

W. L. KELLOGG.
STREET SWEEPER.

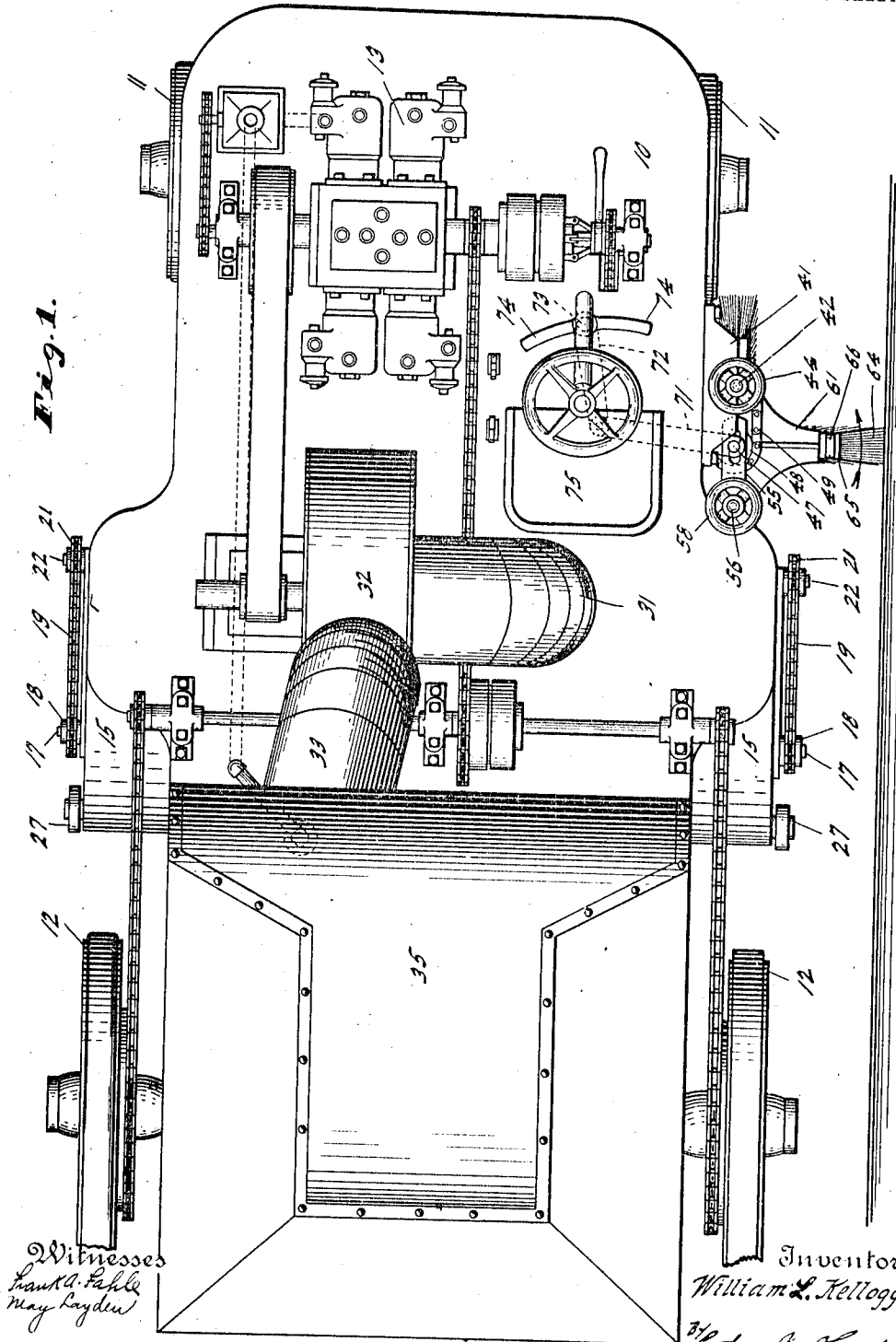
APPLICATION FILED JULY 20, 1911.

Patented Aug. 13, 1912.

3 SHEETS-SHEET 1.

1,035,598.

Fig. 1.



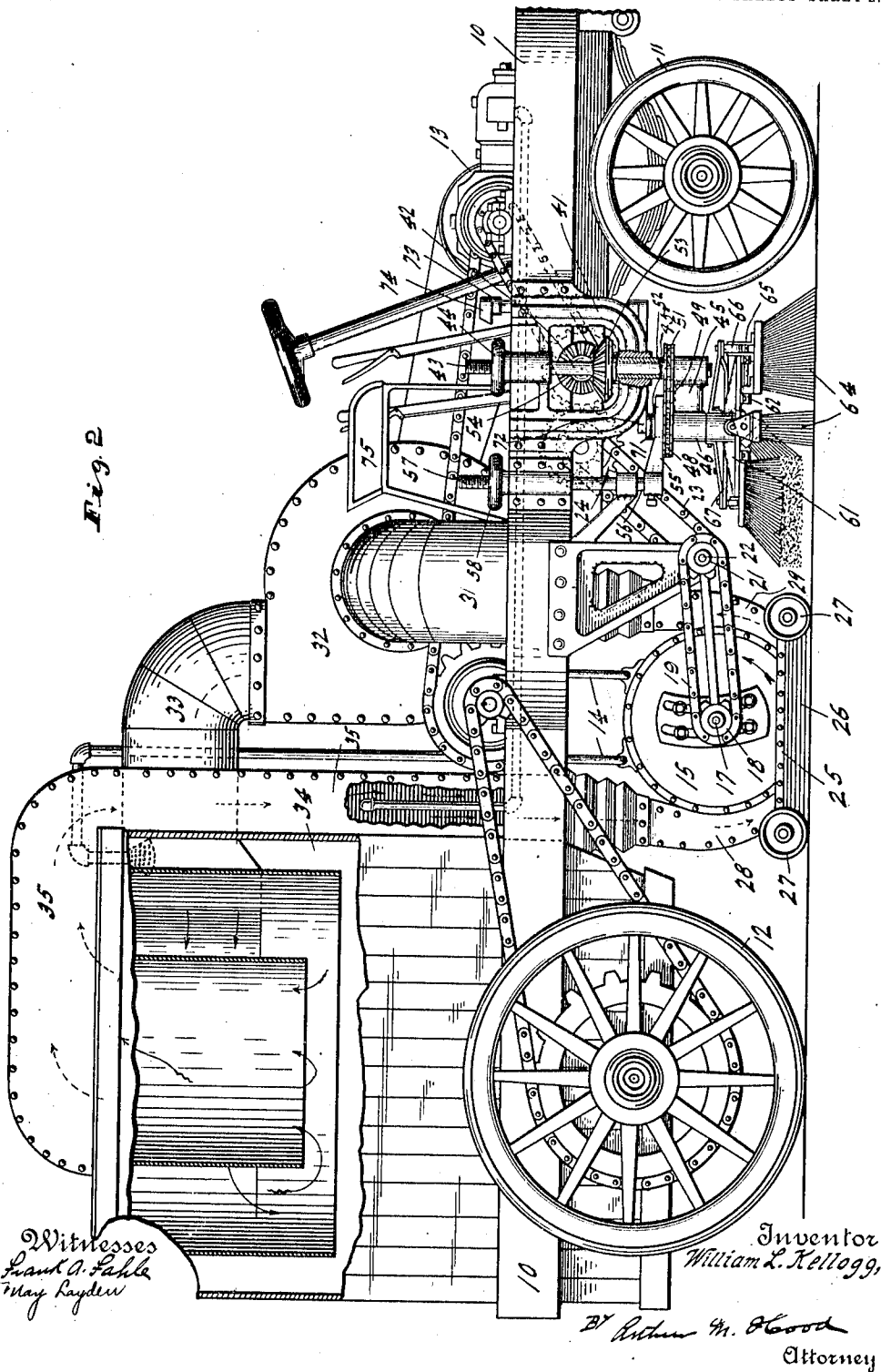
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3 SHEETS-SHEET 2.



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Fig. 3.

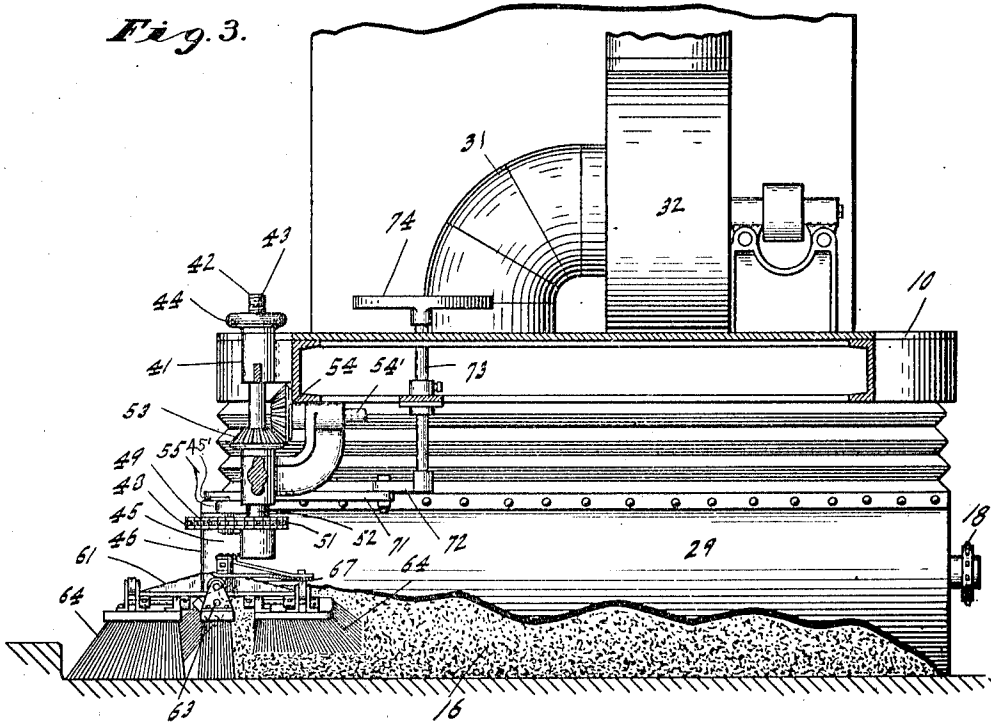
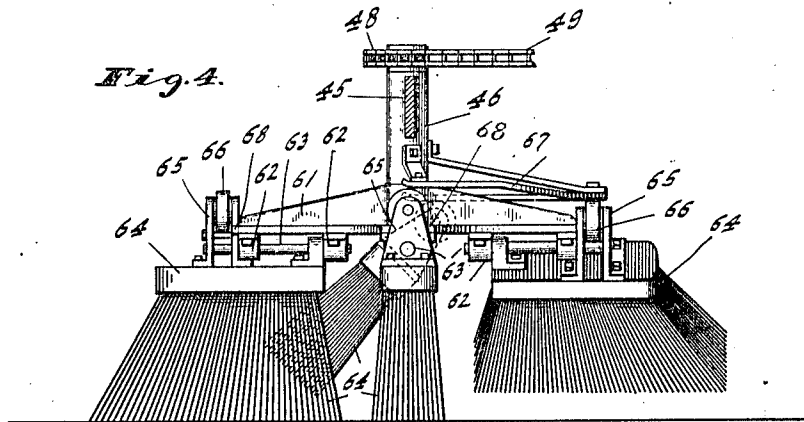


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM L. KELLOGG, OF INDIANAPOLIS, INDIANA.

STREET-SWEEPER.

1,035,598.

Specification of Letters Patent.

Patented Aug. 13, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM L. KELLOGG, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Street-Sweeper, of which the following is a specification.

The object of my invention is to produce a sweeping machine for sweeping streets, the construction being such that the apparatus may be self-propelled and such that the dirt from the gutters, as well as from the main portion of the street, will be collected and properly deposited in a receptacle from which it may be discharged from time to time.

The accompanying drawings illustrate my invention.

Figure 1 is a plan of an apparatus constructed to embody my invention; Fig. 2 a side elevation in partial vertical section; Fig. 3 a fragmentary section in front of the gutter brush looking to the rear, and Fig. 4 an enlarged detail of the gutter brush.

In the drawings, 10 indicates the main body of the vehicle having suitable guiding wheels 11 and traction wheels 12, which may be driven in any suitable manner from the engine 13. The details of connection between the engine and traction wheels form no part of my present invention and therefore will not be further described.

Suspended from links 14 beneath the main frame 10 is a brush casing 15 within which is journaled an ordinary rotary brush 16 to be rotated in the direction indicated by the arrow in Fig. 2. In order to accomplish this result, shaft 17 of the brush carries a sprocket wheel 18 engaged by the chain 19 which engages a sprocket wheel 21 carried by an intermediate shaft 22 which, in turn, is driven by a chain 23 driven by suitable gearing 24 from engine 13. The casing 15 at its lower end is extended into rectangular portions 25 which are provided with flexible depending aprons 26 which come practically to the street surface and the casing structure is supported by ground wheels 27.

Leading downwardly into the rear side of the extension 25 is a return tube 28 and leading upwardly from the forward side of the extension 25 is a suction tube 29. The suction tube 29 leads to a pipe 31 which is connected to the eye of a common suction fan 32 which delivers through pipe 33 into a

dust separator and collecting chamber 34 which discharges through a pipe 35 which connects to pipe 28, the arrangement being such that the fan 32 may establish a current of air upwardly through pipe 29 and downwardly through pipe 28 so that, adjacent the street surface within the extension 25, there will be a current of air moving forwardly in the direction of movement of the vehicle and the direction of movement of the lower portion of the brush 16.

Mounted in a bracket 41, secured to the side of body 10 near the forward end, is a vertical pin 42 which is threaded at its upper end as indicated at 43 to receive an adjusting nut 44 by means of which it may be raised and lowered in the bracket. Pivotally secured to the lower end of pin 42 is one end of a bracket 45 which, at its opposite end, is provided with a bearing 46 within which is journaled a shaft 47 to the upper end of which is secured a sprocket wheel 48. A sprocket chain 49 passes over wheel 48 and over a wheel 51 carried by the lower end of a sleeve 52 which is journaled around pin 42 within the lower end of bracket 41. Sleeve 52 at its upper end carries a beveled gear 53 which meshes with a gear 54 carried by a shaft 54' connected in any suitable manner with the engine. In order to stiffen or support arm 45, by relieving it of part of the weight of the shaft 47 and the parts carried thereby, the upper end of such shaft is projected through a slotted arm 55, so that a collar 45' fixed on such shaft rests on such arm 55. The arm 55 is carried by the lower end of a vertical pin 56, which is free to rotate and which at its upper end is threaded at 57 to receive an adjusting nut 58 so that it may be vertically adjusted to correspond with the vertical adjustment of pin 42.

The lower end of shaft 47 carries a spider 61, each of the rotating arms of which is provided with radially extending bearings 62 receiving a horizontal radially extending pin 63 upon which is pivoted a brush 64. Each brush 64 is provided with an upwardly extending bracket 65 in the upper end of which is journaled a wheel 66 adapted to engage a stationary semi-annular cam 67 carried by bearing 46, the arrangement being such that, when free from the cam 67, the brushes will hang substantially vertical so as to engage the surface of the street and will be prevented from rearward tilting by

a pin 63 but, when wheel 66 comes into engagement with the depressed portion of cam 67, the brush will be given a sudden twist forwardly, *i. e.*, in the direction of its own motion, thus propelling the gathered dirt transversely of the street away from the gutter and toward the brush 16, as clearly indicated in Fig. 3.

In order to swing the gutter brush as a whole toward and from the gutter, to compensate for the difference in the position of the vehicle relative to the curb, I provide a link 71 which may be either connected to the outer end of arm 45 or, as shown, pivotally attached to the upper end of shaft 47. The opposite end of link 71 is pivoted to an arm 72 which is carried by a vertically arranged rock shaft 73 provided with oppositely extending arms 74 so arranged that they may be readily engaged by the feet of an operator sitting in the seat 75.

In operation, the brushes 64 are given a general rotary movement in a horizontal plane and the brush structure as a whole may be swung horizontally to bring the tips of the brushes into engagement with the curb. As the brushes are rotated in a horizontal plane so as to traverse the street, they are intermittently twisted forwardly and upwardly so as to propel the accumulated dirt away from the curb and into the path of movement of the rotary brush 16. As the brush 16 advances the dirt in front of it is swept forwardly and upwardly into the suction tube 29 and this movement is facilitated by the forward movement of the air from tube 28.

I claim as my invention:

1. In a street sweeper, a gutter brush structure comprising a substantially vertical rotary shaft, an upwardly tilting brush mounted thereon to tilt on an axis substantially radial to the shaft, means for intermittently upwardly tilting said brush during its horizontal rotation, and means for shifting the brush structure bodily horizontally.

2. In a street sweeper, a gutter brush structure comprising a substantially vertical rotary shaft, an upwardly tilting brush mounted thereon to tilt on an axis substantially radial to the shaft, and means for

intermittently upwardly tilting said brush during its horizontal rotation.

3. In a street sweeper, a gutter brush structure comprising a substantially vertical rotary shaft, an upwardly tilting brush mounted thereon to tilt on an axis substantially radial to the shaft, means for intermittently upwardly tilting said brush during its horizontal rotation, means for shifting the brush structure bodily horizontally, and a horizontal rotary brush arranged to the rear of the gutter brush in the path of its discharge.

4. In a street sweeper, a gutter brush structure comprising a substantially vertical rotary shaft, an upwardly tilting brush mounted thereon to tilt on an axis substantially radial to the shaft, means for intermittently upwardly tilting said brush during its horizontal rotation, and a horizontal rotary brush arranged to the rear of the gutter brush in the path of its discharge.

5. In a street sweeper, a gutter brush structure comprising an arm swinging on a vertical axis, a substantially vertical rotary shaft mounted in said arm, one or more upwardly tilting brushes carried by said shaft, means for intermittently upwardly tilting said brushes during their horizontal rotation, means for swinging said swinging arm about its axis, and a second swinging arm mounted on a vertical axis and supporting the projecting end of the first swinging arm.

6. In a street sweeper, a gutter brush structure comprising an arm swinging on a vertical axis, a substantially vertical rotary shaft mounted on said arm, one or more upwardly tilting brushes carried by said shaft, means for intermittently upwardly tilting said brushes during their horizontal rotation, and a second swinging arm mounted on a vertical axis and supporting the projecting end of the first swinging arm.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 14th day of July, A. D. one thousand nine hundred and eleven.

WILLIAM L. KELLOGG. [L. S.]

Witnesses:

ARTHUR M. HOOD,
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