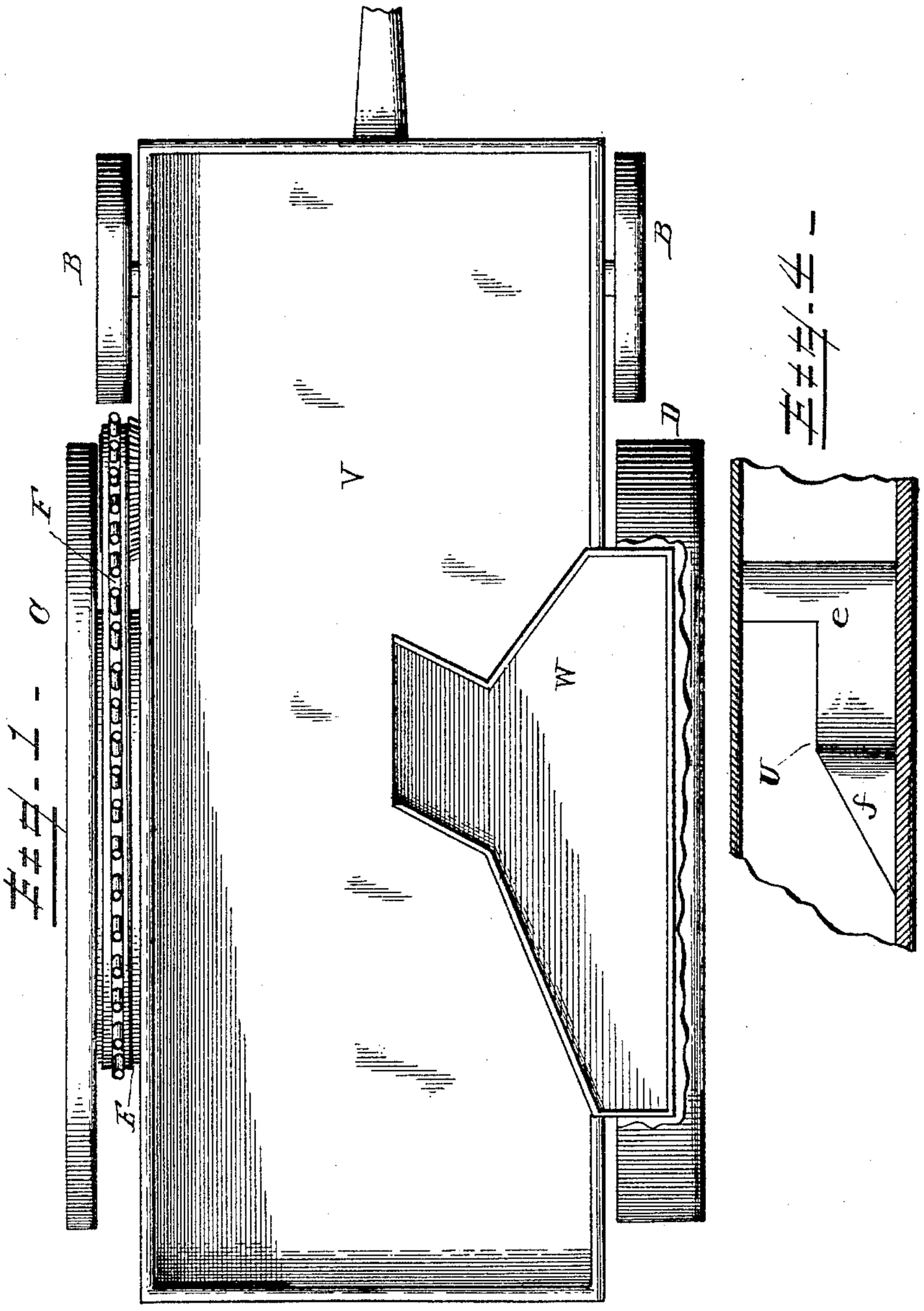
(No Model.) 2 Sheets—Sheet 1.

A. R. WEBER.

STREET SWEEPING MACHINE.

No. 454,533. Patented June 23, 1891.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

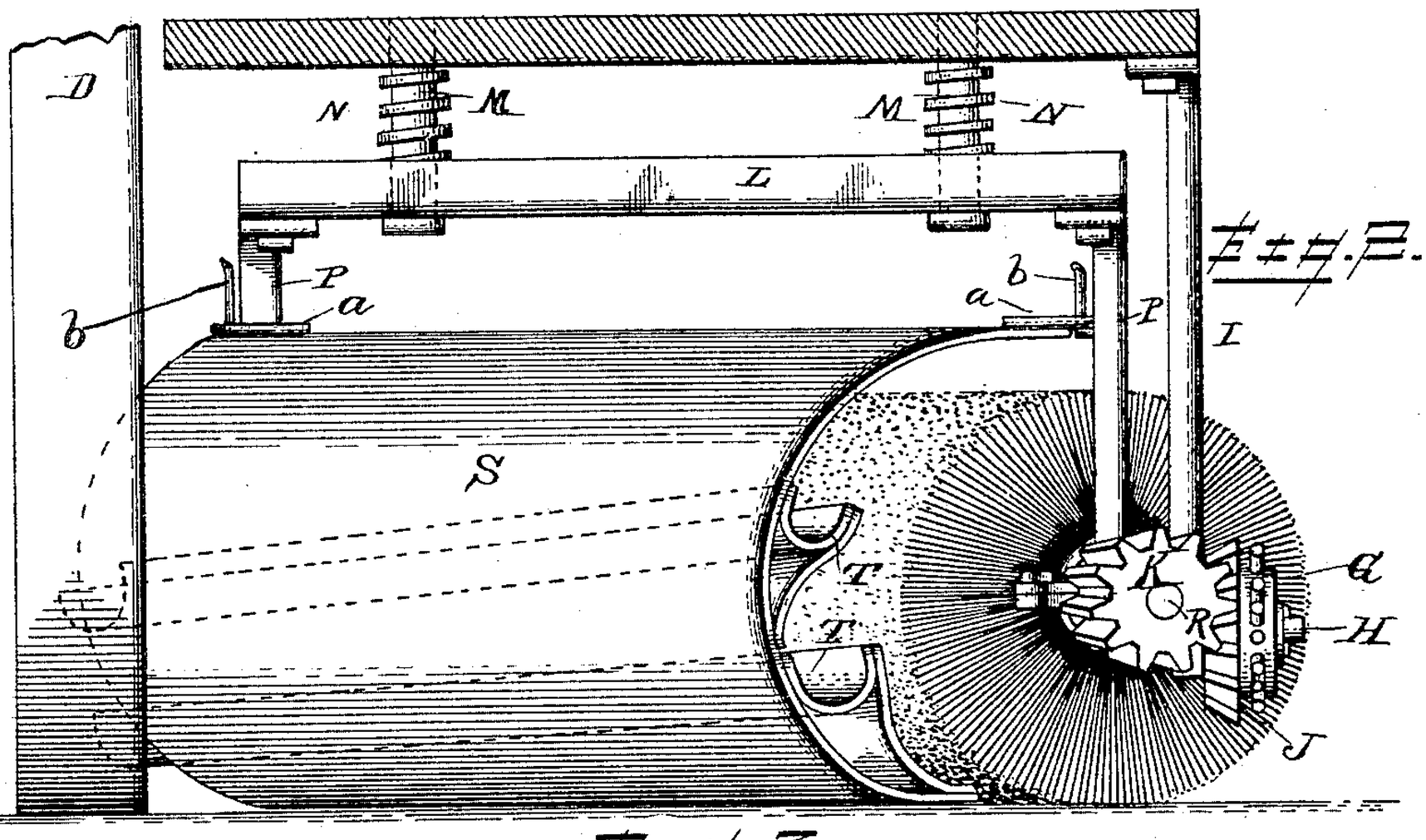
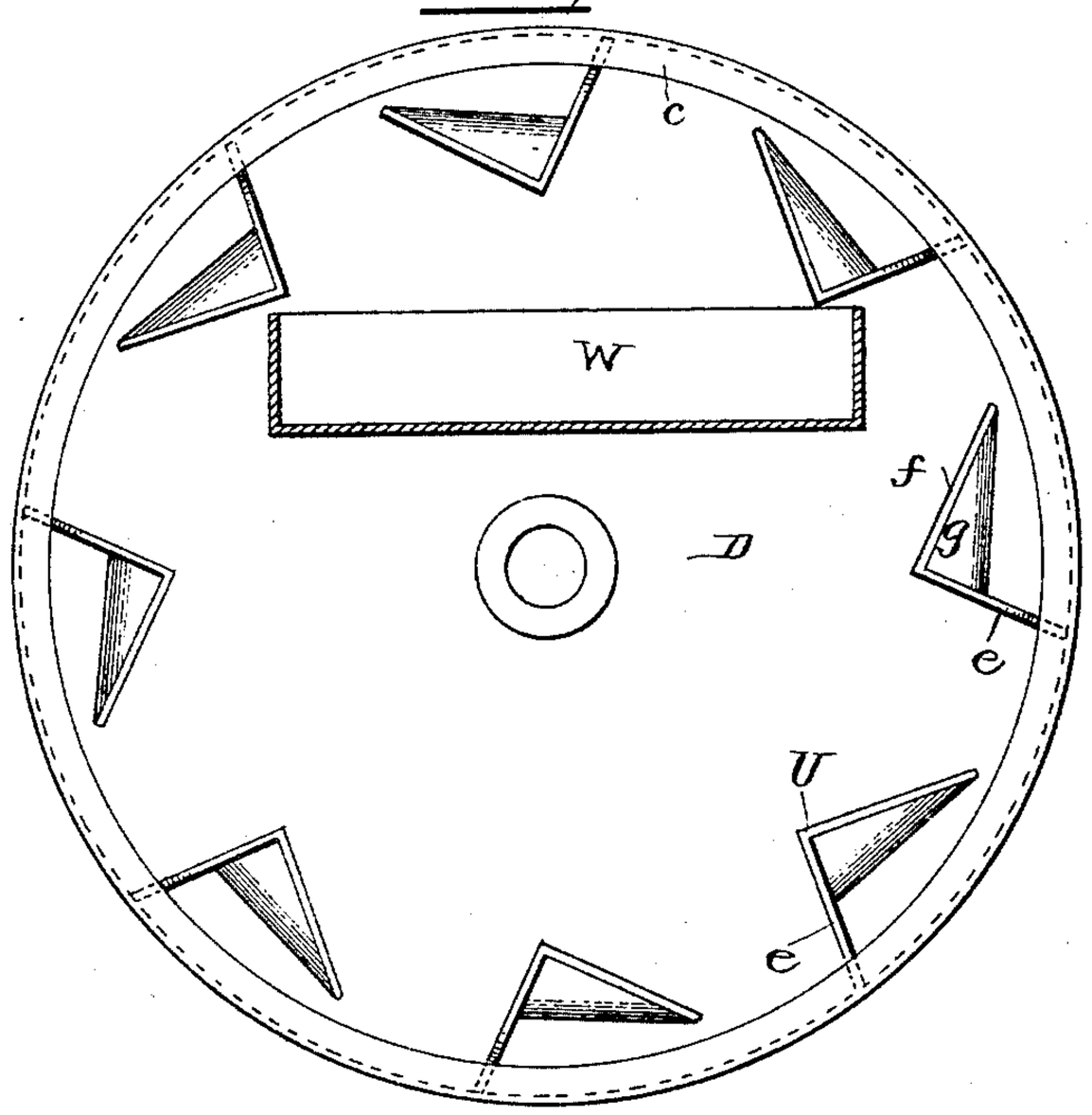


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALBERT R. WEBER, OF BROOKLYN, NEW YORK.

STREET-SWEEPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 454,533, dated June 23, 1891.

Application filed January 14, 1891. Serial No. 377,750. (No model.)

To all whom it may concern:

Be it known that I, ALBERT R. WEBER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Street-Sweeping Machines; and I do 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.

My invention relates to improvements in street-sweeping machines; and it has for its object to provide a machine of the character stated, embodying a simple and durable construction thoroughly adapted to perform in an efficient manner the ordinary functions of a sweeping-machine, whereby the conveyers or troughs of the shield S may extend within the vertical plane of the periphery of the elevating-wheel without interfering with the cups thereof.

In the accompanying drawings, Figure 1 is a top plan view of my improved sweeper, a portion of the periphery of the dirt elevating or conveying wheel being broken away to illustrate the respective position of the trough into which said conveying-wheel discharges. Fig. 2 is a transverse sectional view of the stationary frame to which the brush-carrying spring-backed frame is connected, said spring-backed frame, together with the brush carried thereby, being in perspective, while a portion of the conveying-wheel is illustrated in elevation. Fig. 3 is an interior side elevation of the conveyer-wheel, a transverse section of the receiving-trough being shown in connection therewith. Fig. 4 is a horizontal sectional view of a portion of the conveyer-wheel, illustrating in plan one of my improved conveying or dirt-raising buckets.

Referring by letter to said drawings, A indicates the bed-frame of my improved sweeper, which frame may be of any approved construction and is mounted upon front and rear axles in any ordinary manner, the connection between said bed-frame and front axle being of a pivotal nature, whereby the sweeper may turn.

B indicates the front traveling wheels, which may be of any suitable diameter, and C and D indicate, respectively, the driving and conveying traveling wheels, both of which are designed to operate in conjunction with the sweeping-brush, as will presently appear.

Formed integral with or suitably attached to the inside of the drive-wheel C is a sprocket-wheel E, of a suitable diameter and construction, around which passes a sprocket-chain F, which chain also passes around a smaller sprocket-wheel G, which is situated in the same plane as the large sprocket-wheel E, and is journaled upon a short fixed shaft H, which is fixed to and extends laterally from a depending hanger I, which is attached at its upper end to the bed-frame A, as better shown in Fig. 2 of the drawings.

Formed integral with or fixed to the sprocket-wheel G is a beveled pinion J, which is preferably of the proportional diameter, as shown, and is designed to mesh with a beveled pinion K, keyed upon the end of the brush-shaft, presently to be described.

L indicates the brush-carrying frame, which is preferably of a rectangular form and is connected by means of depending hangers M to the bed-frame A, as illustrated in Fig. 4. These depending hangers M, of which there are preferably four employed, take through the brush-carrying frame, adjacent to the corners thereof, and are headed or flanged at their lower ends, whereby a displacement of the brush-frame is obviated, and surrounding the hangers M, between the bed-frame A and the brush-frame L, are coiled cushion-springs N, which, while serving to keep the brush-frame and brush in a normal operative position, serve also as yielding cushions in case the brush strikes an obstruction in its path.

Depending from the rectangular frame L, at diagonally-opposite corners thereof, are two hangers P, which are attached in a suitable manner to said frame, and are provided at their lower ends with suitable journal-bearings to receive the shaft R of the sweeping-brush.

By the arrangement of the hangers P at diagonally-opposite corners of the rectangular frame it will be seen that the sweeping-brush, which may be of any approved form

and construction, will occupy a position diagonal of the machine-frame, which diagonal position, as is well known, is desirable in this class of machines.

S indicates a curvilinear shield for preventing the dust from flying, which shield is preferably formed of sheet metal and is of a length conforming to or slightly greater than the length of the brush. This shield S, which is preferably curved, as shown, is provided on its upper edge, adjacent to its respective ends, with eyes *a*, which in practice take over hooks *b*, attached at a suitable point to the hangers P; but it is obvious that in practice any suitable means might be employed for attaching the shield to the hangers, and I therefore do not desire to be confined to the employment of the hooks and the eyes described.

Connected in a suitable manner to the inside of the shield S are longitudinal troughs T, of which there are preferably two employed, which extend the full length of said shield; but it is obvious that, if desired, only one trough or conveyer might be employed. These troughs T, which may be of any approved construction, are slightly pitched, as shown in Fig. 2 of the drawings, toward one side of the machine, where it discharges into the cups of the wheel D.

The dirt raising or conveying wheel D is provided with a broad periphery or tread, and upon the inner edge of the said periphery is preferably provided an annular flange *c*, which operates, in conjunction with the raising-cups, to retain the dirt therein.

Arranged at suitable intervals in the wheel D, which is closed on one side, and attached to the periphery, annular flange and side thereof, are dirt-raising cups U, which are better illustrated in Figs. 3 and 4 of the drawings. These cups or conveyers U, respectively, comprise a forwardly-inclined portion *e*, which extends the full width of the periphery of the wheel and merges into a portion reduced in width, as better shown in Fig. 4.

Extending at an angle forward from the end of the inclined portion *e* and toward the periphery of the wheel D is a portion *f*, which is provided on its side adjacent to the periphery of the wheel with an inclined portion *g*, which serves to deflect the dirt back into the pocket or cup formed between the portion *e* and the periphery of the wheel, wherein it is carried up and discharged into the receiving-trough presently to be described; but although I have minutely described the form and construction of the cups for raising the dirt, &c., yet it is obvious that any suitably-formed cup might be employed, and I therefore do not desire to confine myself to the employment of the particular cup shown and described.

V indicates the body or receptacle into which the dirt is discharged from the conveying-wheel, and this body, which is preferably of a rectangular form and of a suitable depth, is attached to the bed-frame A in any suitable manner.

W indicates the receiving-trough, which conveys the dirt and the other matter raised by the wheel D into the body or receptacle. This receiving-trough W is preferably of the proportional size, as shown, and is attached to the side wall of the body V, so that it will extend within the periphery of the wheel D and receive the deposit from the cups therein.

In practice I prefer to provide the body V and trough W with hoods or covers, which may be of canvas or any suitable material, whereby the dust will be prevented from flying.

In operation it will be seen that when the sweeper is started the revolution of the wheel C, through the medium of the sprocket-wheel E and chain F, imparts motion to the sprocket-wheel G and pinion J; and it will be seen that the pinion J, meshing with the pinion K on the brush-shaft R, will rotate the brush in an opposite direction to the rotation of the wheel C, when the dirt will be swept up and deposited in the conveying-troughs carried by the shield S, whence it is discharged into the cups U of the wheel D, and elevated thereby and discharged into the trough W, and thence into the receptacle or body V, from which it may be removed in any suitable manner.

In the practice of my invention, as disclosed in the foregoing description, I do not desire to be understood as confining myself to the use of a sweeping-brush, in combination with my improved devices, as it is obvious that, if desired, the said improvements might be so modified as to co-operate with a scraper or the like.

Having described my invention, what I claim is—

1. In a street-sweeping machine, the combination, with a sweeping-brush and a receptacle adapted to receive the dirt swept up by said brush, of a laterally-disposed conveyer adapted to receive the dirt from the brush, and an elevating or conveying wheel adapted to receive the dirt from the conveyer and discharge the same into the receptacle, substantially as specified.

2. In a street-sweeping machine, the combination, with a sweeping-brush or the like, of a shield arranged adjacent to said brush and carrying a conveyer or trough adapted to receive the dirt swept up by the brush and convey the same to one side of the machine, substantially as specified.

3. In a street-sweeping machine, the combination, with a sweeping-brush or the like, of a conveyer adapted to receive the dirt swept up by said brush and convey the same laterally to one side of the machine, where it may be discharged, substantially as specified.

4. In a street-sweeping machine, the combination, with a sweeping-brush or the like, and

a receptacle adapted to receive the dirt swept up by the brush, of a shield arranged adjacent to the brush and carrying a conveyer, a wheel adapted to receive the dirt from the conveyer, and a trough intermediate of the wheel and dirt-receptacle for the purpose set forth, substantially as specified.

5. The combination, with the brush-supporting frame, the hangers depending from said frame and carrying hooks, and the brush journaled in the said depending hangers, of the shield carrying eyes at its upper edge adapted to take over the hooks on the hangers, and a conveyer carried by said shield and adapted to receive the dirt swept up by the brush and convey it to one side of the machine, substantially as specified.

6. In a street-sweeping machine, the combination, with the brush, a receptacle to receive the dirt swept up by the brush, and a suitable device for receiving the dirt from the brush and conveying it laterally, of an elevating-wheel intermediate of the lateral conveyer and the dirt-receptacle, comprising a wheel closed on its outside and having a broad periphery and an annular flange upon the inner edge thereof, and the cups arranged at intervals upon the inside of the periphery and consisting of the forwardly-inclined portion extending the full width of the periphery and a reduced portion, substantially as and for the purpose set forth.

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

ALBERT R. WEBER.

Witnesses:
E. N. WATERS,
T. E. TURPIN.