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PATENTED JAN. 1, 1907.

F. EBNER.
STREET CLEANING MACHINE.

APPLICATION FILED OCT. 18, 1905.

2 SHEETS—SHEET 1.

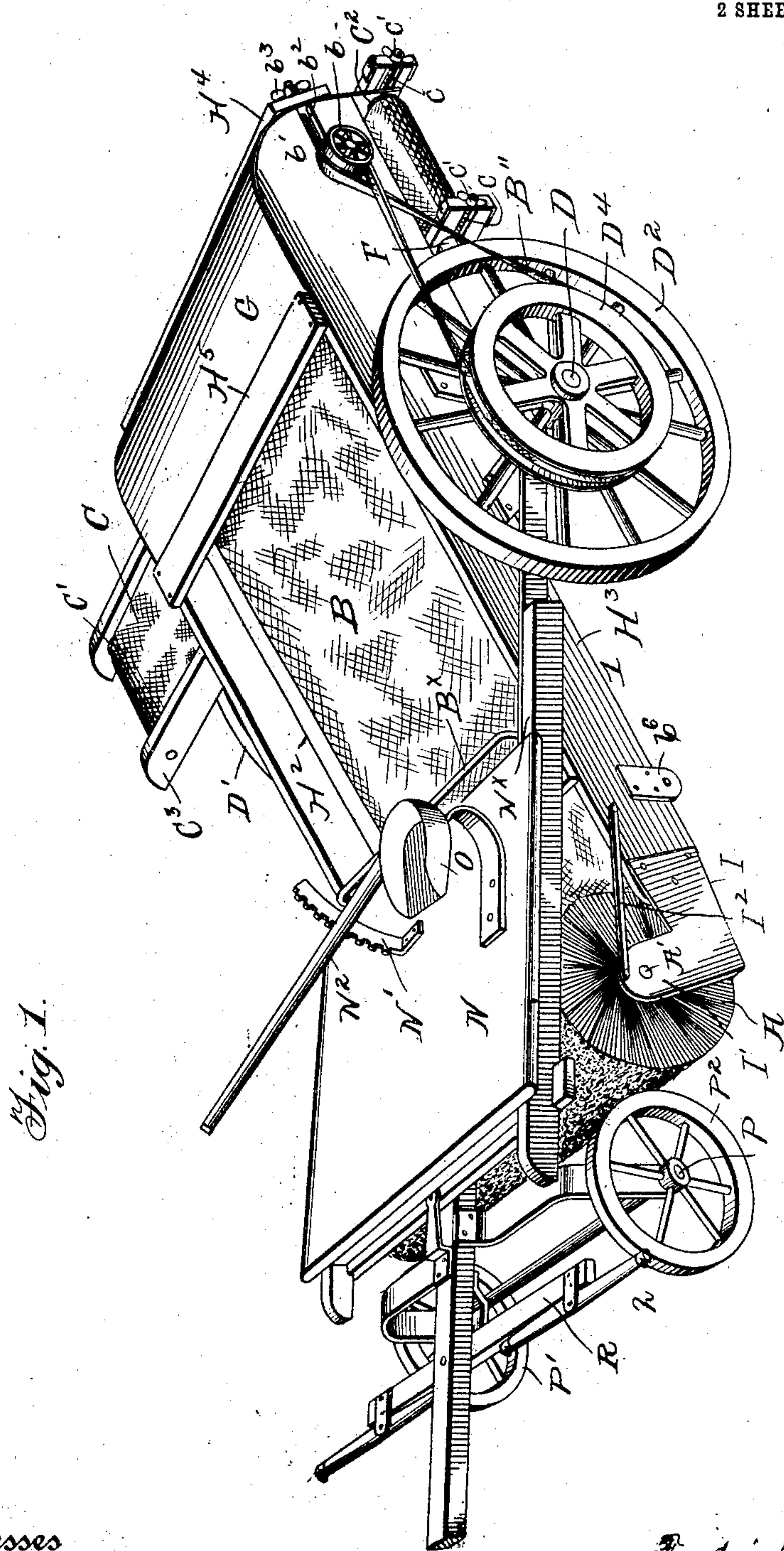


Fig. 1.

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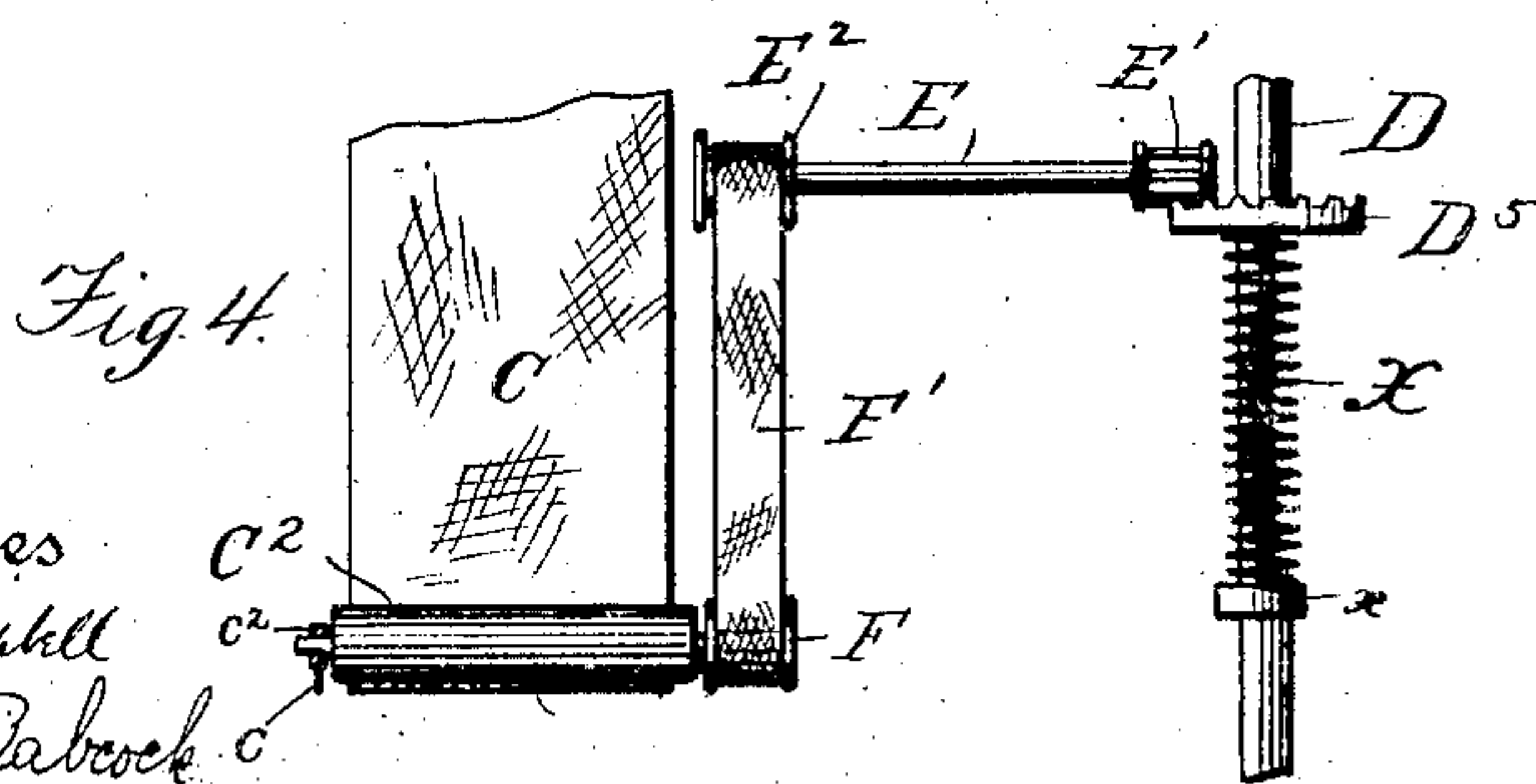
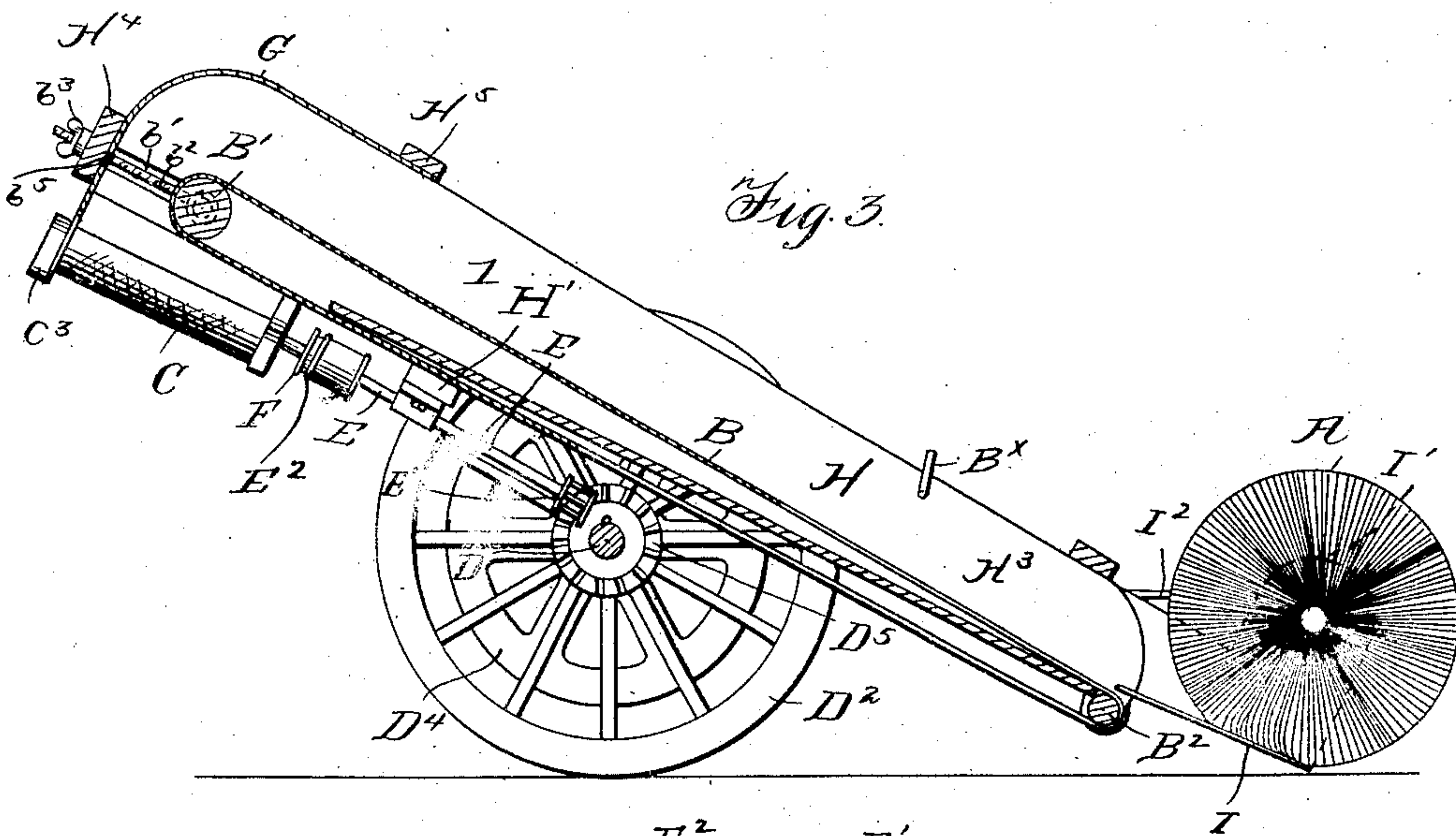
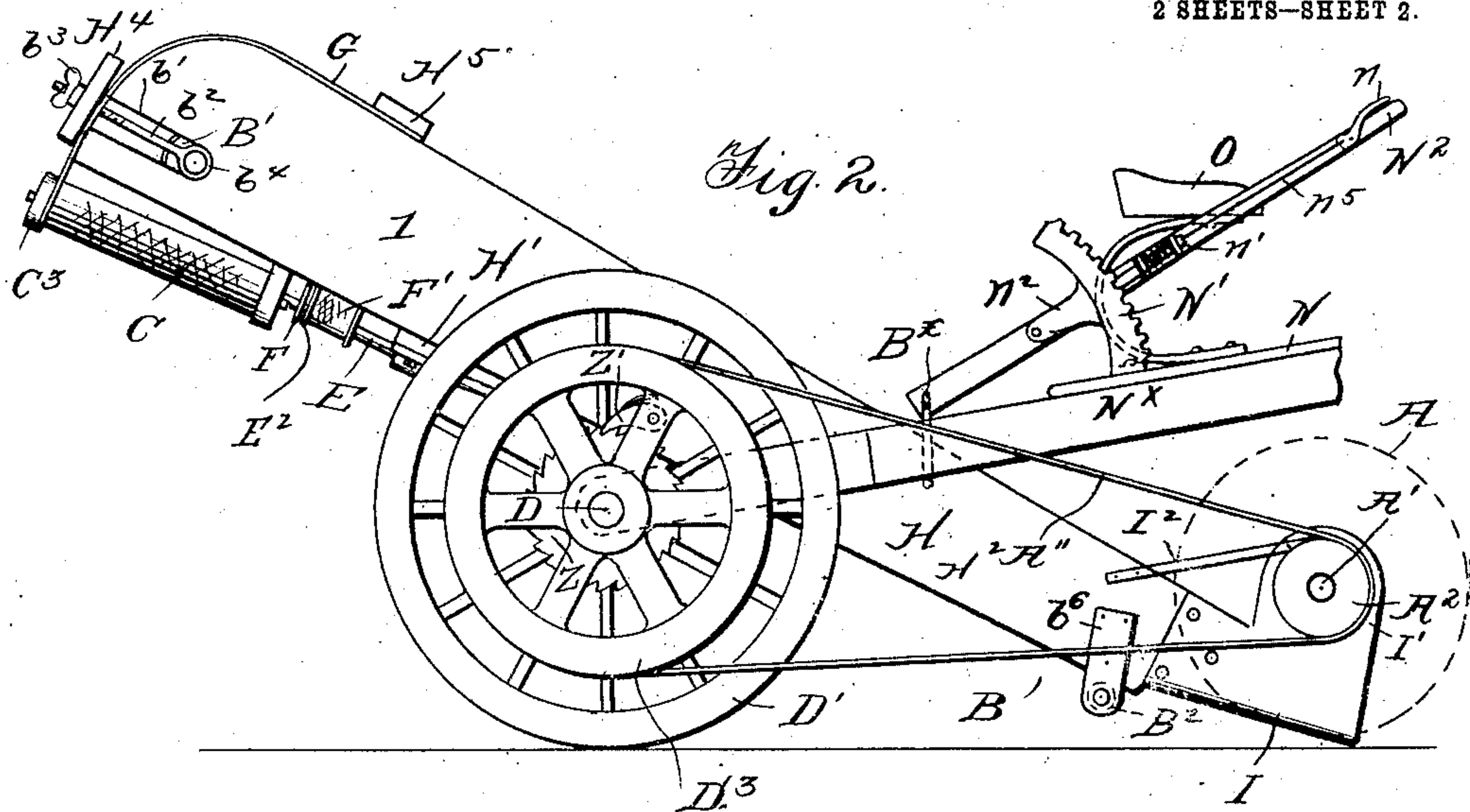
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FREDRICK EBNER, OF LA CROSSE, WISCONSIN.

STREET-CLEANING MACHINE.

No. 839,823.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed October 18, 1905. Serial No. 283,333.

To all whom it may concern:

Be it known that I, FREDRICK EBNER, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Street-Cleaning Machines; 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.

This invention relates to street-sweeping machines of the class adapted to elevate the dirt and dust collected by the sweeper of the same and dump it into any convenient receptacle.

The main object of said invention is to provide improved means for depositing the sweepings into carts or wagons running alongside the machine without interrupting the work of the said machine at all.

To this end my invention consists in the construction and combination of parts hereinafter more particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of a machine embodying my invention. Fig. 2 represents a side elevation of the same. Fig. 3 represents a vertical longitudinal section of the same, and Fig. 4 represents a detail plan view of the spring-held gearing and proximate parts.

1 designates the main section or frame of my sweeping-machine, which carries the rotary brush or sweeper A, the endless elevating sheet or apron B, the lateral horizontal discharging sheet or apron C, the driving-shaft D, and driving-wheels D' and D², together with their operative connections and adjusting devices.

2 designates the front truck of my machine, which is provided with a platform N, carrying a seat O, and a rack N', upon which an operating-lever N² is mounted. The forward part of said truck is supported on an axle P of bearing-wheels P' P² and provided with any suitable means of draft attachment R.

On the right-hand end of shaft D, against the outer side of driving-wheel D', is loosely mounted the pulley-wheel D³, which operates the pulley A² on the right end of axle A' of sweeper A by means of the endless driving-belt A''. On the left end of said driving-shaft and on the outside of drive-wheel D² is fixed the pulley D⁴. This pulley is connected

to the pulley b, which is fast on the left-hand end of the upper roller B' of the elevating-sheet B, by the crossed driving-belt B'', which transmits motion from the former pulley to the latter, rotating the said roller B' in a direction opposite to the direction of rotation of main driving-shaft D. Splined on the said main driving-shaft D, at some point between the two driving-wheels, is a crown-wheel D⁵, engaging the lantern-wheel or pinion E', mounted on the forward end of secondary driving-shaft E, which runs backward from the main driving-shaft. This gear-wheel D⁵ is adapted to slide along the shaft D into and out of engagement with the pinion E' aforesaid, but is normally held in such engagement by the spiral spring X on said shaft D, abutting at one end against wheel D⁵ and at the other against the stop x, which is rigidly mounted on shaft D inside of drive-wheel D².

The discharging sheet or apron C is mounted on two rollers C' C², held in the opposite ends of a frame C³. Roller C' in the right-hand end of said frame is non-adjustable; but roller C² at the other end of said frame is adjustable longitudinally thereof by means of the rods c, adjusting-nuts c', and collars c², fixed about the ends of said roller C². By means of this longitudinal adjustment of roller C² the tension of the sheet C is regulated. On the forward end of the axle of said roller C² is a pulley-wheel F, connected to the pulley E² on the rear end of shaft E by the driving-belt F'. The said shaft E is rotatably mounted in a cross-piece H' of the frame H of the said section 1 of the machine. The elevating-apron B is held at its lower end by roller B², mounted in fixed bearings b⁶ in the lower or forward ends of the side pieces H² H³ of said frame H. The roller B' at the upper end of said sheet is adjustably mounted in slots b', cut in the ends of said side pieces H² H³, the adjustment of said roller being by means of rods b², adjusting-nuts b³, and collars b⁴ on the ends of said roller. The said nuts bear against the outside or rear side of the end piece H⁴ of frame H, so that by turning them the tension on the elevating-apron may be increased or decreased at will. The upper or rear end of frame H is covered by an arched hood G, extending from the cross-piece H⁵, connecting the top edges of the side pieces H² H³ to the rear end of the frame which supports the discharging-sheet and supporting said rear side of said discharging-sheet frame. It passes under the said end

piece H^4 of frame H , and the rods b^2 work through holes b^5 therein.

The lower or forward end of frame H is provided with a receiving-pan I , carrying
5 bearings I' , in which the ends of axle A' of
sweeper A are rotatably mounted. The said
bearings are braced against longitudinal
strain by brace-rods I^2 , running from the
upper ends thereof to the side pieces H^2 H^3 .

10 The operating-lever N^2 is pivotally mounted on an arm n^2 of rack N' and may be locked to said rack in any angle of inclination at will by means of the hand-lever n , pivoted on the said operating-lever near the upper end
15 thereof, the spring-catch n' adapted to normally engage said rack and the connecting-rod n^5 transmitting motion from said hand-lever to said catch in order to disengage it from the said rack. The rear or lower end of
20 said operating-lever N^2 is connected to the suspending-rod B^x , the ends of which are secured to the sides of the frame H . The supports N^x of platform N are rearwardly produced beyond the driving-shaft D , which
25 passes through them, connecting the two sections 1 and 2 of the machine together.

The general operation of my invention is as follows: The handle of operating-lever is raised upward and backward, lowering the
30 sweeper A into operative contact with the surface to be swept. The pulley D^3 turns with driving-wheel D' , and its motion is transmitted by the endless belt A'' to the pulley A^2 on the axle of the sweeper, causing
35 said sweeper to revolve in the same direction, brushing all refuse in its path into the receiving-pan and thence onto the elevating-sheet B . The pulley D^4 on the left end of shaft D turns with said shaft, and its motion
40 is so transferred to the upper or rear roller of said elevating-sheet by means of the crossed endless belt, that said roller rotates in a direction opposite to that of the main shaft and causes the sheet B to travel over it from front
45 to rear of section 1 and carrying all refuse swept upon it by sweeper A to its top, where it falls upon the transversely-traveling dis-

charge-sheet C . The shaft E , receiving motion from the main driving-shaft D , transmits the same to end roller C^2 of discharge-sheet C by means of endless belt F' . This
50 causes the rotation of roller C^2 toward the right, drawing upon the discharging-sheet C in the same direction and causing it to travel in its frame, so as to carry all refuse dumped
55 upon it by sheet B out to the roller C' in the right end of said frame C^3 , from which it drops into a wagon or other receptacle not a part of said invention.

The spring X keeps pinion D^5 in mesh with
60 gear-wheel E' without risk of separation or strain while the machine is turning curves. The pulley D^3 carries a pawl Z' , engaging a ratchet-wheel Z , carried by wheel D' , these parts being arranged to drive the said pulley,
65 the belt I^2 , and the brush A while the machine goes forward and to permit the said pawl to ride freely over the backward-turning ratchet-wheel when the machine is backed. Thus the latter movement will not
70 turn the sweeper or brush A .

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

In a street-sweeping machine, a rotary
75 brush in combination with the main transporting-wheels and their axle, a bevel gear-wheel sliding on said axle, a spring pressing on said gear-wheel, a lantern-wheel meshing with said bevel gear-wheel, a shaft turning
80 with said lantern-wheel, an endless conveyer driven by said shaft, another endless conveyer, gearing from the shaft of said brush to drive the same and a pawl and ratchet operating with this gearing to prevent back-
85 ward motion substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDRICK ^{his} × EBNER.
mark

Witnesses:

L. KLUBER,
MARY EBNER.