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STREET SWEEPER.

APPLICATION FILED DEC. 27, 1910.

Patented Feb. 11, 1913.

4 SHEETS—SHEET 1.

1,053,037.

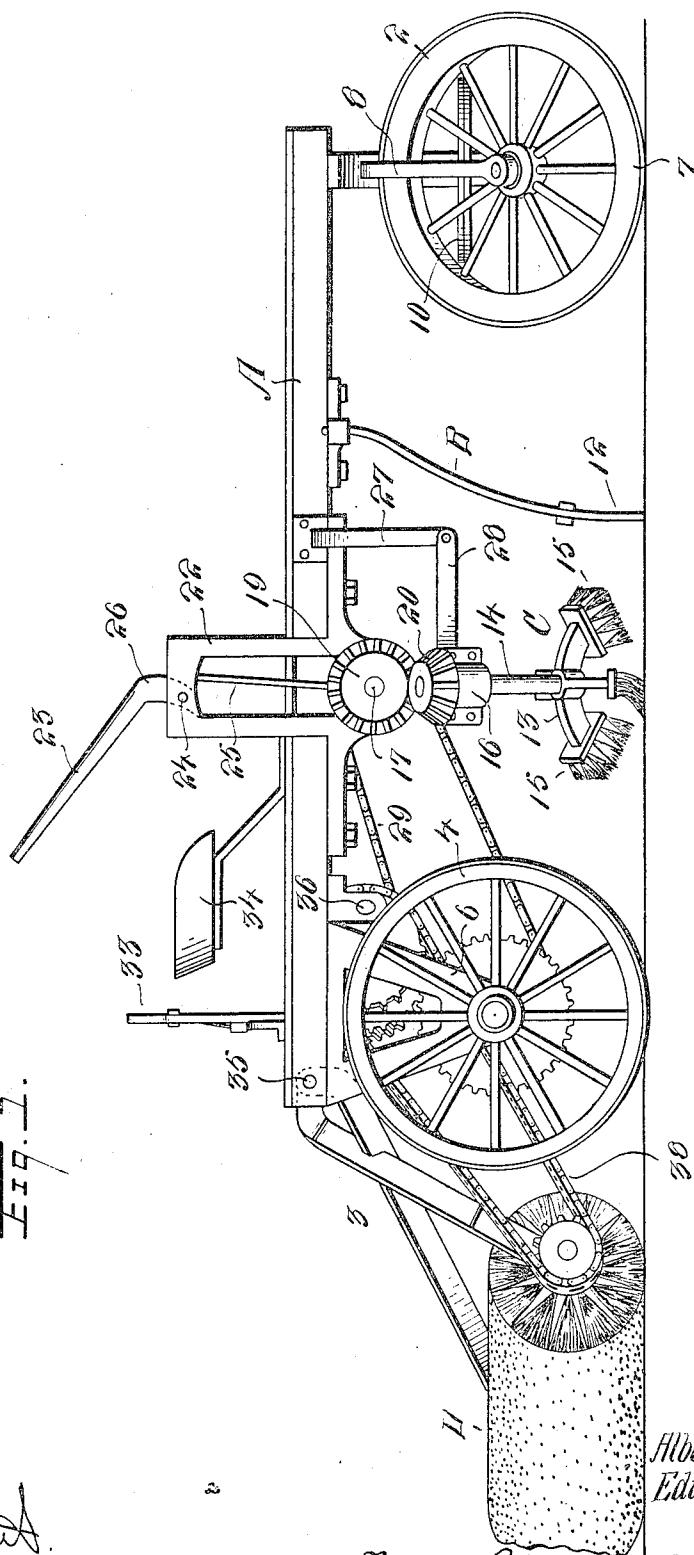


Fig. 1.

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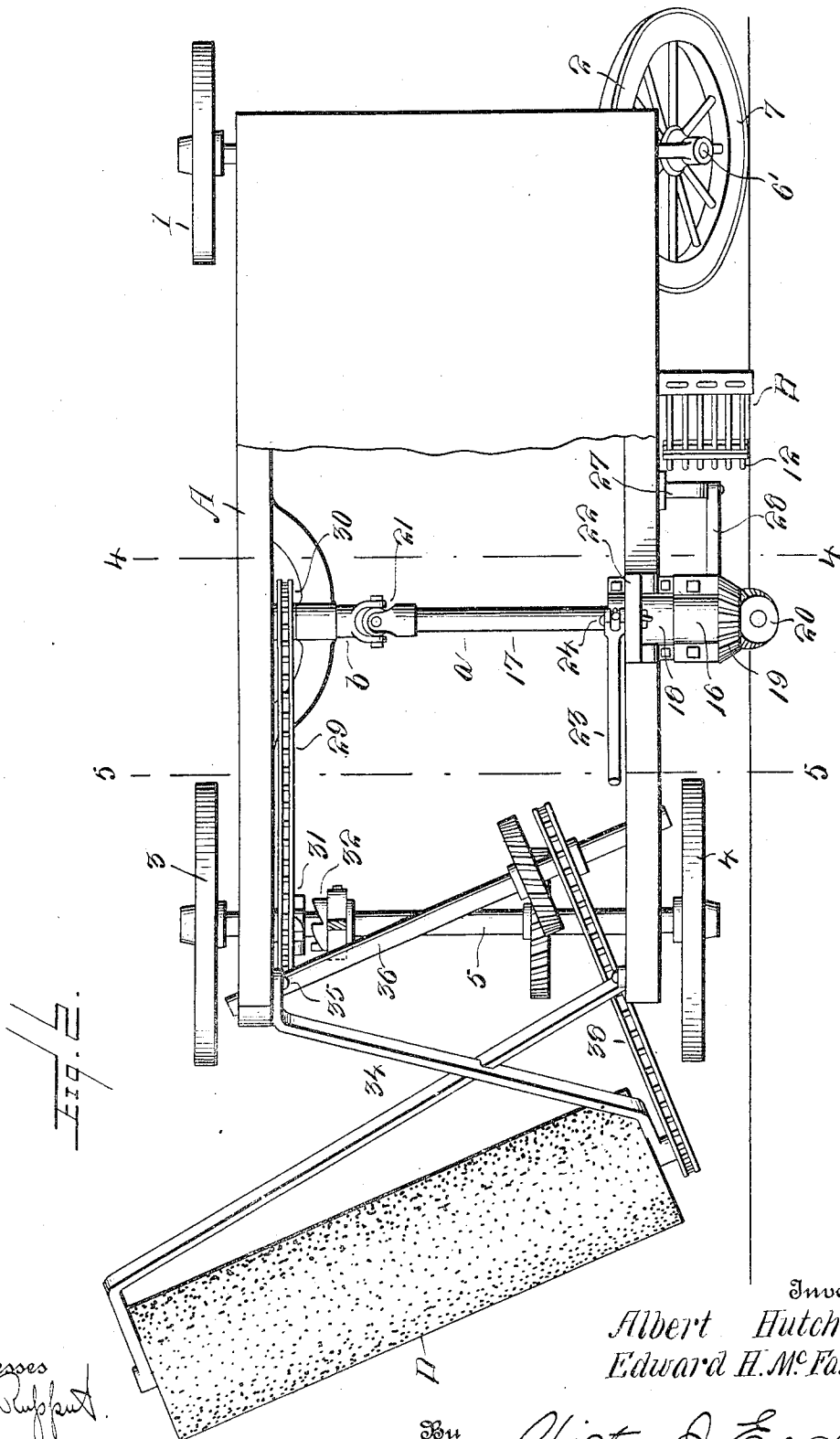
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4 SHEETS-SHEET 2.

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Fig. 3.

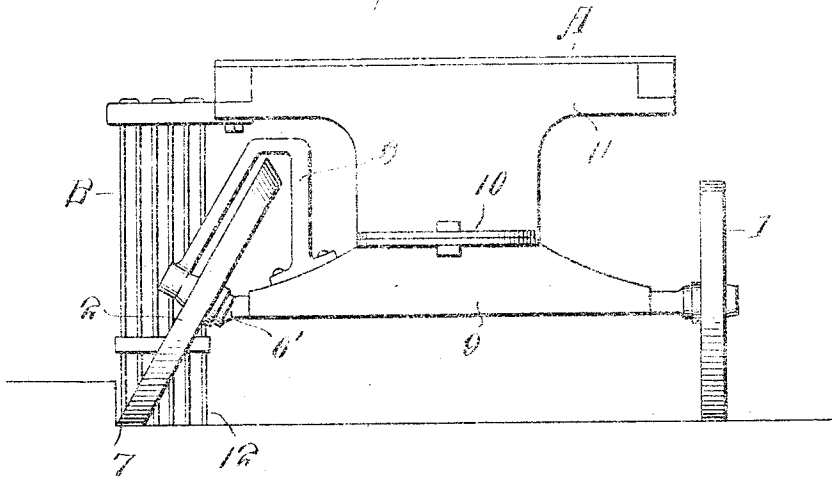
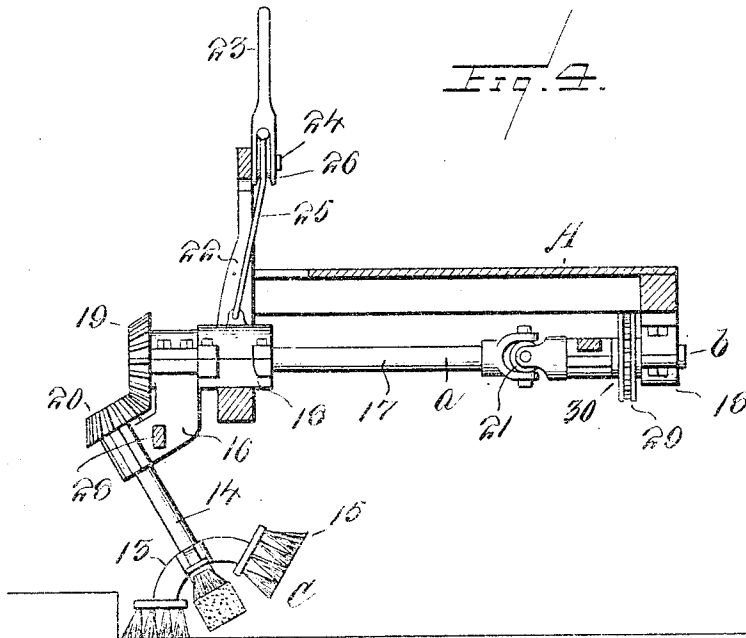


Fig. 4.



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Fig. 5.

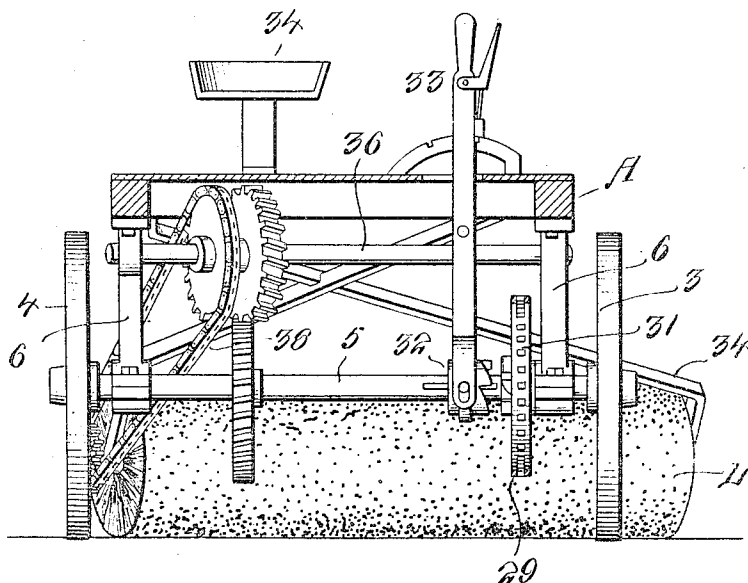
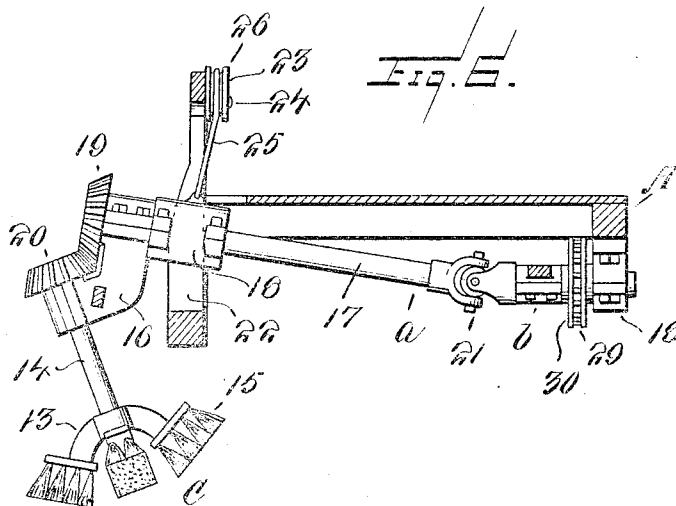


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALBERT HUTCHINS AND EDWARD H. McFARLAND, OF OAK CREEK, COLORADO.

STREET-SWEEPER.

1,053,037.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed December 27, 1910. Serial No. 599,242.

To all whom it may concern:

Be it known that we, ALBERT HUTCHINS and EDWARD H. McFARLAND, citizens of the United States, residing at Oak Creek, in the county of Routt and State of Colorado, have invented new and useful Improvements in Street-Sweepers, of which the following is a specification.

This invention relates to a street sweeper of that type including a revolving brush that sweeps the dirt from the curb toward the middle of the street.

The invention has for one of its objects to improve and simplify the construction and operation of machines of this character so as to be reliable and efficient in use, readily controlled, and comparatively inexpensive to manufacture and keep in repair.

Another object of the invention is the provision of an improved means for cleaning the street immediately along the curb so as to throw the dirt from the gutter into the path of the main brush that trails behind the machine.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a side view of the machine. Fig. 2 is a plan view thereof with a portion of the body broken away to illustrate the brush-driving mechanism. Fig. 3 is a front view of the machine, the brushes not being shown. Fig. 4 is a vertical transverse section on line 4—4, Fig. 2. Fig. 5 is a vertical transverse section on line 5—5, Fig. 2. Fig. 6 is a view similar to Fig. 5, showing the gutter cleaning brush raised so as to be out of the way of obstructions in the street.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates a frame or body of any approved construction, which is supported by front wheels 1 and 2 and rear wheels 3 and 4, the machine being drawn by horses or self-propelled, as desired. The rear wheels are fixed on the axle 5 which rotates in bearings 6 on the frame A, and this axle serves to drive the gutter-cleaning and main brushes. The

front wheel 2, which is adapted to run in the gutter of the street being cleaned, is inclined to the vertical and rotates on an inclined axle stub 6' so that the bottom of the wheel will strike the curb, as at 7, Fig. 3, and prevent the gutter-cleaning device from striking the curb and interfering with efficient operation. This stub axle can be supported or reinforced by a bracket 8 on the front axle 9, there being a fifth wheel 10 between the front axle and the bolster 11.

At the side of the frame nearest the curb is arranged a rake B or other dirt-loosening device, the said rake having teeth 12 that drag along in the gutter behind the wheel 2 so as to loosen the dirt. Immediately behind the rake is a rotary brush C that throws the dirt out of the gutter in a lateral direction so that the dirt will be taken up by the main brush D that trails along behind the machine. The brush C may be of any approved construction, the one shown consisting of a spider 13 mounted on the lower end of a rotary shaft 14, the arms of the spider being provided with brushes 15 that successively come into contact with the gutter and sweep the dirt laterally therefrom. The shaft 14 is inclined to the vertical, as clearly shown in Fig. 4, and rotates in a bracket-bearing 16 that is suspended on a driving shaft 17 that extends transversely to the machine. This shaft rotates in bearings 18 on the frame A and has on its gutter end a miter gear 19 connected with the miter gear 20 on the upper end of the shaft 17. The end of the shaft 17 that carries the brush C is adapted to be raised and lowered so as to elevate the brush out of the way of obstructions in the street. For this purpose, the shaft 17 is made in two parts, *a* and *b*, connected by the universal joint 21. The bearing 18 for the part *a* is vertically-movable in a guide 22 on the frame A, and the vertical movement is effected by a lever 23 fulcrumed at 24 in the upper end of the guide and connected by a flexible link 25 with the bearing 18. This lever has a cam 26 so that as the lever 23 is pressed downwardly, the element 25 winds on the part 26 of the lever and causes the brush C to be raised. Since the bearing bracket 16 is suspended on the rotating shaft 17, the bracket must be prevented from swinging on the shaft as an axis when the brush is in operation. For this purpose, an arm 27 extends from the frame A and is connected by

a link 28 with the bearing bracket. This link permits the bearing bracket to rise and fall, but normally maintains the shaft or spindle 14 of the brush C in the position shown in Fig. 1. The transversely-extending driving shaft 17 is driven from the axle 5 by a sprocket chain 29 passing over sprocket wheels 30 and 31 on the axle 5 and shaft 17, respectively. The sprocket wheel 31 is adapted to be operatively connected with the axle 5 for rotation therewith by a clutch 32 that is operated by a lever 33 mounted on the frame A at a point adjacent the driver's seat 34.

The main brush D is located with its axis obliquely to the direction of travel for throwing the dirt outwardly from the curb toward the middle of the street. This brush is mounted on the swinging frame 34 that is pivoted at 35 to the rear part of the main frame so that the brush will trail behind the machine. On the frame is an oblique shaft 36 that is arranged parallel with the axis of the brush D, and this shaft is driven from the axle 5 by a skew gearing. The brush is positively driven from a countershaft 36 by a sprocket mechanism 38.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while we have described the principle of operation of the invention, together with the apparatus which we now consider to be the best embodiment thereof, we desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what we claim as new, is:—

1. In a sweeper, the combination of a

frame, wheels supporting the same, and a gutter-cleaning means at one side of the frame, the front wheel of the machine at the gutter side being inclined to the vertical to strike the curb and thereby maintain the gutter-cleaning means out of contact with the curb.

2. A street sweeping machine comprising a body, wheels supporting the same, gutter-cleaning means disposed at the side of the body, and a dirt-loosening element mounted at the side of the body in front of the said cleaning means, one of said wheels being located in front of the said element and inclined to the vertical so that the lowest part of the wheel will project laterally beyond the gutter cleaning means and dirt loosening element for preventing the same from coming into contact with the curb.

3. A street sweeping machine comprising a body, a gutter cleaning means, and wheels supporting the body, one of the wheels being located in front of the gutter cleaning means having its axis so disposed that the lowest part of the wheel projects laterally beyond the gutter cleaning means for maintaining the latter out of contact with the curb.

4. A street sweeping machine comprising a body, front and rear axles, the front axle having one of its stubs disposed upwardly at an angle to the horizontal, wheels on the stubs of the axle, and a gutter sweeping means disposed behind the wheel mounted on the angularly-disposed stub whereby the wheel maintains the gutter cleaning means out of contact with the curb.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT HUTCHINS.
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Witnesses:

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