

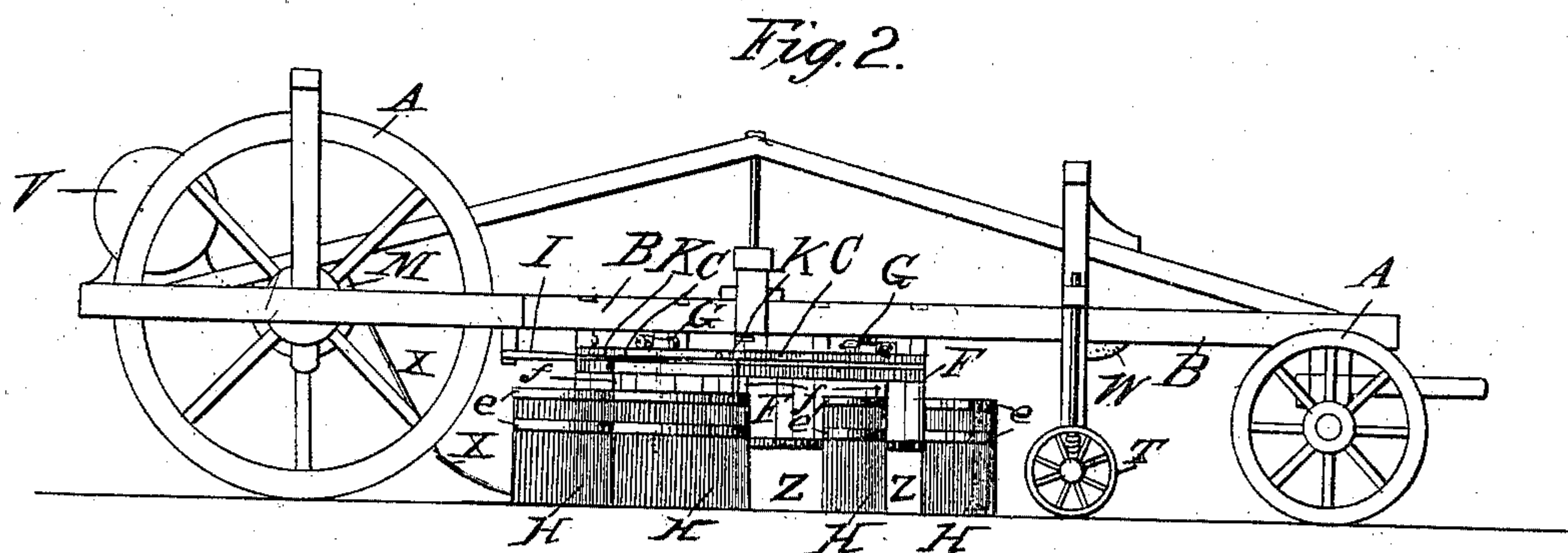
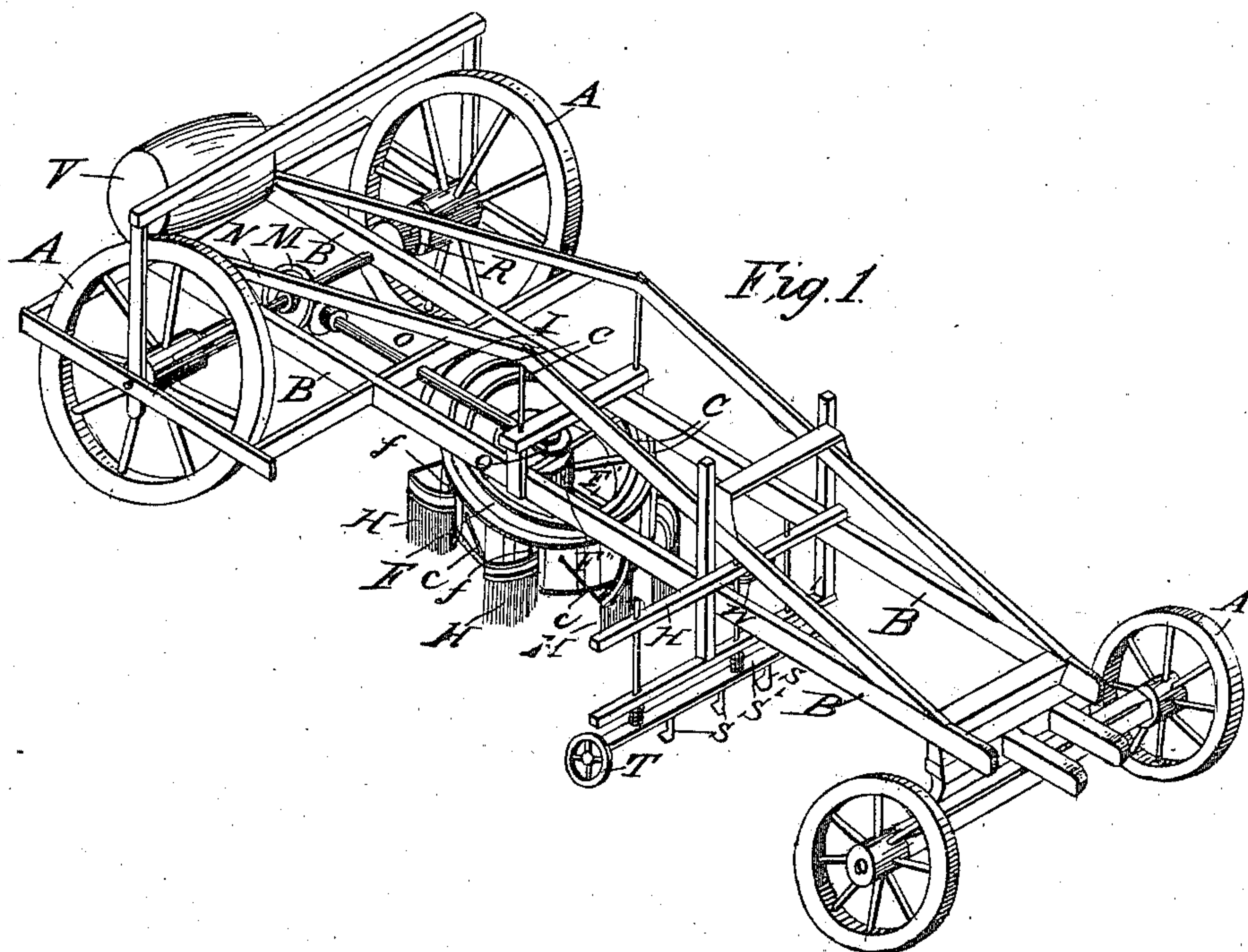
A. M. WILSON.

2 Sheets—Sheet 1.

Street Sweeper.

No. 3,797.

Patented Oct. 16, 1844.



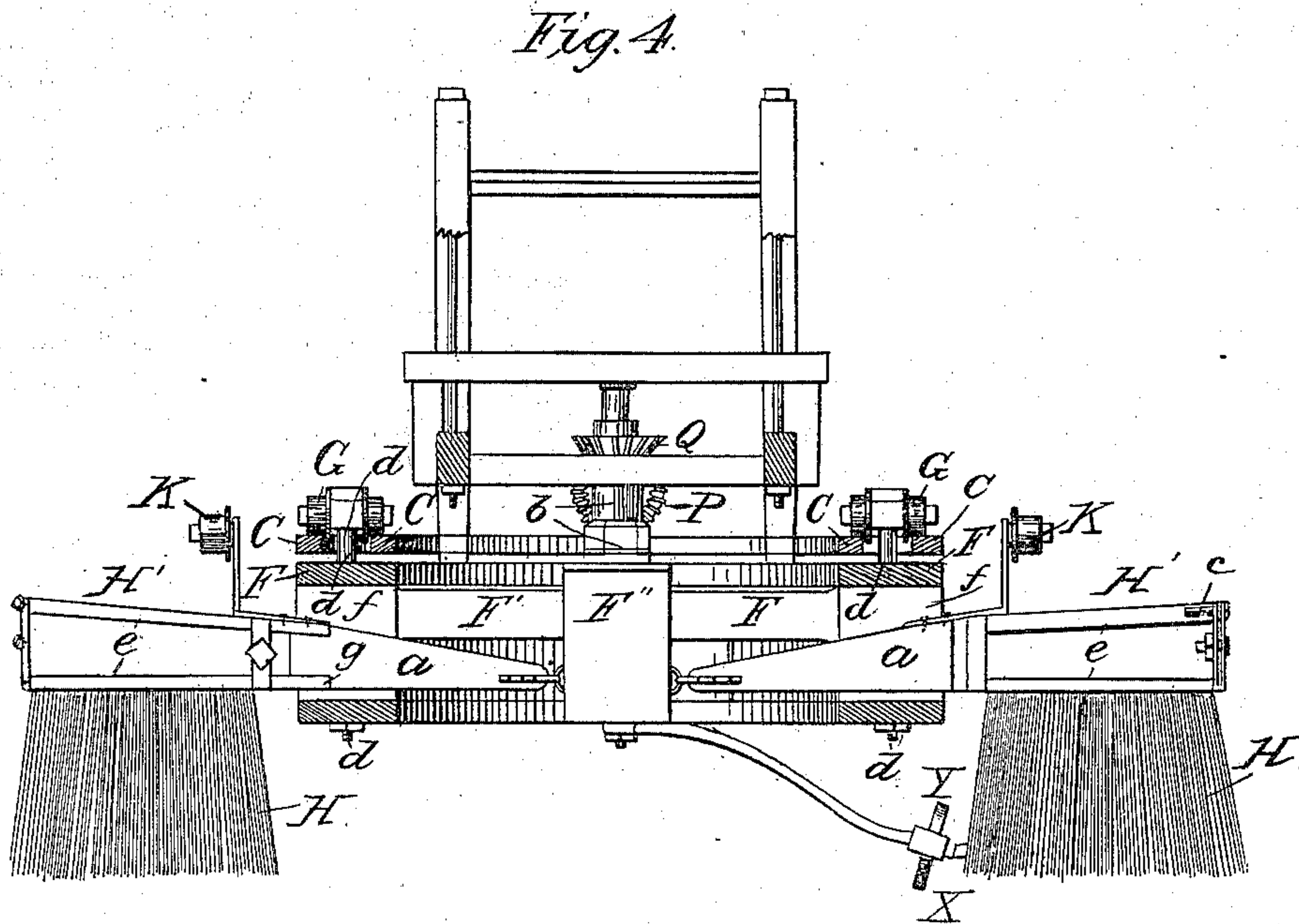
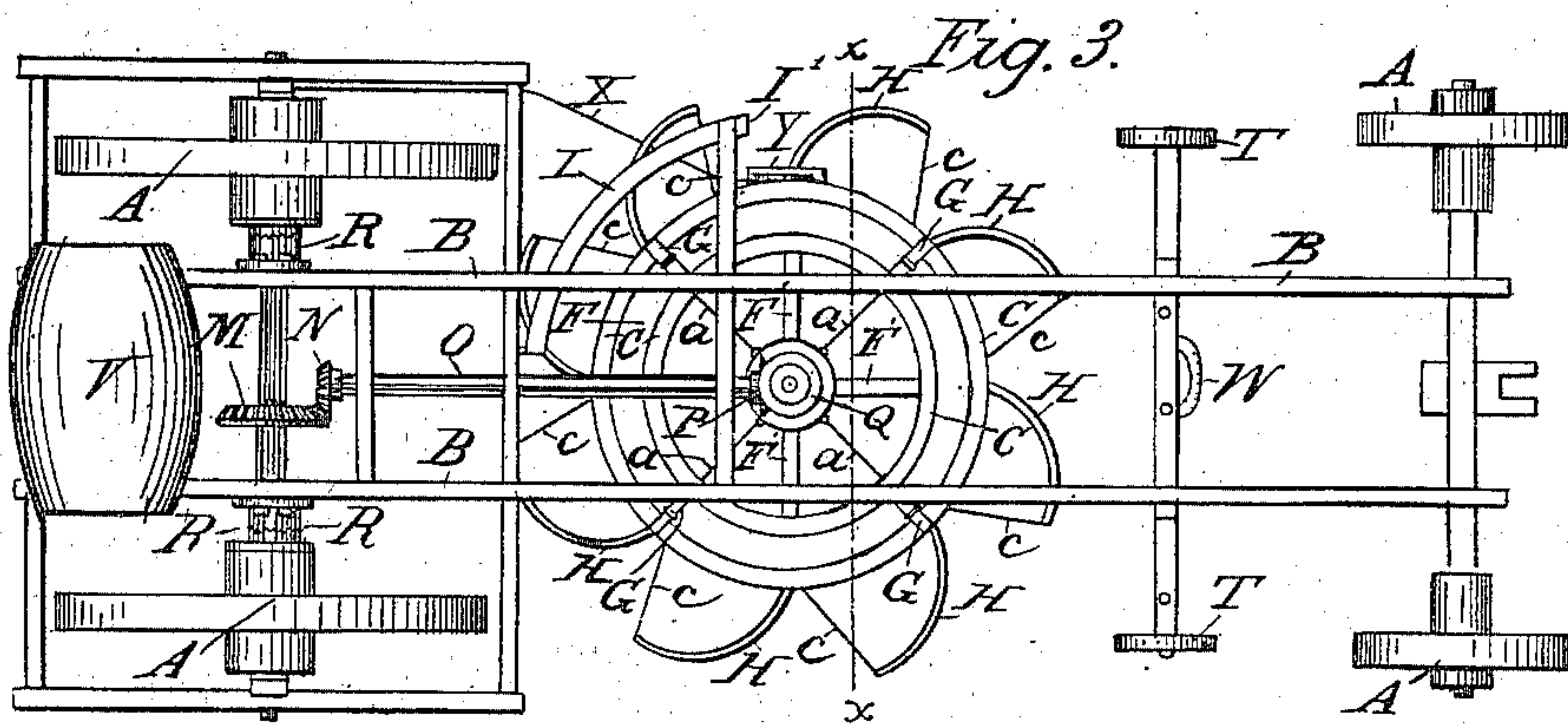
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Street Sweeper.

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UNITED STATES PATENT OFFICE.

ALEXANDER M. WILSON, OF ROSSVILLE, NEW YORK.

IMPROVEMENT IN MACHINES FOR SWEEPING STREETS.

Specification forming part of Letters Patent No. 3,797, dated October 16, 1844.

To all whom it may concern:

Be it known that I, ALEXANDER M. WILSON, of Rossville, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Machines for Sweeping Streets; and I do hereby declare that the following is a full and exact description thereof.

My machine is sustained upon a four-wheeled carriage firmly framed together for sustaining a series of revolving brushes and the apparatus therewith connected. About the center of the carriage there is a hollow wheel or drum, that is made to revolve horizontally by means of bevel-gearing connected with the axle of the hind wheels. From the periphery of this drum there projects a series of brooms, usually eight in number, by which the sweeping is to be effected. The handle parts of these brooms pass through slots in the periphery of the drum and are suspended on joint-pins at their inner ends, thus allowing them to play up and down, it being necessary that said brooms should be raised from the ground at a certain point in every revolution to cause them to leave the dirt in a regular row, which they have swept together, and this they are made to do by the action of a segment of a circle, one end of which is depressed, so as to form an inclined plane, which receives a friction-roller attached to the upper side of each of the brooms. The stock or head of each of the brooms is curved, forming about a quadrant of a circle, and the motion of the drum is toward the convex sides of said brooms. The twigs or fibers by which the sweeping is effected, which descend vertically from the stocks, tend to carry the sweepings, therefore, from the center toward the circumference of the circle formed by the sweeping apparatus. The brooms are lifted successively when they arrive at the inclined plane, and are kept up, say, for one-fourth or less of their revolution, and are thereby made to deposit the sweepings in a right line.

The revolving drum has above it near its periphery two circular rings, which are sustained by the carriage-frame, there being a space between them through which four or any other desired number of bolts pass that are made fast to the drum and have attached to their upper ends the axles of friction-roll-

ers, which rollers are sustained and run upon the circular rings as upon a railway.

In the accompanying drawings, Figure 1 is a perspective view of my machine; Fig. 2, a side elevation, and Fig. 3 a top view thereof.

A A are the two hind, and A' A' the two fore, wheels.

B B are two line-timbers constituting the frame, and which may be about twenty feet long.

C C are the two circular rings, which are attached by bolts to the under sides of the timbers B B in such manner as to leave their upper surfaces free for pairs of friction-rollers G G, constituting friction-trucks.

F F is the hollow drum or wheel, which is attached to a center hub F'' by arms F' F'.

This drum I have made five-feet six inches in diameter, fifteen inches deep, and eight inches wide on the rim.

Fig. 4 is a vertical cross-section of the machine in the line *x x* of Fig. 3, but drawn on a larger scale and showing the manner in which the friction-rollers or trucks G are connected to the drum and roll upon the ways C C by bolts *d d*, attaching to the drum F.

H H are the brooms, and *a a* their handles. The head H', which is curved, embraces the upper ends of the twigs or other material used for sweeping, between bands of iron *e e*. The handle part *a* may be made of wood, and occupies the slots *f f* in the periphery of the drum F. *c c* are jointed brace-rods, which stay the brooms and rise and fall with them. The head H', I have made three feet and the handle *a* two feet six inches in length, the whole diameter of the sweep being ten feet.

I I, Figs. 1, 2, and 3, is a circular segment of iron concentric with C C, and depressed at its end I', so as to constitute an inclined plane. To the upper edge of each of the heads of the brooms there is attached a friction-roller K, which encounters and ascends the inclined plane I' and runs on the segment-piece I I, so as to raise the broom about four inches from the ground during its continuance thereon. On arriving at its end the broom again bears on the ground.

The drum F is made to revolve by the revolution of the shaft by the hind wheels A A, said wheels being connected to the axle through the intermedium of ratchets R R.

borne up by spiral springs, thus allowing the carriage to back and turn freely in the same manner as in the machine for cutting grass and grain for which I formerly obtained Letters Patent.

M is a bevel-wheel on the shaft of A A, gearing into a wheel N on the line-shaft O, at the opposite end of which there is a second bevel-gearing P Q, (seen most distinctly in Fig. 4,) which gives motion to the hub F'' of the drum or wheel F. The upper part of the hub is formed into a sliding clutch, as shown, also, at 66, Fig. 4. This admits of that degree of vertical play to the drum which is necessary to keep it from cramping and enabling the friction-rollers to bear on the circular ways C C. It will be found advantageous to allow the lower ends of the brooms to pass over a bar or rod, which shall bend the fibers and cause them to throw off any dirt which might otherwise accumulate upon them.

XX may represent such a rod, which may be made fast to the carriage at its upper end and be supported by a wheel Y, running on the ground at its lower end, the rod being placed in such a position as that the fibers shall pass over it as the brooms are lifted from the ground.

As there are frequently small heaps of hardened dirt that the brooms alone would be unable to remove, I place a row of hooked teeth or cutters S S, Fig. 1, on a cross-bar S' S', which is allowed to play up and down and is pressed on by spiral springs to regulate its action. The bar carrying these teeth or cutters runs upon wheels T T, and stands immediately in front of the revolving brooms and within an inch or two of the ground to which they accommodate themselves by the motion of the cross-bar. I intend, also, when it may

be found necessary, to produce an action more powerful than that of the brooms by setting into the same or similar heads with the brooms strong wire teeth, as shown by the straight lines Z Z, Fig. 2, which will serve to scratch up the tough mud and dirt which might otherwise resist the action of the brooms. These wire scratchers must be raised by the segment-rail, so as to pass above the rod X X.

In dusty weather a water-tank may be attached to the carriage, as represented by the vessel V, and from this water may be conveyed through a hose, as in the common watering-carts, to a distributing-trunk, as at W, in front of the revolving brushes.

In using this machine a width of about ten feet will be swept by its once passing along, and in repassing it will sweep ten feet more, leaving the dirt in regular rows to be removed by carts in the ordinary way.

Having thus fully described the nature of my improvements on the machine for sweeping streets, what I claim therein as new, and desire to secure by Letters Patent, is—

The manner in which I have formed and arranged the brooms and combined them with the other parts of the apparatus, their stocks or heads being curved in the manner set forth, and the system of brooms being made to revolve horizontally and to deposit the dirt in regular rows by raising them in a part of their circuit, as described, the general arrangement and operation of the respective parts of the machine being substantially the same with that herein fully made known.

ALEX. M. WILSON.

Witnesses:

THOS. P. JONES,
WM. BISHOP.