

No. 703,194.

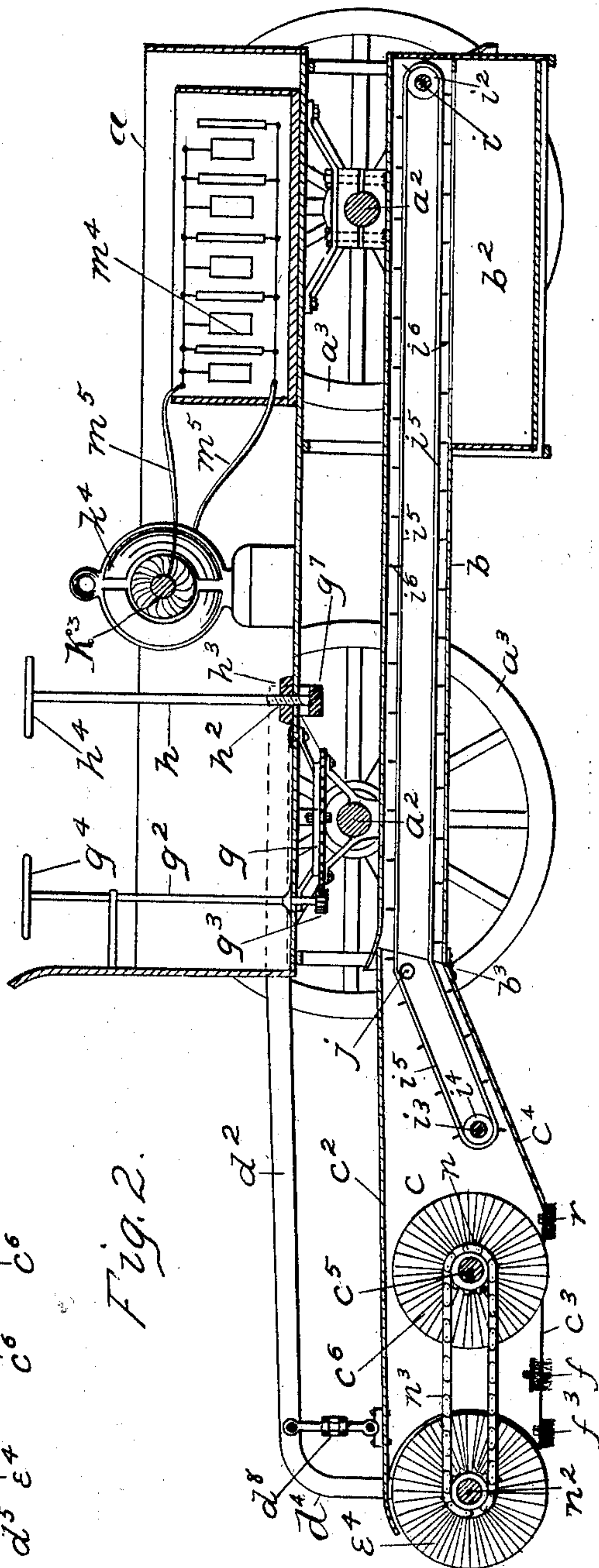
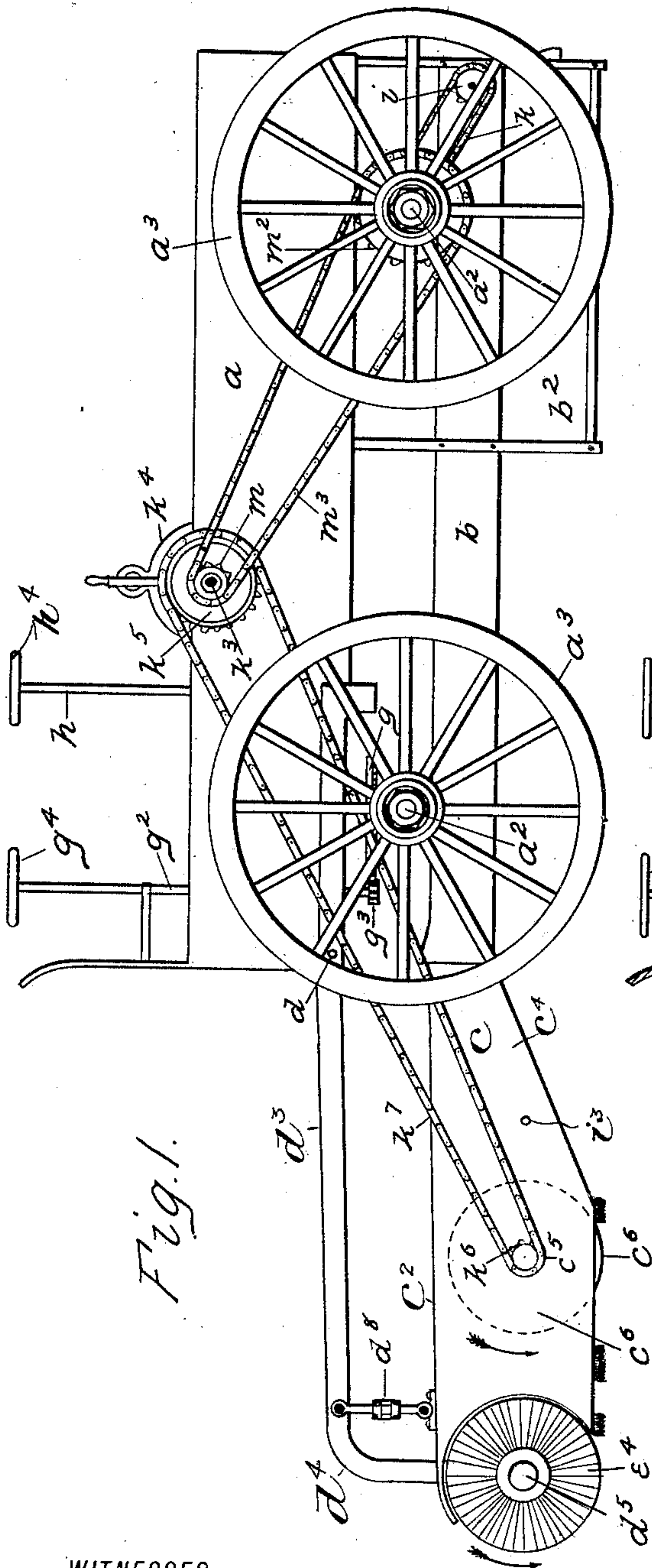
Patented June 24, 1902.

P. R. HANSBURY.
STREET SWEEPER.

(Application filed Feb. 27, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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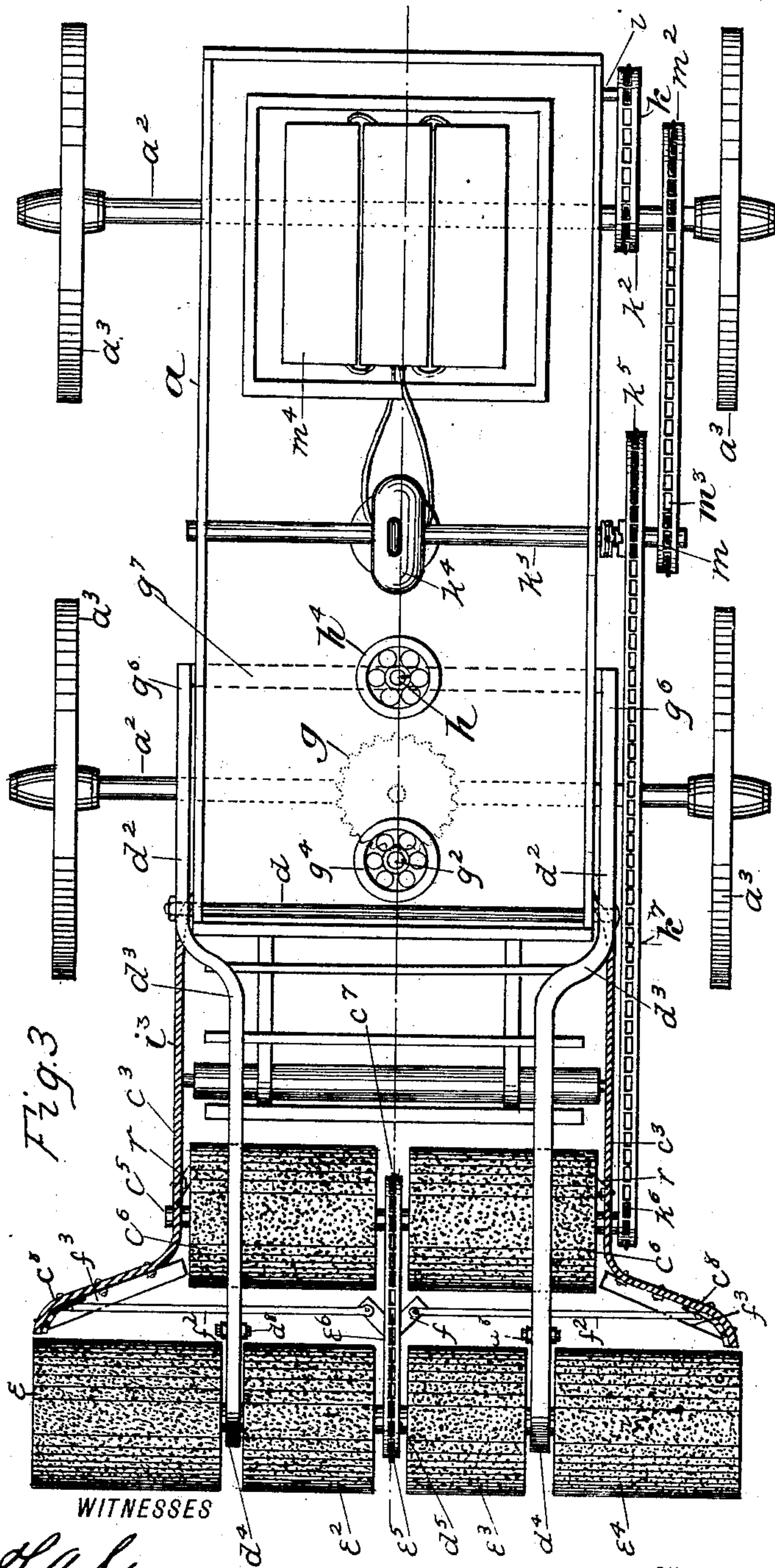


Fig. 3

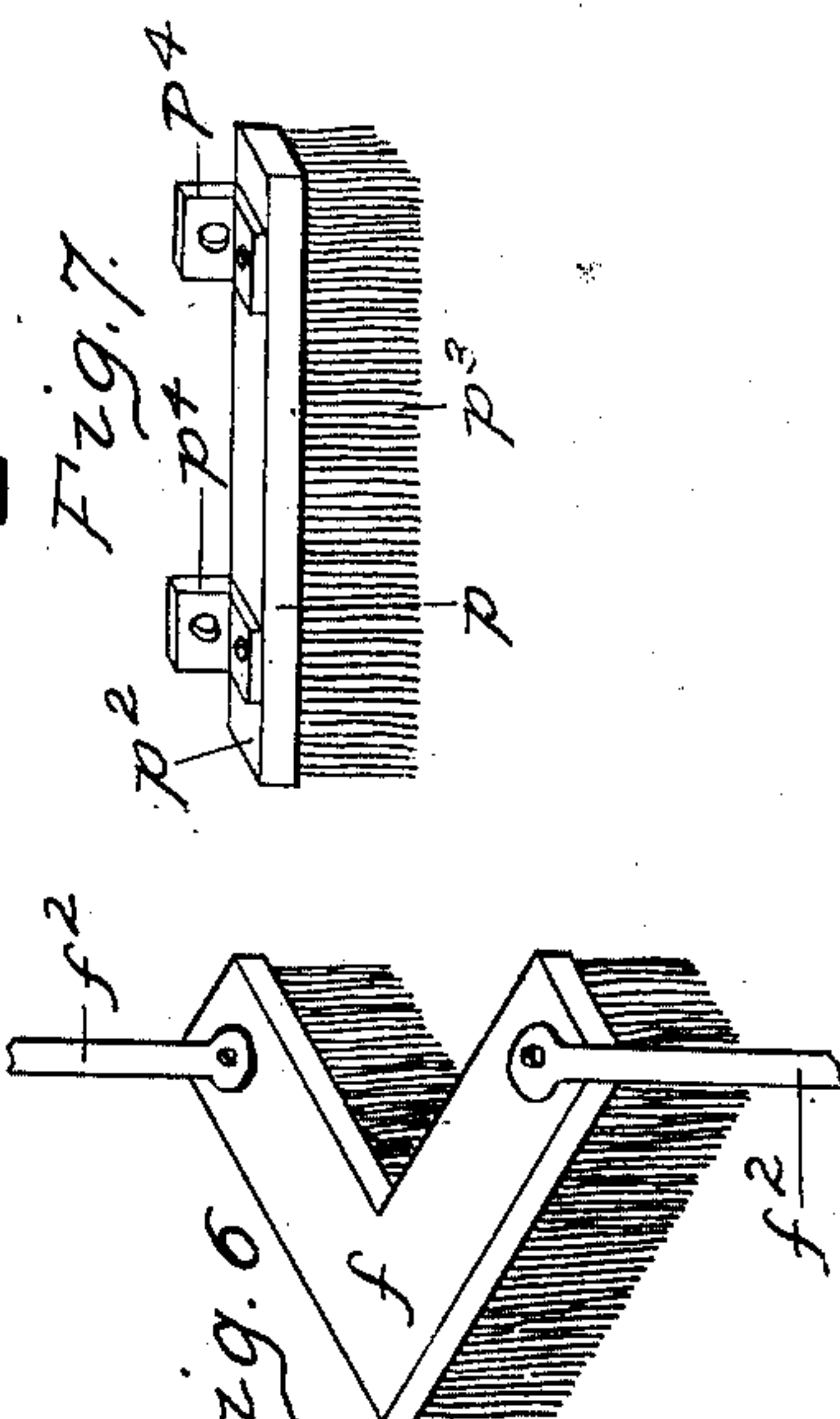


Fig. 6

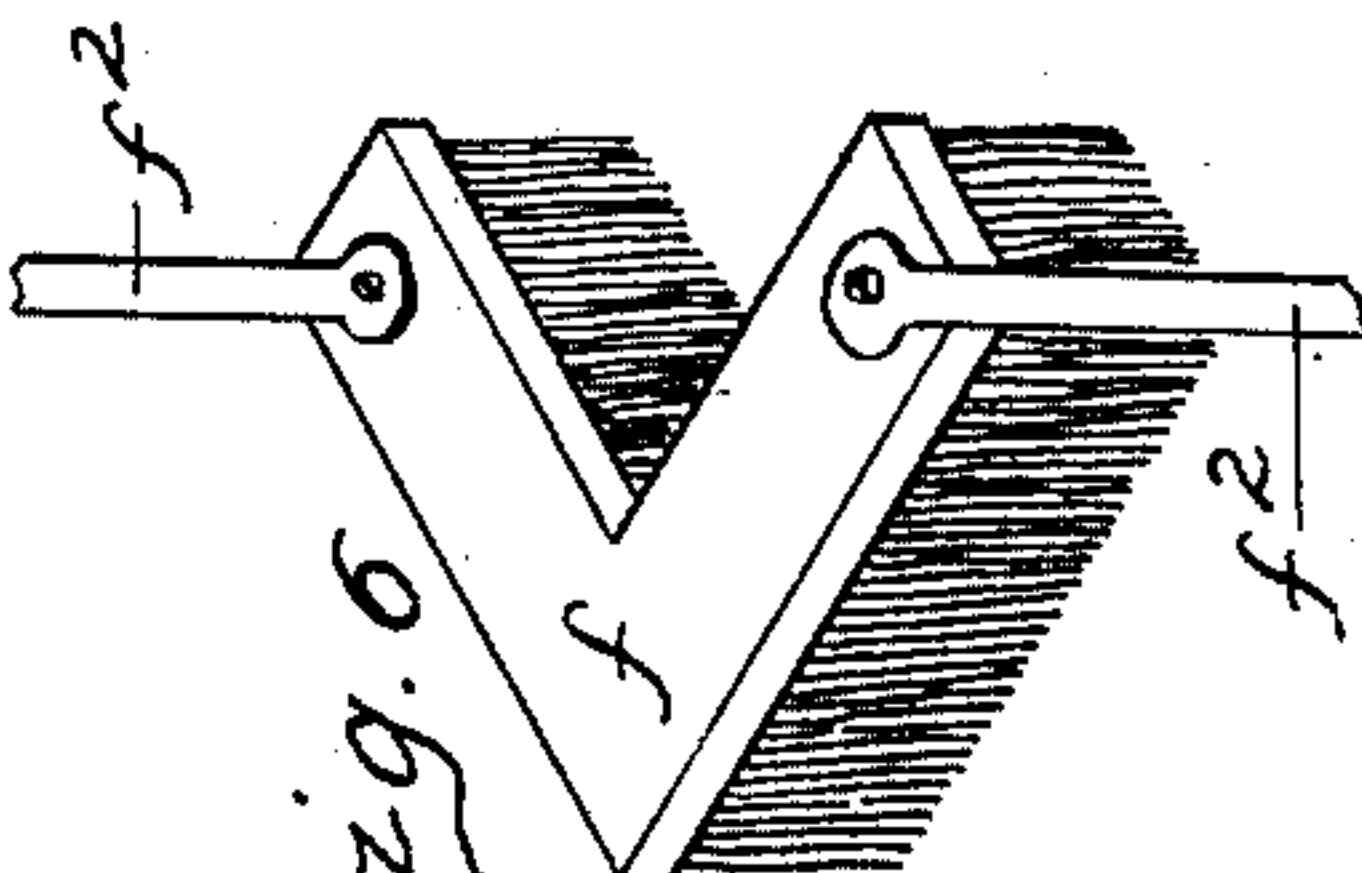


Fig. 7

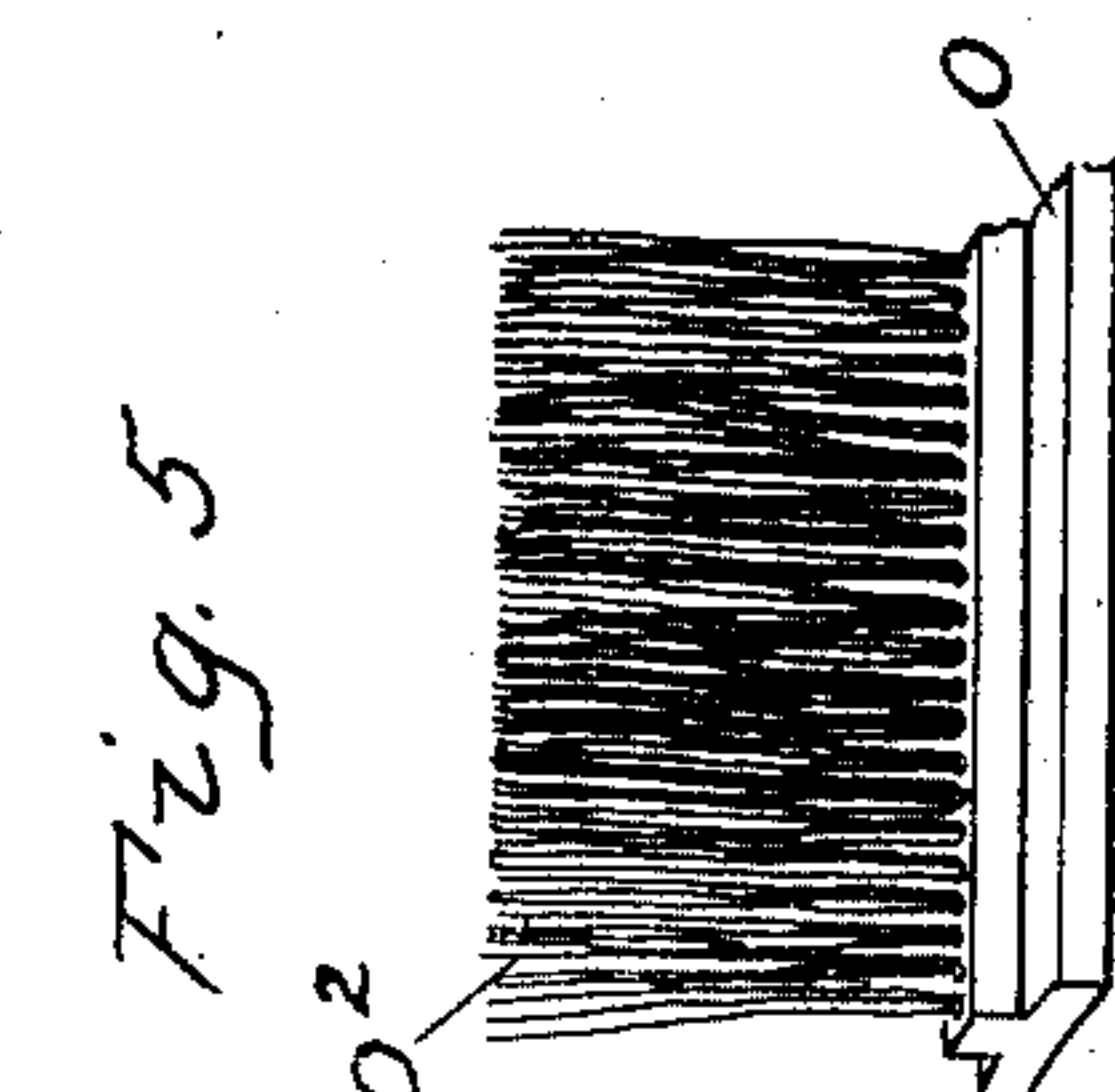


Fig. 5

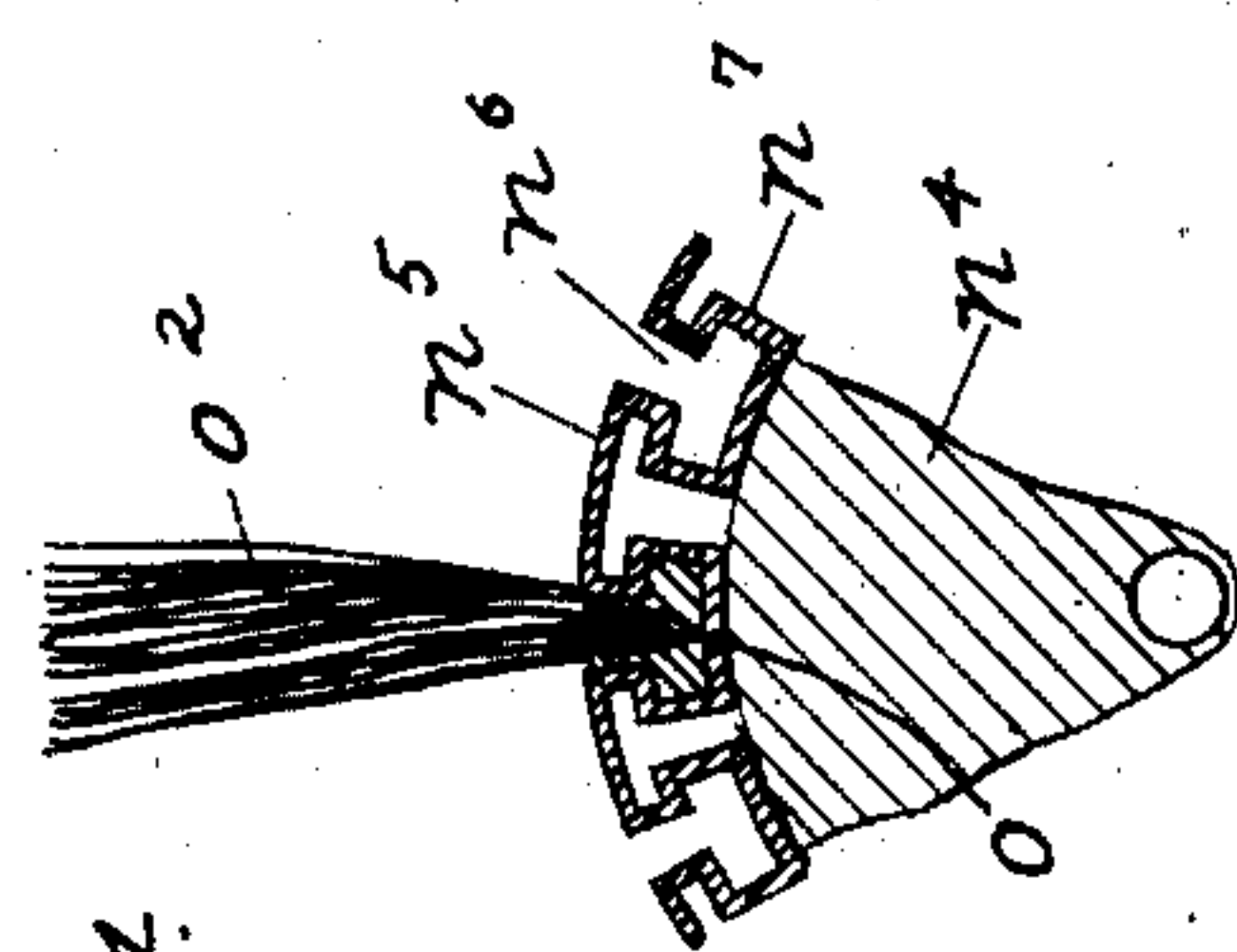


Fig. 4

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PETER R. HANSBURY, OF NEW YORK, N. Y.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 703,194, dated June 24, 1902.

Application filed February 27, 1902. Serial No. 96,009. (No model.)

To all whom it may concern:

Be it known that I, PETER R. HANSBURY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Street-Sweepers, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved street-sweeper which is adapted to be operated by an electric or other motor carried thereby and which is simple in construction and operation; and with this and other objects in view the invention consists in an apparatus of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same reference characters in each of the views, and in which—

Figure 1 is a side view of a street-sweeper made according to my invention; Fig. 2, a sectional side elevation thereof; Fig. 3, a sectional plan view thereof; Fig. 4, a sectional detail of a form of brush which I employ; Fig. 5, a perspective view of a detail of said brush, and Figs. 6 and 7 are perspective views of other forms of brushes which I employ.

In the practice of my invention I provide a vehicle having a body portion a and axles a^2 , provided with wheels a^3 , and beneath the body portion a is a conveyer-casing b , which is in communication at its rear end with a dust and dirt receptacle b^2 and which is open at its front end. Hinged to the bottom of the front end of the conveyer-casing b , as shown at b^3 in Fig. 2, is a brush-holder c , comprising a top plate c^2 , sides c^3 , and a bottom c^4 , the bottom c^4 being inclined downwardly and forwardly, as clearly shown in Fig. 2. The front of the brush-holder c is open and also the bottom thereof backwardly to about half the distance of its length, and mounted in the sides c^3 of the brush-holder, just in front of the bottom portion c^4 , is a shaft c^5 , provided with two cylindrical brushes c^6 , between which is placed a gear-wheel c^7 , which is secured to said shaft.

The sides c^3 of the brush-holder at the forward ends are curved outwardly, as shown at c^8 , and pivoted to the front of the body portion of the vehicle by means of a shaft d , which passes therethrough, or in any other desired manner are arms or bars d^2 , which are curved inwardly just in front of the body portion of the vehicle, as shown at d^3 , and then extended forwardly of and over the brushes c^6 and curved downwardly, as shown at d^4 , and form a support for a brush-shaft d^5 , which is provided with cylindrical brushes e , e^2 , e^3 , and e^4 . The shaft d^5 is also provided centrally with a gear-wheel e^5 , which is geared in connection with the wheel c^7 on the shaft c^5 by a chain or other suitable device e^6 , and it will be observed that the space between the brushes e and e^2 is directly in front of the right-hand brush c^6 , while the space between the brushes e^3 and e^4 is directly in front of the left-hand brush c^6 .

Supported between the shafts c^5 and d^5 and the brushes with which said shafts are provided and centrally of the brush-holder is a triangular brush f , said brush being supported by means of transverse rods or bars f^2 or in any other desired manner, and the object of this brush is to clean the space between the brushes e^2 and e^3 on the shaft d^5 , and secured to the outwardly-curved portions c^8 at the opposite sides and front ends of the brush-holder are other brushes f^3 , which are backwardly and inwardly inclined and the object of which is to direct the dust and dirt from the ends of the brushes e and e^4 in the direction of the brushes c^6 , it being understood that the brushes f and f^3 are so supported as to come in contact with the ground over which the sweeper is passed.

It will be observed that the brush-shaft d^5 is longer than the brush-shaft c^5 , and the brushes e and e^4 extend outwardly far enough to enable the device to be operated close up to a curb, the length of said shaft d^5 and the brushes thereof being equal to or greater than the length of the axles of the vehicle.

The front axle of the vehicle is provided with a gear-wheel g , which is secured in a horizontal position to the top thereof, and passing vertically through the front portion of the body of the vehicle is a shaft g^2 , provided at its lower end with a pinion g^3 , which

operates in connection with the gear-wheel g , and the shaft g^2 is provided at its upper end with a hand-wheel g^4 , and by means of this construction the vehicle may be steered or guided, as will be readily understood.

The front end portions of the arms or bars d^2 , which support the front brush-shaft d^5 , are connected with the top of the brush-carrier c by a turnbuckle device d^8 , and said arms or bars d^2 are projected backwardly, as shown at g^6 , and connected transversely beneath the body of the vehicle by a bar g^7 , and mounted vertically in the body of the vehicle over the bar g^7 is a shaft h , the lower end of which is screw-threaded, as shown at b^2 , and passes through a screw-threaded bearing h^3 . The lower end of the shaft h bears on the cross-bar g^7 , and the upper end of said shaft h is provided with a hand-wheel h^4 , and by turning said shaft h the entire brush-carrier and the arms or bars d^2 may be raised at the front ends, so as to elevate all the brushes or raise them from the ground when it is desired to operate the apparatus.

The conveyer-casing b is provided at its rear end with a shaft i , having wheels i^2 , and in the rear bottom portion of the brush-carrier is another shaft i^3 , having wheels i^4 , and mounted on the wheels i^2 and i^4 are endless belts or bands i^5 , provided with transverse strips i^6 , and the belts or bands i^5 and the transverse strips constitute the conveyer proper for conveying the dust or dirt back into the receiver b^2 . A roller j is mounted in the rear upper portion of the brush-carrier, and the upper reach of the belts or bands i^5 is passed thereover, as clearly shown in Fig. 2, and the said conveyer proper is operated by a drive-chain or equivalent device k , by which the shaft i is geared in connection with the rear axle a^2 at k^2 .

Mounted transversely of the body of the vehicle when supported in any desired manner is a main power-shaft k^3 , which is operated by an electric or other suitable motor k^4 , and this power-shaft is provided with a large gear-wheel k^5 , which is geared in connection with a wheel k^6 on the shaft c^5 of the rear brushes c^6 by a chain or other suitable device k^7 . The shaft k^3 is also provided with a small gear-wheel m and the rear axle a^2 with a larger gear-wheel m^2 , and these wheels are geared in connection by a chain m^3 .

I have also shown a storage battery m^4 , which is placed in the rear end of the body of the vehicle and connected with an electric motor in the usual manner, as shown at m^5 , and the said motor may be operated in this manner or by any other electric power device or generator, and instead of an electric motor any preferred means may be employed for operating the shaft k^3 .

The rear brush-shaft c^5 and the front brush-shaft d^5 are provided, respectively, with sprocket or gear wheels n and n^2 , which are geared in connection by a chain n^3 , and by means of the construction herein described

it will be seen that the brushes on the shafts c^5 and d^5 are both turned in the direction of the arrows a shown in Fig. 1, and the dust or dirt is taken up and thrown backwardly in the operation of the apparatus onto the bottom portion c^4 of the brush-carrier, from which the said dust or dirt is conveyed backwardly and deposited in the receptacle b^2 . The receiver b^2 may be of any desired construction, and any suitable means may be provided for removing the dust or dirt therefrom.

In Fig. 4 I have shown a portion in cross-section of one of the brushes, and in practice I prefer to employ a solid core-piece n^4 , the perimeter of which is provided with a metal casing n^5 , having longitudinal grooves n^6 , the inner portions of which are enlarged laterally, as shown at n^7 , and the brushes proper are made up of separate parts o , adapted to be inserted into the spaces n^7 , and to these pieces o is secured the brush material o^2 . By means of this construction the brushes may be repaired whenever necessary by simply removing the parts or pieces o and placing new ones in their places.

In Fig. 7 I have shown at p a form of brush which may be used at the points where the brushes f^3 are shown in Fig. 3, or the brushes f^3 may be of any desired shape or construction, and the brush p consists of a top piece p^2 , to which the brush material p^3 is secured, and the top piece is provided with angular clamps p^4 for securing it to the outwardly-directed parts c^8 of the brush-holder. I also prefer to employ small brushes r , which are secured to the bottom of the opposite sides of the brush-holder beneath and rearwardly of the brush-shaft c^5 , the object of these brushes being to direct the dust and dirt inwardly in order that the conveyer may more readily take it up, and these brushes r may be of any desired construction, as may also the other brushes shown and described herein.

The operation of the device will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement. The vehicle or apparatus is moved forwardly by means of the shaft k^3 , which may be turned by the motor k^4 or in any desired manner, and the shaft h is turned so that the brushes will come in contact with the ground or the surface over which the sweeper is passed, and the dust or dirt is taken up by the cylindrical brushes on the shafts c^5 and d^5 and moved backwardly to the conveyer, by which it is conveyed into the box or receptacle b^2 . When it is not desired to operate the brushes or to move the vehicle from point to point without the brushes coming in contact with the ground, the shaft h is manipulated so as to raise the apparatus, as hereinbefore described.

The apparatus is simple in construction and operation and perfectly adapted to accomplish the result for which it is intended,

and changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. A sweeper comprising a vehicle having a body portion, a longitudinal conveyer-casing supported beneath said body portion and open at its front end and the rear end of which is in communication with a dust and dirt receptacle, a brush-holder hinged to the front end of the conveyer-casing and adapted to be raised and lowered, the rear bottom portion of the brush-holder being inclined downwardly and forwardly, and the front portion thereof being open, brushes mounted in the brush-holder and a conveyer mounted in the conveyer-casing and extending downwardly over the inclined bottom portion of the brush-holder, and means for operating the brushes and the conveyer, substantially as shown and described.

25 2. A street-sweeper comprising a vehicle having a body portion, a conveyer-casing mounted thereunder and open at its front end and the rear end of which is in communication with the dust and dirt receptacle, a brush-holder hinged to the front end of the conveyer-casing and the rear bottom portion of which is inclined downwardly and forwardly and the front bottom portion of which is open, brushes mounted in the brush-holder, a conveyer placed in the conveyer-casing and the front end of which extends downwardly and forwardly over the inclined portion of the brush-holder, a motor geared in connection with the axles of the vehicle and with the conveyer and the brushes, and means for operating said motor, substantially as shown and described.

45 3. A street-sweeper comprising a vehicle having a body portion, a conveyer-casing mounted beneath said body portion and open at its front end and the rear end of which is in communication with a dust and dirt receptacle, a brush-holder hinged to the front end

of the conveyer-casing and the rear bottom portion of which is inclined downwardly and forwardly and the front bottom portion of which is open, a brush-shaft mounted in said brush-holder casing and provided with two brushes, bars pivoted to the sides of the body portion of the casing and extending forwardly and downwardly, a supplemental shaft mounted in the ends of said bars and at the front end of the brush-holder, said shaft being provided with a plurality of cylindrical brushes, means for raising and lowering the brush-holder and the brushes, a conveyer mounted in the conveyer-casing and extending downwardly and forwardly over the inclined portion of the brush-holder and means for operating said conveyer, substantially as shown and described.

4. An apparatus of the class described, comprising a vehicle having a body portion, a conveyer-casing mounted thereunder and open at its front end, a brush-holder hinged to said conveyer-casing at the front end thereof and the rear bottom portion of which is inclined downwardly and forwardly and the front bottom portion of which is open, a brush-shaft mounted in said brush-holder, bars pivoted to the body of the vehicle and extending forwardly and downwardly, another brush-shaft mounted in the ends of said bars and occupying the front end of the brush-holder, said brush-shafts being geared in connection, means for raising and lowering the front end of the brush-holder and the front ends of said bars, a conveyer placed in the conveyer-casing and extending downwardly and forwardly over the inclined bottom portion of the brush-holder and means for operating the vehicle, the conveyer and the brushes in the brush-holder, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 24th day of February, 1902.

PETER R. HANSBURY.

Witnesses:

F. A. STEWART,
C. E. MULREANY.