May 15, 1923.

1,454,884

L. B. DONKERS

STREET SWEEPER

Filed Nov. 14, 1919

2 Sheets-Sheet 1

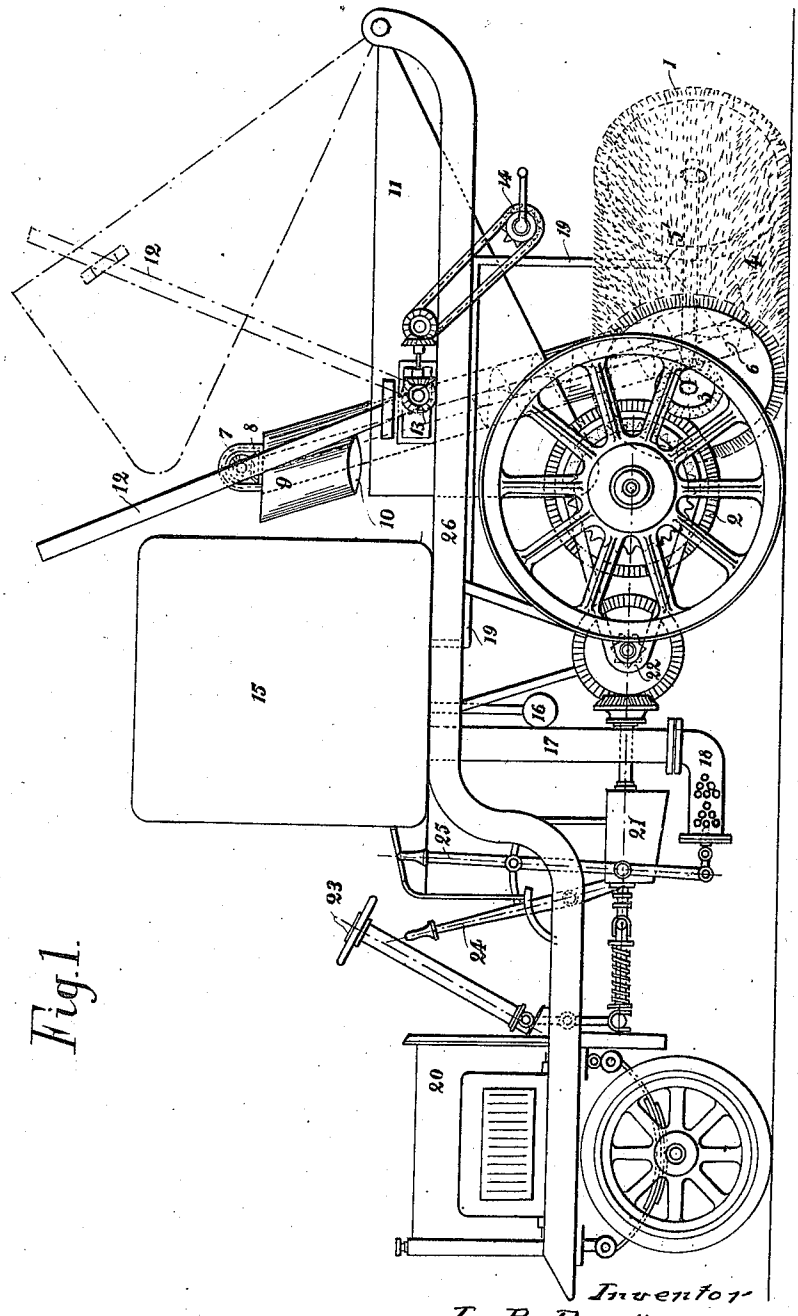


Fig. 1.

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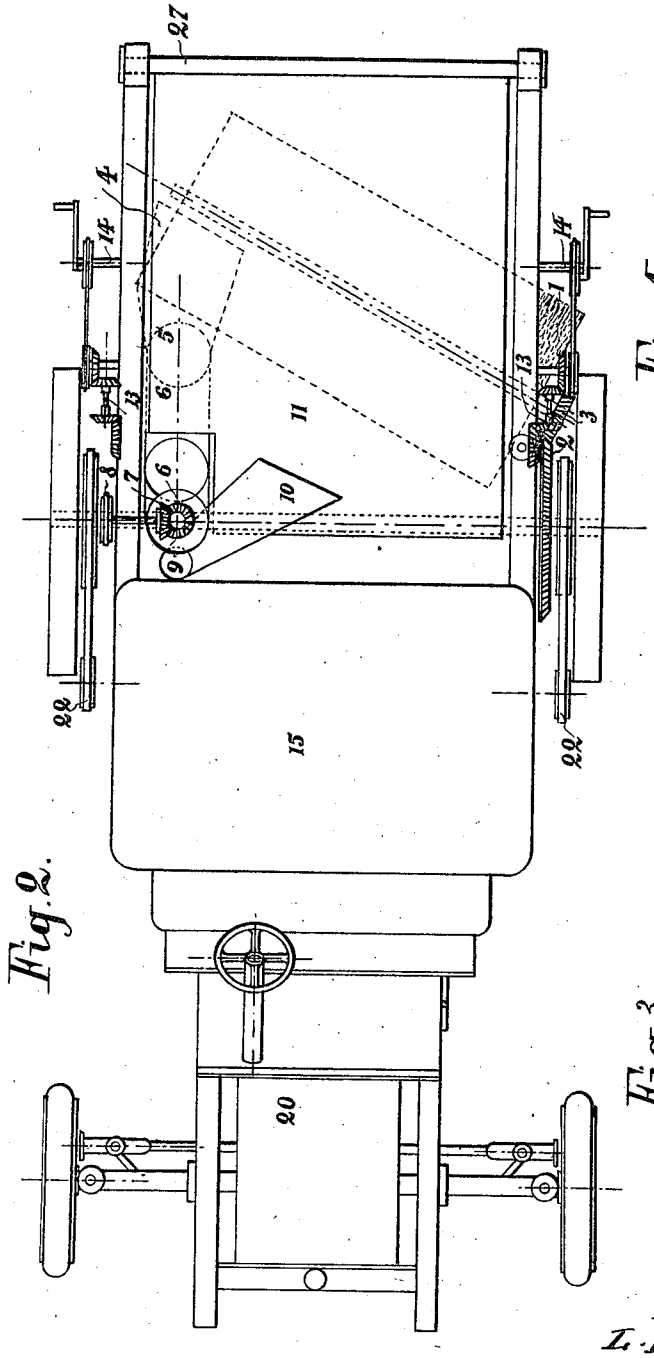


Fig. 2.

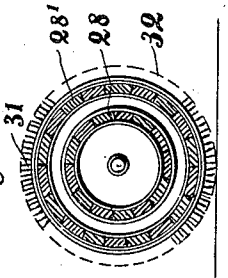


Fig. 4.

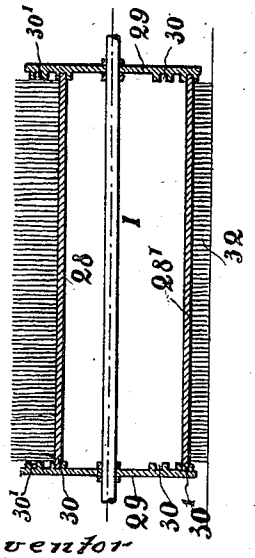


Fig. 3.

Inventor
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Patented May 15, 1923. 1,454,884

UNITED STATES PATENT OFFICE.

LOUIS BAPTISTE DONKERS, OF ANTWERP, BELGIUM.

STREET SWEEPER.

Application filed November 14, 1919. Serial No. 338,037.

To all whom it may concern:

Be it known that I, LOUIS BAPTISTE DONKERS, a subject of the Belgian King, and resident of Antwerp, Belgium, have invented certain new and useful Improvements in Street Sweepers.

The present invention relates to a motor sweeping engine for automatically removing dust, mud and sweepings from the streets, and the object is to combine the various parts of a device of such class in such a manner that it may be used for the following purposes:

Gathering and picking up the sweepings or gathering same without picking them up.

Sweeping the streets and gathering the sweepings and sprinkling water on the streets.

Sprinkling the streets.

Removing snow.

Conveying goods, materials and the like.

Owing to the various above mentioned works performed by the novel machine, townships provided with it may do away with a stock of rolling material, large expenses are avoided and the public services are greatly simplified.

The novel sweeping machine is shown by way of example in the accompanying drawings, in which:

Fig. 1 is a lateral view of the whole device.

Fig. 2 is a top plan view corresponding to Fig. 1.

Figs. 3 and 4 show the brush in longitudinal and cross section respectively.

A cylindrical brush 1 is mounted on the vehicle frame 26, behind the rear axle, in a slanting position with respect to the vehicle. It is operated by the rear axle by the intermediary of gears 2, 3, pinion 2 being keyed on the rear axle and pinion 3 on the shaft of brush 1, a clutch being provided on the rear axle of the vehicle for throwing in and out of gear the pinions 2 and 3. Instead of conical pinions, sprockets connected by a chain may be used for the said purpose.

The brush 1 shown in Figs. 3 and 4, is formed by means of two series of removable arc shaped planks 28, 28′, inserted at their end portions into circular grooves 30, 30′ provided on discs 29, 29, thus forming two coaxial cylinders and in which are fixed the fibres or the like forming the sweeping material.

Fresh fibres are carried by the inner planks 28 and worn fibres by the outer bars 28′, whereby the diameter of the outer surface 32 of the brush remains more or less constant, and the sweeping power of the brush does not change. It results that the fibres may be used until they are nearly wholly worn out, this resulting in a great economy.

In the drawing the outer cylinder 28′ is formed by 18 planks and the inner cylinder 28 by 13 of such planks; therefore it is necessary to keep in reserve five of such bars in order that the outer ends of the fibres may be kept at a uniform distance from the axis of the brush, as shown at 32.

During the rotary motion of the brush, the sweepings are gathered laterally and thrown by the brush on a platform 4 towards the entrance 5 of an inclined pipe within which rotates a conveyer worm 6 mounted on a shaft 12. Shaft 12 is operated by a chain passing over sprocket wheels 7 and 8, the latter wheel being keyed on the rear axle of the vehicle as shown in Fig. 2 or on the shaft of the differential 22. A clutch is provided on the rear axle for throwing in and out of gear the wheels 7 and 8.

The conveying worm forces the sweepings through the inclined pipe upwards to the upper aperture 9 of a removable pipe 10 through which they drop into tank 11.

The latter is arranged for rocking on pivot bolts 27 engaged into apertures provided on rearwardly curved projections of the vehicle frame 26.

Pipe 10 is removable in order not to disturb the rocking motion of tank 11 when the latter should be emptied of its contents. The rocking motion of tank 11 to the position shown in dotted lines at 11′ is produced by means of two laterally disposed worms 12 operated by a gear 13 and a crank 14, instead of moving the tank by hand, the tilting motion of same may also be imparted by the motor 20.

A water tank 15 is mounted on the frame 26 of the vehicle, between motor 20 and tank 11 and serves for moistening the sweepings whilst the brush is gathering same, or for sprinkling the street in the usual way when the brush is not working.

A pipe 17 extending downwards from the bottom of tank 15 terminates at its lower end into an elbow 18 provided with holes through which the water flows in shape of

small jets for sprinkling the street. A lever 25 operated by the driver, controls the flowing of water from elbow 18. A second pipe 16 terminates into a rose for sprinkling more water when desired.

When the platform or shovel 4 is removed from the device, the latter works as a usual sweeping machine, without collecting the sweepings, which are only gathered in a line on the street, but not conveyed into the tank 11.

Brush 1 is lowered in its working position or raised by means of a well known set of levers controlled by the driver from his seat.

A small pipe 19 opening at 5′ conveys a small jet of water into said entrance 5 of the inclined pipe in order to prevent the accumulation of mud, dust and the like within said aperture.

21 is the gear box. 23 the steering wheel and 24 the gear lever of the motor vehicle.

For removing snow from the streets, a usual snow plough is removably secured to the frame, underneath the water tank.

Owing to the shape of the tank 11, any materials, goods and the like may be readily charged into said tank for being conveyed.

From the foregoing description it will be readily seen that I have produced a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

Having now fully described my said invention, what I claim and desire to secure by Letters Patent, is:

In a motor driven street sweeper, the combination of a motor vehicle having a frame, a brush mounted transversely of the frame and in a slanting position with respect to the vehicle, an inclined pipe mounted on one side of the frame and terminating adjacent the periphery of the brush, a spiral conveyer mounted for rotation in the pipe, means connecting the upper end of said conveyer with the vehicle for transmitting rotary motion to the conveyer, a platform carried by the lower end of the pipe and extending under one end portion of the brush to a point adjacent the plane of the vertical axis thereof, said platform being adapted to receive material accumulated by the brush, said inclined pipe being formed at the top with an opening, a removable pipe communicating with the first mentioned pipe, and a tank carried by the frame to receive material from the removable pipe, whereby the brush will sweep the dirt onto the platform and along the same into the lower end of the pipe and the spiral conveyer will elevate the dirt and discharge it into the removable pipe from which it falls into the tank.

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

LOUIS BAPTISTE DONKERS.

Witnesses:

J. MIEDY,

HUDEFFRET.