(No Model.)

2 Sheets—Sheet 1.

W. S. MEARS.

STREET SWEEPER.

No. 596,331. Patented Dec. 28, 1897.

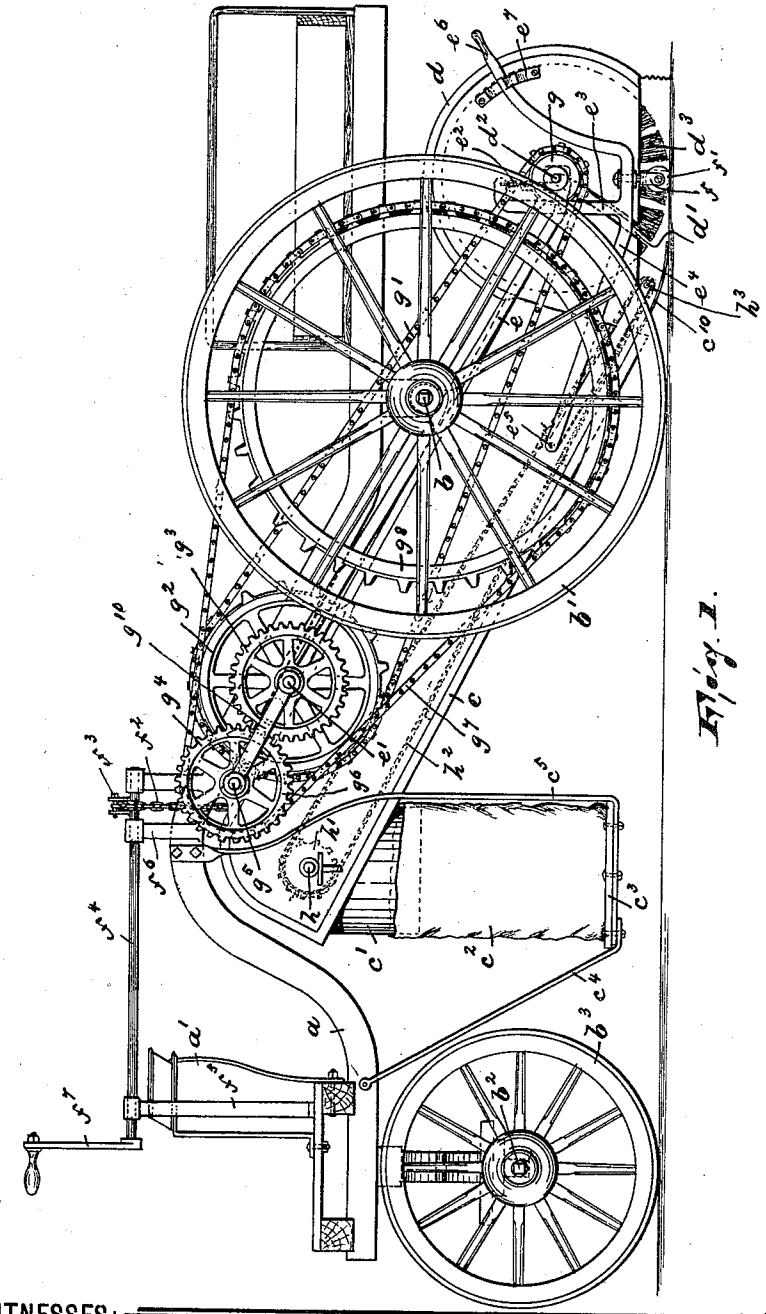

Fig. 1.

WITNESSES:

Wm. D. Bell.

Duncan M. Robertson

INVENTOR:

William S. Mears

BY Gartner & bo ATTY'S.

(No Model.)

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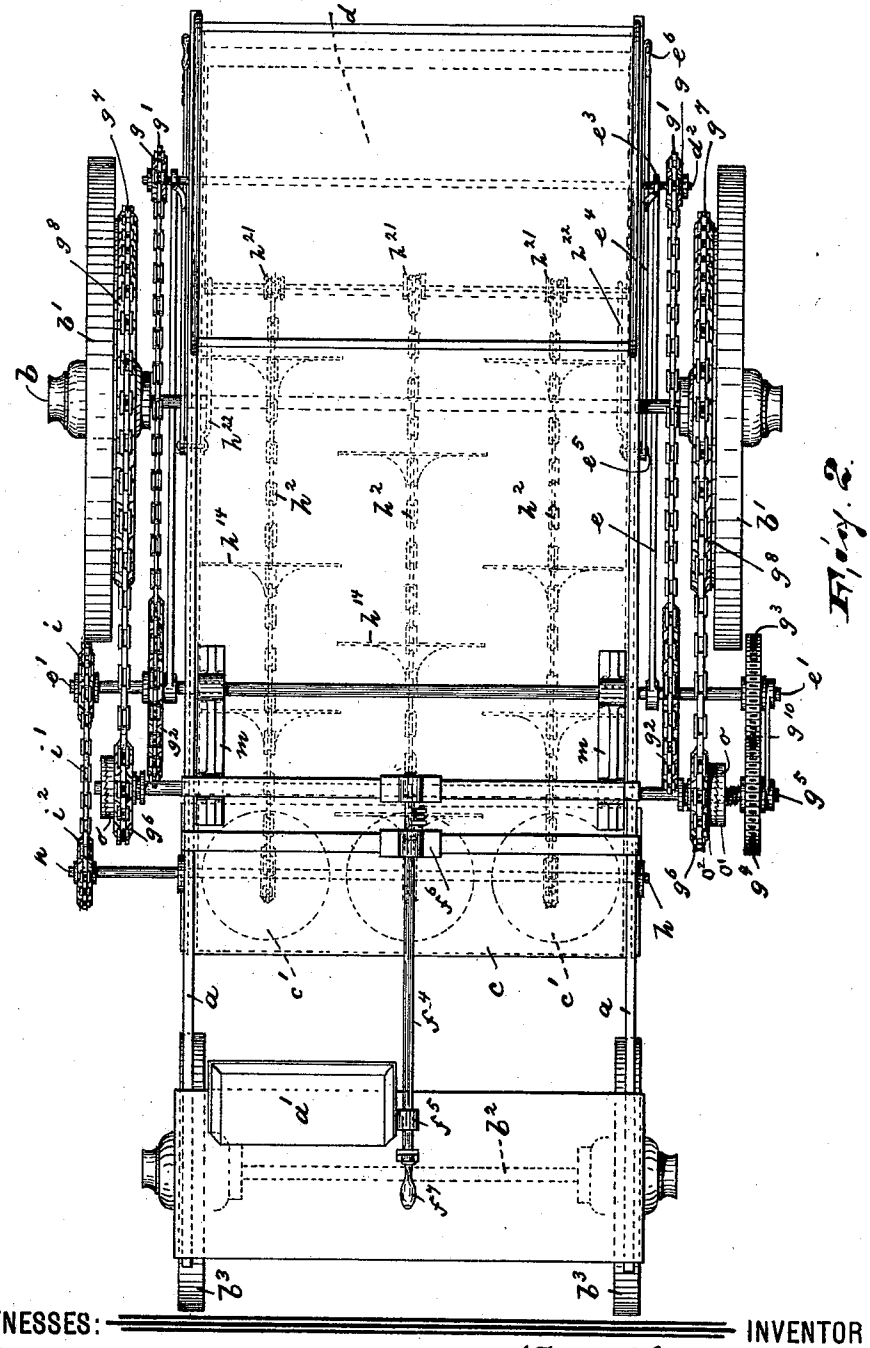

Fig. 2.

WITNESSES:

Wm. D. Bell.

Duncan W. Robertson

INVENTOR:

William S. Mears

BY Gartner & Co ATTY'S.

UNITED STATES PATENT OFFICE.

WILLIAM S. MEARS, OF SCRANTON, PENNSYLVANIA, ASSIGNOR TO THE BROOKS STREET SWEEPER MANUFACTURING COMPANY, OF SAME PLACE.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 596,331, dated December 28, 1897.

Application filed December 30, 1896. Serial No. 617,443. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. MEARS, a citizen of the United States, residing in Scranton, county of Lackawanna, and State of Pennsylvania, have invented certain new and useful Improvements in Street-Sweepers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to improve that kind of street sweeper and cleaner having a revoluble brush, an elevating mechanism, and refuse-receptacles.

The invention consists in the improved street-sweeper, its revolving-brush supporting and adjusting mechanism, in the refuse-elevating means, and in the combination and arrangements of the various parts thereof, substantially as will be hereinafter more fully described and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in the two views, Figure 1 is a side elevation of my improved street-sweeper, and Fig. 2 a top plan view thereof.

In said drawings, a represents a truck-frame with the driver's seat a' and having bearings for the axles b and b^2, carrying the rear and front wheels b' and b^3, respectively. Fulcrumed on the rear axle is the inclined elevator-casing c, to the forward upper end of which is secured a chain f^2, connected to the crank f^3, projecting from the shaft f^4. Said shaft is arranged at right angles to the axles and is supported in standards f^5 and f^6, secured in turn to the truck-frame a, and is provided on its forward end with a crank-handle f^7 for the purpose of operating said shaft to thus raise or lower the elevator-casing. The lower upper portion of said casing terminates in a series of hoppers c', adapted to be engaged by refuse-receptacles c^2, which in the present case are bags and which are arranged on a platform c^3, supported by braces c^4 and c^5, secured to the truck-frame a, as clearly shown.

The lower rear end of the elevator-casing c terminates in a pan c^{10}, adapted to receive the refuse, as will be manifest. A hood d is rigidly secured to the rear end of said elevator-casing and is provided at each side with a radial elongated slot d', penetrated by the shaft d^2, carrying the revolving brush d^3. Said shaft is supported in bearings formed at the rear ends of the levers e, fulcrumed at their forward ends on the shaft e', having its bearings in brackets m, secured to and projecting from the casing c. On each side of the said casing and toward the rear portion thereof is fulcrumed, as at e^5, a lever e^4, provided with an upwardly-extending arm e^3, the upper portion of which is connected by a chain e^2 with the bearing for the shaft d^2, which bearing, as heretofore described, is arranged at the rear end of its respective lever e. It must be stated that the chain can be lengthened and shortened as desired. A handle e^6 projects rearward from each of said levers e^4 and is adapted to be engaged by one of a series of stops e^7, secured to and arranged on the side of the hood.

Since the hood is rigidly secured to the casing and since the stops e^7 on the sides of the hood constitute supports for the rear or handle ends of the levers e^4, it is obvious that the brush-shaft d^7, connected to the arms e^3 by chains e^2, is practically depended from the arms of the levers in such a manner as to be easily adjustable. The adjustment of the shaft is of course necessary in case the brush carried thereby becomes worn, either evenly or unevenly, or in case brushes of different sizes are employed. In this connection it is to be stated that the object of the inclined elongated slot above described is to render it possible that the line of contact of the adjustable brush with the roadway shall always be the same distance from the pan or lower extremity of the casing whether a brush of large or small diameter is used.

A wheel f', journaled in bracket f, which in turn is swiveled on its respective lever e^4, is arranged on each side of the hood and below the axle d^2, and forms, in connection with

the levers e and e^4, the main support for the revolving-brush-carrying shaft d^2. On the said shaft d^2 and on the ends thereof are secured the sprocket-wheels g, connected by sprocket-chains g' with the sprocket-wheels g^2, which latter are securely mounted on the shaft e'. On one end of said shaft is secured a gear-wheel g^3, meshing into gear-wheel g^4, mounted on the parallel shaft g^5, having its bearings in the brackets m. The free ends of said shafts are prevented from spreading by means of the bridge or tie g^{10}, and the gear-wheels are thus kept in mesh. On the shaft g^5 and on each side of the casing are loosely mounted the sprocket-wheels g^6, controlled by and held normally on said shaft by the clutches o and are connected by sprocket-chains g^7 with the sprocket-wheels g^8, which latter are secured to the rear wheels b' in any desired manner. Each of the clutches o comprises two members o' and o^2, having interlocking teeth on their adjacent faces, the one, o', being spaced from the gear-wheel g^4 by a spiral spring o^3 and keyed to the shaft g^5 and the other, o^2, being integrally formed on the side of the sprocket-wheel g^6, which, as above described, is loosely journaled on the shaft. The member o^2 of each clutch is prevented from inward movement on the shaft by a collar o^4, against which said member under tension of the spring o^3 is normally pushed by the other member of the clutch. By the employment of the clutch included in the mechanism just described the sprocket-wheels g^6 are always kept in alinement with the sprocket-wheels g^7. On the opposite end of shaft e' is secured another sprocket-wheel i, operating through sprocket-chain i' the sprocket-wheel i^2, which latter is mounted on the shaft h. Said shaft penetrates the casing and has its bearings in the sides thereof and carries within said casing a series of sprocket-wheels h'. At the lower end of the casing is arranged a shaft h^3, parallel with shaft h and carrying a series of rollers or sprocket-wheels h^{21}, arranged in alinement with the sprocket-wheels on shaft h' and connected therewith by the sprocket-chains h^2. Each of said sprocket-chains carries a series of scrapers h^{14}, which are alternately arranged with and between each other. The shaft h^3 has its bearings in the brackets h^{22}, secured to the sides of and within the casing c.

In operation power is transmitted from the rear wheels to the shaft g^5, which in turn operates the shaft e' through the gear-wheels g^4 and g^3. The shaft e' is thus rotated in a direction opposite to that of the rear wheels and in turn transmits its motion to the shaft h' and to the revolving-brush-carrying shaft d^2, thus operating the elevator-chains h^2 and the revolving brush d^3, respectively. Should the sweeper turn around a corner—that is to say, one of the rear wheels revolve slower than the other—the clutch o on the respective side enters into operation in a manner well understood, and thus prevents a breakage of the elevator-chain-operating mechanism on account of excess of tension. By the lever arrangement e and e^4 and the wheels f' the revolving brush d^3 is capable of adjusting itself to any unevenness of the roadway to be cleaned, and should the brush be worn off—that is, become reduced in diameter—the chain e^2 is lengthened, and thus the brush brought again to a proper height, as will be manifest.

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

1. A sweeper consisting of a truck on wheels, an inclined elevator-casing fulcrumed on the axle of the rear wheels, a hood arranged at the lower rear end of said casing and provided at each of its sides with a radial elongated slot, the revolving-brush-carrying shaft arranged in said hood and penetrating said slots, a fulcrumed lever on each side of the casing and furnishing bearings for the said shaft, a shorter lever on each side of and fulcrumed on the casing and provided with an upwardly-extending arm, chains connecting said arms with the levers forming the bearings for the shaft, a wheel swiveled on each of said shorter levers, and means for revolving said brush, substantially as and for the purposes described.

2. In a street-sweeper provided with an elevator-casing which is vertically adjustable at its lower end, the combination of a revoluble-brush-carrying shaft journaled near the lower end of the casing, and an adjusting mechanism therefor consisting of rearwardly-projecting levers each fulcrumed at one of its ends in the side of the casing, and provided with a substantially vertical arm and with a handle at its free end, means for adjustably supporting the free ends of the levers, chains adjustably connecting said shaft to, and depending said shaft from, the arms of said levers, and antifriction-wheels swiveled on the levers, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of October, 1896.

WILLIAM S. MEARS.

Witnesses:
ALFRED GARTNER,
DUNCAN M. ROBERTSON.