(No Model.)

5 Sheets—Sheet 1.

J. R. GALLAGHER.

STREET SWEEPER.

No. 505,455. Patented Sept. 26, 1893.

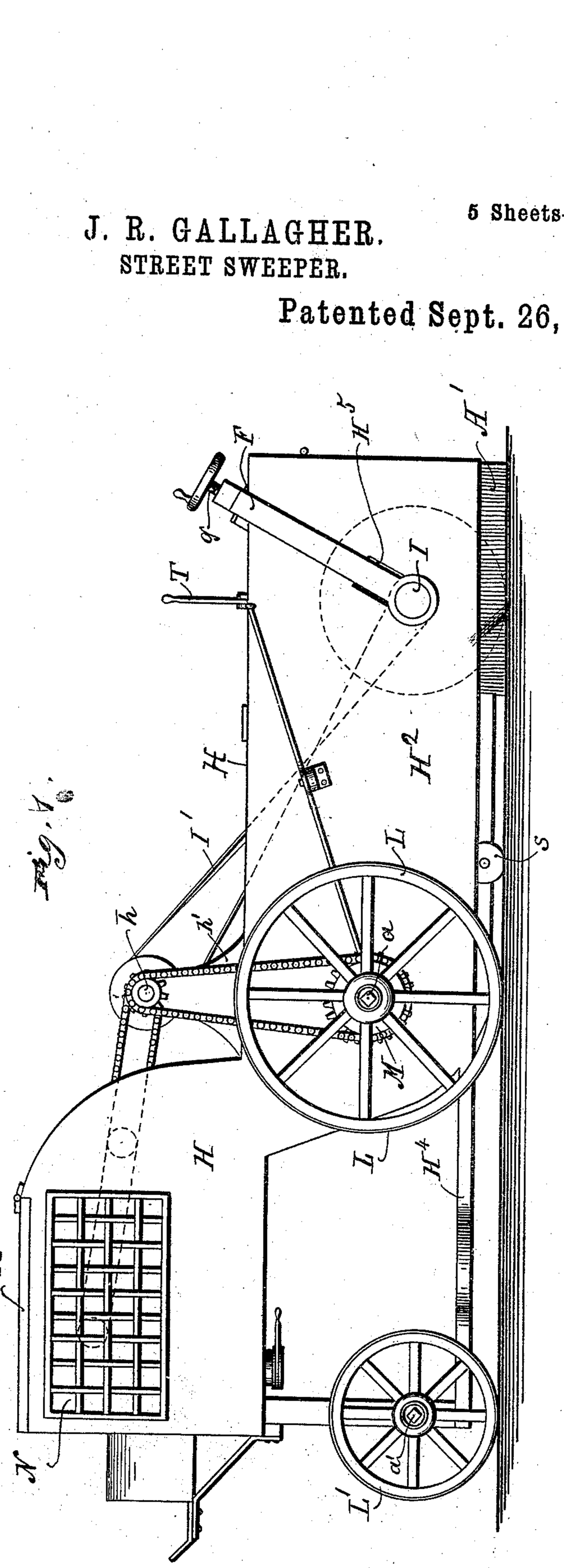

Fig. 1.

Witnesses:

Philip J. Ryan

William H. Noah.

Inventor:

James R. Gallagher

per Charles Raetig

his Attorney.

(No Model.)

5 Sheets—Sheet 2.

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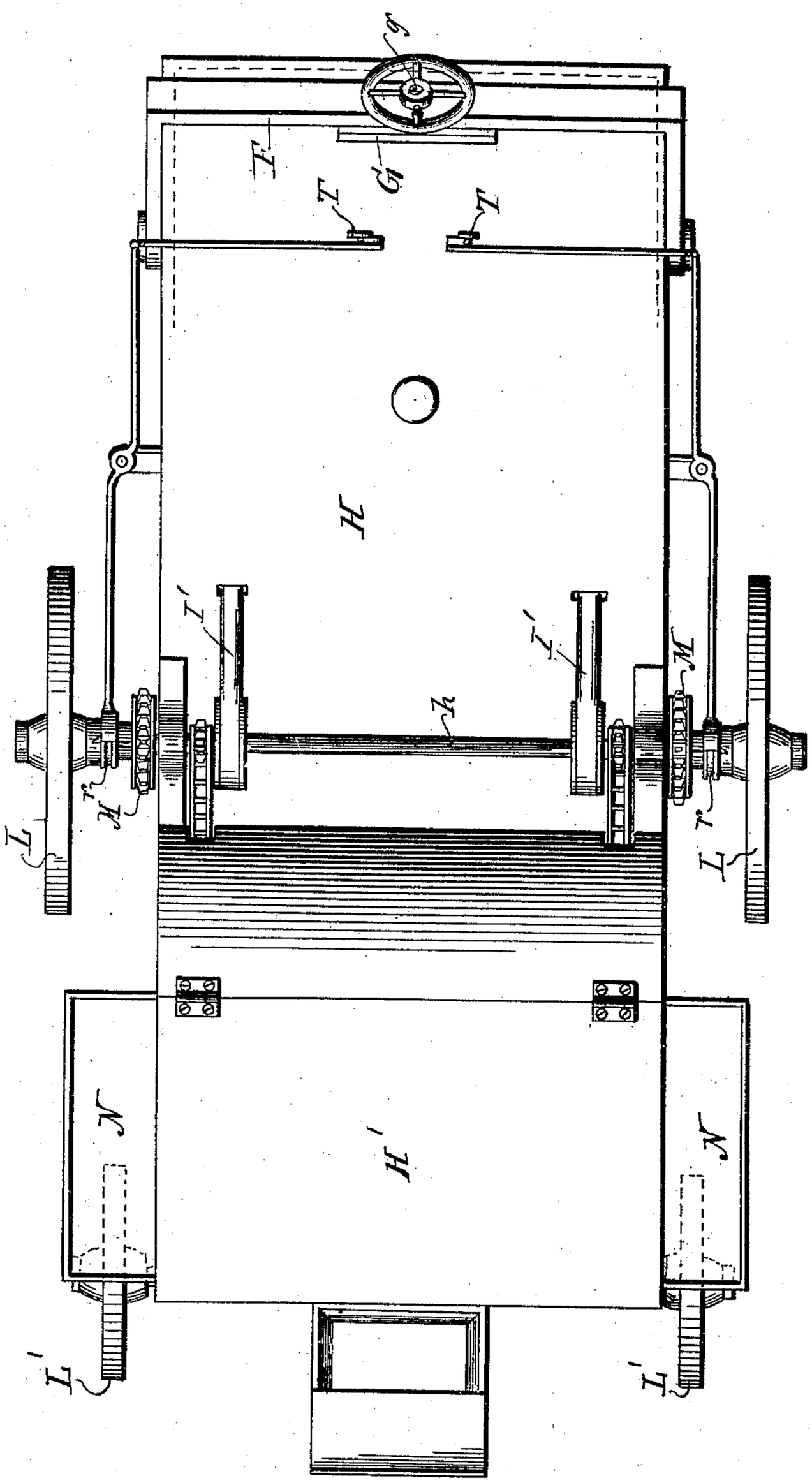

Fig. 2.

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(No Model.) 5 Sheets—Sheet 3.

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Fig. 3a.

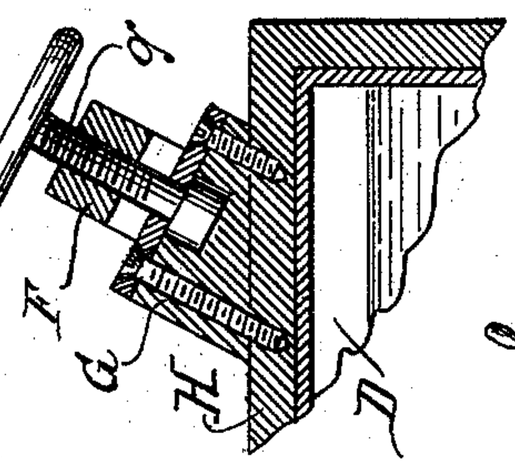


Fig. 4.

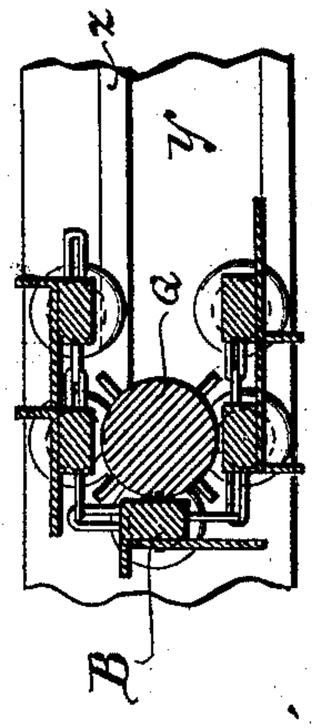
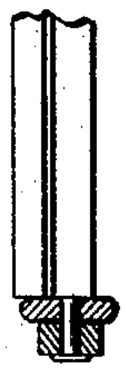


Fig. 5.

Fig. 3.

Fig. 6.



Witnesses:

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(No Model.) 5 Sheets—Sheet 4.

J. R. GALLAGHER.

STREET SWEEPER.

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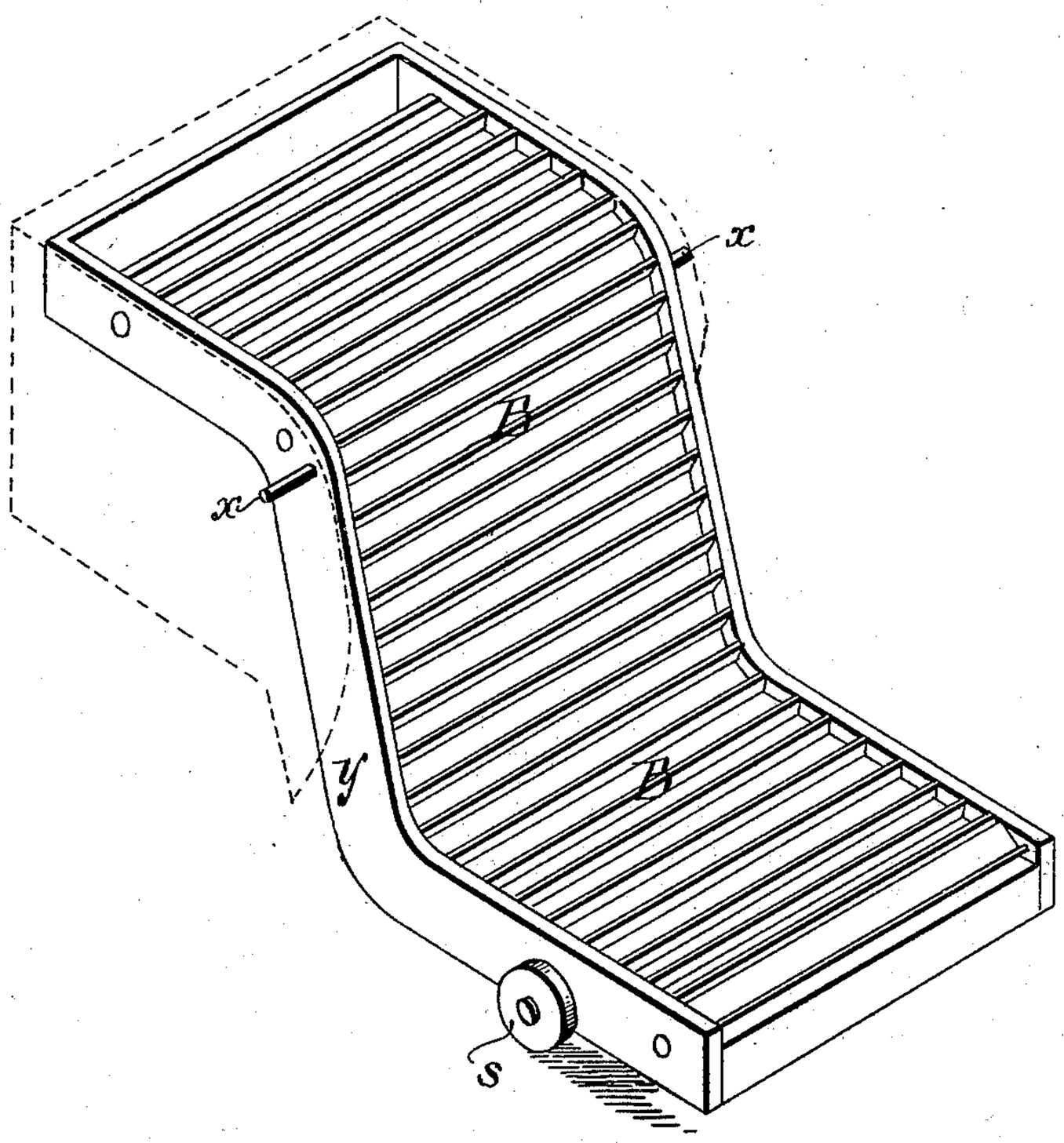
Fig. 7.



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(No Model.) 5 Sheets—Sheet 5.

J. R. GALLAGHER.

STREET SWEEPER.

No. 505,455. Patented Sept. 26, 1893.

Fig. 8

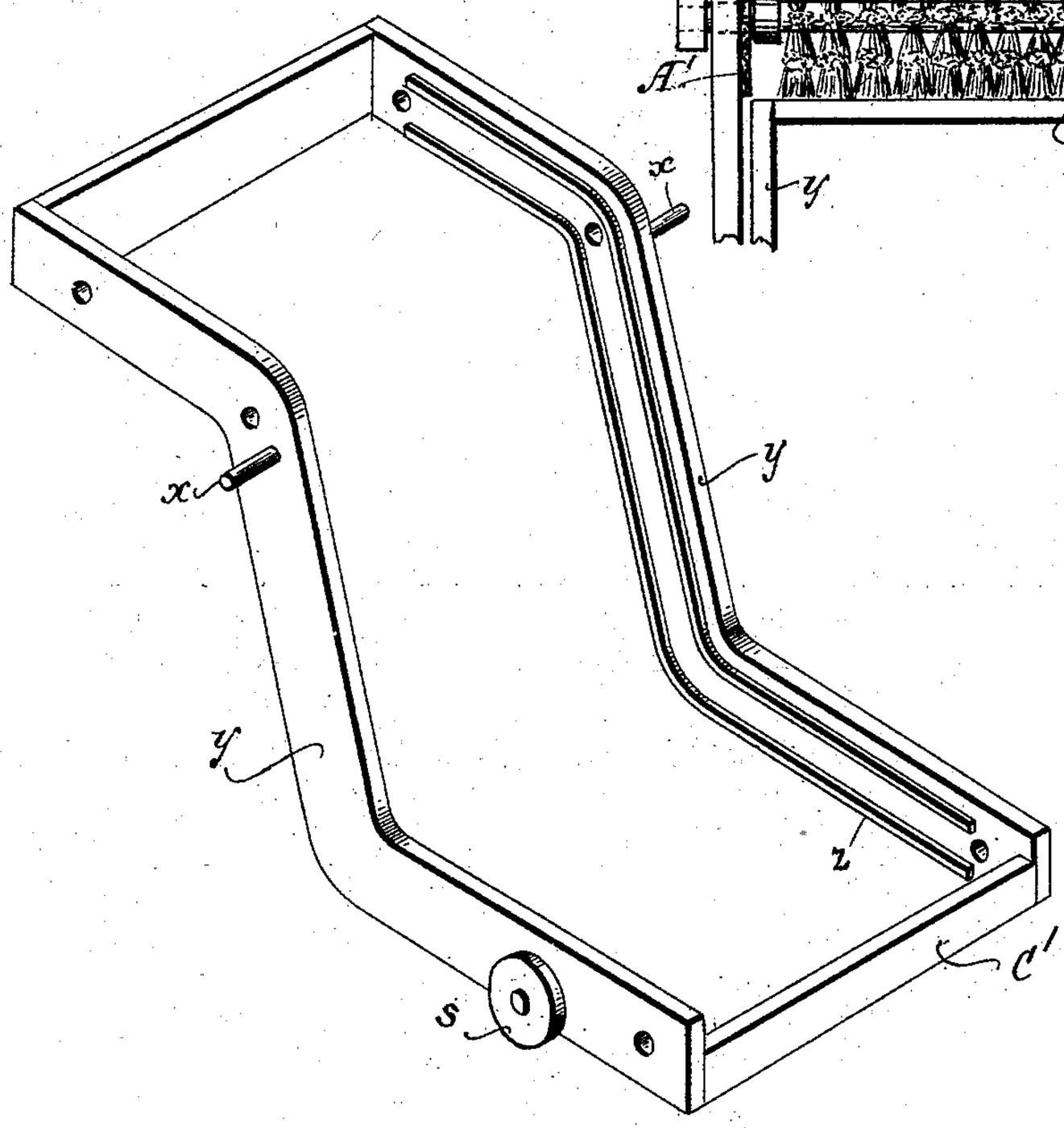


Fig. 9.

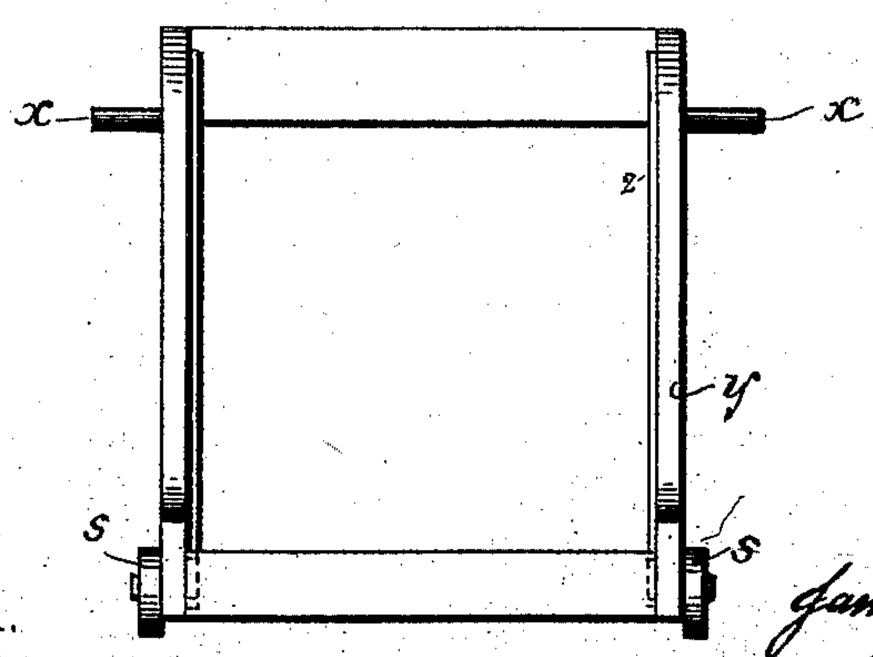
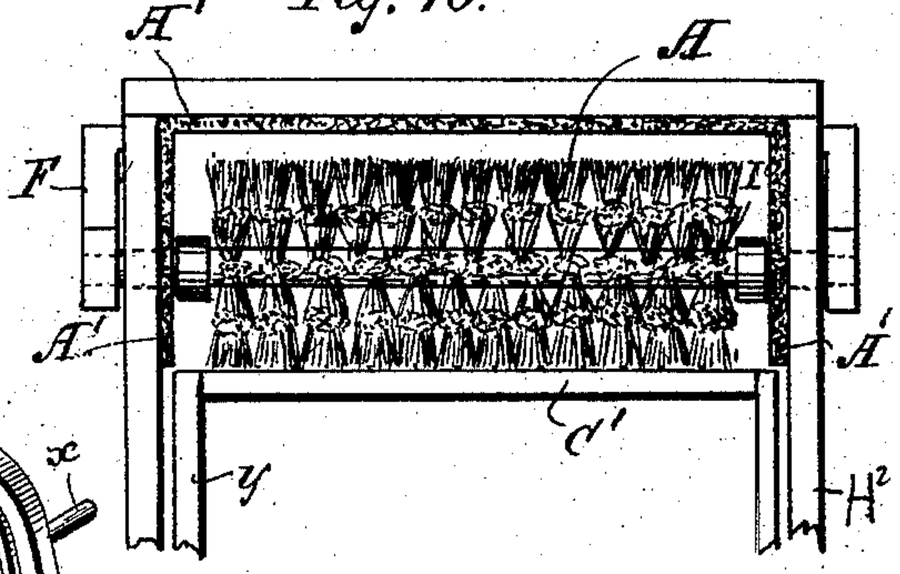


Fig. 10.



Witnesses:
Philip J. Ryan.
William H. Noah.

Inventor:
James R. Gallagher
per Charles Raetting
his Attorney.

UNITED STATES PATENT OFFICE.

JAMES R. GALLAGHER, OF BUENA VISTA, NEW JERSEY.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 505,455, dated September 26, 1893.

Application filed May 10, 1893. Serial No. 473,643. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. GALLAGHER, a citizen of the United States, and a resident of Buena Vista, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Street-Sweeping Machines, of which the following is a specification.

My invention relates to street sweeping machines, and the objects of my improvements are to gather in the sweepings expeditiously and economically and at the same time to distribute the shocks and thereby diminish the noise made in working the machine, and also to diminish the raising of dust. I accomplish this object by the apparatus illustrated in the accompanying drawings, in which—

Figure 1, represents a side elevation of the machine. Fig. 2 represents a top view thereof. Fig. 3 is a central vertical longitudinal section of the machine. Fig. 3ª is a detail view showing the mode of securing the screw *g* to the casing and in the fork in a larger scale. Figs. 4, 5 and 6 show details of the conveyer or elevator. Fig. 7 is a perspective view of the conveyer. Figs. 8 and 9 show detail views of the frame of the conveyer. Fig. 10 represents a bottom view of the rear part of the machine.

Upon an axle *a* supported on each end by a wheel L are mounted, preferably centrally, the side walls H^2 of a casing or box H, which forms the body of my street sweeping and dirt gathering machine, which is preferably of the shape indicated by Figs. 1, 2 and 3 of the drawings, and which carries in front outside the seat for the driver and inside near the top a hopper H^3 provided below with the customary outlet valve. There is a space provided below the hopper and a platform H^4 drawn across the bottom of the casing H at this point which will support the receptacles, bags, and the like into which the sweepings are gathered, and one or more attendants, so that the gathering and emptying are done simultaneously with the sweeping, while the machine is in motion, the bags being deposited along the route and collected separately. Larger objects, which are too heavy to be moved by the revolving brush and liable to clog the valve of the hopper H^3 hereinafter described, are removed by hand and deposited in crates N, Figs. 1 and 2, one of which is mounted at each side of the machine and can be easily detached therefrom and replaced by others.

A cover H′ is provided in the casing over the hopper and forward end of the conveyer.

Above the axle *a* is mounted in suitable bearings *h′* secured upon the casing on body H, the transmission shaft *h* carrying chain wheels and pulleys for transmitting the motion from the driving wheels L to the revolving brush and to the conveyer.

At the bottom near the rear end of the casing H is mounted in adjustable bearings the revolving brush A extending across the entire inner width of the casing and to the rear end and part of the side-walls is secured a U-shaped brush A′ reaching from their lower edge to the ground and closely encircling three sides of the space occupied by the revolving brush A, while the fourth side is closed by the lower end-transverse-brace C′ of the conveyer frame *y*. The axle I of the revolving brush after passing through the parallel slots H^5 in the side walls of the casing H is rotatably mounted in bearings secured to the ends of the fork F which is vertically adjustable by means of a screw *g* secured rotatably to a beam G, mounted upon the casing and engaging with the screw thread cut preferably central, in the horizontal member of the fork F.

A water tank D is mounted directly over the revolving brush and a pipe E carries the water from there to a sprinkler E′ arranged in front of the lower end of the conveyer B and running along its entire width and employed to moisten the dirt when the weather is dry.

To facilitate access to the revolving brush a hinged door H^6 is provided at the rear end of the casing H.

A peculiar feature in my sweeping machine is the conveyer B which is preferably of the shape of an S and which is hung at or near its front end upon the pivots *x* secured in bearings mounted in the side walls H′ of the casing while the lower rear end is supported by two rollers or wheels *s* secured to its frame *y*, which will roll upon the pavement and thus relieve the machine proper, not only from about one half of its weight but suffer less by the shocks received by the machine passing over irregular pavement and consequently

will carry the dirt safer to the hopper and raise less dust than when it is firmly affixed to the casing.

The endless chain and pockets of the conveyer are preferably of the construction shown in Figs. 4, 5, 6 and 7, and carry rollers traveling on railings *z* mounted to the inner sides of the conveyer frame and are guided over sprocket wheels Q to one of which, preferably the one in front, is the motion transferred from the driving wheels L by means of chain wheels, chains, transmission shaft and clutch couplings, causing the chain to travel in the direction indicated by arrows in Fig. 3 of the drawings.

The revolving brush is turned in the opposite direction to that in which the wheels L, L are turning by means of crossing the belts I′ leading from the pulleys on the transmission shaft *h* to those on the revolving b ush axle I. The motion of the driving wheel L, L is transferred to chain wheels M, M mounted upon the axle *a* and carrying in key ways on their hubs each one member of a clutch coupling *r*, the other member forming part of the hub of a driving wheel L. The sliding member of each clutch coupling is worked from a lever T mounted over the revolving brush on the top of the casing *h* by means of pivoted levers and links in such a position that one man standing on top of the tail end of the machine can adjust the vertical position of the revolving brush A and also work the clutch couplings, starting or stopping the motion of the parts without leaving his place.

The weights of the casing H and all the parts mounted thereon are balanced upon the axle *a* in such a manner that, when the water tank is empty, there will be a considerable overbalance in front of the machine which will be supported by the axle *a′* and wheels L′ mounted one at each end of the axle *a′*. The casing is firmly closed at all sides with exception of its lower tail end, at which the conveyer and the brushes project beyond its lower edge. When in this position on their home trip, the revolving brush can be raised from the ground by turning the screw *g*.

When the machine is to commence operation, water is fed into the tank D and the latter, partially filled, will outweigh the overbalance of the front end of the machine and tip it over the axle *a* throwing the weight of any additional water let into the tank D upon the adjusted revolving brush A, thus enabling the adjustment of the pressure with which the revolving brush is operated. If in dry weather this water is gradually drawn out through the sprinkler, the gradual accumulation of sacks filled with dirt and placed on the top of the tail end of the machine will there retain the desired overbalance, thus replacing the weight of water drawn from the tank.

The machine can be worked with three or four men, one on the driver's seat, one on the top of the rear end of the machine, and one or two below the hopper or around the machine, although in time of need more attendants can be employed to advantage.

I am well aware that scraper attachments have been used suspended from a wagon in combination with a conveyer and do not claim such arrangements, but

What I claim, and desire to secure by Letters Patent, is—

1. In a street sweeping machine, the combination of an adjustable revolving brush, driven from an axle carrying the main weight of the machine, with stationary brushes, inclosing the space in which the revolving brush is operating on three sides, while the front side is closed by an end-transverse-brace of the conveyer frame, and with the conveyer, mounted in an **S**-shaped oscillating frame, one end of which is pivotally connected with the body of the machine, while the other end is supported by rollers, as and for the purposes herein shown and described.

2. In a street sweeping machine the combination of the brushes mounted at the tail end of the machine upon an oscillating casing with a water tank whose contents regulate the pressure upon the brushes, an oscillating conveyer and a hopper as and for the purposes herein shown and set forth.

Signed at New York, in the county of New York and State of New York, this 9th day of May, A. D. 1893.

JAMES R. GALLAGHER.

Witnesses:
PHILIP J. RYAN,
W. H. NOAH.