

A. VERSCHUREN.
STREET SWEEPING VEHICLE.
APPLICATION FILED FEB. 17, 1908.

932,195.

Patented Aug. 24, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

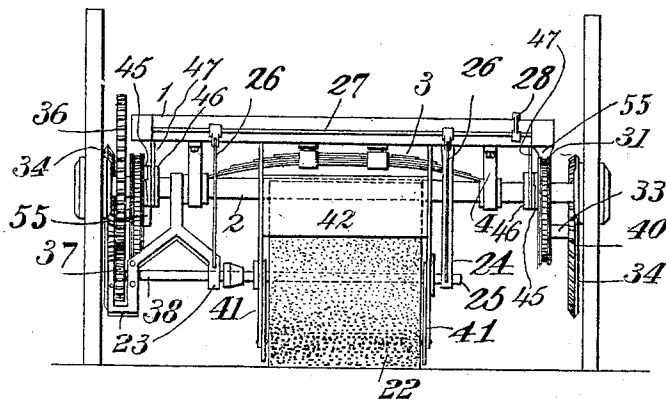
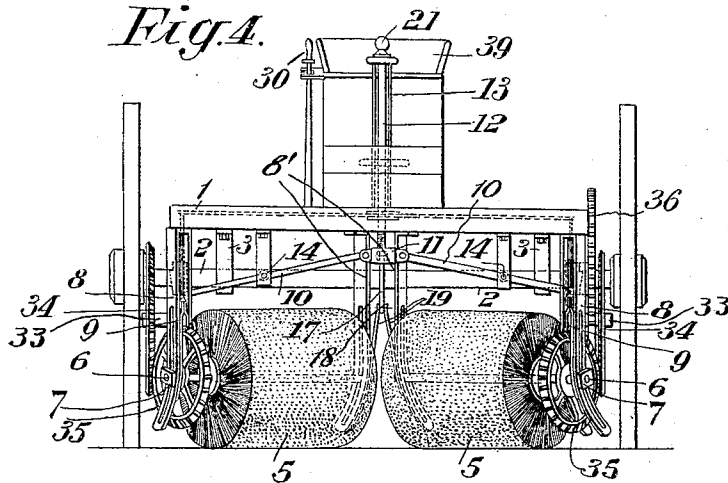


Fig. 4.



Witnesses:
C. Hyman
C. Singer

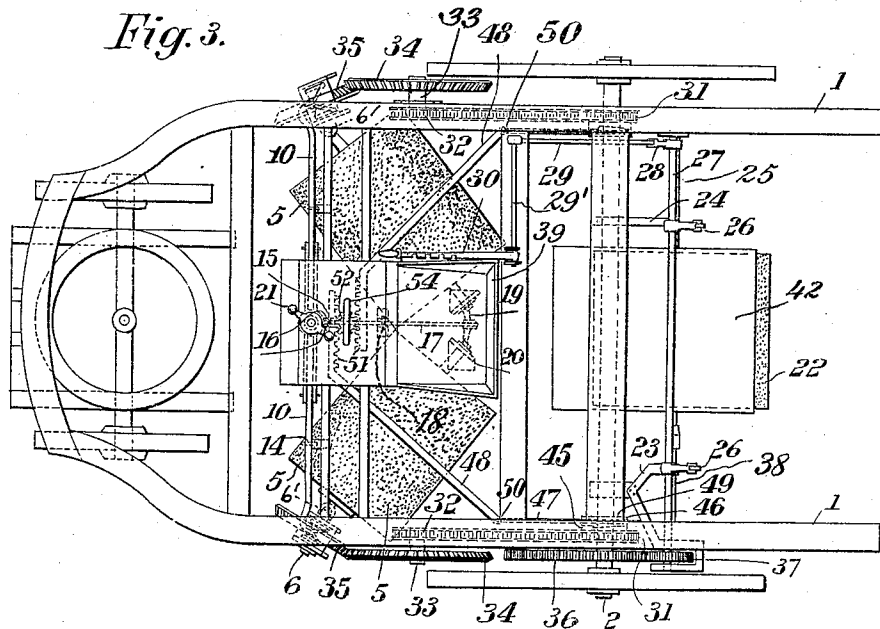
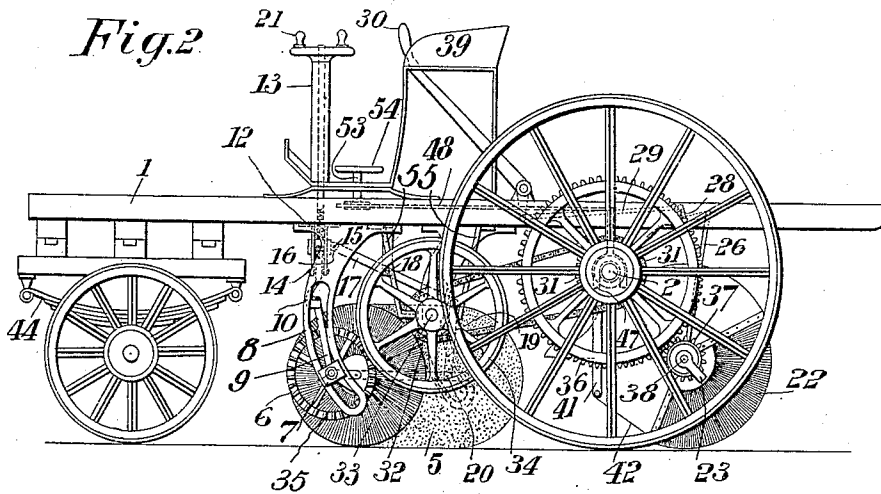
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2 SHEETS—SHEET 2.



Witnesses:
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C. Singer.

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UNITED STATES PATENT OFFICE.

AUGUSTE VERSCHUREN, OF ANTWERP, BELGIUM.

STREET-SWEEPING VEHICLE.

932,195.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Original application filed February 1, 1906, Serial No. 299,058. Divided and this application filed February 17, 1908.
Serial No. 416,371.

To all whom it may concern:

Be it known that I, AUGUSTE VERSCHUREN, a subject of the King of Belgium, and resident of 35 Rue Léopold de Wael, Antwerp, Belgium, have invented a certain new or Improved Street-Sweeping Vehicle, of which the following is a specification.

This invention relates to improvements in street sweepers and is designed for use more particularly in connection with that class of sweepers wherein obliquely disposed brushes are provided for collecting and directing the sweepings toward the center of the sweeper and wherein a follower brush, disposed at right angles to the line of travel of the sweeper, is provided for engaging the centrally disposed sweepings and directing them into a suitable receiver.

The present application is divided from my application filed February 1st, 1906, Serial No. 299,058.

The invention has to do more particularly with improved devices for controlling the sweeping brushes both as regards their adjustment and rotation and the invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawings:—Figure 1 is a rear view of one form of sweeper embodying the features of my invention, with the side brushes omitted. Fig. 2 is a side elevation thereof. Fig. 3, is a plan view. Fig. 4 is a front elevation with the rear brush omitted.

Like numerals of reference designate similar parts throughout the different figures of the drawings.

As shown the sweeper comprises a frame 1, supported by front and rear wheels by means of interposed springs 44 and 3 respectively. A suitable seat 39 may be provided for the operator and brushes 5 and 22 are disposed below the frame 1 for gathering the sweepings from the road bed. The brushes 5 are rotary and are disposed with their axes oblique to the line of travel of the sweeper so as to direct the sweepings toward the longitudinal axis of the sweeper. The brush 22 is disposed at right angles to the line of travel of the sweeper and with respect to its axis, and is also centrally disposed with respect to the longitudinal axis of the sweeper and at a point in the rear of the brushes 5 so that the centrally directed sweepings gathered by the

brushes 5 will be taken up by the brush 22 to be deposited in a suitable receiver or elevator, such for instance, as that described in my application hereinbefore identified.

The manner in which the brushes 5 are driven will now be described in detail.

The rear wheels are mounted upon an axle 2 which carries sprocket wheels 31 adapted to be belted or otherwise operatively connected with sprocket wheels 32 disposed somewhat in advance of the wheels 31. The sprocket wheels 32 are mounted upon short shafts 33 supported in depending hanger bearings 55. Said shafts 33 carry bevel gears 34 which mesh with bevel gears 35. The gears 35 are mounted upon brush spindles 6 at the outer ends thereof on which the brushes 5 are rigidly secured. The brush spindles 6 are in two parts and are connected by a universal joint 6'. At their inner and outer ends the brush spindles 6 are journaled in bearing boxes 7 and said boxes are conveniently mounted in guide ways to permit up and down movement or adjustment of the brushes and as shown said guide ways are in the form of slotted depending brackets 8 and 8' secured to the frame 1, the bracket 8 serving for the outer ends of the spindles and the bracket 8' for the inner ends thereof.

In order to maintain driving connection between the brushes and the axle 2 in all adjustments of the former it is necessary to maintain a mesh engagement between the gears 34 and 35 and therefore the slots in the brackets 8 and 8' are curved and the curvatures of said slots are struck from the centers of the shafts 33, so that the centers thereof will always be a uniform distance from the centers of the spindles 6.

The means whereby the brushes 5 are adjusted with respect to the road bed will now be described in detail.

An adjusting rod 12 is disposed in a rigidly mounted sleeve 13 and carries on its upper end a manually operable crank 21 located in a position to be accessible from the seat 39. A supporting block 11 has threaded engagement with the lower end of the adjusting rod 12 and is connected with the inner ends of pivotally mounted levers 10 so that the block 11 will be prevented from rotating when the rod 12 is adjusted. The sleeve 13 forms a support for the crank 21. The levers 10 are pivoted at 14 to depending brackets

secured to the frame 1 and the outer ends of the levers 10 are connected with the boxes 7 by means of bifurcated links 9. It will be readily seen from the foregoing that when the operator rotates the crank 21 in a direction to lower the block 11 the outer ends of the brush spindles 6 will be raised whereas when the crank 21 is rotated in an opposite direction so as to raise the block 11 the outer ends of the brush spindles will be lowered. It is desirable to raise and lower the brushes horizontally and therefore means are provided for raising both ends of the spindles 6 in unison and in the embodiment shown the inner ends of the spindles 6 are connected with links 19 which latter are secured to a lever 17 pivoted at 18. Said lever 17 is connected at 15 to the block 11 and the arrangement is such that when the block 11 is lowered the inner ends of the spindles 6 will be raised and when the block 11 is raised the inner ends of the spindles 6 will be lowered in a manner similar to the manner in which the outer ends of the spindles 6 are raised and lowered.

The manner in which the rear brush 22 is supported, operated and adjusted will now be described in detail.

The rear brush 22 is mounted upon a brush spindle 25 which is provided with an extension 38 at one end. The spindle 25 has bearings in arms 23 and 24 which are supported by the rear axle 2 as shown. The arm 23 is bifurcated and the outer fork is bent back, thereby providing three bearings for extension shaft 38; between the outer two bearings there is disposed a gear 37 which is rigidly secured to the extension 38. The gear 36, meshing with the gear 37, is mounted on the rear axle 2 and serves to impart rotary motion to the brush 22. In order that the brush 22 may be raised and lowered a rock shaft 27 is provided and is connected by links 26 with the arms 23 and 24. An arm 28 on the rock shaft is connected by a rod 29 and rock shaft 29' with a lever 30 by means of which an operator may rock the shaft 27 to obtain the required adjustment of the brush 22.

A casing 42, is provided for the brush 22, and said casing is desirably mounted upon the spindle 25. The lower wall of said casing may serve to convey the sweepings from the brush 22 to a suitable receiver or elevator such for instance as is shown in my application hereinbefore identified. Links 41 connected with the frame 1 are secured to the casing 42 so as to hold the delivery end thereof in prescribed relation with respect to the receiver of the sweepings.

It is desirable to throw the brushes 5 and 22 out of driving relation with the axle 2 when the sweeper is being moved from place to place and is not adjusted in a position to operate upon the road-bed. Clutches are

provided which consist of outer and inner members 45 and 46 respectively, the outer members 45 being fixed to the sprocket wheels 31, and one of said outer members to the gear 36, and the inner members 46 being splined to the axle 2. Bifurcated levers 47 engage the clutch members 46 for the purpose of throwing them into and out of engagement with the clutch members 45. Levers 48 pivoted at 50 to the frame 1 are connected with the levers 47 and are provided on their ends with racks 51 adapted to be engaged by a pinion 52. The pinion 52 is connected with an operating member 54 located in a position accessible to the driver seat 39 whereby the clutches may be thrown into and out of engagement to connect or disconnect the brushes from the driving means therefor.

It will be readily seen that when the sprocket wheels 31 are thrown out of driving connection with the axle 2 the brushes 5 will cease to rotate and when the gear 36 is thrown out of driving engagement with the axle 2 the brush 22 also ceases to rotate, therefore all three brushes will be thrown into and out of driving engagement by the operating member 54.

I claim:—

1. In a street sweeping apparatus the combination with a vehicle frame, of a plurality of brushes therefor, spindles for said brushes, brackets depending from said frame in which said spindles are slidably mounted, pivotally mounted levers connected with said spindles at their ends, a block connected with the free ends of said levers, a manually operable adjusting rod having threaded connection with said block, and a rigidly mounted sleeve supporting said rod.

2. In a street sweeping apparatus the combination with a vehicle frame, of a plurality of brushes therefor, spindles for said brushes, brackets depending from said frame in which said spindles are slidably mounted, pivotally mounted levers connected with said spindles at their ends, a block connected with the free ends of said levers, and a manually operable adjusting rod having threaded connection with said block.

3. In a street sweeping apparatus the combination with a vehicle frame, of a plurality of brushes therefor, spindles for said brushes, brackets depending from said frame in which said spindles are slidably mounted, levers connected with said spindles, a block connected with said levers, and means for raising and lowering the block to adjust said brushes with respect to the street surface.

4. In a street sweeping apparatus the combination with a vehicle frame, of a pair of brushes disposed obliquely to the line of travel of said apparatus, a follower brush disposed at right angles to the line of travel of said vehicle, spindles for said brushes, an

axle for said vehicle, arms pivotally mounted
on said axle and supporting said follower
brush, means connected with said arms for
raising and lowering said brush spindle with
5 respect to the street surface, a gear mounted
on said follower brush spindle, a driving gear
mounted on said axle meshing with said fol-
lower brush spindle gear, sprockets mounted
on said axle, sprockets hung from said frame
10 in advance of said first mentioned sprockets,
sprocket chains chained about said sprock-
ets, clutches for connecting and disconnect-
ing said driving gears and axle sprockets
with and from said axle, pivotally mounted
15 levers having inwardly converging ends pro-
vided with racks for operating said clutches,
an operating member provided with a pin-
ion engaging said racks whereby said levers

may be operated, gears mounted on the
outer ends of said obliquely arranged brush 20
spindles, gears operated by said advance
sprocket meshing with said spindle gears,
brackets for the inner and outer ends of said
obliquely raised spindles, levers connected
with said inner and outer ends of said 25
obliquely raised spindles, and means for op-
erating said levers to raise and lower the in-
ner and outer ends of said obliquely arranged
brushes in unison.

In testimony whereof I have hereunto set 30
my hand in presence of two witnesses.

AUGUSTE VERSCHUREN.

Witnesses:

LOW DONHER,
G. DEHERSY.