No. 848,040.

PATENTED MAR. 26, 1907.

A. R. MONETTE.

STREET SWEEPER.

APPLICATION FILED FEB. 20, 1906.

3 SHEETS—SHEET 1.

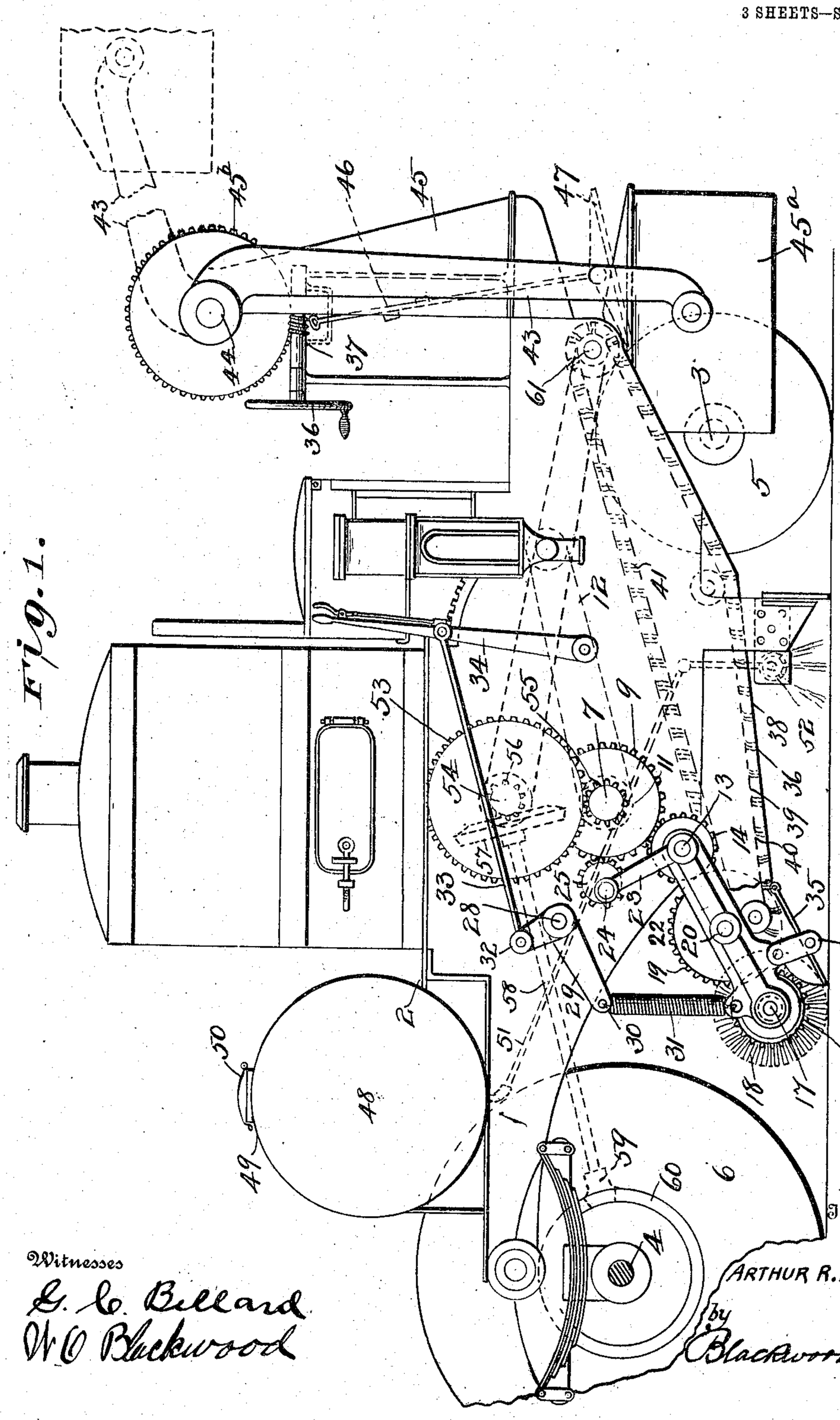

Fig. 1.

Witnesses

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3 SHEETS—SHEET 2

Fig. 3.

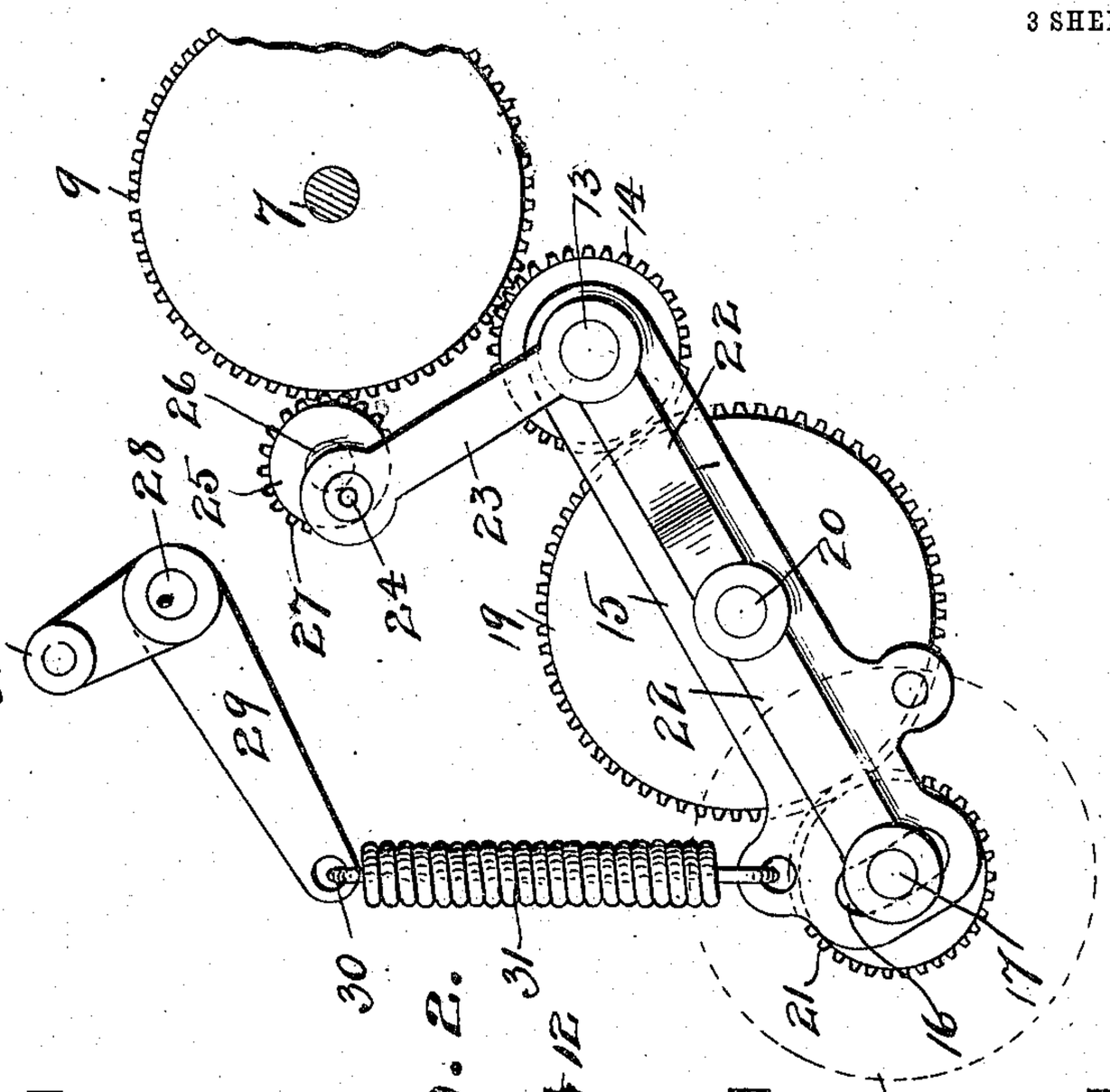
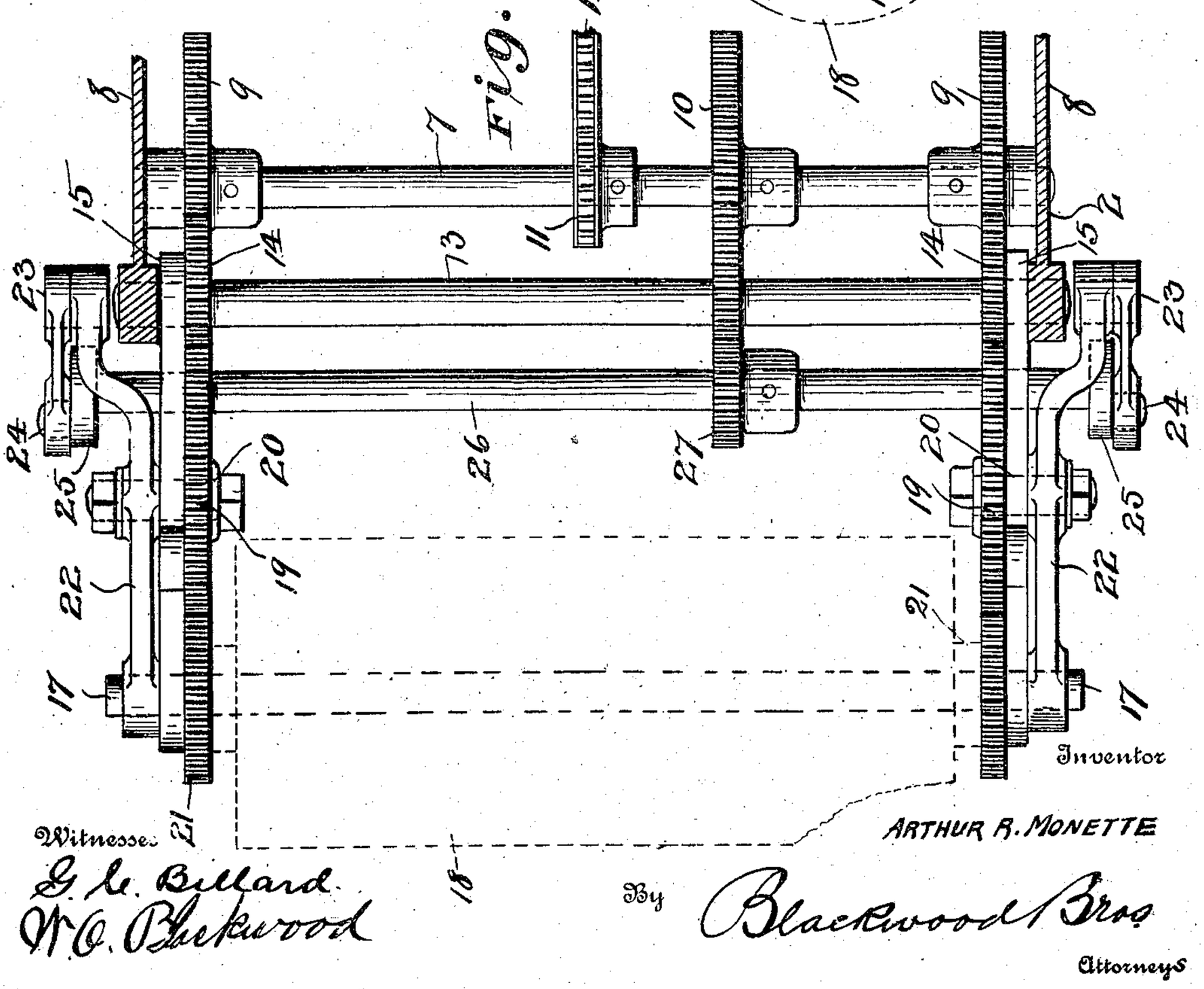


Fig. 2.



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3 SHEETS—SHEET 3.

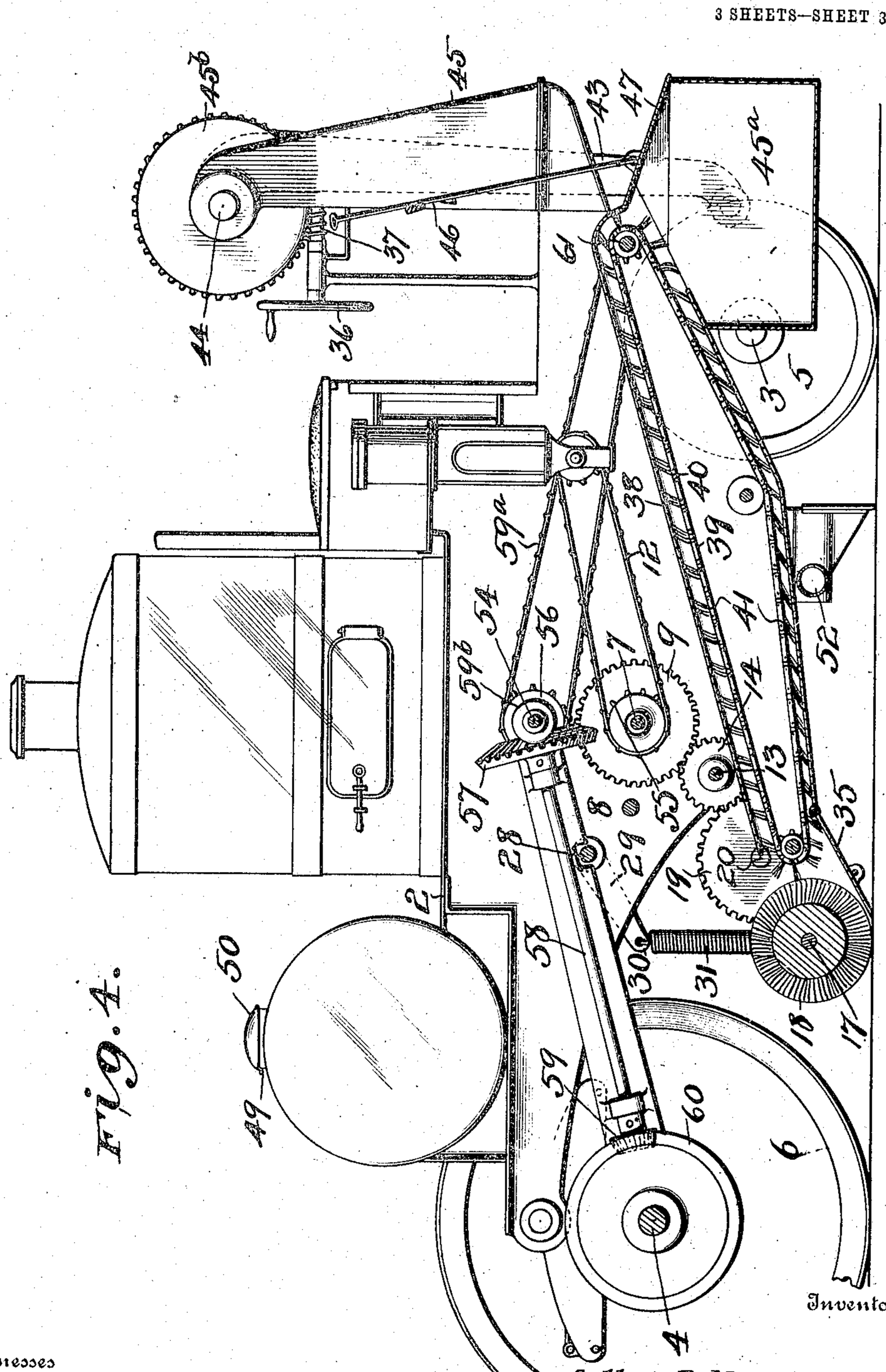

Fig. 4.

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UNITED STATES PATENT OFFICE.

ARTHUR R. MONETTE, OF NEW YORK, N. Y.

STREET-SWEEPER.

No. 848,040. Specification of Letters Patent. Patented March 26, 1907.

Application filed February 20, 1906. Serial No. 302,026.

To all whom it may concern:

Be it known that I, ARTHUR R. MONETTE, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Street-Sweepers, of which the following is a specification.

My invention relates to improvements in street-sweepers, and more particularly to that class known as "automobile" or "self-propelled" street-sweepers.

The object of the invention is to provide a street-sweeper in which a rotary brush is employed, with means for imparting to the brush a vibratory motion to reproduce the motion of a hand-broom sweeper for the purpose of dislodging dirt therefrom and keeping it clean.

It also has for its object to provide a street-sweeper which is simple, inexpensive, and durable in construction, easy to operate, effective in use, and which will perform the work allotted to it in a thorough expeditious manner.

It still further has for its object to provide means for sprinkling the ground or pavement whenever it is found to be necessary by the condition of the dust, means for automatically and simultaneously sweeping the street, collecting and elevating the sweepings into a suitable refuse-receptacle, and means for raising said refuse-receptacle to such position that when turned upside down its contents will be dumped directly into a cart or wagon.

Referring to the drawings, Figure 1 is a side elevation, Figs. 2 and 3, bottom plan and side elevation, respectively, of the brush operating and vibrating mechanism on an enlarged scale; and Fig. 4 is a vertical longitudinal section, partly in elevation.

In the drawings, in which like numerals of reference denote like parts throughout the several views, 1 represents my improved street-sweeper, having a frame 2, front and rear axles 3 and 4, respectively, front steering-wheels 5, mounted on the front axle 3, rear traction-wheels 6, mounted on the rear axle 4. The main shaft 7 of the sweeper is mounted in the sides 8 of the frame 2 and is provided with a gear-wheel 9 at each end and a gear-wheel 10 intermediate said ends, 11 being a sprocket-wheel mounted at approximately the center of said shaft 7, which is operatively connected by means of a sprocket-chain 12, with a suitable steam-engine or gasolene, electric, or other motor. A shaft 13, also mounted in the sides 8 of the frame 2, is provided with a gear-wheel 14 near each end, which mesh with the gear-wheels 9 on the main shaft 7.

An arm 15 is mounted on each end of the shaft 13 and is provided with a slot 16 at its lower end to receive the ends of the shaft 17 of the rotary brush 18. On the inner side of each arm 15, midway of its ends, a gear-wheel 19 is mounted on a pin 20, and each of said gear-wheels meshes with one of the gear-wheels 14 on the shaft 13 and with a gear-wheel 21 on each end of the shaft 17 of the rotary brush 18. Each of the pins 20 has a lever 22 pivoted thereon, the lower end of each of said levers being attached to the shaft 17 of the rotary brush and the upper end of each of the levers being pivotally connected to a link 23, which in turn is pivoted on a pin 24, eccentrically mounted on a disk 25 on each end of a shaft 26, said shaft being provided with a pinion 27, which meshes with a gear-wheel 10 on the main shaft 7, by which it is driven.

A shaft 28, mounted at its opposite ends in the side 8 of the frame 2 of the sweeper, is provided with crank-arms 29, one end 30 of each of said arms being connected to one of the arms 15 by means of springs 31, and the upper end 32 of each of the crank-arms 29 is connected to a rod 33, which in turn is connected to a hand-lever 34, said lever being for the purpose of raising and lowering the rotary brush from the ground when not in use and the springs being for the purpose of regulating the pressure of the said brush on the ground or pavement and allowing it to be readily lifted over any fixed obstruction.

The sweepings from the rotary brush 18 are delivered to an apron 35, which is pivoted to the lower end of an elevator 36 and supported by means of links 37, pivoted to the arms 15.

The elevator comprises a suitable cover or inclosing casing 38, provided with an endless conveyer-belt 39, running over pulleys and having slats 40, arranged at intervals across the same, said slats being provided with brushes 41 of any desired kind for the purpose of conveying the sweepings from the brush upward and along the under side or bottom of the elevator-casing 38.

At and just below the upper end of the elevator-casing a refuse receptacle or box is

placed, which is pivoted to the lower ends of arms 43, and the upper ends of said arms are mounted on a shaft 44, carried by uprights 45, rising from the frame of the sweeper. The refuse receptacle or box 45[a] is designed to be operated—that is, swung up or down—by turning the hand-wheel 36 and operating the worm-shaft 37, which in turn communicates motion to the shaft 44 through the medium of the gear-wheel 45[b]. A suitable hand-lever 46 is pivoted to the cover 47 of the refuse-receptacle for the purpose of affording means whereby the said cover may be raised.

In order to provide for the sprinkling of the ground or pavement to allay the dust, a liquid-containing tank 48 is provided at the rear of the frame of the street-sweeper and has a filling-opening 49 and cover 50 at the top and an outlet or discharge pipe 51 depending from the bottom, said pipe being provided at its lower end with a nozzle or sprinkler 52 in the form of a straight pipe perforated from end to end and transversely disposed across the under side of the sweeper.

The rear traction-wheels 6 are driven and the street-sweeper propelled through the medium of a gear-wheel 53 on shaft 54, which meshes with a pinion 55 on main shaft 7, a bevel gear-pinion 56, which meshes with a bevel gear-wheel 57, mounted on the upper end of a shaft 58, and a bevel-gear 59, which meshes with a bevel-gear 60 on the axle 4.

The elevator is operated by means of an endless belt or sprocket-chain 59[a], which operatively connects a sprocket-wheel 59[b] on the shaft 54 with a sprocket-wheel on the shaft 61 of the elevator. The number of vibrations relative to the number of rotations of the rotary brush can be varied by changing the relative sizes of the gears 10 and 27, and the vibratory movement of said brush is independent of the raising and lowering and rotary movement of the same. The propelling of the street-sweeper, the rotary and vibratory movement of the brush, the collecting and elevating of the sweeping, and depositing them in a suitable receptacle is done simultaneously.

In operation the main shaft is caused to rotate by means of a suitable steam-engine or motor, which communicates with and drives the gear-wheels 9, which communicate motion to the gear-wheels 14 and from the gear-wheels 14 to the gear-wheels 19 and 21, said gear-wheels 21 imparting a rotary movement to the brush-shaft, and at the same time the gear-wheel 10 communicates motion through the pinion 27 to the shaft 26 and from the disks 25 and pins 24 to the links 23, and from the links 23 to a lever 22 to the rotary brush-shaft 17 and causes the shaft to vibrate up and down in slots 16 in the arms 15, and as the brush collects and delivers the sweepings to the elevator the elevator elevates said sweepings and delivers them to the refuse-receptacle 42. The hand-wheel 36 is then operated, which causes the arms 43 to swing upward and raise the refuse-receptacle to such position that when turned upside down the sweepings contained therein will be dumped into a wagon, cart, or other receptacle, when said sweepings may be carted away to a dump or other suitable place.

Although the vibratory movement of the brush is mainly for the purpose of keeping said brush clean, yet it also assists in throwing or delivering the sweepings upon the apron, said vibratory movement being produced by mounting pins 24 eccentrically on the disks 25 on each side of the shaft 26, so that when said shaft is revolved it will operate the levers 22 and cause their lower ends to move up and down on the arc of a circle struck from the center of the pins 20 in the slots 16 of the frames 15.

I do not desire to be understood as limiting myself to the specific details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement on the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claims.

What I claim is—

1. A street-sweeper having a brush and means for rotating and vibrating said brush, substantially as described.

2. A street-sweeper having a rotary brush means for vibrating said brush and means for raising and lowering said brush, without interfering with its rotary and vibratory movements, substantially as described.

3. A street-sweeper having a rotary brush and means for simultaneously rotating and vibrating said brush and elevating the sweepings collected by said brush, substantially as described.

4. A street-sweeper comprising a rotary brush, means for rotating said brush, and means independent from the means for rotating said brush for imparting a vibratory motion thereto, substantially as described.

5. A street-sweeper comprising a frame, a shaft mounted in said frame, arms pivoted to said shaft, levers pivoted to said arms, a brush having a shaft mounted in the ends of said levers, means for rotating said brush and means for imparting a vibratory movement to said brush through said levers, substantially as described.

6. A street-sweeper comprising a frame, a shaft mounted in said frame, arms pivoted to said shaft having slots, levers pivoted to said arms, means for vibrating said levers, a brush

provided with a shaft having its ends extending through said slots and mounted in the ends of said levers and means for operating said brush, substantially as described.

7. A street-sweeper comprising a frame, a shaft mounted in said frame, arms pivoted to said shaft, levers pivoted to said arms, a brush having a shaft mounted in the lower ends of said levers, means for operating said brush, a shaft having disks at each end with pins eccentrically arranged thereon, links operatively connecting the upper ends of said levers with the pins of the disks, and means for operating the shaft having the disks, substantially as described.

8. A street-sweeper comprising a frame, arms pivoted thereto having elongated slots through their ends, means for raising and lowering said arms, levers pivoted to said arms, a shaft carrying a brush mounted in the lower ends of said levers, means for operating said brush, links pivoted to the upper ends of said levers, eccentrics connected to said links, and means for operating said eccentrics and causing the brush to vibrate, substantially as described.

9. A street-sweeper comprising a brush, means for rotating said brush and means for imparting a vertical vibratory motion to said brush, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR R. MONETTE.

Witnesses:
WILLIAM J. CAMPBELL,
WILLIAM T. DONNELY.