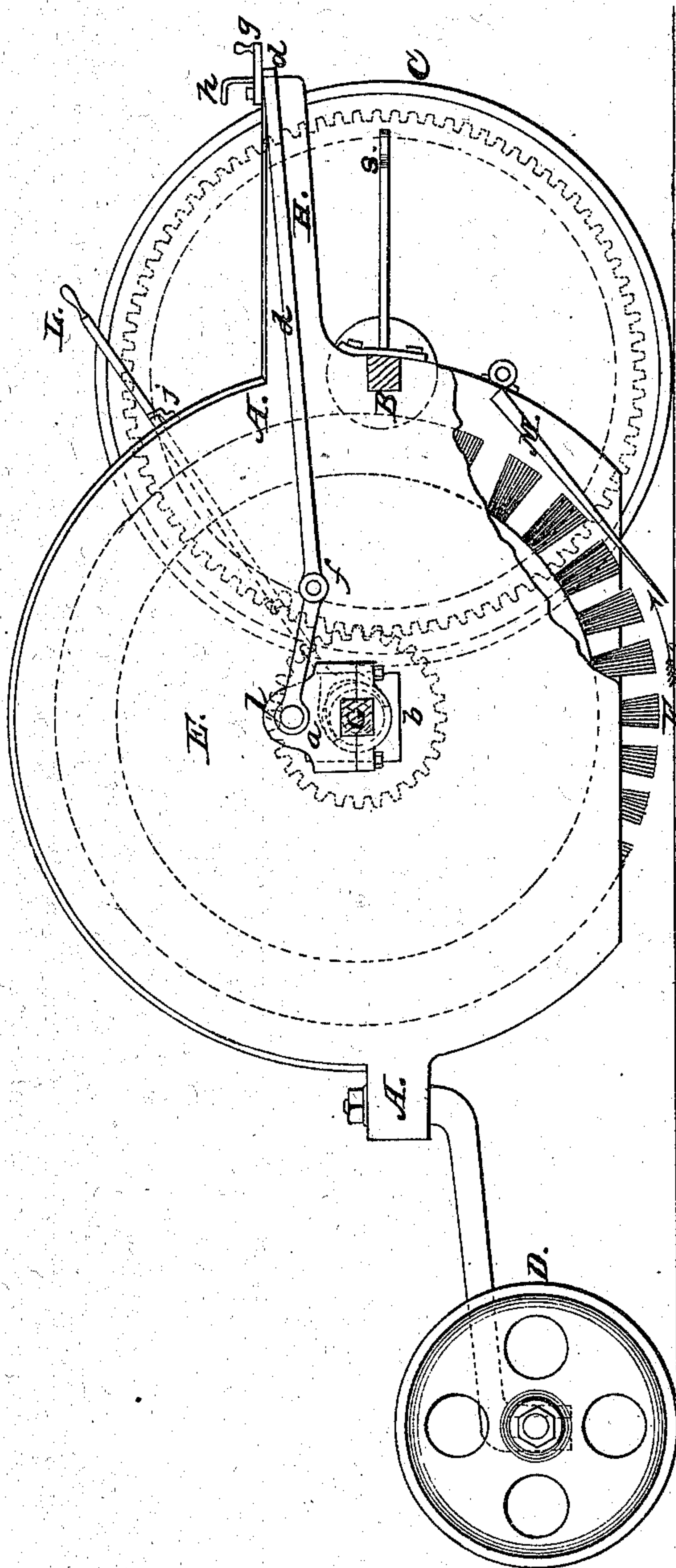
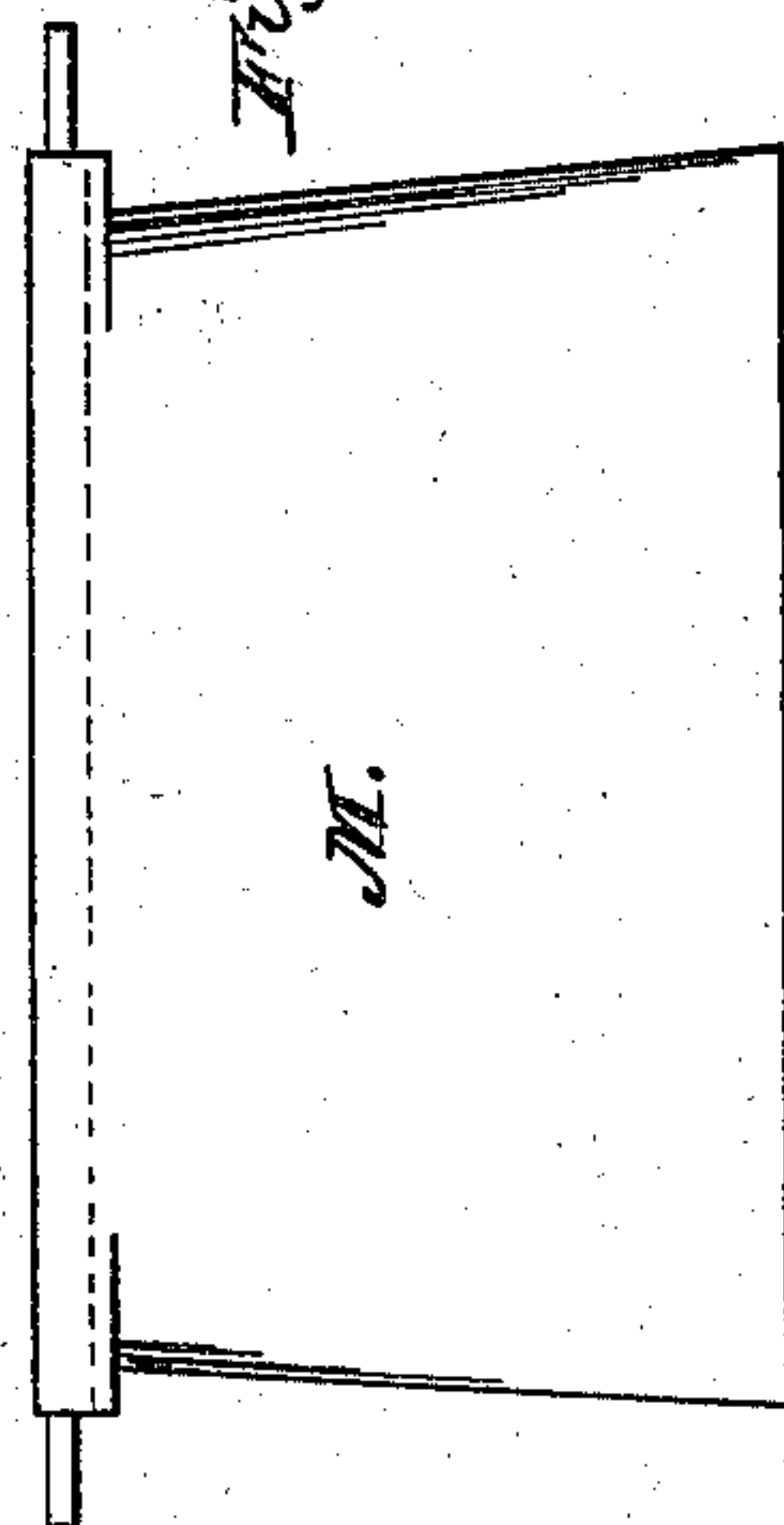


Fig. 3.



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Letters Patent No. 95,177, dated September 21, 1869.

IMPROVED STREET-SWEEPING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, M. F. WICKERSHAM, of Springfield, in the county of Sangamon, and State of Illinois, have invented new and useful Improvements in Street-Sweeping Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains, to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, Sheet I, is a plan view of my improved street-sweeping machine, part being broken away to show the cylindrical brush.

Figure 2, Sheet II, is a side elevation, partly in section, the plane of the section being indicated by the line *x x*, fig. 1.

Figure 3, Sheet II, is an inverted plan view of the pivoted apron, by which the dirt is conducted from the brush to the dumping-cart.

Similar letters of reference indicate corresponding parts in the several figures of the drawings.

This invention relates to certain improvements in the street-sweeping machine for which Letters Patent of the United States were granted to me, December 20, 1864, and numbered 45,548.

In said patent, the cylindrical brush is shown arranged transversely of the frame of the machine, and hung in a vibrating frame upon the axle of the main driving-wheels.

The dirt is thrown from the brush, in the process of sweeping, directly upward to an endless chain of buckets, by which it is conducted above the front of the machine and discharged into an ordinary cart or wagon.

The present improvement consists—

First, in arranging the brush in such a manner as to discharge the dirt directly into a dumping-cart placed at the front of the machine, without the employment of an endless chain of buckets;

Secondly, in the combination of parts by which the brush is brought in contact with the ground or pavement during the operation of sweeping, or raised above the same while the machine is being transported from place to place;

Thirdly, in the arrangement of devices for throwing the brush into and out of gear; and

Lastly, in pivoting the apron which conducts the dirt from the brush to the dumping-cart, to the front portion of the frame of the machine, in such a manner that its lower edge shall conform under all circumstances to the inequalities of the ground over which it passes.

In the accompanying drawings—

A is the frame of the machine, mounted at its forward end upon the axle B of the wheels C, and at its rear end upon the swivelled truck D.

The centre of this frame is enlarged, as shown clearly in fig. 2, forming a drum or case, E, to contain the brush.

F is the cylindrical brush, arranged transversely of the frame A, and mounted upon a central shaft, G, as shown.

This shaft has its bearings in quadrangular or rectangular boxes *a*, arranged in corresponding openings *b*, in the ends of the drum E.

d is a bail extending around the front end or platform H of the frame, and having its ends pivoted to lugs *e*, formed upon the upper edge of the boxes *a*.

The two arms of the bail form levers, having their fulcrum at *f*, upon the ends of the drum E, as clearly shown in figs. 1 and 2 of the drawings.

This bail operates as a lever to raise or lower the brush.

When the machine is not in operation, the front end of the bail is depressed by the foot of the driver, thereby raising the brush from contact with the ground or pavement. In this position it is retained by means of a button, *g*, or other suitable catch, arranged upon the front of the platform H. When, however, it is desired to operate the machine, the bail is released by turning the button, which permits the brush to fall, by its own gravity, in contact with the ground.

To facilitate the depression of the bail, I have arranged a step, *h*, upon its forward portion, to accommodate the foot of the driver.

Motion is communicated to the brush F from the wheels C, by means of toothed rims I affixed to the outer faces of the latter, meshing into gear-wheels J, arranged to turn loosely upon the reduced ends of the shaft G.

K are clutches adapted to slide freely upon the ends of the shaft G, but not to turn thereon.

They are moved to engage with the toothed hubs *h*, formed upon the inner faces of the gear-wheels, by means of forked levers L, having their fulcrum *i* in the ends of the drum, and extending forward to the platform H within reach of the driver.

By operating these levers, the clutches are moved to engage or disengage with the hubs *h*, according as it may be desired to rotate the brush or prevent its operation.

The levers are locked in position by means of racks, *j*, affixed to the sides of the frame or drum, as shown in fig. 1.

M is an apron, formed of sheet-metal, or other suitable material, having its sides slightly bent up, and pivoted, at its upper edge, to the forward portion of the frame, in front of the brush and beneath the platform H. It is arranged to extend rearward in an inclined position beneath the brush, and receives and guides the dirt from the same to a dumping-cart placed

in front of the machine, and attached, by any suitable means, to the bent rod or draw-bar *s*.

The cart which I propose to use for this purpose forms the subject of a separate application for Letters Patent, bearing even date herewith.

By pivoting or hinging the apron to the frame, its lower edge will pass lightly over the surface of the ground, conforming to the inequalities of the same, and will therefore under all circumstances form a perfect guide for the dirt in its passage to the cart.

If desired, the axle *B* of the driving-wheels may be bent upward in the arc of a circle, between the side-pieces of the frame *A*, in order to present less obstruction to the passage of the dirt over the upper edge of the apron to the dumping-cart.

The operation is as follows:

As the machine is drawn along in the direction of the arrow 1, the brush is rotated, through the medium of the gearing previously described, in the direction indicated by arrow 2, forcing the dirt, small sticks, stones, and other rubbish, up the inclined apron *M* into the dumping-cart.

By my improved machine, the paved streets of cities and towns can be kept clean and free from dust and dirt at a comparatively trifling expense.

It is simple and cheap in construction, easily operated, and supplies a want long felt in cleaning the streets of cities.

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

1. The adjustable brush *F*, arranged as described, to discharge the dirt, in the process of sweeping, beneath the front platform *H*, directly into a separate dumping-cart without the employment of an endless chain of buckets, substantially as herein shown and described, for the purpose specified.

2. In combination with the brush *F*, the lever-bail *d*, arranged as described, whereby the brush is brought in contact with the ground or raised above the same, substantially as herein shown and described, for the purpose specified.

3. The arrangement of the pivoted lever *L* and clutch *K*, with relation to the shaft of the brush, the racks *j* and the loose gear-wheel *J*, as herein described, for the purpose specified.

4. The loose pivoted curved apron *M*, in combination with the frame *A*, drum *E*, and brush *B*, arranged to operate in connection with a detachable cart, substantially as herein shown and described, for the purpose specified.

5. The frame *A*, constructed as described, with the front platform *H* and central transverse drum *E*, and mounted upon the axle *B* and swivelled truck *D*, as herein set forth, for the purpose specified.

The above specification signed by me, this 22d day of July, 1869.

M. F. WICKERSHAM.

Witnesses:

JOHN A. SILENCE,
A. BERNSTEIN.