

(No Model.)

R. A. HEALY & E. D. CUNDELL.

GAS HEATED ROTARY BRUSH FOR STREET CLEANING MACHINES.

No. 506,501.

Patented Oct. 10, 1893.

Fig 1:

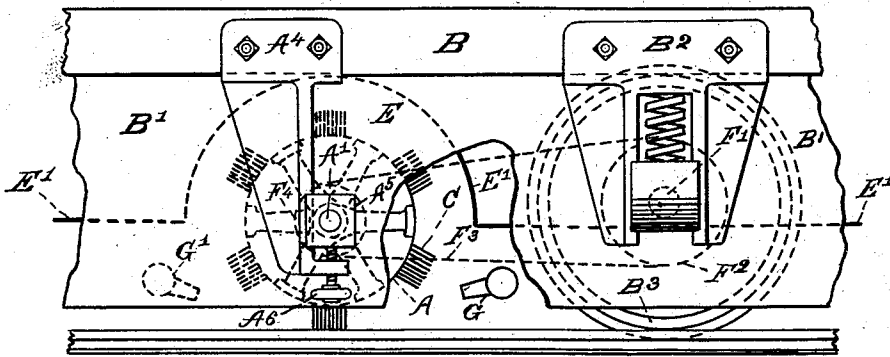


Fig 2:

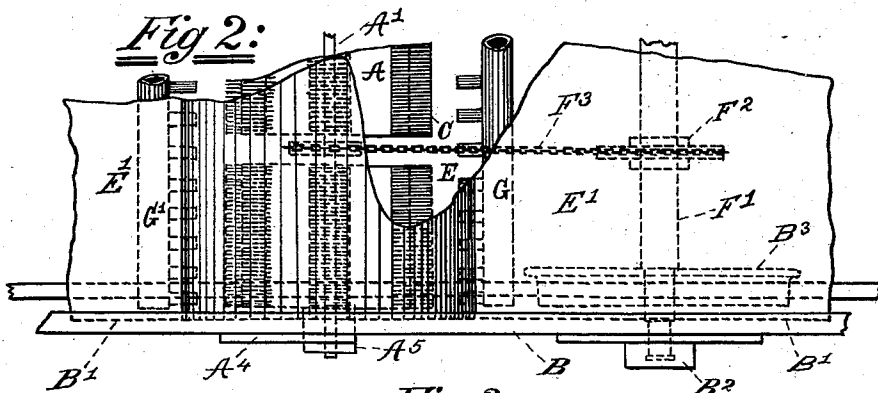
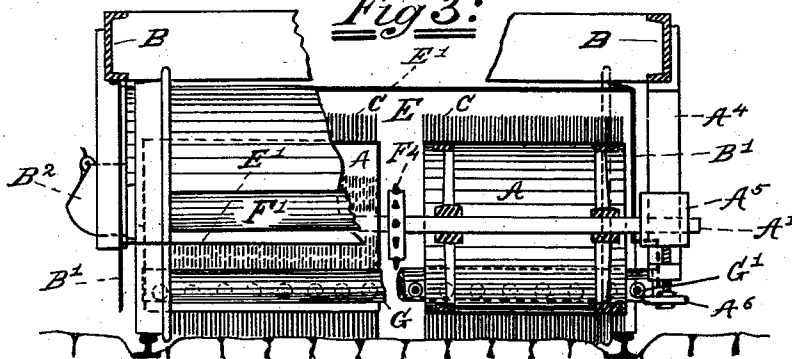


Fig 3:



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UNITED STATES PATENT OFFICE.

RICHARD A. HEALY AND EDWARD D. CUNDELL, OF PATERSON, NEW JERSEY,
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GAS-HEATED ROTARY BRUSH FOR STREET-CLEANING MACHINES.

SPECIFICATION forming part of Letters Patent No. 506,501, dated October 10, 1893.

Application filed April 1, 1893. Serial No. 468,725. (No model.)

To all whom it may concern:

Be it known that we, RICHARD A. HEALY and EDWARD D. CUNDELL, citizens of the United States, residing in the city of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Gas-Heated Rotary Brushes for Street-Cleaning Machines and for Snow-Melting Purposes, of which the following is a specification.

Our invention relates to rotating brushes for use in a movable machine, mounted upon wheels, which may be moved rapidly over the surface of roads, both rail and common, as well as streets for the purpose of liquefying snow that may lie upon the same during or after a snow fall, the brush which is formed of iron or steel, revolving in a chamber formed on the under side of the platform of the truck or carriage, and which is made a combustion chamber for the ignited gas and air from adjacent burners. The wires forming the brushes absorb a part of the heat of the chamber and becoming red hot in their revolution and in their contact with the snow become cooled in the act of melting the same and heated again when they enter the chamber in their rotation. By this means large amounts of snow may be rapidly liquefied, inasmuch as besides dissolving the snow by contact with the heated brush wires, the snow is lifted up and thrown about in the annular chamber that surrounds the brush, which being filled with heated air and gas flame, is completely dissolved. Motion to rotate the brush may be obtained by means of a link belt chain in continuous connection with a driving sprocket wheel on one of the axles of the vehicle which rotates with the wheels, and a sprocket wheel on the center shaft or arbor of the brush.

It may be understood that all parts are preferably made of steel and iron to withstand heat, and that the brush may be capable of adjustment with respect to height that may be necessary for uneven roads, or streets. We accomplish these results by the various devices illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, showing part of a wheeled carriage with brush located in its bearings and connected by belt to driving

axle. Fig. 2 is a plan view of the same. Fig. 3 is a transverse sectional view of machine through central brush.

Similar letters have reference to similar parts.

We will now proceed to describe the construction, and operation of our newly invented gas heated rotary brush.

B Fig. 1 represents the frame of a wheeled vehicle to each side of which an adjustable bracket or hanger is secured, in the bearings of which, A⁵, is located the arbor A' of the brush A and which is vertically adjustable by the hand wheel and screw A⁶.

Secured on the arbor A' by the set screws A³ spiders P are located, upon which are secured, by the bolts P' and lugs A², the cylindrical drums A, which are made in sections to accommodate the width of face required for the brush, three or more being necessary. Six or more sections of brushes may be arranged circumferentially on the cylinders or drums and are extended the whole width of the drum longitudinally.

The sides of the vehicle are provided with the protecting shields, B', B', and the under side is covered,—forming a chamber,—by the plates E', E', plates being curved in the center longitudinally to a radius larger than that of the extremity of the brush pins c, c², so as to form the space E for combustion of the unexpended gases from the burners G and G', which are located a certain distance from the drum or brush A.

To the driving axle F' which with its wheels B³ revolve in the bearings B², is secured a sprocket wheel F², a similar but smaller sprocket wheel F⁴, being secured to the shaft, or arbor A' of the drum, or brush A. The chain or link belt F³ being continuous, connects the driving motion from the wheel F², to the wheel F⁴, and allows a different rate of revolution for each wheel, or shaft, as shown in Figs. 1 and 2 suitable holes or slots being formed in the cover plates E', to permit the rotation of the wheel F², and the passage of the chains F³.

In operation, when the vehicle is in motion forward, the wheels B³, and axles F' revolve, as also the sprocket wheel F² which by the link belt, or chain F³, imparts an accelerated rotary motion to the wheel F⁴, shaft A', and

rotary drum or brush A, the brush points C
 C², being adjusted by the hand wheel, and
 screw A⁶, so that contact with the snow may
 be secured. The gas and atmospheric air is-
 5 suing from the orifice of the burners G, and
 G' being ignited; the flame is directed di-
 rectly upon the sides of the drum A, and the
 surplus and rising heated gases rise and fill
 the semi-annular combustion chamber E. The
 10 points of the wires C as also their entire length
 attaining a red heat, strike and lift the snow,
 throwing it up into the chamber E, as well as
 dissolving, or liquefying it by direct contact;
 by this means the wires or brushes are kept
 15 at a red heat, although, alternately passing
 through the body of the snow upon the road.
 By this arrangement the rapidity of lique-
 faction is limited only, by the degree of heat
 maintained in the chamber E, and the num-
 20 ber of revolutions of the brush A, the pins C,
 C² acting as knives to divide the snow, as well
 as blades to throw it into the chamber E.

Having described the construction of our
 newly-invented-gas heated rotary brush for
 25 street-cleaning machines, what we claim as
 new, and desire to secure by Letters Patent,
 is as follows:

1. The combination of a wheel carriage or

vehicle; provided with a covered combustion
 chamber; with a rotary brush or brushes con- 30
 tained therein, gas burners arranged on each
 side of said brushes; rotary motion being
 communicated to said brushes by sprocket
 wheels on the brush shaft and wheel axles
 connected by a linked belt or chain, said 35
 brush shaft being adjustable in its bearings,
 substantially as specified.

2. The combination of the platform B,
 wheels B³, axles F', side shields B', cover
 plates E', of a wheeled vehicle with the rotary 40
 brush A, mounted on shaft A', gas burners
 G, G', hot air chamber E, sprocket wheels F²,
 F⁴, chain F³, bracket A⁴, bearing A⁵, adjust-
 ing screw and wheel A⁶, substantially as speci-
 fied. 45

3. A rotary brush mounted in adjustable
 bearings located upon a car or vehicle and
 gas burners arranged on each side of the
 same, said brush being constructed of incom-
 bustible material substantially as and for the 50
 purposes specified.

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Witnesses:

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