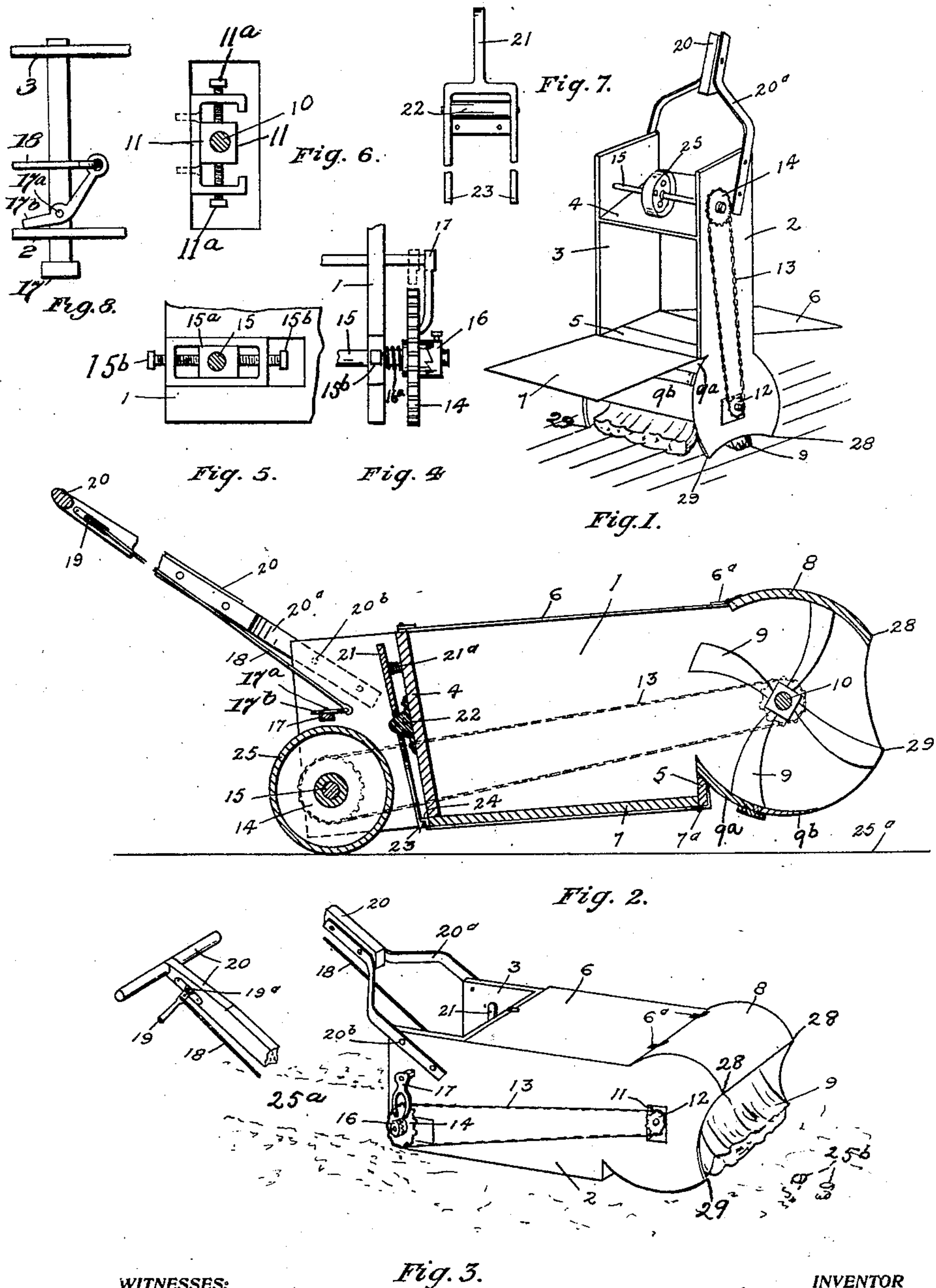


J. J. DE SPAIN.
SWEEPING MACHINE.
APPLICATION FILED NOV. 20, 1906.

907,755.

Patented Dec. 29, 1908.



WITNESSES:
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Fig. 3.

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JOSEPH J. DE SPAIN, OF NEAR ST. JOSEPH, MISSOURI.

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No. 807,755.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH J. DE SPAIN, citizen of the United States, residing near St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Sweeping-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in that class of sweeping machines, which are used for sweeping streets, floors and the like; and is especially designed for the sweeping of paved streets: and the objects of my improvements are; first to provide a sweeping machine which shall sweep and carry matter from the surface, swept thereby, and perform said operations, without raising dust or particles of said matter; thus avoiding inconvenience to persons and injury to objects, near my invention, while the same is in use; second, to so construct a sweeping machine, that it shall adjust itself to irregular surfaces; that said machine may at the pleasure of the operator be transported on its driving wheel, without operating the sweeping mechanism, and to provide every facility for emptying and cleaning the matter receptacle, with utmost ease and rapidity, and further, to provide means for the protection from injury of the brush of said machine, that it shall be thoroughly adjustable, be easy of operation, simple in construction, be durable and cheap in cost of manufacture. I attain these objects by the mechanism illustrated in the accompanying drawing, in which:

Figure 1. is a view in perspective, showing the lid and bottom of the matter receptacle in open position, certain parts being omitted to avoid confusion. Fig. 2. is a longitudinal section, cut vertically through the center of the machine, showing the lid and bottom of the matter receptacle in closed position, and the machine in position for transporting on its drive wheel. Fig. 3. is a view in perspective, of the machine as it appears in use. Fig. 4. is a rear view of certain parts of the shifting mechanism. Fig. 5. is a side elevation of adjustable box 15^a and of certain other parts. Fig. 6. is a side elevation of box 11 and of certain other parts. Fig. 7. is a rear elevation of latch 21. Fig. 8. is a top plan of the shifter.

Referring to Fig. 2, my invention, in its preferred form, consists of side pieces 2 and

3, end pieces 4 and 5, hinged lid 6, hinged to hood 8 by hinges 6^a; hinged bottom 7, hinged to end piece 5, by hinges 7^a, to form the body 1, of my invention, which is a receptacle for receiving and carrying matter, swept by said machine. My invention also embraces the hood 8, under which rotates the brush 9, carried on shaft 10, rotating in adjustable boxes 11, and driven by sprocket pinion 12, driven by sprocket chain 13, driven by sprocket wheel 14, loose on shaft 15, and normally held in engagement with ratcheted collar 16, by spring 16^a; and also shiftable out of engagement with said collar, secured on shaft 15; by L shaped shifter lever 17^b, having its free end fulcrumed against the inner surface of side piece 2, and being pivotally attached at 17^a to shifter 7, slidably supported by side pieces 2 and 3. Lever 17^b is operated by pull rod 18, pulled by grip lever 19, pivotally attached to T handle 20, by pivot 19^a. T handle 20 is provided with fork 20^a secured to body 1 by bolts 20^b. Latch 21 is pivoted to piece 4, at 22, and has its lower portion bifurcated, as seen in Fig. 7, said bifurcations terminate in the shape of hooks as seen at 23, actuated by spring 21^a, to normally engage and detachably hold catch pieces 24 secured on the free edge of bottom 7, as seen in Fig. 2. Shaft 15 is driven by wheel 25, secured thereon, and which normally supports the rear end of body 1. Boxes 11, see Fig. 6. are vertically adjustable, by screws 11^a, to compensate for wear of brush 9, arising from use, and thus provides means for keeping brush 9 in contact with surface 25^a, when said brush is in active use, as seen in Fig. 3. Boxes 15^a are horizontally adjustable by screws 15^b, as seen in Fig. 5, for tensioning the sprocket chain 13 seen in Figs. 1, 2, and 3. Points or projections 29 are formed integral with the sides of body 1, as seen in Fig. 3, and the points or projections 28 are formed with the hood 8.

In the operation of my invention the operator (not shown) grasps T handle 20, and by it pushes the machine forward, with machine in position seen in Fig. 3, traction of surface 25^a, rotates the drive wheel 25, which drives rotary brush 9, by the before described parts, thereby sweeping matter 25^b, from surface 25^a, over scraper edge 9^b and scraper 9^a, into body 1, until said operator desires to transport said machine to another place, upon which said operator presses downward upon T handle 20 until the ma-

chine assumes the position seen in Fig. 2. and at the same time grips and presses grip lever 19 and by said lever disengages the brush driving mechanism from wheel 25, on which the machine is then transported to said place. When said operator desires to empty body 1, of said matter, he presses forward, the upper end of latch 21, thereby releasing the free edge of bottom 7 which together with said matter gravitates until said bottom rests on surface 25^a, and said matter may readily be removed, from body 1. When the operator desires to thoroughly clean the interior of body 1, the machine is placed in the position seen in Fig. 1. resting in a vertical position on points 28 and 29 convenient for the operator; and the bottom 7 and lid 6 are rotated on their respective hinges to the position seen: after which the parts are replaced in position, seen in Fig. 2. and the operation is repeated as desired. The detachably attached scraper edge 9^b provides a very inexpensive means for renewing the edge of scraper 9^a, when the same is required by reason of accident or wear. Hood 8 covers brush 9 and prevents promiscuous throwing of matter 25^b. It will be seen in Fig. 4. that the ratchets of collar 16, and the ratchets on sprocket wheel 14, are so sloped that said ratchets will automatically disengage, when sprocket wheel 14 is rotated backward, which occurs when the said operator pulls the machine backward, by T handle 20. It will readily be understood, that should matter 25^b, adhere to surface 25^a, that scraper edge 9^b, when in operation, as seen in Fig. 3 would cleave said matter from said surface, and that since the wheel 25 provides a one-point support for the rear end of body 1, the weight of the forward part of body 1 will press scraper edge 9^b throughout the entire length thereof, firmly upon surface 25^a; the device therefore being self-adjusting. The wheel 25, is outside of the body 1 at the rear of said body, and is provided with positive means for driving brush 9 in position to be free from interference of dust and particles of matter.

While I have shown my invention, as a manually operated machine, it is evident that modifications could be made, which would render said machine suitable to be operated by horses or other power, and for sweeping a variety of surfaces, without departing from the spirit of my invention, and I reserve the right so to do. I am aware that sweeping machines have been invented, in which each of said machines is provided with a suitable receptacle for receiving and carrying matter, swept by said machine; and that the well known rotary brush, adapted

to sweep matter over a scraper into said receptacle, is in common use; but in all such machines of which I am aware, either four point supports are provided, which render the scrapers of said machines non self adjusting, or the traction wheel is provided with a friction drive, (which is non-positive in its action,) for driving the rotary brush.

Therefore, what I claim as new and desire to secure by Letters Patent is;

1. In a sweeping machine, the combination with the body 1, adapted to receive and carry matter swept by said machine, of a scraper attached to said body, a rotary brush adapted to sweep said matter over said scraper and into said body; a hood for said brush; the two projections 29, formed integral with body 1, and the projection 28, formed with hood 8, adapted to support the machine in a vertical position; together with bottom 7, having one of its edges hinged to said body and its opposite, free edge detachably attached to said body, and also the lid or cover 6, having one of its edges hinged to hood 8.

2. In a sweeping machine, in combination, the body 1, a scraper, attached to said body, and adapted to support the forward portion thereof, a rotary brush, secured on a shaft, rotatably mounted in the forward part of said body and provided with a sprocket pinion on one end thereof, a traction wheel, centrally situated at the rear and outside of said body, and adapted to form a one-point support for the rear portion of said machine, a drive shaft for said traction wheel, a ratcheted collar secured on one end of said drive shaft, a ratcheted sprocket wheel, loosely mounted on said drive shaft, a spring encircling said drive shaft, for disengageably engaging said ratcheted sprocket wheel with said ratcheted collar, a shifter, slidably mounted in the side pieces of said body, an L lever, pivotally secured on said shifter, a pull rod for pulling one end of said L lever, while the free end of said lever is fulcrumed against the inner surface of one of said side pieces, a grip handle for pulling said pull rod, a T handle for pushing said machine, and on which said grip handle is pivotally mounted and a sprocket chain for conveying power from said ratcheted sprocket wheel to said sprocket pinion.

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

JOSEPH J. DE SPAIN.

Witnesses:

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