

No. 615,537.

Patented Dec. 6, 1898.

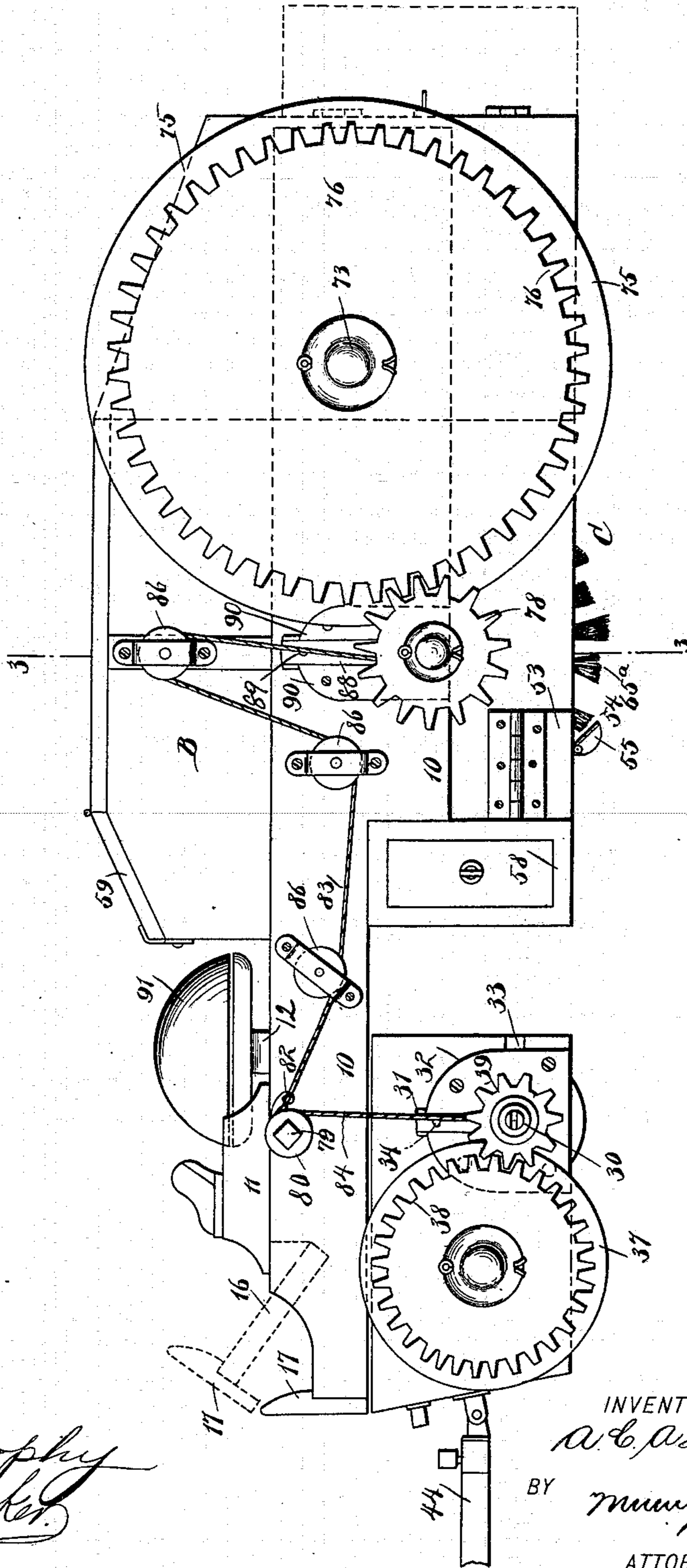
A. C. A. DUPUY.  
STREET SWEEPER.

(Application filed Jan. 22, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1



WITNESSES:

*J. S. Brophy*  
*J. H. H. H. H.*

INVENTOR

*A. C. A. Dupuy*

BY

*M. H. H. H.*

ATTORNEYS.

No. 615,537.

Patented Dec. 6, 1898.

A. C. A. DUPUY.  
STREET SWEEPER.

(Application filed Jan. 22, 1898.)

(No Model.)

3 Sheets—Sheet 2.

FIG. 2

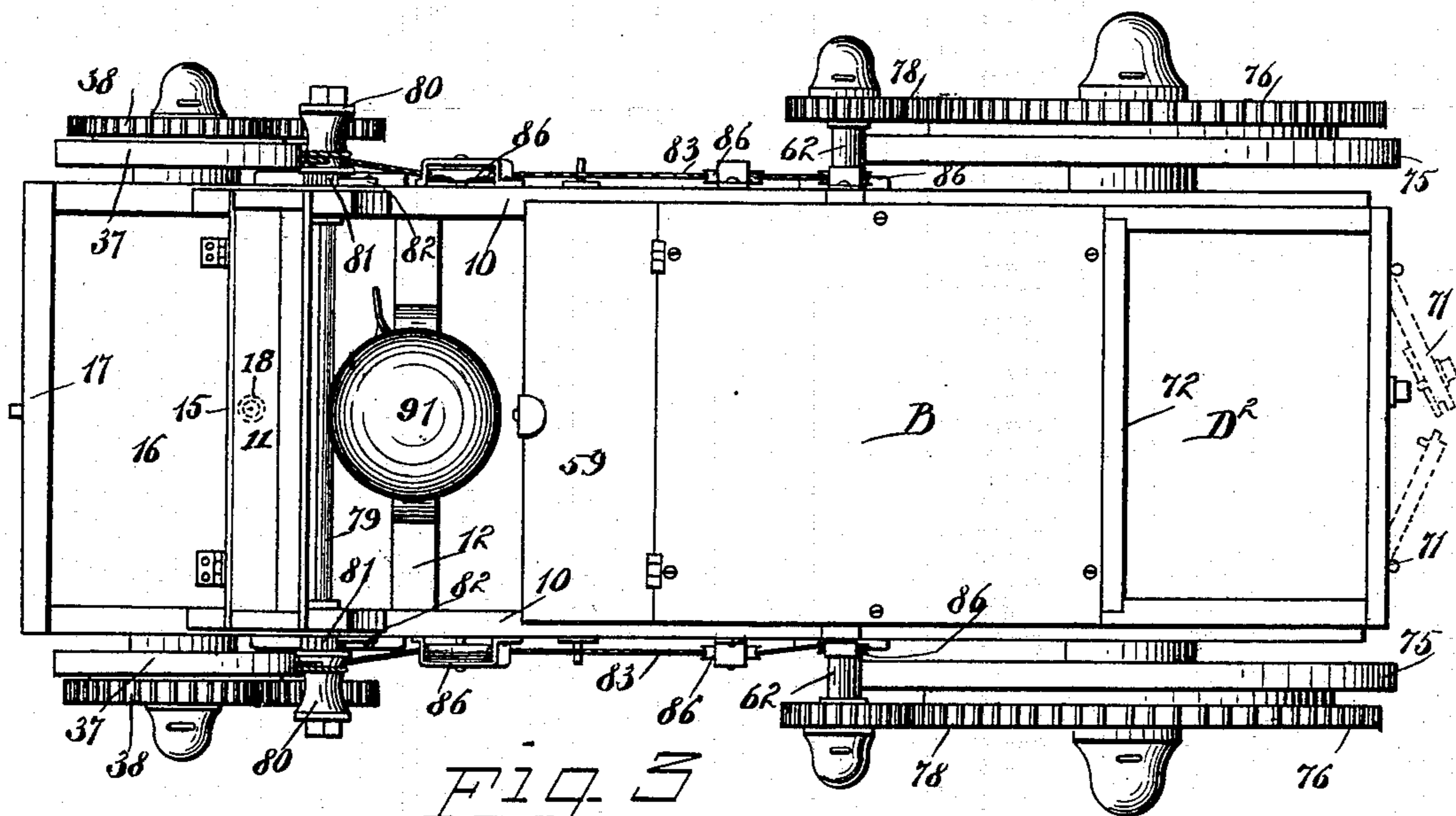
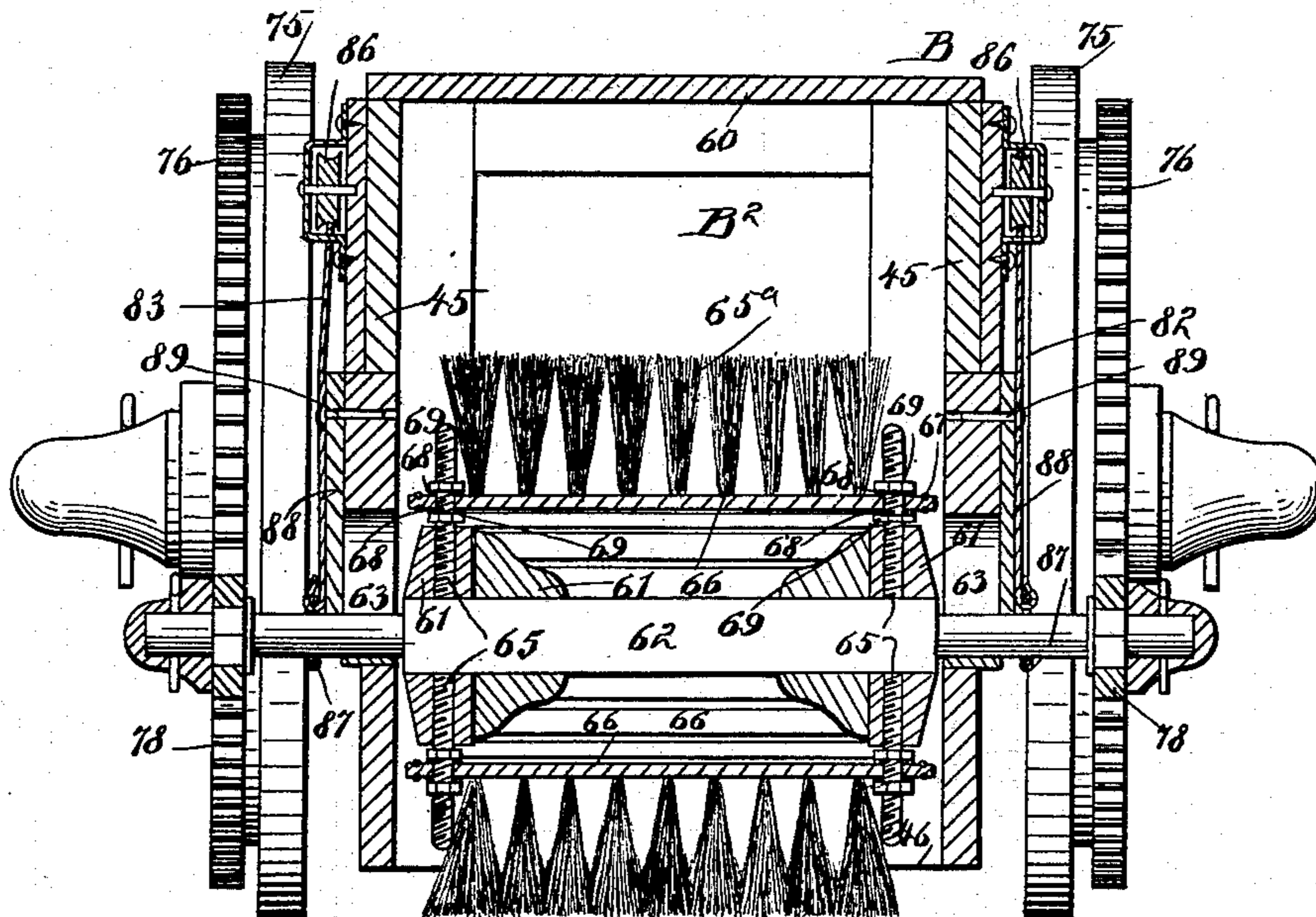


FIG. 3



WITNESSES:

*J. V. Prophy*  
*J. H. Aker*

INVENTOR

*A. C. A. Dupuy*

BY

*Munroe*  
ATTORNEYS.

No. 615,537.

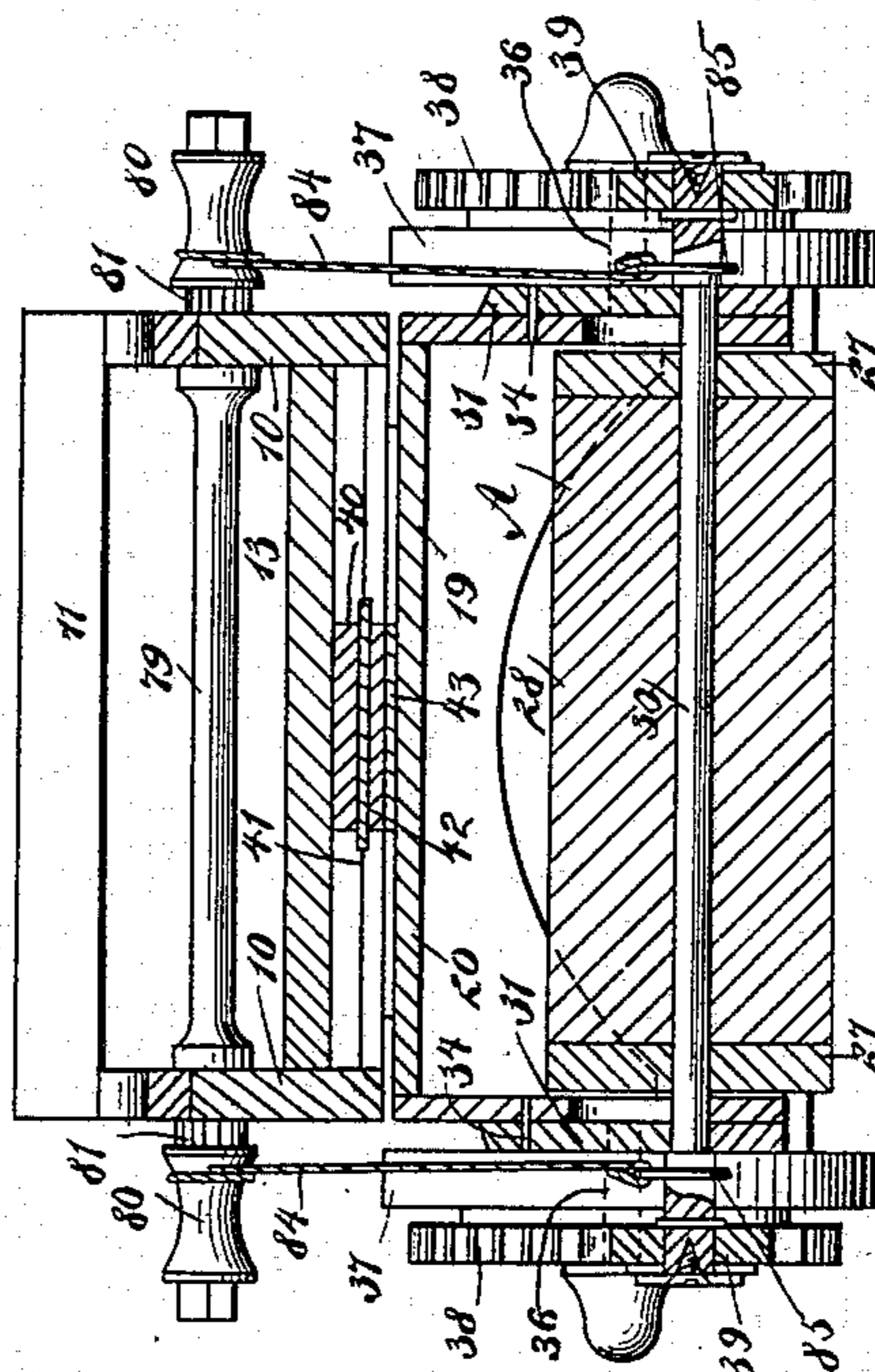
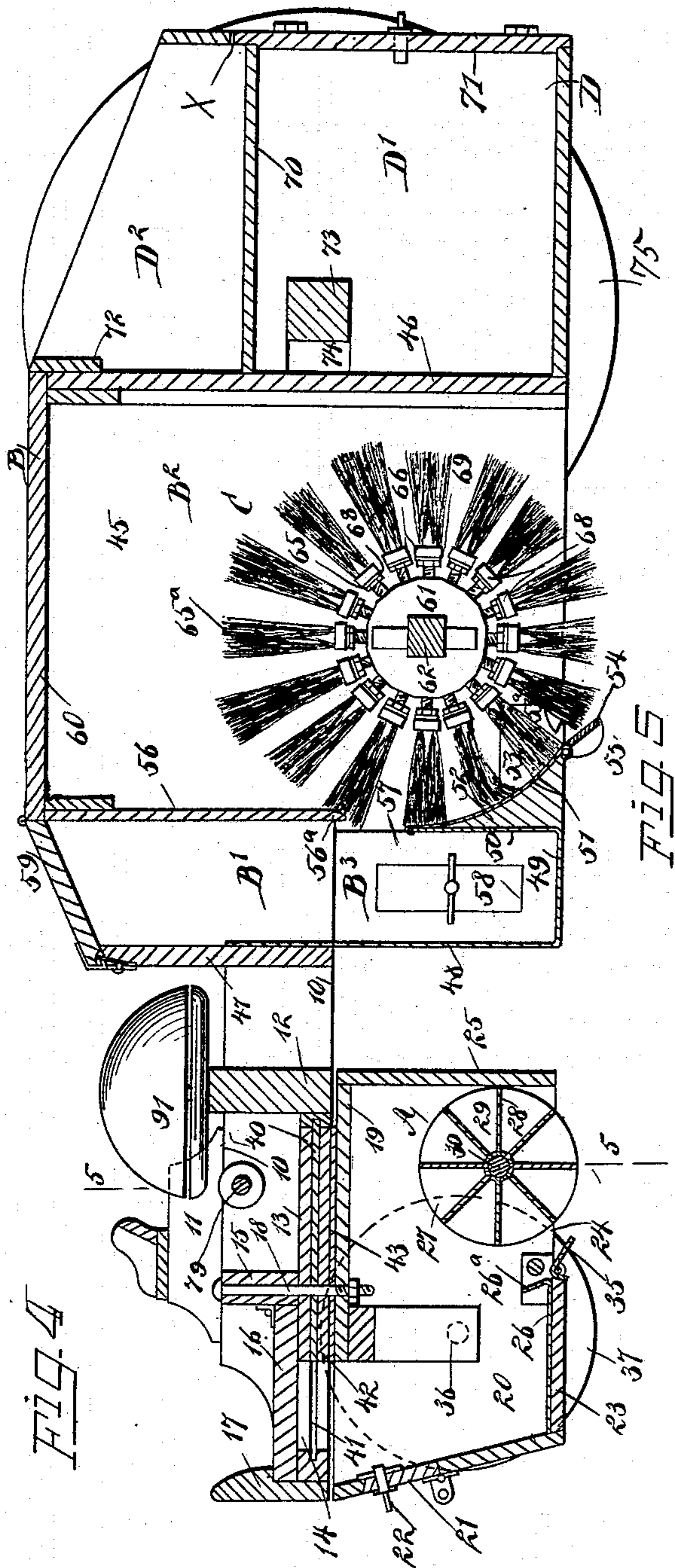
Patented Dec. 6, 1898.

A. C. A. DUPUY.  
STREET SWEEPER.

(Application filed Jan. 22, 1898.)

(No Model.)

3 Sheets—Sheet 3.



WITNESSES:  
*J. A. Prophy*  
*J. H. Fletcher*

INVENTOR  
*A. C. A. Dupuy*  
BY *Munn*  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

ADAM C. A. DUPUY, OF NEW ORLEANS, LOUISIANA.

## STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 615,537, dated December 6, 1898.

Application filed January 22, 1898. Serial No. 667,565. (No model.)

*To all whom it may concern:*

Be it known that I, ADAM C. A. DUPUY, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and  
5 useful Improvement in Street-Sweeping Machines, of which the following is a full, clear, and exact description.

The object of my invention is to construct a sweeping-machine which will not only gather  
10 up dust, dirt, and like particles, but which will also take up separately from the dust or dirt any small stones or small obstructions that may be in the path of the machine.

Another object of the invention is to so  
15 construct the machine that a receptacle will be provided for brush and all such trash as cannot be taken up automatically by the machine, the brush or other large articles of like character or large stones being delivered by  
20 hand to the machine.

A further object of the invention is to provide a machine which may be used with especially satisfactory results upon smooth streets, such as concrete or macadam roads, and which  
25 may likewise be used in the cleaning of yards or parks, paths and pavements, and which will necessitate but one attendant to operate the machine and a second attendant to deliver by hand to the machine such articles as cannot  
30 be automatically taken up.

A further object of the invention is to provide an especially constructed and convenient brush and a means for raising and lowering the stone-wheel and the brush, and, further-  
35 more, to construct the machine in a very simple, durable, and economic manner.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth,  
40 and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

45 Figure 1 is a side elevation of the machine. Fig. 2 is a plan view thereof. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a longitudinal vertical section taken centrally of the machine, and Fig. 5 is a transverse section taken substantially on the line  
50 5 5 of Fig. 4.

In the construction of the body of the machine two side pieces 10 are employed, the rear portions whereof are much wider than the

front portions, a seat 11 being suitably supported upon the front portions of the side pieces at their upper edges, as shown in Figs. 1 and 4, and at the rear of the seat 11 a strong cross-bar 12 is provided, and between the front end of the side pieces 10 and the cross-  
60 bar or sill 12 a flooring 13, of suitable construction, is formed, having an opening 14 near the front. A second cross-bar 15 connects the side pieces 10 in advance of the main sill 12, as is particularly shown in Fig. 65 4, and a foot-rest 16 is hinged to or connected in like manner with the forward cross-bar 15, the foot-rest being provided with a suitable front board 17, which is secured thereto. Normally the foot-rest 16 rests upon the top of  
70 the flooring 13, covering the opening 14 therein, while the front board 17 extends downward in front of the said flooring, as shown in Fig. 4.

A king-pin 18 is journaled in the forward  
75 cross-bar 15 at the longitudinal center thereof, and the said king-pin or king-bolt extends through the partial top portion 19 of the stone-receiving compartment 20. This stone-receiving compartment is of box-like construction, comprising suitable sides and a front, the front having a door 21, secured by a suitable bolt 22, the box-like compartment being further provided with a bottom 23 at its front portion, ordinarily between six and  
85 ten inches from the ground, an opening 24 intervening the bottom 23 and the back 25 of said stone-compartment. Thus it will be observed that the contents of the stone-compartment may be removed through the opening in the  
90 top usually closed by the foot-rest 16.

A lining 26, preferably of metal, is provided for the upper surface of the bottom 23 of the stone-compartment, the said lining being carried upward at the forward edge of the opening  
95 24, forming a barrier 26<sup>a</sup>. A stone-receiving wheel A is mounted to revolve partially within the stone-receiving receptacle or compartment 20 and partially in the opening 24 in the bottom of the said receptacle or com-  
100 partment. This stone-receiving wheel usually consists of two heads 27, a suitable hub, and rotary plates 28, attached to the hub and to the heads, forming a series of compartments 29, as is also best shown in Fig. 4. 105 The shaft 30, on which the stone-receiving wheel is mounted, is made to pass through suitable openings in the side of the box or

stone-receiving compartment 20, the openings through which the shaft 30 passes being vertical openings, and they are closed by slides 31, dovetailed in strengthening-plates 32, removably attached to the outer faces of the stone compartment or box 20, as shown in Fig. 1, and in the said sides of the stone-compartment a horizontal opening 33 is made in order that when the back 25 is removed the shaft 30 may be introduced into the vertical openings in which the shaft of the rock or stone wheel is capable of vertical adjustment. When the shaft of the rock-wheel is to be removed, the reinforcing or strengthening plates 32 are detached from the frame of the machine, enabling the shaft to be withdrawn through the horizontal openings 33. A pin 34 is located in each side 31, being adapted to enter openings in the frame in order that the slides when vertically adjusted may be held in their adjusted positions.

An apron 35 is pivoted at the forward end of the opening 24 in the stone-receiving compartment 20, which apron extends downward below the stone or rock wheel, but removed therefrom, and serves to facilitate the stones or rocks when leaving the compartment in the wheel A to be conducted upward at the rear of the barrier 26<sup>a</sup>.

The forward axles 36 of the machine are secured to the side portions of the stone-compartment 20, and upon each of these axles 36 a forward supporting-wheel 37 is mounted to revolve, and each wheel is provided with a gear 38, secured thereto in any suitable or approved manner. The gears 38 are made to mesh with pinions 39, the latter being secured to the outer end portions of the rock or stone wheel shaft 30. When the shaft 30 is to be raised, the pinions 39 are loosened to slide on the shaft. The stone-compartment 20 is given a fifth-wheel or pivotal attachment to the flooring 13 at the front of the main frame of the machine. To that end a disk 40 is loosely mounted on the king-pin or king-bolt 18 and is held to turn in an annular groove 41, provided in the flooring 13, which is suitably recessed at the bottom. A spacing-disk 42 engages with the bottom of the fifth-wheel 40, being also mounted loosely on the king-bolt, and a washer 43 engages with the spacing-disk and with the top 19 of the stone-compartment, to which top the washer may be secured and serve as a wear-plate. A tongue or pole 44 is suitably attached to the front of the rock or stone receiving compartment 20, so that the draft is brought directly thereon.

A box-receptacle B is located at the central portion of the frame of the machine between the side pieces 10, being attached to the side pieces in a removable manner. The box-receptacle B consists of sides 45, which extend from a point above the sides 10 of the main frame to a point approximately on a level with the bottom of the stone-compartment 20, being also removably secured by bolts and screws. The rear end section 46 of the box-

compartment extends from one side 45 to the other the full depth of said sides; but the forward end of the said box-receptacle is made in two sections—namely, an upper portion 47, which extends from side to side and stops at the lower edge of the sides of the main frame 10, as shown in Fig. 4, while at the lower end of the board 47 a plate 48 is attached in a removable manner, the said plate extending downward as far as the lower edge of the sides 45, being then carried horizontally rearward, as shown at 49, and upward parallel to the main section 48, as illustrated at 50 in Fig. 4, providing what I denominate a "dust-compartment" B<sup>3</sup>, a well-hole B' being above the dust-compartment, and at the rear of the well-hole and dust-compartment a brush-compartment B<sup>2</sup> is located.

A directing-plate 51 extends from the upper edge of the member 50 of the dust box or compartment downwardly and rearwardly, terminating on about a level with the lower edge of the side pieces, and a strengthening or stay block 52 is made to intervene the directing-plate 51 and the upwardly-extending rear member of the dust-box, as is also shown in Fig. 4.

A dust-gathering apron 54 is hinged at the lower end of the directing-plate 51, the said apron being provided at each of its extremities upon its forward face with preferably curved lugs 55, which may stand from two to four inches clear from the ground and hold the dust-collecting apron in proper relation with the directing-plate 51 and with the brush C to be hereinafter described.

When the machine is to be carried to or from a surface to be cleaned, the apron is adapted to be carried up within the brush-compartment B<sup>2</sup>, and this is accomplished by opening doors 53, made in the sides of the box-receptacle B, as shown in Figs. 1 and 4, and then carrying the apron upward or upon the directing-plate. The apron 54 is, however, prevented from moving too far upward while in service by means of projections 53<sup>a</sup>, (shown in Fig. 4,) formed upon the inner surfaces of the said doors 53.

The well-hole B', which is for the purpose of enabling the driver to ascertain if the dust-box has received a proper load, is completed in its construction by a partition 56, which extends from the top portion of the sides 45 downward slightly beyond the opening 57, leading into the dust-box, as shown in Fig. 4, thus providing a transverse edge 56<sup>a</sup>, against which the bunches of bristles on the brush will strike as the brush rotates, compelling the bunches to free themselves from earth and deliver the same into the dust-box. The well-hole B' is provided with a suitable hinged cover 59, and the dust-box is provided with a dust-proof door 58 at each end, from which the dirt or dust accumulated therein may be readily removed by means of a rake, hoe, or suitable implement. The top 60, preferably removable, is provided for that portion of the

box-receptacle B in which the brush-compartment B<sup>2</sup> is formed.

The brush is of peculiar construction, said construction being best shown in Fig. 3, in which it will be observed that heads 61 are secured upon a shaft 62, the outer surfaces of the heads, which are inwardly inclined, being made to face the inner surfaces of the box-receptacle B, and therefore the heads do not bind. That portion of the shaft 62 on which the heads are located is preferably polygonal, and the end portions are round or circular in cross-section, being carried through vertical openings 63, made in the side of the box-receptacle, as shown in Fig. 3, which openings correspond to the openings in which the shaft of the rock or stone wheel has movement. The heads 61 are preferably polygonal in general contour, and a spoke 65 extends from each space on each head a predetermined distance beyond the heads, the outer ends of the said spokes especially being preferably threaded.

The bunches of bristles or bunches of other material employed are secured upon blocks 66 of sufficient length to extend from one head 61 to the other. The outer ends of the brush-blocks are preferably provided with a band 67 in order that they shall not split, since the spokes pass through the end portions of these blocks. The brush-blocks are furthermore strengthened by passing plates 68 transversely across the end portions at both sides, and lock-nuts 69 are secured upon the spokes bearing against the said tie or strengthening plates. The bunches of bristles or other material provided for the brush are preferably made in two lengths and of two kinds of material—namely, a hard and a soft material, the bunches of the soft material being an eighth of an inch longer than the bunches of hard material, and ordinarily bunches of the same kind of material are secured upon the same block, and the rows of bunches are alternately arranged around the hub of the wheel. The dust-plate 52 is shaped in accordance with the diameter of the harder bristle surface of the brush, and its top should never be lower than the upper face of the axle.

At the rear end of the machine I have provided a receptacle D, which is preferably attached by screws or like devices to the rear end of the central box-receptacle B in order that the receptacle D may be detached from the receptacle B when desired. The rear receptacle D is divided by a horizontal partition 70 into a lower tool-box compartment D' and an upper compartment D<sup>2</sup>, which is open and is adapted to receive briars, large stones, and other material that cannot be taken up automatically by the machine. The compartment D<sup>2</sup> is water-tight and is provided with an outlet  $\alpha$  for the water. The tool-box D' is provided with one or more doors 71, and the doors have suitable locks. When the doors are closed, their upper portions close the outlet  $\alpha$ , as

shown in Fig. 4. In attaching the rear box D to the central box B a cross-bar 72 is provided at the upper forward portion of the rear box, which is secured by screws or otherwise to the central box B, and the body of the said rear axle 73, which is polygonal, is received within recesses 74, made in the sides of the rear box, as is particularly shown in Fig. 4. Supporting-wheels 75 of proper diameter are mounted on the projecting portions of the rear axle 73, and each supporting-wheel is provided with an attached gear 76, these gears 76 being made to mesh with pinions 78, which are secured upon the outer end portions of the brush-shaft 62. When the brush-shaft is raised or lowered, which will be while the machine is in motion, the pinions 78 will be raised or lowered, the shaft-pinions remaining in mesh with the gears 76.

The stone or rock wheel and the brush are adapted to be raised simultaneously and held raised while the machine is going to and from a surface to be cleaned. The raising and lowering of these parts are accomplished by journaling a shaft 79 at the rear of the driver's seat, the shaft being adapted to be operated by a crank at each end or at both ends.

The shaft is provided at each end with a drum 80, a ratchet-wheel 81, adjacent to the drum, operating right and left, as shown in Figs. 1 and 5, the ratchet-wheel being engaged by pawls 82, carried by the body-frame of the machine. Each machine is preferably provided with two brushes, so that one can be repaired when the other is in use.

Two ropes, cords, or chains 83 and 84 are attached to each of the drums, being wound thereon in the same direction, and the cords or chains 84 are carried downward, terminating in rings 85 at their lower ends, which rings encircle the outer end portions of the shaft of the rock or stone wheel, as shown in Fig. 5. The cords or chains 83 are carried rearwardly over guide-pulleys 86, then downwardly, terminating in rings 87, (shown in Fig. 3,) which rings encircle the outer end portions of the brush-shaft 62.

Slides 88 are adapted for use in raising and lowering the brush-shaft, the said slides corresponding to the slides 31 of the rock-wheel shaft, and the slides 88 have movement in guide-plates 90, which surround the openings 63, through which the brush-shaft extends. Pins 89 are provided for the slides 88 and serve to hold the slides in the position to which they are set, any desired number of holes being provided in the sides of the box-receptacle B for the reception of these pins, as shown in Fig. 3; but I desire it to be distinctly understood that any approved form of adjustable bearing may be substituted for the bearings shown as provided for the brush and rock wheel shafts.

In operation small stones and small articles will be taken up by the front pocket-wheel A and will be deposited in the rock or stone receiving compartment 20, while the dust and

dirt will be taken up by the brush and delivered to the dust-box B<sup>3</sup> without the dust escaping from the box-receptacle, since it is preferably made dust-proof at all points. In this manner the road or other surface to be treated may be expeditiously and properly cleaned without inconvenience or discomfort to any persons near the machine.

It is intended that the driver shall have an attendant whose business it will be to work in advance of the machine and pile up any brush, briars, stones, or other incumbrances that the machine is not capable of automatically taking up, and when the machine reaches such pile the accumulated debris is loaded into the rear upper compartment D<sup>2</sup>.

The machine is exceedingly simple, durable, and economic and will be effective in operation.

A bell 91 is placed convenient to the driver's seat in order that an alarm may be sounded when necessary.

The screw-spokes are very important, since the diameter of the brush must be continuously preserved.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a street-sweeper, a wheeled support provided with independent compartments, each compartment having a section adapted to receive and hold material, a pocket-wheel adapted to take up stones mounted to revolve in one of the said compartments, and a brush mounted to revolve in the other of the said compartments, the wheel and brush being located adjacent to the inlets of the receiving-sections of the said compartments, as and for the purpose specified.

2. In a street-sweeper, a wheeled support provided with a forward pivoted box-compartment having a section adapted to receive objects, and an apron at the inlet for the said receiving-section, a pocket-wheel mounted to revolve adjacent to the said apron and the inlet for the receiving-section of the said box-compartment, a second box-compartment provided with a dust-receptacle, a directing-plate leading to the inlet of the dust-receptacle, an apron located at the lower end of the directing-plate, and a brush mounted to revolve in engagement with the said directing-plate and apron and across the inlet of the said dust-receptacle, for the purpose specified.

3. In a street-sweeper, the combination, with a wheel-supported frame, of a box-receptacle carried by the said frame, having an opening in its bottom and a receptacle for objects adjacent to the said opening, a wheel mounted to revolve within the said box-compartment, provided with a series of pockets open at their peripheral portions, and an apron located between the forward edge of the opening in the box-receptacle and the said pocket-wheel, for the purpose specified.

4. In a street-sweeping machine, the combination, with a wheel-supported frame and

a box-compartment pivotally carried by the said frame, the said box-compartment being provided with an inlet-opening in its bottom and a receptacle for objects located likewise in its bottom, the said box-receptacle being likewise provided with outlet-openings, and an apron pivotally mounted at the inlet-opening adjacent to the said receptacle within the box-compartment, of a shaft journaled in the said compartment, means for driving the said shaft from a supporting-wheel of the frame, and a stone or rock receiving wheel secured on the said shaft at the inlet-opening of the box-compartment, the said wheel comprising head-sections, a hub and partitions secured to the said heads and radiating from the said hub, for the purpose specified.

5. In a street-sweeping machine, the combination with a wheel-supported structure provided with a compartment having an open bottom, a dust-receptacle located at the bottom portion of the said compartment, and in communication therewith, a concaved directing-plate extending from the open portion of the compartment to the bottom of the inlet of the dust-receptacle, a wall extending downwardly over the upper portion of the inlet for the dust-receptacle and an apron attached at the lower end of said directing-plate, of a brush mounted to revolve in the said compartment, the rows of bristles from said brush being arranged for engagement with the apron, the directing-plate and the upper wall of the dust-receptacle, and means for raising and lowering the brush, as and for the purpose specified.

6. In a street-sweeping machine, the combination, with a wheel-supported frame, a box-compartment pivotally attached to the lower portion of the frame, having a bottom inlet-opening and upper outlet-openings, a rear box-compartment open at the bottom, and a dust-receptacle communicating with the interior of the rear box-compartment, of a pocket-wheel mounted to revolve in the forward pivotal compartment at the inlet-opening thereof, an apron pivoted at the inlet-opening of the forward box-compartment forward of and below the pocket-wheel, a directing-plate extending from the open bottom of the rear box-compartment to the lower portion of the inlet of the dust-receptacle, an adjustable apron pivoted at the lower end of the said directing-plate, a brush mounted to rotate in the rear box-compartment, its brush-surface being arranged for engagement with the apron and directing-plate and to cross the inlet of the dust-receptacle, means, substantially as described for raising and lowering the brush and the pocket-wheel, and devices for driving the brush and pocket-wheel from the supporting-wheels of the frame, as specified.

ADAM C. A. DUPUY.

Witnesses:

HENRY E. KER,  
JOHN G. EUSTIS.