

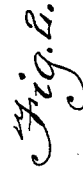
APPLICATION FILED OCT. 24, 1910.

Patented Dec. 26, 1911.

2 SHEETS—SHEET 1.



H. N. Ramsey
L. E. Barkley.



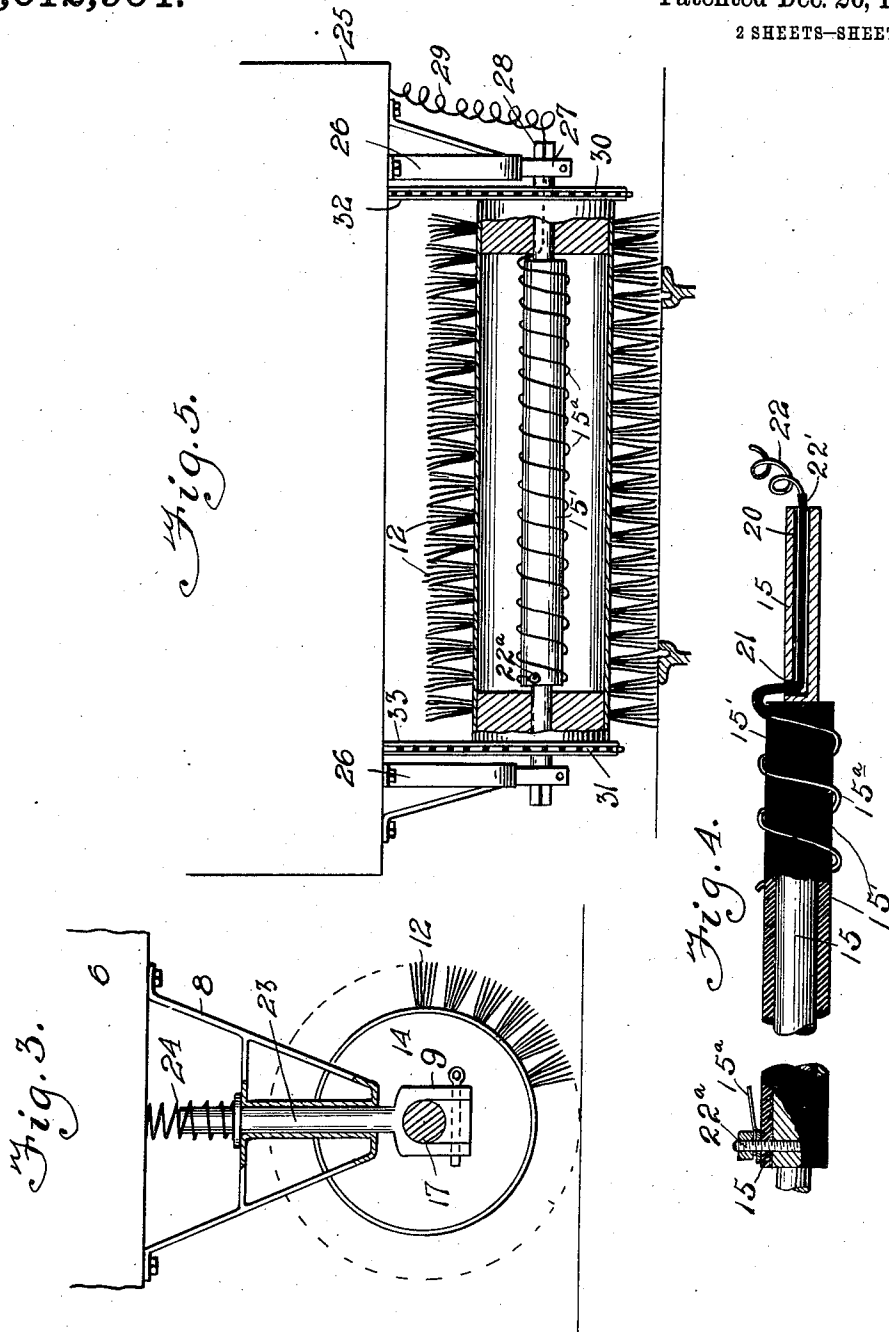
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A. A. OWEN & S. B. MUSGRAVE.
STREET AND RAILROAD SNOW SWEEPER.
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2 SHEETS-SHEET 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

ARTHUR A. OWEN AND SAMUEL B. MUSGRAVE, OF SPRINGFIELD, MISSOURI.

STREET AND RAILROAD SNOW-SWEEPER.

1,012,904.

Specification of Letters Patent.

Patented Dec. 26, 1911.

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To all whom it may concern:

Be it known that we, ARTHUR A. OWEN and SAMUEL B. MUSGRAVE, citizens of the United States of America, and residents of Springfield, in the county of Greene and State of Missouri, have invented certain new and useful Improvements in Street and Railroad Snow-Sweepers, of which the following is a specification.

This invention relates to brushing and scrubbing and particularly to street and railroad snow sweepers.

An object of this invention is to provide a street sweeper having brushes supplied with means for heating the bristles thereof for the primary purpose of preventing the accumulation of snow on the bristles of the brushes or the accumulation of ice thereon, either of which would impair the functions of the brushes.

A further object of this invention is to provide a street sweeper having brush cylinders to which the bristles or fiber are applied, novel means being provided for heating the interior of the cylinders and confining the heat except of course that which radiates through the brushes.

With the foregoing and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a sectional view of two brushes applied to a fragment of a car; Fig. 2 illustrates a side elevation of a fragment of a car with one of the brushes shown in end elevation; Fig. 3 illustrates an enlarged detail view of a brush and the means for connecting it to a car; Fig. 4 illustrates a detail view showing the manner of wiring through the shafts of the brushes; and Fig. 5 illustrates a sectional view showing a single brush of such length as to span the rails of a track.

In these drawings 6 denotes a fragment of a car body, 7 one of the wheels thereof and 8 brackets suspended from the car body and having journal bearings 9 therein for the reception of the shaft 17 which is provided for the purpose of supporting an end

of each of two brushes, which comprise cylinders 11, carrying the bristles or spines 12. The other ends of said cylinders are supported by brackets 8', to the heads 9', of which the end portions of the shaft 15 are secured. For preventing rotation of the shafts 15 in the heads 9', the end portion of the shafts may be made angular as in Fig. 5. The head 13 of each cylinder has a bearing 13' to receive an end portion of the shaft 15 and the head 14 of each cylinder has a bearing 14' to receive an end of the shaft 15. The heads 14 also have apertures 16, the walls of which are angular for the purpose of forming seats for the ends of the shaft 17 which shaft 17 is of polygonal outline in cross section and therefore the rotation of the shaft 17 serves to rotate the cylinders upon the end portion of the shafts 15. The shaft 17 is further provided with a sprocket 18, which is actuated by a chain 19, the latter taking motion from any suitable source not shown.

The outer end of each shaft 15 is provided with a longitudinally disposed aperture 20 which communicates with a radially disposed aperture 21 designed to receive the conductor 22 which conductor may lead from a battery or other source of electrical supply not shown. The conductors 22 are covered with insulating material 22' at those portions where they pass through the shaft but are bare where they are shown within the cylinders. The shafts 15, however, have their insulated portions covered with insulating material 15'.

In carrying the invention into practice, it is the purpose of the inventors to place a resistance coil 15^a in the cylinders in order that the said cylinders may become heated and thus impart heat to the bristles for the purpose of melting snow or ice. In the form shown in Fig. 1, an electric conductor extends into the apertured outer end of each shaft and is connected to an end of the resistance coil, and in order to effect the circuit the other end of the resistance coil may be secured to any suitable metal part of a car which is in electrical connection with the source of electro-motive force, which will result in grounding the circuit. The grounding is, however, preferably effected by connecting the end of the conductor directly to the shaft 15 by means of a binding post 22^a passing through the insulation 15'.

For the purpose of causing the brushes to

exert pressure on the track or on the surface being cleaned, the brackets 8 are provided with vertically movable shanks 23 extending upward from the heads or bearings 9' and having springs 24 encircling their upper ends, the said springs being designed to exert pressure on the shanks and consequently on the brushes carried by the lower ends thereof through the medium of the shafts 17.

In Fig. 5 we have shown a car 25 having brackets 26, one near each side of the car, the said brackets being of the same construction as the one shown in Fig. 3. The brackets support shanks having heads 27 in which the end portion of the shaft 28 is secured, the said shaft having longitudinally disposed apertures at each end similar to the apertures shown in Fig. 4 for the reception of the conductor 29 which extends therethrough. That portion of the conductor within the cylinder is of greater resistance as compared with the part of the conductor exteriorly thereof and therefore the portion within the cylinder becomes heated and serves to warm the bristles of the brush carried thereby to such an extent as to prevent accumulations on the said brush. In this form, we have shown two sprocket wheels 30 and 31 mounted upon the ends of the cylinder and adapted to be driven by the sprocket chains 32 and 33 respectively, it being understood that the said sprocket chains may be driven in any suitable manner and cause the cylinder to rotate upon the end portions of the shaft 15, which remain stationary.

Under certain conditions the form of the invention shown in Fig. 5 will prove advantageous especially so when it is desired to clean the track for its full width but the form shown in Fig. 1 will be satisfactory in removing deposits on the rails proper of the track and its operation and maintenance would probably prove less expensive than the operation and maintenance of the form shown in Fig. 5.

We claim—

1. In a street and railroad snow sweeper, a car body, brackets extending therefrom, bearings associated with the brackets, shafts seated in the bearings, the said shafts having openings in their ends, conductors extending through the said openings, rotatable cylinders on the shafts, bristles carried by the brushes which comprise cylinders, conductors of electricity extending through the openings of the shafts, resistance elements in the cylinders connected to the conductors, and means for rotating the cylinders.

2. In a street and railroad snow sweeper, pendently supported brackets, a shaft carried by certain of the brackets, a hollow rotatable brush having heads, each head having an aperture receiving the shaft, means for rotating the brush and means within the brush for heating the brush.

3. In a street and railroad snow sweeper, brackets, means for supporting the brackets, shafts stationary with relation to the brackets, cylinders having heads with journal bearings therein, said heads having polygonal sockets communicating with said bearings, a shaft having ends polygonal in cross section journaled in certain of the brackets and extending into the polygonal sockets of the cylinder head, means for rotating the last mentioned shaft, conductors of electricity extending into the cylinders and resistance elements in the aperture between the cylinder heads.

4. In a street and railroad snow sweeper, pendently supported brackets, yieldable shanks carried by the brackets, shafts carried by the yieldable shanks, hollow brushes mounted on the shafts, means for rotating the brushes, the said shafts having openings therein extending from the outside of the brushes to the insides thereof, conductors of electricity extending through the apertures, and resistance elements in the brushes in electrical connection with the conductors.

5. In a street and railroad snow sweeper, pendently supported brackets, a shaft carried by certain of the brackets, a hollow rotatable brush having heads, each head having an aperture receiving the shaft, means for rotating the brush, and electrical means in said aperture for heating the brush.

6. In a street and railroad snow sweeper, a shaft, means for supporting the shaft, a hollow brush rotatably mounted on the shaft, said shaft having an aperture in an end thereof, a resistance coil in said hollow brush for heating the brush, said resistance coil being connected through said aperture with an external source of electric current, and power transmission means operatively connected with the brush for rotating the brush.

In testimony whereof we have hereunto affixed our signatures and seals, in the presence of two witnesses.

ARTHUR A. OWEN. [L. S.]
SAMUEL B. MUSGRAVE. [L. S.]

Witnesses:

JOHN B. NEFF,
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