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Fig 3.

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998,745.

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SWEEPING MACHINE.
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2 SHEETS—SHEET 2.

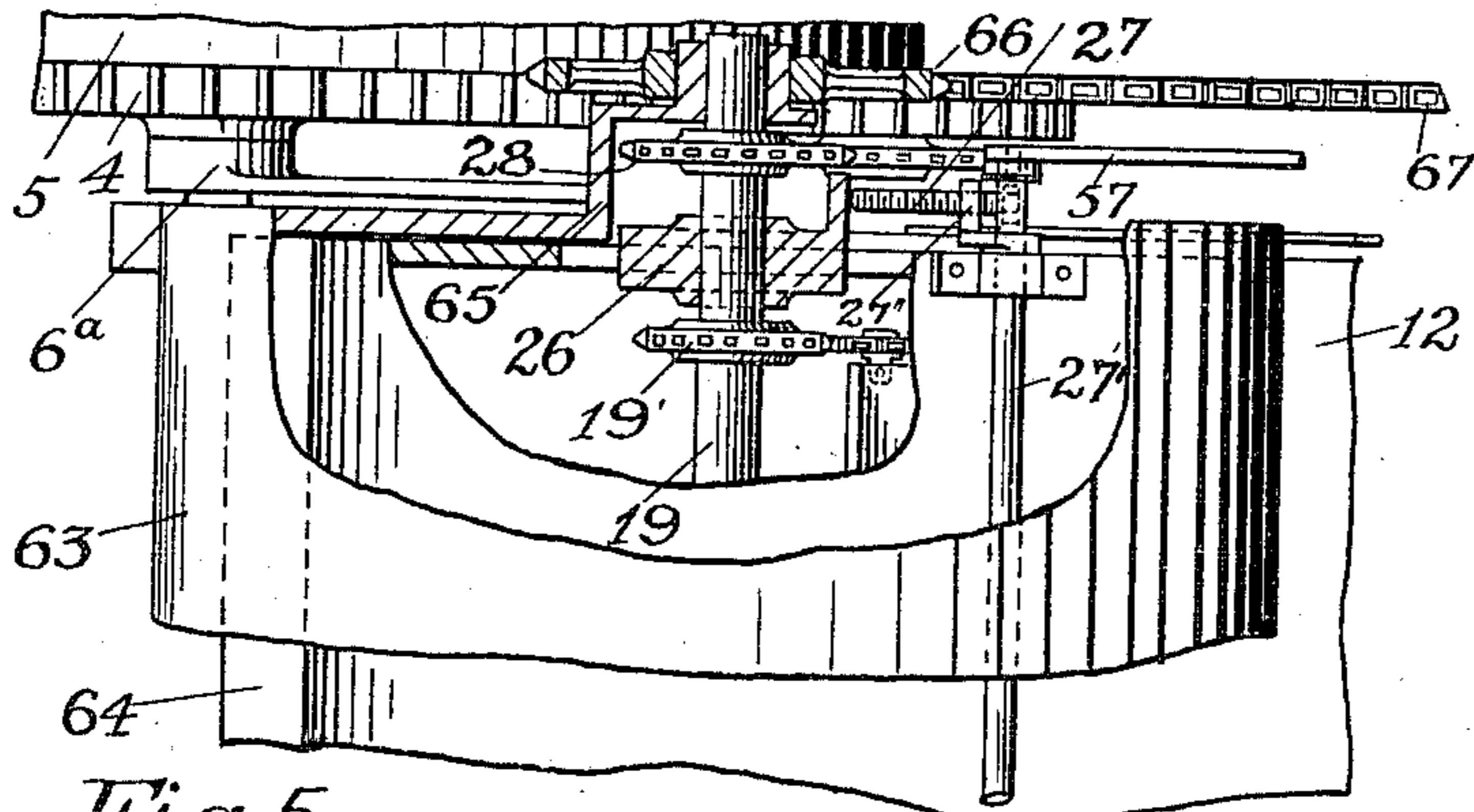


Fig 5.

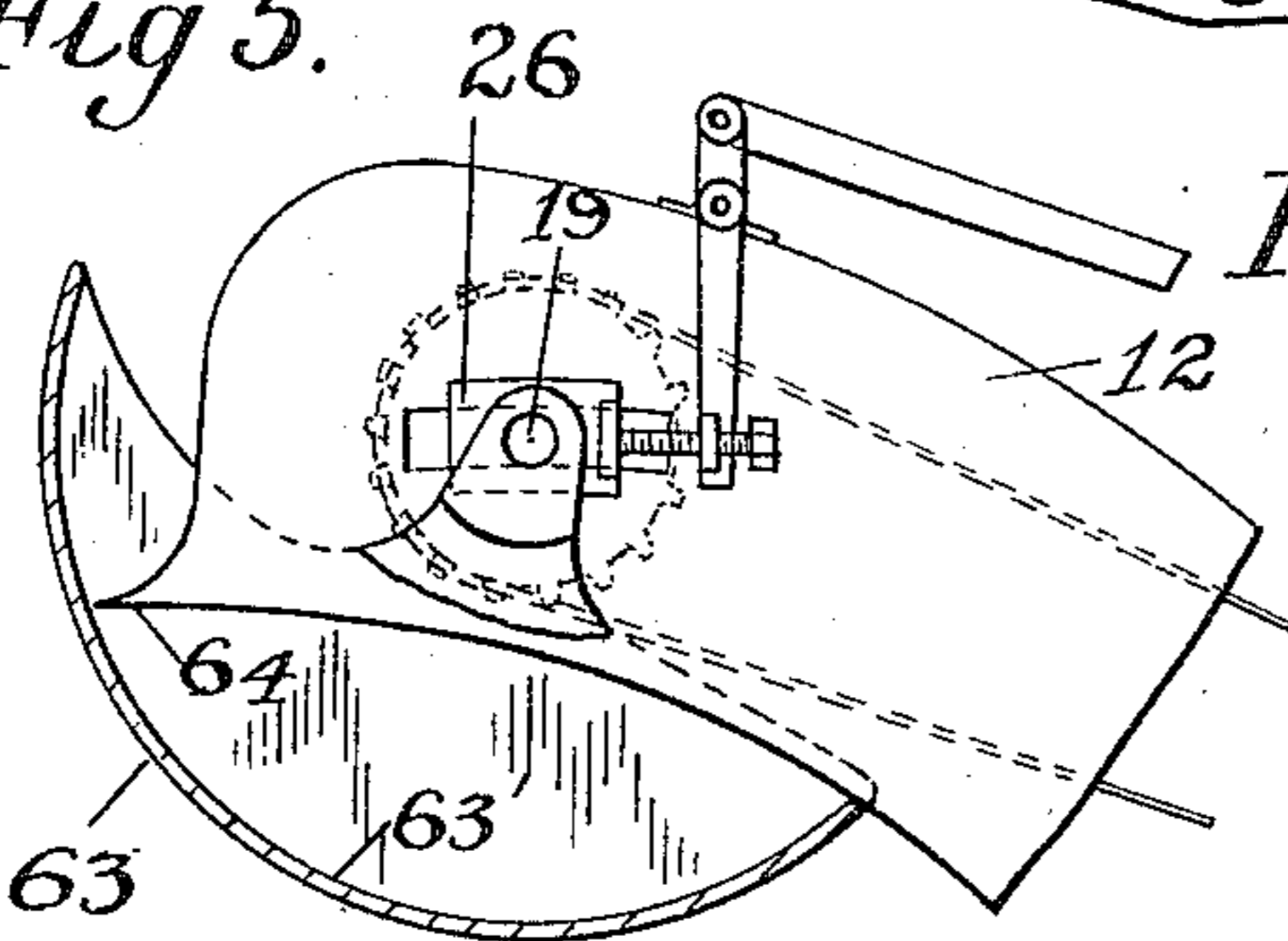


Fig 6.

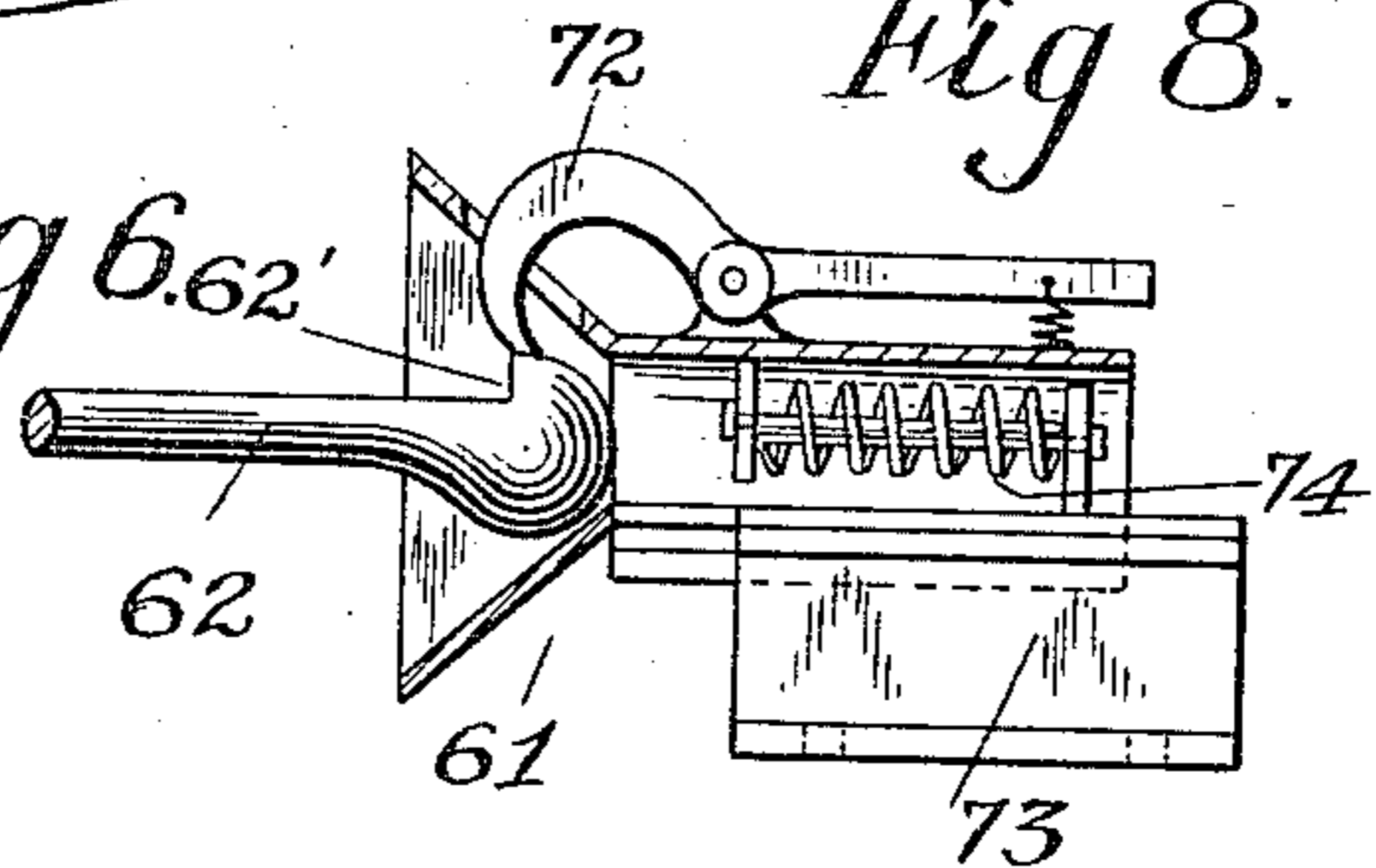


Fig 8.

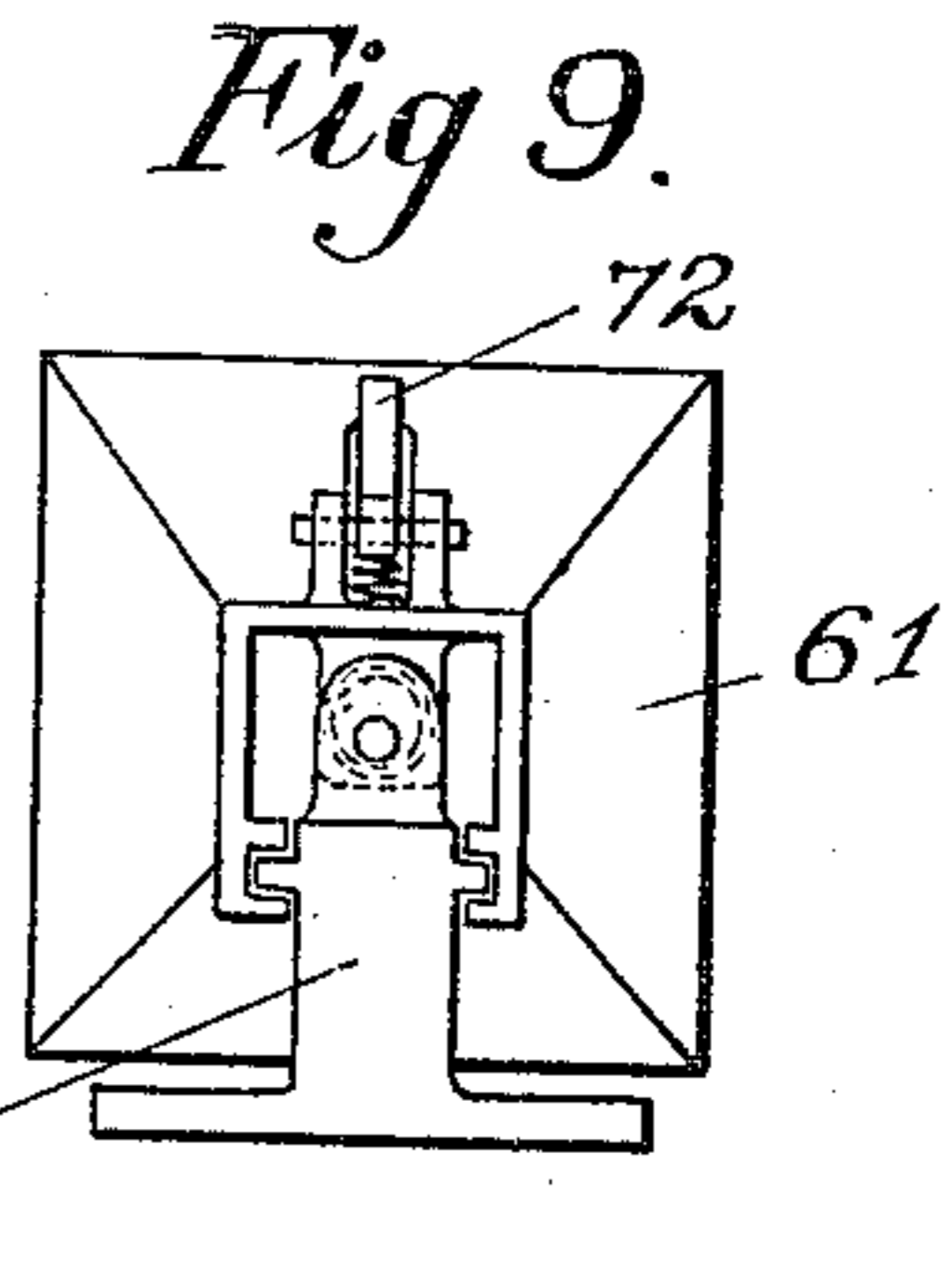


Fig 9.

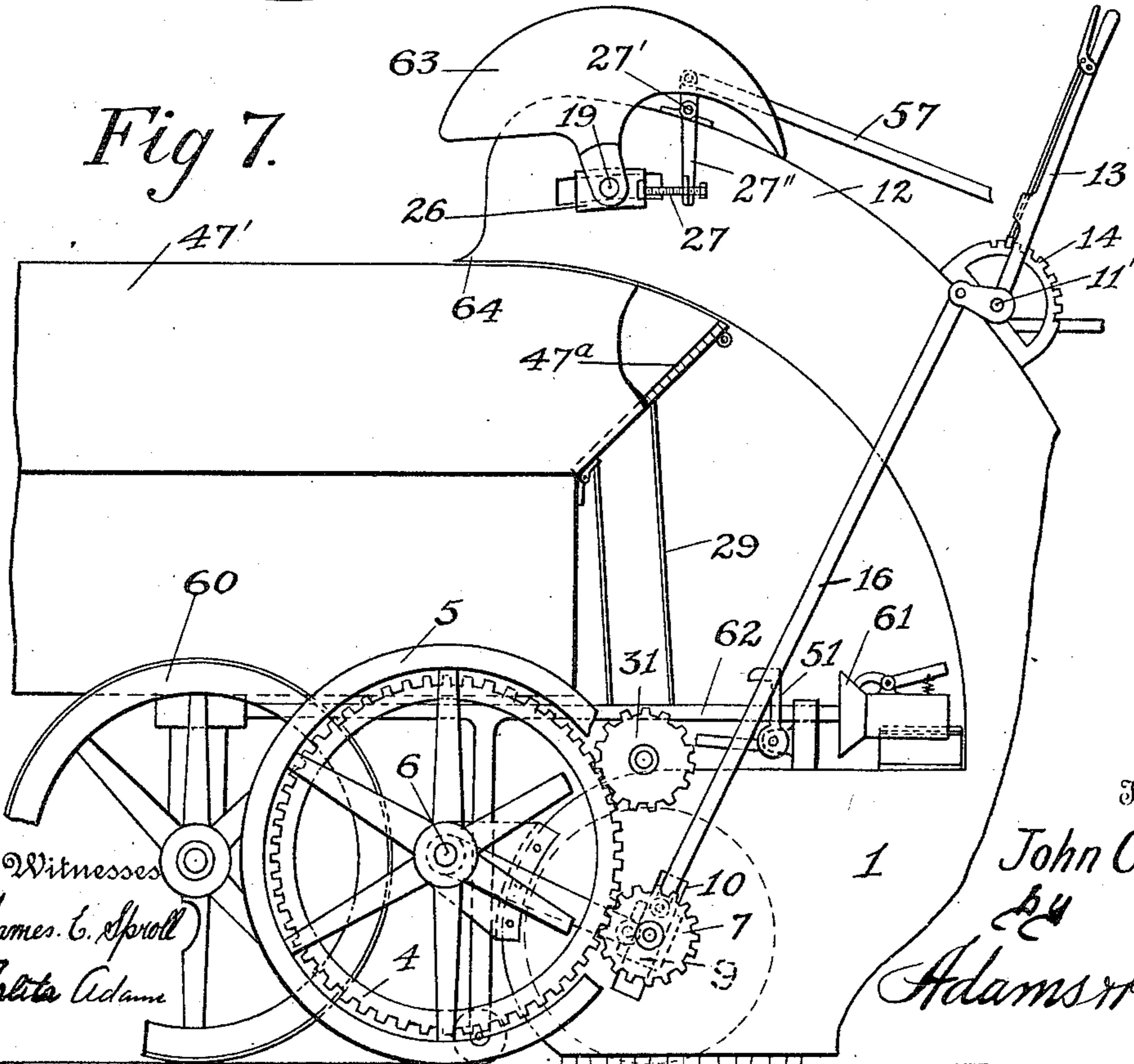


Fig 7.

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UNITED STATES PATENT OFFICE.

JOHN CABLE, OF SEATTLE, WASHINGTON.

SWEEPING-MACHINE.

998,745.

Specification of Letters Patent.

Patented July 25, 1911.

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To all whom it may concern:

Be it known that I, JOHN CABLE, a citizen of the United States of America, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Sweeping-Machines, of which the following is a specification.

My invention relates to machines of the above indicated character, having more particular reference to street sweeping machines, and aims primarily to provide a construction which will be efficient in operation, particularly with respect to the handling of the sweepings, and further practically dustless.

Other objects will be set forth as my description progresses and those features of construction, arrangements and combinations of parts on which I desire protection, particularly set forth in my appended claims.

Referring to the accompanying drawings, wherein like numerals of reference indicate like parts throughout:

Figure 1 is a fragmentary side elevation, portions thereof being broken away. Fig. 2 is a top plan in partial section, of the machine. Fig. 3 is a perspective, illustrating more particularly one of the blocks in which the brush is journaled. Fig. 4 is a fragmentary perspective of one of the flights of the conveyer. Fig. 5 is a fragmentary plan, with parts shown in section, illustrating particularly the auxiliary receiver and its immediate correlated mechanism. Fig. 6 is a fragmentary side elevation of the upper end portion of the casing, the auxiliary receiver being shown in section, and in operative position. Fig. 7 is a fragmentary elevation of the machine equipped with a main receiver of modified form. Fig. 8 is a longitudinal section of the coupling for the modified form of main receiver, and Fig. 9 is a rear elevation of the coupling.

Referring to the drawings, 1 indicates a bottomless housing provided at its forward end portion with an inclined apron 2, arranged to receive the sweepings from a suitable brush 3, supported for rotation and driven by drive gears 4 fixed to the rear traction wheels 5, which latter are journaled on stud axles 6, carried by rearwardly projecting brackets 6^a of the housing, as clearly shown in Figs. 1 and 2.

As now considered, I provide gears 7 on the end portions of the axle 8 of brush 3, the same being in mesh with drive gears 4 and being of a comparatively small diameter.

To compensate for wearing of the brush, I support the same for vertical adjustment, axle 8 being journaled in blocks 9, slidably arranged in slots 10, provided in the side walls of housing 1, and pivotally connected with arms 11 which are swingingly supported on the axles 6 whereby during vertical adjustment of the brush, gears 7 will not be thrown out of mesh with gears 4.

The adjustment of brush 3 is effected by the operator who rocks a cross shaft 11', journaled on an upwardly extending casing 12, through the medium of a lever 13, having a latch mechanism of ordinary form for engagement with the toothed segment 14.

Shaft 11 is provided on its end portions with cranks 15, connected by links 16 with blocks 9.

Reference numeral 17 indicates an endless conveyer extending from apron 2 in a forward direction over a substantially horizontal lower wall portion 12^a of the casing, then upwardly, first at a substantially right angle to said wall portion 12^a, then rearwardly in a curved path to the point of discharge. By this arrangement of the conveyer, the flights 18 thereof are caused to first drag over the face of apron 2 to gather the sweepings onto the wall portion 12^a of the casing where they are held by the adjacent angular or vertical wall portion of the casing until caught by a flight and conducted upwardly, as will later be more fully understood.

Flights 18 have outwardly curved side edge portions 18' and these prevent displacement of the material during the upward and rearward travel of the flights. The lower side edge portion 18' of each flight projects outwardly farther than the upper one so as to engage and travel over the inner face of the forward wall of the casing 12.

Conveyer 17 comprises two chains certain of the links of which are provided with lugs, as 24 (see Fig. 4), to which flights 18 are secured as by screws 25, said chains passing over sprocket wheels 19' on a drive shaft 19 and suitable idlers 20 and 21, the latter of which are carried on a shaft 22, supported in side wings 23 of apron 2.

Drive shaft 19 is journaled in slidable

bearings 26, connected with a suitable adjusting device, to be hereinafter described, and is provided on one end with a sprocket wheel 28 to which power is transmitted by
 5 a chain 29 from a driven shaft 30, journaled on housing 1 and provided with gears 31 meshing with drive gears 4.

To prevent injury to apron 2 as by the same striking a rock or other obstruction,
 10 I pivotally support the same as by hinges 45, whereby the apron can swing vertically, the same during such movement carrying with it shaft 22 and thereby insuring of a proper action of the flights in their move-
 15 ment over the face of said apron, at all times. Apron 2 can also be elevated through lifting force transmitted through the conveyer by the adjusting mechanism for bearings 26, which mechanism is normally set
 20 to hold the conveyer under the desired tension. This adjusting mechanism comprises a rock shaft 27', journaled on casing 12 and provided on its end portions with arms 27'' carrying screws 27 which have bearing on
 25 the bearings 26. A link 57 connects rock shaft 27' with an operating lever 58 which is journaled on shaft 11' and provided with the usual latch mechanism, as shown, related to the toothed segment 59.

30 In the operation of my machine, the flights in passing around sprocket wheels 19' discharge their contents through the discharge opening 46 of casing 12 into a suitable receiver, as a closed receptacle 47 which
 35 is swingingly supported, as by hinges 48 on the housing 1, the pintles of which hinges can be readily removed when it is desired to remove the receptacle from the machine. Pivoted catches 51, having operating han-
 40 dles, as 50, normally engage lugs 52 on the sides of receptacles 47 to prevent accidental swinging thereof.

Reference numeral 47' indicates a receptacle of modified construction, the same being
 45 provided with supporting wheels 60 and releasably connected to the machine in snug fitting relation beneath the upper end portion of its casing 12 by the coupling 61 and draw bar 62. This form of receptacle en-
 50 ables the operation of sweeping being carried on without the necessity of the receptacle being hauled with the machine, after being filled, the same at such time being uncoupled and another substituted therefor.

55 Reference numeral 63 indicates an auxiliary receiver supported for adjustment over the discharge opening 46 of casing 12, the same being adapted to receive the sweepings conveyed during movement of the machine,
 60 when the receptacle 47' has been removed, as in hauling the same to a second or substitute receptacle. This auxiliary receiver is pivoted on the end portions of shaft 19 (see Fig. 5) and has a concentrically curved bot-
 65 tom wall portion 63', related to which and

preferably for engagement therewith, is an ejector or scraper 64, consisting of a rearwardly projecting extension of casing 12.

For elevating or dumping the auxiliary receiver, I provide on one hub extension 65
 70 thereof, a sprocket wheel 66, driven by a chain 67 from a similar wheel on a shaft 68, which latter is given a step by step movement through operation of the hand lever 69 controlling the pawl and ratchet driving
 75 device, as 70. A dog 71 holds shaft 68 against backward movement, the same having a projecting tail part 71' for engagement with the foot for effecting its disengagement, and when device 70 is also dis-
 80 engaged, such release of the dog 71 frees shaft 68 to permit of the auxiliary receiver lowering by gravity to its operative position, as shown in Fig. 6.

The construction of receptacle 47' is im-
 85 material with the exception that I desire a snug fit of its body with the adjacent curved wall of the casing 12, as shown, the same however, must be so constructed as to permit of its being properly positioned
 90 and coupled when the auxiliary receiver is in operative position, this being permitted in the present instance by first lowering a hinged wall section 47^a. When this wall
 95 section is swung back to normal position, and secured in any desired manner, auxiliary receiver 63 is operated clear of the casing discharge opening 46 (see Fig. 7) during which operation said auxiliary receiver
 100 is discharged of its contents through the agency of ejector or scraper 64.

Draw bar 62 is formed on its free end portion with an inclined guiding surface, rearwardly of which is a shoulder 62' for
 105 engagement with the pivotally supported catch 72 of the draw head of the coupling, said draw head being slidably supported on a guide 73 of the housing and secured to a
 110 spring, as 74, which acts as a buffer and further receives the pulling strain. Spring 74 is of a well known type, the same having its end portions extending in opposite direc-
 115 tions through an intermediate coiled portion and connected with respective lugs provided on the draw head of coupling 61 and guide 73, as clearly shown in Fig. 8.

If desired one or more fenders 53 may be provided, as on the axles of suitable front
 120 supporting wheels 44, to prevent the housing or projecting parts of the machine coming in contact with the curbing.

Housing 1 can be varied in construction with respect to details, to render the same more effective with respect to the operation
 125 of the machine, and as now constructed I preferably provide the same with a depending flexible guard 1', which will aid in the prevention of the exit of dust, as will be readily understood.

Having thus fully described my invention, 130

what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a sweeping machine, a housing, an upwardly and rearwardly extending casing communicating with said housing, a brush supported for rotation in said housing, a hinged apron in said housing arranged to receive the sweepings from said brush, an endless conveyer extending through said casing and having flights for removing the material from said apron, supporting means on said apron for the lower end portion of said conveyer a slidably supported means, engaged with the upper end portion of said conveyer, and means for adjusting said slidably supported means to move said conveyer and thereby adjust said apron including a rock shaft journaled on said casing and having connection with said slidable means, a forwardly disposed driving mechanism, and a link connection between said mechanism and said rock shaft.

2. In a sweeping machine, a housing, an upwardly and rearwardly extending casing communicating with said housing and provided in its rear end portion with a discharge opening, a brush supported for rotation in said housing, an apron arranged to receive the sweepings from said brush, and an endless conveyer arranged to remove the sweepings from said apron and convey the same to the discharge opening of said casing, two end supporting shafts for said conveyer, one of said shafts being supported on said apron, bearings slidably supported on said casing and carrying the other of said shafts, and means for adjusting said bearings, whereby said apron can be elevated, said means including a rock shaft having arms adjustably engaged with said bearings, and operating means for the rock shaft.

3. In a sweeping machine, the combination with a casing provided in one end portion with a discharge opening, and means in said casing for forwarding the material for discharge through the opening thereof, of

a receiver pivotally supported for movement from beneath the discharge opening of said casing around the adjacent end of the latter to a point above the same, and a scraper on the last named end portion of said casing projecting rearwardly therefrom into the path of said receiver.

4. In a sweeping machine, the combination with a casing provided in one end portion with a discharge opening, and means in said casing for forwarding the material for discharge through the opening thereof, of a receiver pivotally supported for movement from beneath the discharge opening of said casing around the end of the latter, means for ejecting material from said receiver during movement thereof, and means for swinging said receiver comprising an endless chain, sprocket wheels over which the chain passes, one of which sprocket wheels is fixed to said receiver and the other to a relatively fixed part, and means for driving the last named of said sprocket wheels to thereby effect adjustment of said receiver toward and from its receiving position.

5. In a sweeping machine, the combination with a casing provided in one end portion with a discharge opening, and means in said casing for forwarding the material for discharge through the opening thereof, of a receiver pivotally supported for movement from beneath the discharge opening of said casing around the end of the latter, means for swinging said receiver including a drive shaft connected with said receiver for imparting movement thereto, a lever having a releasable driving connection with said shaft, and means for holding said shaft as adjusted by said lever.

Signed at Seattle, Washington, this 11th day of February 1910.

JOHN CABLE.

Witnesses:

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WILLIAM NIGHTINGALE.