V. D. CARROLL.

STREET SWEEPING MACHINE.

APPLICATION FILED MAY 1, 1906.

911,702. Patented Feb. 9, 1909.

Fig. 1.

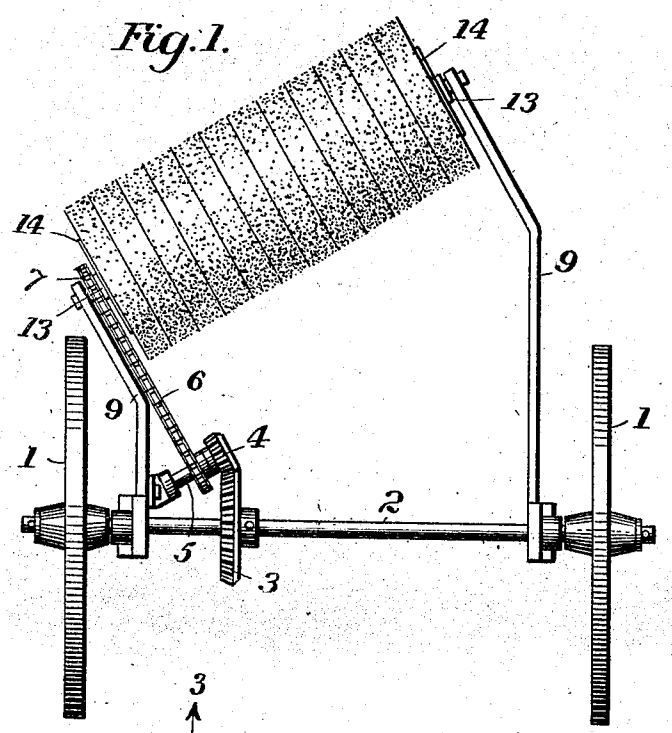


Fig. 4.

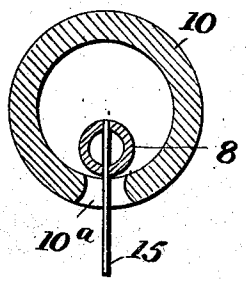


Fig. 2.

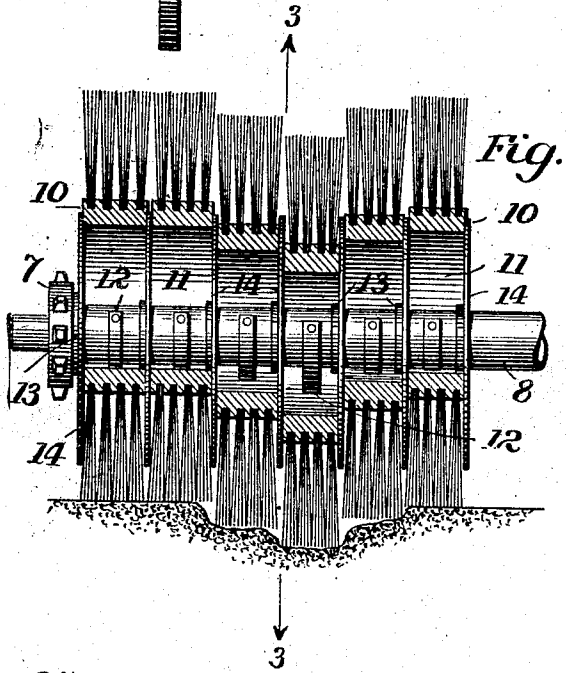
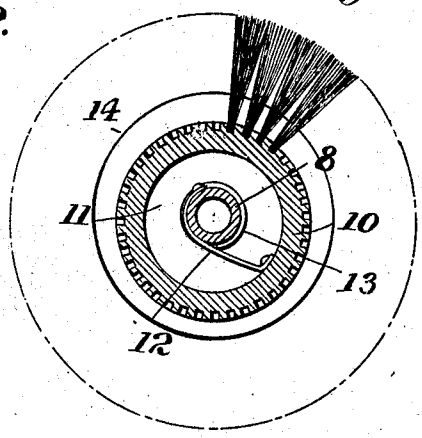


Fig. 3.



Witnesses

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VINCENT D. CARROLL, OF SAN FRANCISCO, CALIFORNIA.

STREET-SWEEPING MACHINE.

No. 911,702. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed May 1, 1906. Serial No. 314,704.

To all whom it may concern:

Be it known that I, VINCENT D. CARROLL, a citizen of the United States, residing at San Francisco, San Francisco county, State of California, have invented certain new and useful Improvements in Street-Sweeping Machines, of which the following is a specification.

The present invention relates to improvements in street sweeping machines, and particularly to the construction of rotary brushes for such machines.

The particular object of the invention is to provide a brush for this purpose which will adapt itself to inequalities in the surface over which it is moved and thereby effect a more efficient cleaning than is possible with the constructions commonly in use.

In the accompanying drawing,—Figure 1 is a plan view of a portion of a street sweeper having its brush constructed in accordance with the present invention; Fig. 2 is a longitudinal sectional view through the brush, on an enlarged scale; Fig. 3 is a transverse sectional view through the brush, on the line 3—3 of Fig. 2; Fig. 4 is a detail view illustrating a slight modification of the form of invention shown in the other figures.

Referring to the drawings, 1, 1 designate two of the wheels of a street sweeping machine, on the axle 2 of which is mounted a driving gear 3. This gear meshes with a pinion 4, which is mounted on an auxiliary shaft 5, a suitable sprocket on which is connected by a chain 6 with a sprocket 7 on the brush driving shaft 8. This shaft is journaled in suitable bearings formed at the ends of arms 9 extending rearwardly from the axle 2.

The brush comprises a series of similar sections arranged side by side about the shaft 8 and each independently connected therewith as hereinafter described. As shown, the hub or body 10 of each section of the brush is provided with a passage 11, the diameter of which is considerably greater than that of the shaft 8, and the connection between the shaft and hub is such that each section of the brush is free to move transversely relative to the shaft.

The shaft may be connected with each of the sections by any suitable means which, while communicating the rotary movement of the shaft to the brush section, will permit the latter to move vertically to accommodate itself to irregularities in the surface over which it is moved. As shown in Figs. 2 and 3, the hub 10 of each brush section is connected with the shaft by a flexible band 12. It will be seen that this connection offers no obstruction to a free vertical movement of the section relative to the shaft so that when any section of the brush is moved over a depression in the surface being cleaned, for example, the brush section will fall until it reaches the bottom of such depression; and similarly if an obstruction or elevation is in the path of the brush-section, the latter may move upwardly so as to clear the same without in any manner effecting the vertical position of the other sections of the brush.

Any suitable means may be provided for holding the several brush sections in proper position on the shaft or limiting movement thereof longitudinally of the shaft. As shown, suitable collars 13 are fitted to the shaft and provided with disk-like flanges 14 of such diameter as to always extend across the hubs of the several brush sections. The driving sprocket 7 may be connected to or formed integral with one of said collars 13.

In Fig. 4 is illustrated a slightly modified form of connection between the driving shaft 8 and hub 10 of the brush sections. In this embodiment of the invention, the shaft 8 is provided with radially projecting pins 15, each extending through an aperture 10^a in the hub of one of the brush sections, said aperture being relatively large so that the finger 15 does not interfere with the free vertical movement of the brush section while transmitting rotary motion from the driving shaft.

The operation and advantages of the invention will be readily understood from the foregoing description and the drawings. Referring particularly to Fig. 2 it will be seen that the brush will automatically adapt itself to rough surfaces and that each section thereof is freely movable independently of every other section.

What I claim is,—

1. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush comprising a plurality of sections surrounding the shaft and each freely movable radially of the shaft by gravity to a position eccentric to the shaft, and means for transmitting rotary movement from the shaft to the brush.

2. In a street sweeping machine, the combination of a wheeled support or carriage a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush comprising a plurality of sections each circular in cross section and extending continuously about the shaft, each of said sections being freely movable by gravity to a position eccentric to the shaft as it is moved over a depression in the surface being swept, and means for transmitting rotary movement from the shaft to the brush.

3. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush comprising a plurality of relatively narrow circular sections arranged side by side to provide a cylindrical brush, each brush section being freely movable by gravity to a position eccentric to the shaft as said section comes into alinement with a depression in the surface being swept, and means within each of the brush sections for transmitting rotary movement to said sections from the shaft.

4. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush comprising a plurality of sections, each including a ring-like hub loosely surrounding the shaft whereby it may be moved radially to a position eccentric to the shaft as it passes a depression in the surface being swept or meets an obstruction, and a flexible connection between the shaft and each of said brush sections for rotating the latter as the shaft is revolved.

5. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush comprising a plurality of sections, each including a ring-like hub loosely surrounding the shaft whereby it may be moved radially to a position eccentric to the shaft as it passes a depression in the surface being swept or meets an obstruction, and a band arranged within each of said hubs and having its ends connected to the hub and shaft respectively.

6. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush comprising a plurality of sections each surrounding the shaft and mounted to move transversely thereof independently of the other sections, means on the shaft for properly separating said sections, and connections between each brush section and the shaft whereby the brush will rotate as the shaft is revolved.

7. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush surrounding said shaft and comprising a plurality of sections, each adapted to automatically move to a position eccentric to the shaft as it passes a depression in the surface over which the brush travels, and means for transmitting rotary movement from the shaft to each section of the brush.

8. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by said carriage and adapted to be revolved as the latter is moved, a brush comprising a plurality of relatively narrow sections arranged side by side about the shaft and each connected with the shaft to be rotated thereby, each of said brush sections being mounted to automatically move to a position eccentric to the shaft as said section comes into alinement with a depression in the surface being swept, and means for preventing movement of the sections longitudinally of the shaft.

9. In a street sweeping machine, the combination of a wheeled support or carriage, a shaft mounted in bearings carried by the carriage and adapted to be revolved as the carriage is moved, a brush comprising a plurality of relatively narrow sections arranged side by side about the shaft, each of said sections being adapted to automatically move to a position eccentric to the shaft as said section comes into alinement with a depression in the surface over which the brush is moved, a series of plates separating said brush sections and preventing movement thereof longitudinal of the shaft, and means for transmitting rotary movement from the shaft to each of said brush sections.

In testimony whereof I affix my signature in presence of two witnesses.

VINCENT D. CARROLL.

Witnesses:

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