

No. 639,020.

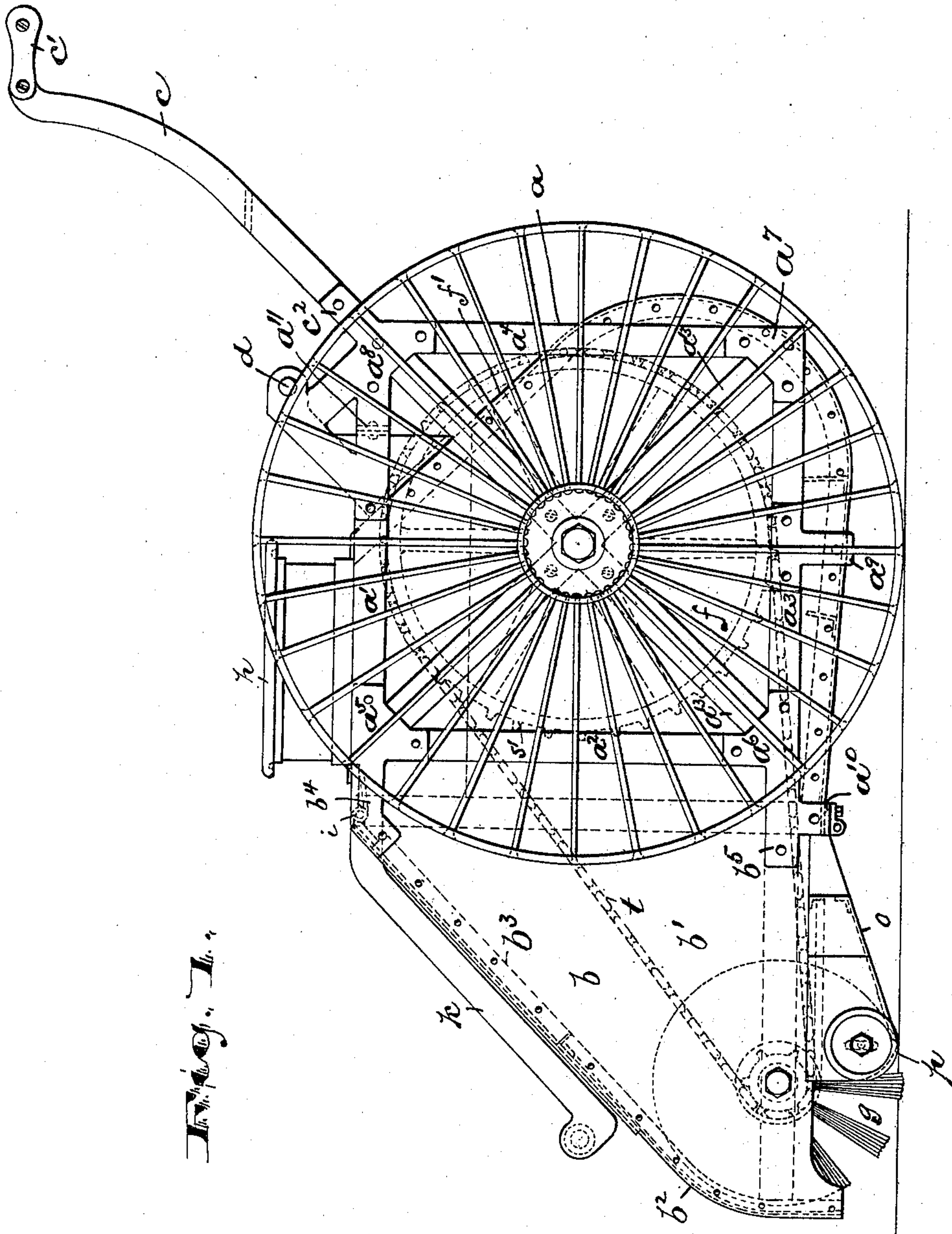
Patented Dec. 12, 1899.

O. P. CADMUS.  
STREET SWEEPER.

(Application filed Jan. 24, 1899.)

(No Model.)

4 Sheets—Sheet 1



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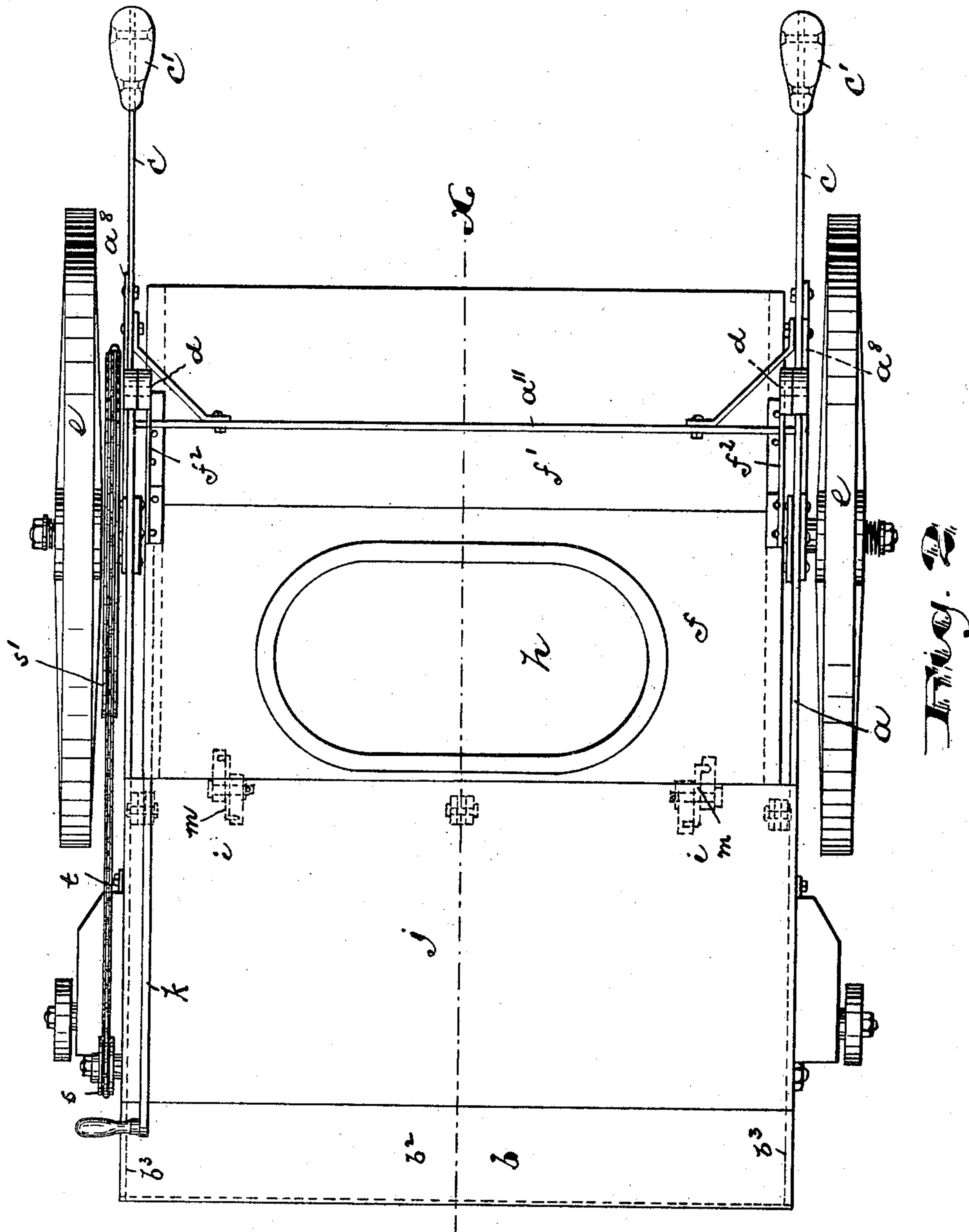
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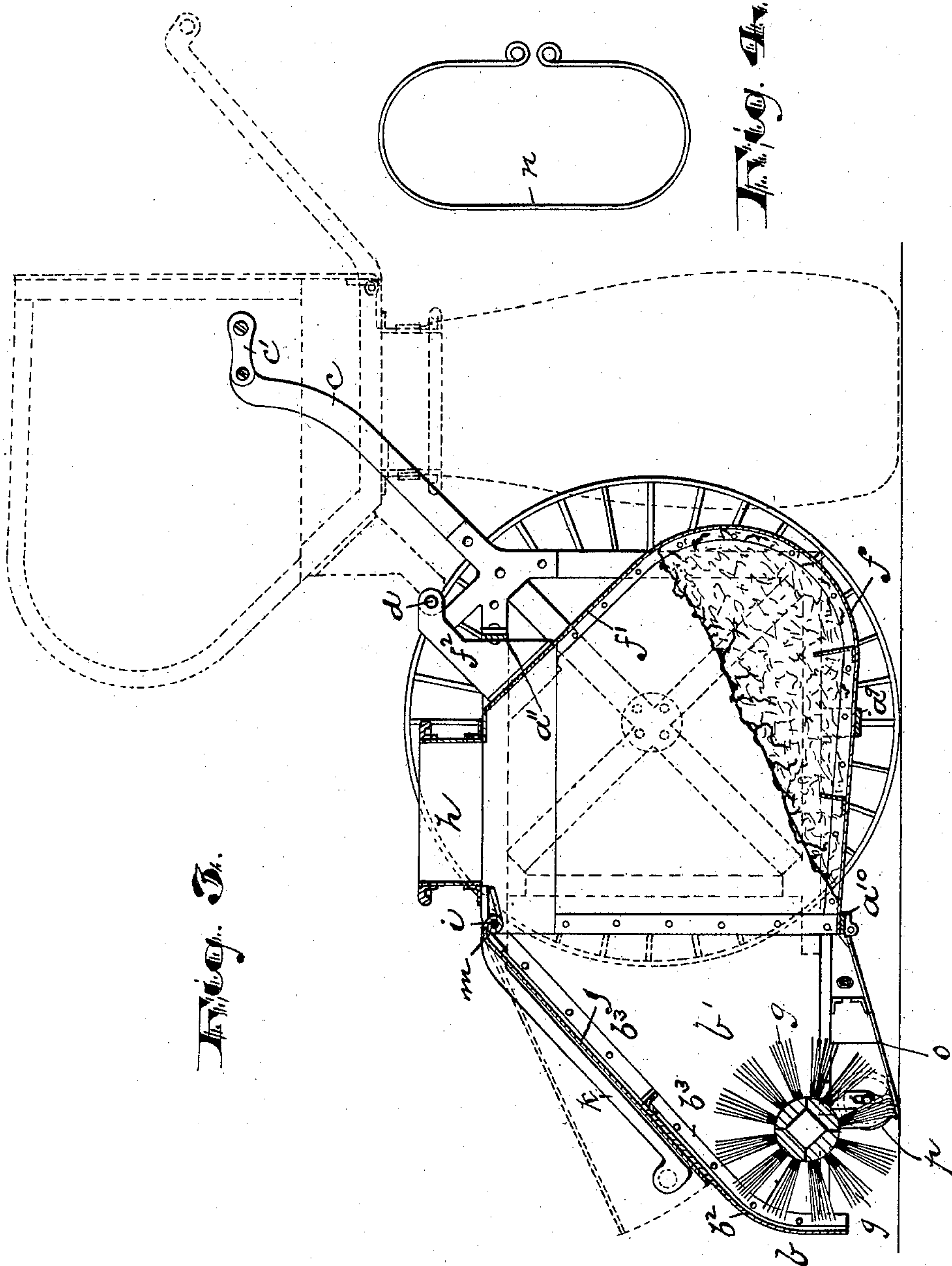
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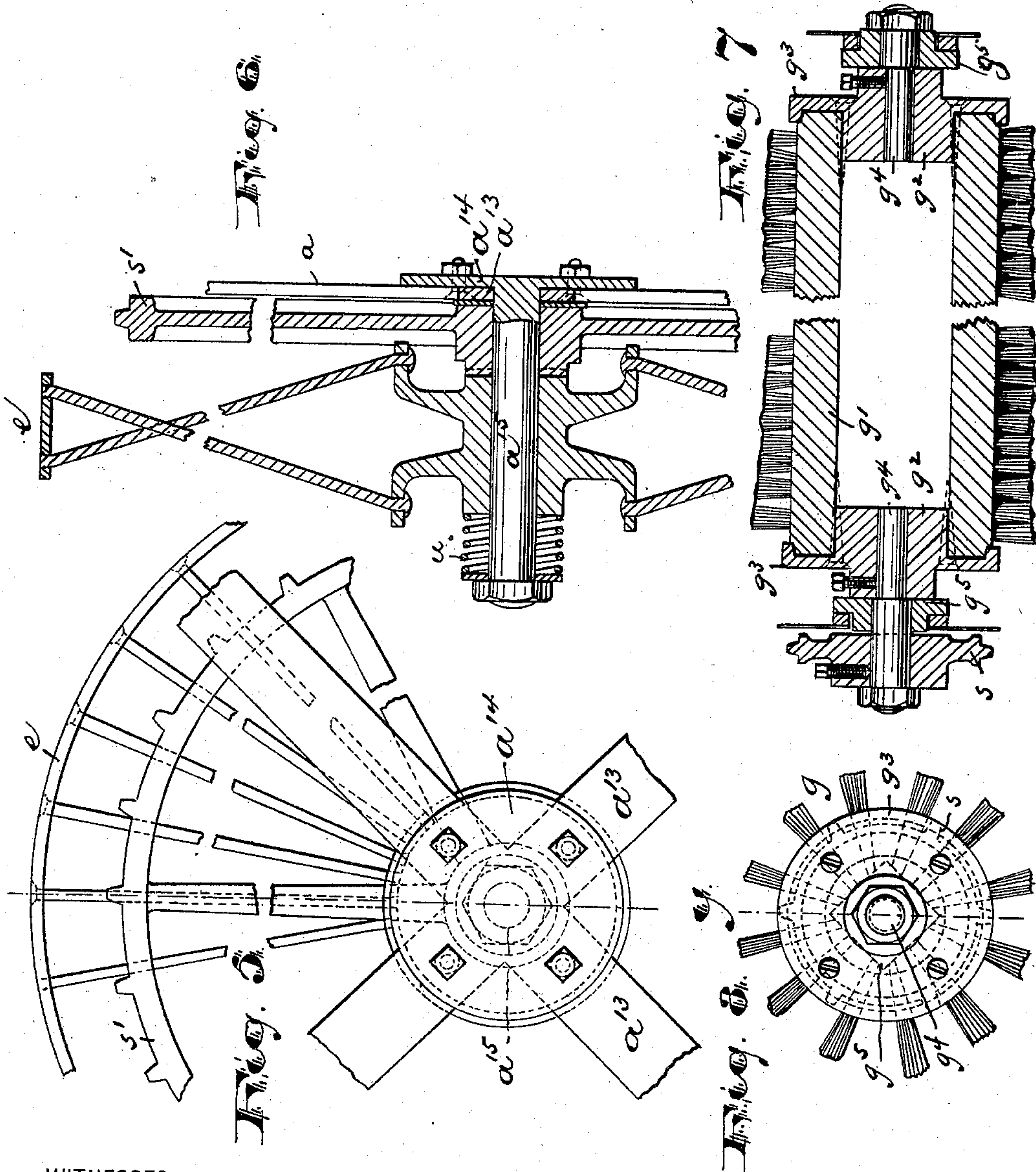
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# UNITED STATES PATENT OFFICE.

OSCAR P. CADMUS, OF NEWARK, NEW JERSEY.

## STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 639,020, dated December 12, 1899.

Application filed January 24, 1899. Serial No. 703,268. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR P. CADMUS, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Street-Cleaning Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The general objects of this invention are to facilitate the work of street-cleaning, and more particularly of cleaning asphalt or brick pavements; to secure a more perfect removal of the dirt from the pavement, and especially the fine dust such as cannot be removed by an ordinary scraper; to prevent the fine sweepings from being blown by the wind in the act of emptying the sweepings into bags or receptacles therefor, to the annoyance of pedestrians or those passing in the neighborhood of the sweeper, and to prevent the loss of the dust and an immediate resweeping; to reduce the cost of construction and provide a device which will be more simple, more compact, and convenient to be handled in the sweeping operations and when trundled or otherwise transferred from place to place, and to secure other general objects and results, some of which may be referred to hereinafter in connection with the more specific objects described in connection with the description of the working parts.

The invention consists in the improved street-cleaning apparatus and in the combinations and arrangements of parts, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a side elevation of my improved device. Fig. 2 is a plan of the same. Fig. 3 is a sectional view taken vertically through the center of the sweeper at line *z*, Fig. 2. Fig. 4 is a plan of a bag clamp or holder for fastening the bag which receives the dirt from the sweeper to the mouth of the dust-pan of

said sweeper. Fig. 5 is a detail side view of a portion of the frame and wheel of the vehicle; and Fig. 6 is a section of the same, taken through the center of the axle. Fig. 7 is a section on line *z* of Fig. 8, and Fig. 8 is a detail end view of the brush of the sweeper.

In said drawings, *a* indicates a frame of flat iron pieces of suitable thickness to provide proper rigidity and strength, the body of said frame comprising quadrangular side parts each composed of pieces *a'* *a*<sup>2</sup> *a*<sup>3</sup> *a*<sup>4</sup>, joined by corner-pieces *a*<sup>5</sup> *a*<sup>6</sup> *a*<sup>7</sup> *a*<sup>8</sup>, said side parts being connected by transverse connecting-pieces *a*<sup>9</sup> *a*<sup>10</sup>, and *a*<sup>11</sup>, so that said side parts are held rigidly at proper relative distances apart. At the front of said body portion of the frame the same is provided with a forward extension to receive the brush and scraper, said extension comprising a sheet-metal closure *b* of peculiar construction, of which *b'* *b'* are side plates of sheet metal, partly closed, as at *b*<sup>2</sup>, by a connecting top plate which joins the two side plates. The side plates are strengthened at the edges by angle-irons *b*<sup>3</sup> in any suitable manner. The corner-pieces *a*<sup>5</sup> *a*<sup>6</sup> have forward extensions *b*<sup>4</sup> *b*<sup>5</sup>, which overlap said side plates *b'* *b'* and their strengthening pieces, the whole being suitably riveted or bolted together in any appropriate manner.

At the back of the frame, at the upper corners thereof, are fastened handles *c* *c*, which extend upward and rearward a distance convenient to be grasped by the hands of the operator, the upper extremities being provided with hand-pieces *c'* of any suitable construction. Said handles *c* *c* are not connected at their upper ends, but are separate to permit the passage of a dust pan or receptacle between. The corner-pieces *a*<sup>8</sup> are provided with extensions *c*<sup>2</sup>, by means of which the handles are held with the necessary firmness. The corner-pieces *a*<sup>8</sup> are also shaped to provide a bearing for pivotal pins or bolts *d* *d*, by means of which the dust pan or receptacle is connected and held at its upper part to and within the frame. The said pivotal bolts or pins *d* *d* are preferably disposed a little above and near the rear of the frame-body, as shown. At the center of the quadrangular side parts of the frame the same are provided with cross-braces *a*<sup>13</sup> *a*<sup>13</sup>, which, where they cross or join, are preferably welded to-



gether and are reinforced by axle-plates  $a^{14}$ , having outwardly-projecting horizontal axles  $a^{15}$  for the wheels  $e$  upon which the vehicle is trundled.

5 The dust-pan  $f$ , pivoted upon the pivots or bolts  $d$   $d$ , fits nicely in the body portion of the frame, held at the top by said pivots, and at the bottom said dust-pan is supported on the cross-pieces  $a^9$   $a^{10}$  of the frame. The  
10 construction of said dust-pan is perhaps best shown in Fig. 3, where it is shown to be open at the front to permit the dirt to be thrown directly into said pan by the brush  $g$  and at the top provided with an oblong mouth  $h$ .  
15 The bottom of the pan is horizontally in line with the brush, the scraper only intervening and the pan made larger than the top, the pan being extended rearwardly at the lower part, and the upper rearward walls are inclined, as at  $f'$ , to lead the dust to said mouth  
20 in the emptying operation hereinafter described. Back of said mouth the closed inclined side is provided with brackets or extensions  $f^2$ , which at their upper ends provide  
25 pivotal bearings to receive the pivots  $d$   $d$ . Forward of said mouth are suitable hinge-bearings  $i$  for a cover  $j$  of sufficient area to cover the front opening of the dust-pan when the latter is raised from its normal position  
30 in emptying.

At one side of the dust-pan is a forwardly and downwardly extending handle  $k$ , rigidly secured to the dust-pan  $f$  to turn therewith, the piece forming the handle being preferably  
35 bent, so as to pass horizontally into the upper right-hand corner of the dust-pan and be riveted to the side or top thereof and at its outside extension to lie close to the inclined top of the forward extension, where it will be out  
40 of the way of obstruction. The handle  $k$  rests more or less closely down upon the hinged cover  $j$  and holds the same closed against the extension or closure  $b$  of the frame. When the handle  $k$  is raised, the dust-pan moves  
45 with it on the pivots  $d$ , the cover  $j$  remaining at rest on the extension of the frame until the front of the dust-pan is raised into contact therewith, when said cover closes the front opening of the dust-pan and is elevated there-  
50 with to the position shown in broken outline in Fig. 3. The hinges  $i$  are preferably provided with springs  $m$ , which normally tend to hold said cover closed both against the closure or extension of the frame and the dust-  
55 pan when the latter is raised, the said springs being of sufficient strength to prevent the cover  $k$  from falling open when in its raised position, and thus permit the escape of dust. When thus turned on its pivot to the elevated  
60 position referred to, it will be noticed that the mouth of the dust-pan is inverted or turned downward, and the somewhat funnel-shaped inner walls at the top of the normally-disposed dust-pan serve to guide the dust to-  
65 ward and into the mouth  $h$ , so that the said dust all gravitates out of said pan through said mouth. Prior to the cleaning or sweep-

ing operations I cover the said mouth with a bag of any suitable textile fabric such as is now commonly employed in the collection of  
70 street-sweepings, and said bag is clamped to said mouth by a spring-clamp  $n$ . (Shown in Fig. 4.) The bag thus arranged and fastened serves as a means for preventing the escape of dust through the mouth  $h$ , although  
75 the air is allowed an outpassage through the interstices of the fabric to prevent an outpassage of air at the inlet for the sweepings. When the dust-pan is inverted in position, the  
80 bag assumes a position to receive the gravitating sweepings, which fall into the bag, filling it, so that the bag may be immediately tied to be carted to a suitable depository.

At the lower part of the closure the same is provided with a pivoted scraper  $o$ , adapted to  
85 raise the heavy and damp dirt from the surface of the street, and a brush  $g$ , disposed below the forward edge of the scraper, so as to partly engage the street-surface and partly  
90 the edge surfaces of the scraper and clean the latter from the scraped-up dirt and also remove the fine dust from the street-surface and throw it into the dust-pan with more or less force.

The pivoted scraper at its front is supported  
95 by the wheels  $p$  and held thereby in proper relation to the surface undergoing the cleaning operation, the pivotal movement of the scraper being permitted by slotting the closure at the axles of said wheels.  
100

The brush  $g$  is a rotary one, made in sections to permit an easy removal of the worn bristles, the bristle-carrying sections  $g'$  being preferably in four quarter-sections grouped  
105 around end hubs  $g^2$ , having socketed flanges  $g^3$ , in which the quarter-sections are fitted and held by screws or other suitable means. The said end hubs are fixed to axles  $g^4$ , which work in boxes  $g^5$ , secured to the closure of the  
110 frame, and the said axles or one of the same is provided with a small sprocket-wheel  $s$ , connected by a chain  $t$  to a large sprocket-wheel  $s'$ , working on the axle with the wheel  $e$ .

Suitable clutch devices are employed to permit the back movement of the vehicle with-  
115 out producing a corresponding back or reverse movement of the brush. In this connection I may employ a spring  $u$ , Fig. 6, on the axle of the wheel to permit a limited lateral movement of the wheel  $e$ , the hub of  
120 which may have ratchet or clutch teeth to cooperate with corresponding clutch-teeth on the sprocket-wheel  $e'$ .

While I have described in positive terms a construction embodying the invention in its  
125 preferred form, I am aware that changes or modifications may be made without departing from the spirit or scope of the invention, and consequently I do not wish to be understood as limiting myself by the said positive  
130 descriptive terms, excepting as the state of the art may require.

Having thus described the invention, what I claim as new is—



1. The improved street-cleaning apparatus or device comprising a wheeled frame, a scraper, and brush and a pivotal dust-pan having front and top openings and having its  
 5 bottom horizontally in line with the brush to receive the sweepings directly therefrom, the rear side opposite the front opening inclining forward at the top toward said top opening, said pan being adapted to be reversed from  
 10 its normal position to permit an outpassage of the dust into a bag or receptacle, all combined, substantially as set forth.

2. The improved street-cleaning device comprising a wheeled frame, a rotary brush  
 15 receiving power from the wheels of said frame, and a pivotal dust-pan adapted to be turned on its pivot to permit an outpassage of the dust into a bag, the said pan having a converging hopper-shaped top with a projecting  
 20 mouth around which the bag may be tied or fastened so that when said pan is reversed in position the contents of the pan will be led into said bag, combined, substantially as set forth.

3. The improved street-cleaning device, comprising a wheeled frame, a rotary brush, means for operating said brush, and a pivotal  
 25 dust-pan open at the front directly behind the brush to receive the sweepings thrown therefrom to receive the sweepings from the brush and at the top to receive a bag, sub-  
 30 stantially as and for the purposes set forth.

4. The improved street-cleaning device comprising a wheeled frame having handles  
 35 at the back and a forward extension partly inclosed and supporting a scraper and rotary brush, means for rotating said brush, and a reversible dust-pan open on the side toward  
 40 said closure to receive the sweepings, and at the top to permit the sweepings to pass out when the pan is reversed, and having a hinged cover adapted to close the opening in the  
 closure, substantially as set forth.

5. The improved street-cleaning device  
 45 comprising a wheeled frame, brush and means for rotating the same, a scraper and a dust-pan having a horizontal bottom open front and inclined rear side and having a handle independent of the handle of the frame and  
 50 a mouth to which a bag may be attached, the

said pan being movable by means of the handle thereof to secure an emptying of the sweepings into said bag, all combined, substantially as set forth.

6. In a street-sweeper, the combination with 55 the frame thereof, of a dust-pan to receive the sweepings and pivots supporting said pan and permitting a reversal of the same to permit a gravitation of the accumulated sweepings, said pan having a cover hinged thereto, 60 serving to close the dust-entrance to said pan when reversed, and to engage the frame automatically to partly close the same when the said pan is lowered to its normal position to receive the sweepings, the said frame hold- 65 ing the cover away from the dust-entrance thereto, substantially as set forth.

7. In a street-cleaning device, the combination with the frame having a closure open to permit the outpassage of the pan and hav- 70 ing therein a rotary brush, a pivotal pan open at the front and top and provided with a handle to facilitate turning, and a cover hinged to said pan and adapted to close the said closure when the front opening is in position to 75 receive the sweepings and to close said front or entrance opening when the pan is raised in the frame to empty the accumulated dirt through the top opening, substantially as set forth. 80

8. In a street-cleaning device, the combination with the wheeled frame having a closure at the front open to permit the outpas- 85 sage of the pan therethrough and a rotary brush and pivoted scraper and means for operating said brush, of a pivotal pan open at the front and top, and at the top, forward of the top opening, having a hinged cover adapted to close the front or entrance open- 90 ing and to engage the frame to close the passage or opening in the closure, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of January, 1899.

OSCAR P. CADMUS.

Witnesses:

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 C. B. PITNEY.