No. 622,372.

Patented Apr. 4, 1899.

D. I. LANGWORTHY.

STREET SWEEPER.

(Application filed Feb. 7, 1898.)

(No Model.)

4 Sheets—Sheet 1.

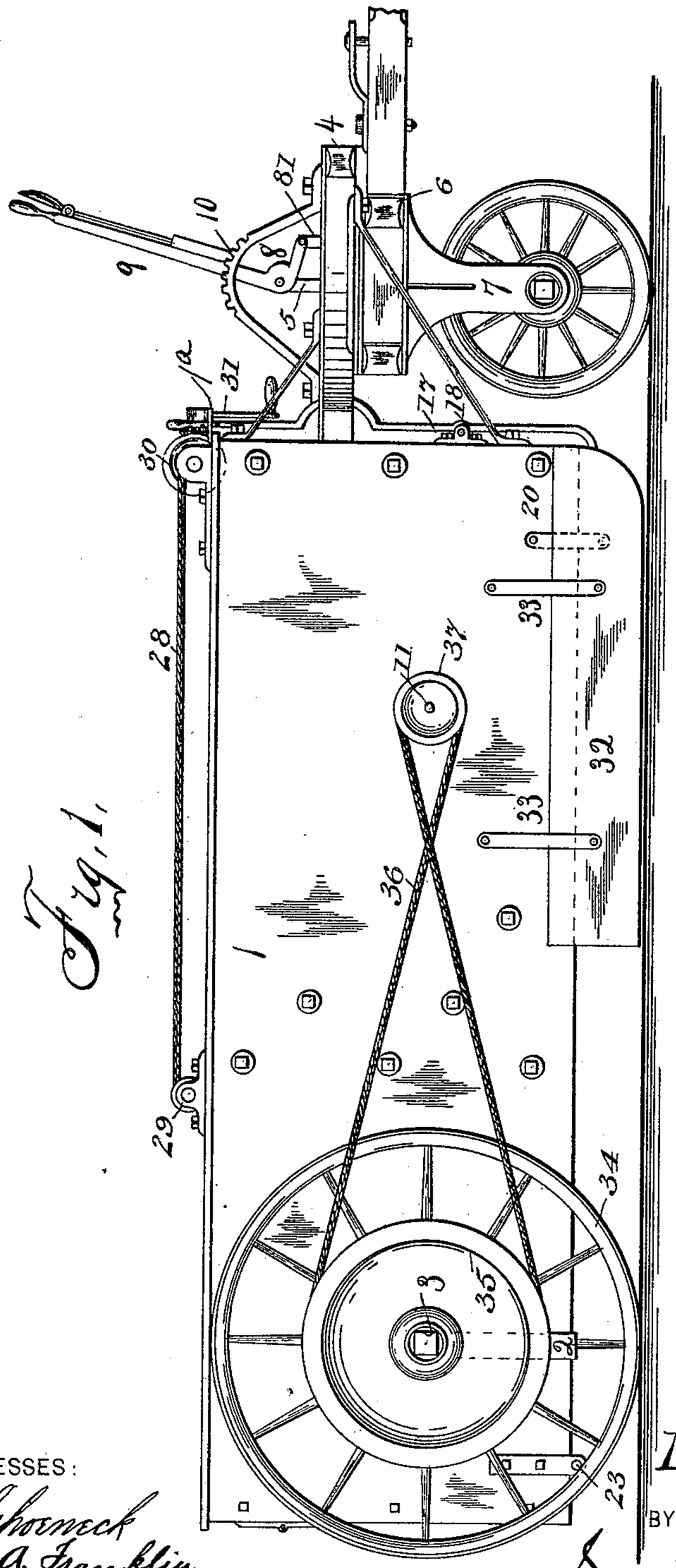

Fig. 1.

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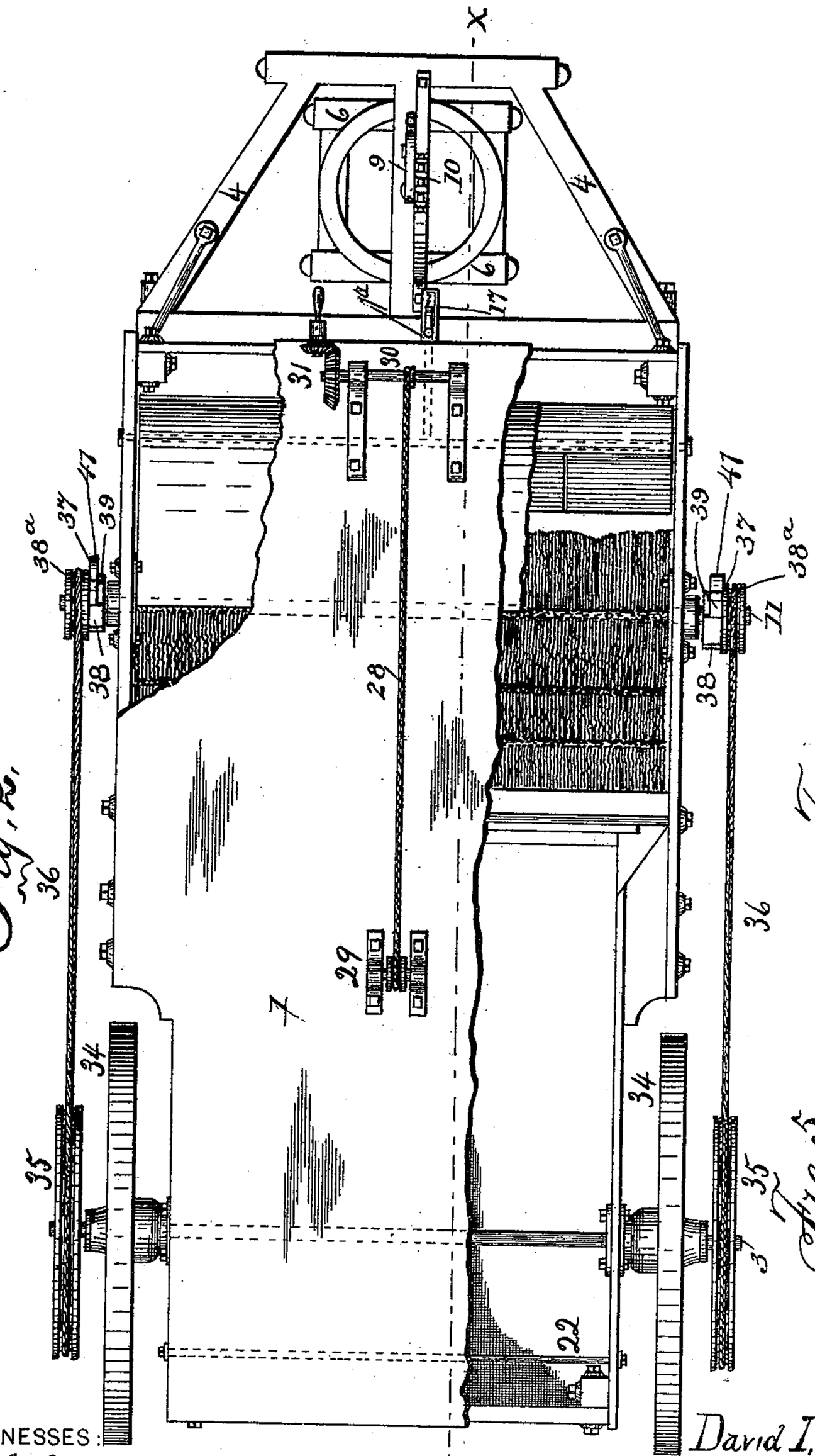

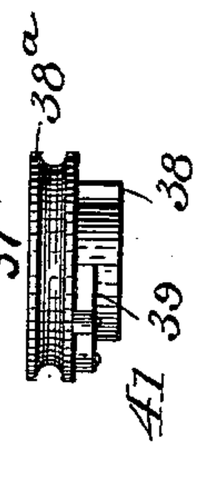

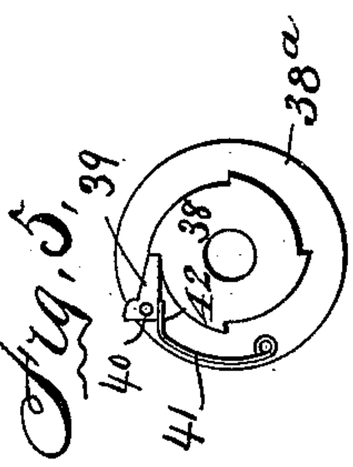

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(No Model.) 4 Sheets—Sheet 3.

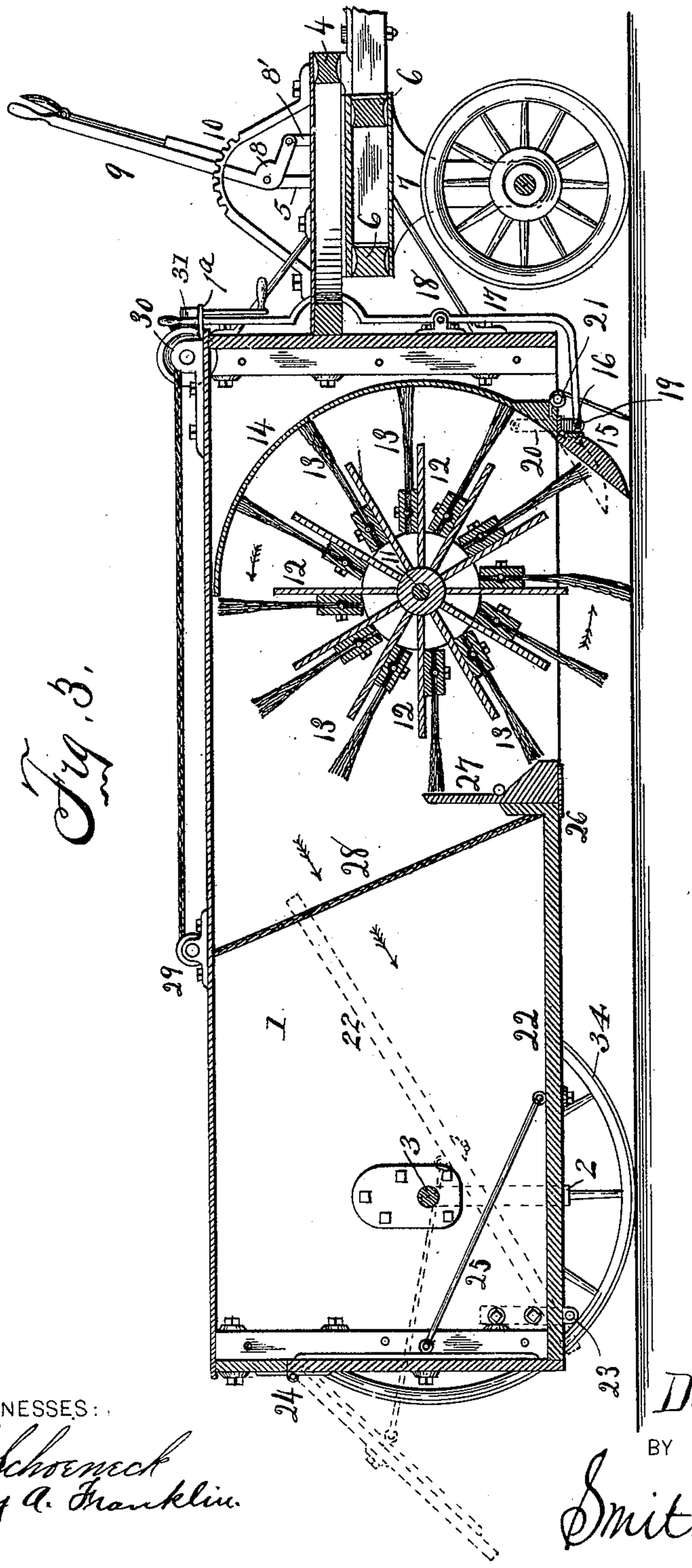

Fig. 3.

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4 Sheets—Sheet 4.

Fig. 6.

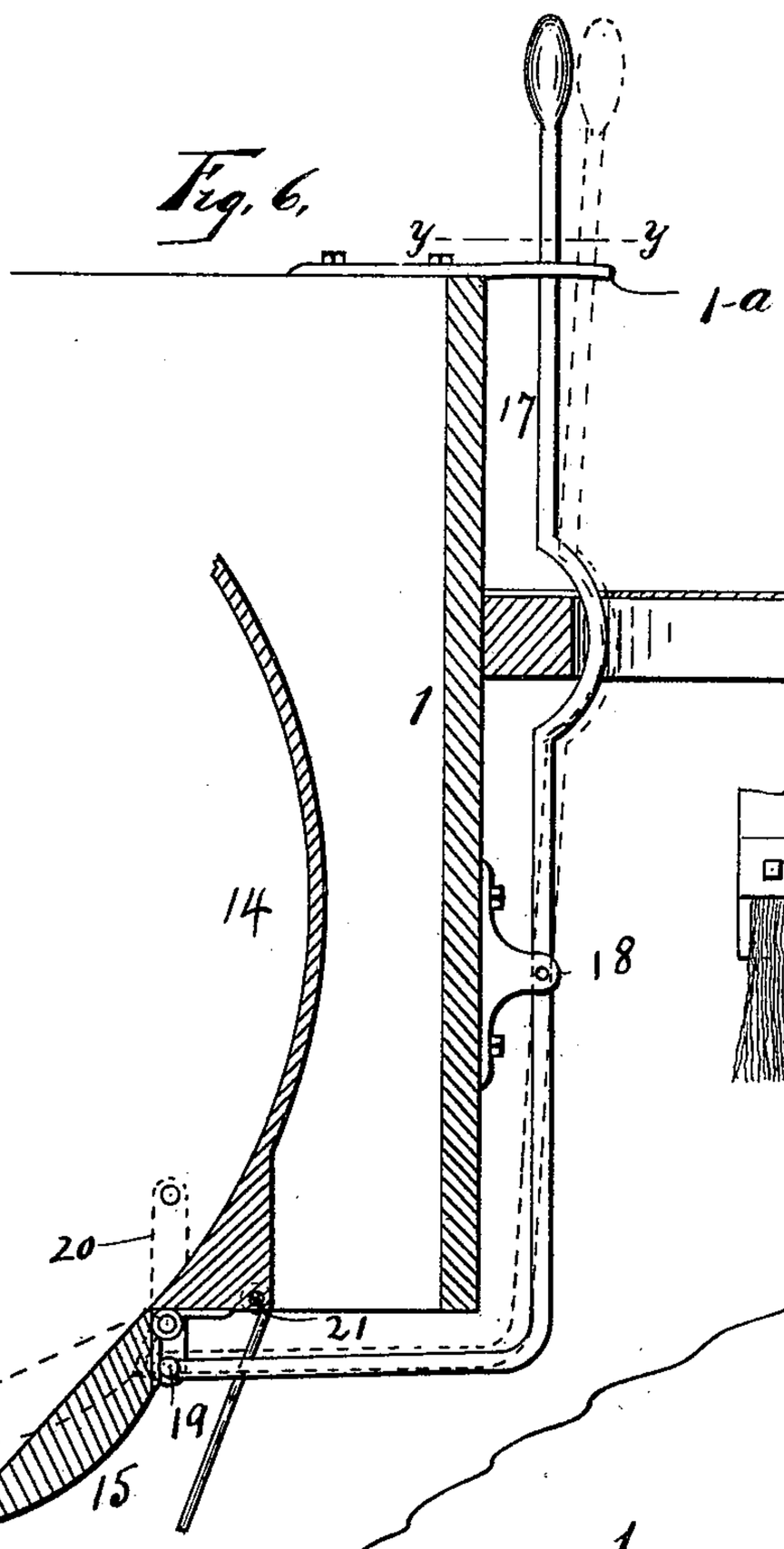


Fig. 8.

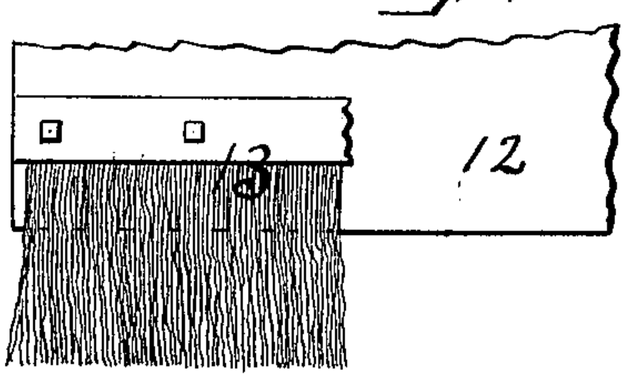
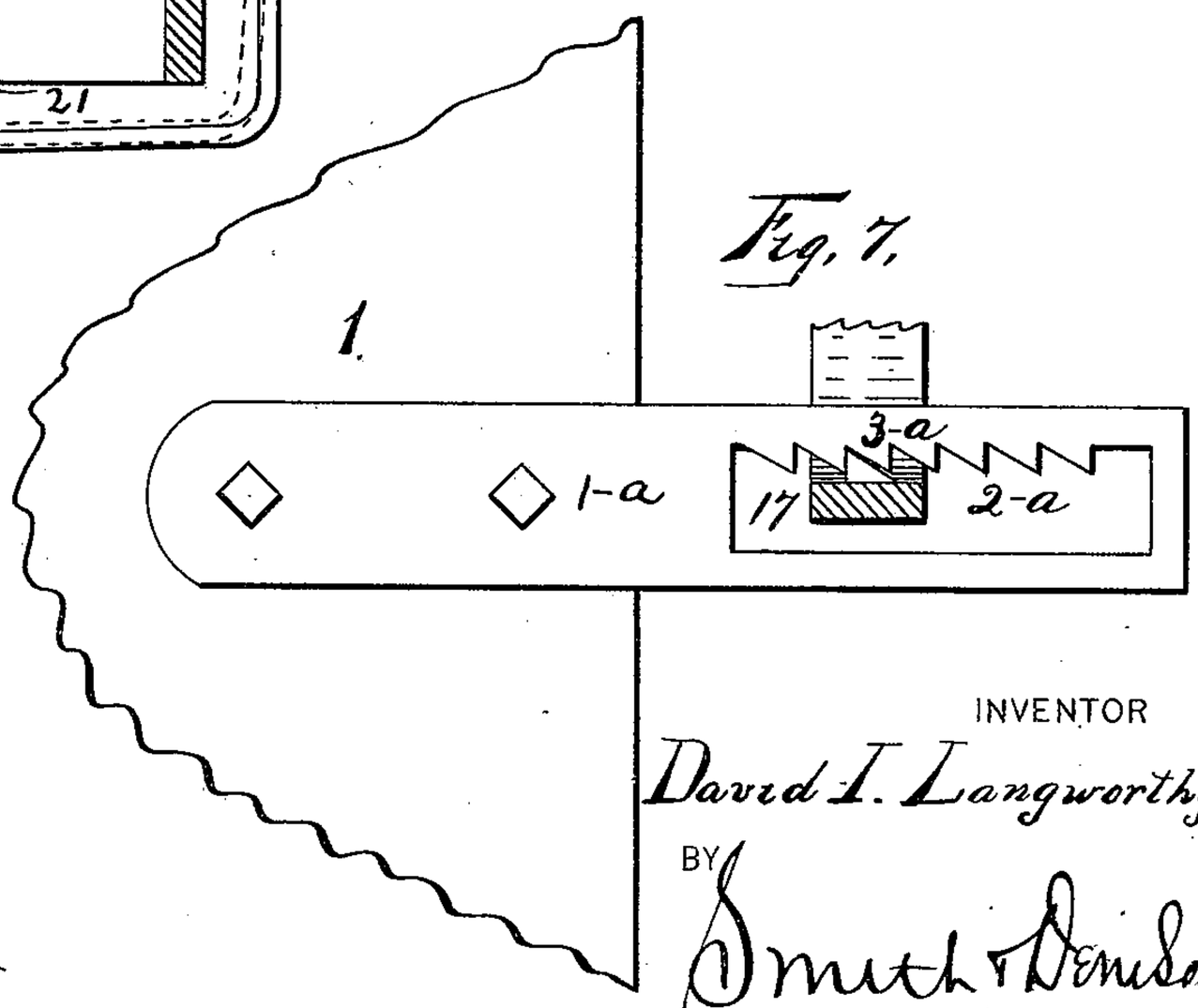


Fig. 7.



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UNITED STATES PATENT OFFICE.

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STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 622,372, dated April 4, 1899.

Application filed February 7, 1898. Serial No. 669,341. (No model.)

To all whom it may concern:

Be it known that I, DAVID I. LANGWORTHY, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Street-Sweepers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in street-sweepers.

My object is to improve their detail construction and general utility; and to that end my invention consists in the several new and novel features of construction and operation which are hereinafter described, and fully set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of the sweeper complete ready for use. Fig. 2 is a top plan view thereof, portions of the top of the shell or case being broken away. Fig. 3 is a longitudinal vertical section on line *x x*, Fig. 2. Fig. 4 is a top plan view of a slip-clutch, enlarged, mounted upon the outer ends of the shaft carrying the brushes. Fig. 5 is an inner face thereof of the clutch mechanism as it would appear upon the left-hand side of the machine. Fig. 6 is a vertical longitudinal section of the front end of the shell, showing the rack with which the lever engages to hold it in any position desired. Fig. 7 is a cross-section on line *y y*, Fig. 6, enlarged. Fig. 8 is a view of one end of the wings 13 and showing the brushes secured thereto.

Similar numerals of reference indicate corresponding parts.

1 is the shell or case of the sweeper, mounted at its rear end upon a strap 2, which is supported by the rear axle 3, the forward end being provided with a bracket 4, suitably braced to the shell, and is mounted upon a platform 6, which in turn is mounted upon the truck 7. Upon the platform 6 I erect an upright 5, to which I pivot a lever 8, to one end of which I secure the arm 8′, mounted upon the bracket 4, so that by the to-and-fro movement I am able to adjust vertically the forward end of the shell or case, the handle 9 of the lever being held in the fixed position by a bar and ratchet 10 in the ordinary way. By this mechanism I am able to raise or lower the forward end of the case. In this construction I show the forward truck as provided with but one wheel. This I do for the purpose of allowing me to take a short turn, although I do not limit myself to this construction, as it will be evident that any other truck may be used with two or more wheels, though not as convenient.

The bottom of the case is removed in the forward end, leaving an opening, as shown in Fig. 3, through which the brushes pass in coming in contact with the ground, and above this opening and transversely across the shell is a shaft 11, upon which are secured wings 12, to which the brushes 13 are adjustably secured, so that when they become worn off they may be moved outward upon the wings and thereby enable me to use the whole of the brush. The wings 12 are provided with openings or slotways through which the brushes are secured to said wings by means of bolts, and may be readily moved in or out upon said wings by loosening the nut.

Transversely in the forward end of the shell I mount, preferably, a curved partition 14, and at the base thereof and transversely across the shell I hinge weighted fingers 15, forming a dust-pan, so as to permit of their dropping into indentures or passing over small obstacles as they appear in the streets.

The forward upper end is provided with a shoulder 16, and 17 is a lever hinged to the case at the point 18 and is provided upon its rear end with a cross-bar 19, adapted to engage said shoulder 16 for the purpose of forcing the weighted fingers rearwardly and upwardly out of contact with the ground, so that the machine may be readily moved backward without in any way interfering with the fingers.

20 is a strap secured upon each side of the shell for the purpose of supporting the ends of the cross-bar 19.

The upper end of the lever 18 is provided with any ordinary rack for the purpose of holding it in any position desired.

1^a is a rack having teeth 2^a, with which the lever 17 engages. In order to cause the lever to normally engage with the teeth, I locate the point 18, to which the lever 17 is hinged,

at one side, so that the spring of the lever will keep it in contact with the teeth. The lever 17 is also provided upon one side with a lug 3^a to allow it to engage with the rack.

Upon the bottom of the case and transversely across it and just forward of the weighted fingers forming the dust-pan I secure spring-fingers 21, these fingers passing down and coming in close contact with the ground and are for the purpose of breaking up any soft foreign substances with which the sweeper comes in contact, so that they may be readily taken up by the brush as it passes over them, and at the same time they are of such a nature that they will yield in either direction, although normally constructed so as to yield the more readily rearwardly with the forward movement of the machine.

The bottom 22 of the rear end of the shell is hinged upon a shaft 23, and the rear end board, or a portion thereof, is hinged at 24, as shown in Fig. 3, and 25 is a rod within the shell connecting the bottom with the end board, the forward end of said bottom resting upon a cleat or bracket 26, 27 being a transverse partition for holding the debris in the rear portion of the shell.

28 is a cable secured to the forward end of the bottom 22 and passes up over a pulley at 29, mounted on the top of the shell, and thence passes over a drum 30 upon the forward end of the case, said drum being provided with either a crank-arm direct or by means of an intermediate gear, as shown at 31. By this mechanism it will be evident that when it is desired to remove the contents of the shell or dump it it will simply be necessary to raise the forward end of the bottom by means of winding the cable onto the arm, when the bottom will be raised and the end-board thrown out and assume the position shown in the dotted lines in Fig. 3 of the drawings. To the forward end of the case and upon its sides I suspend shoes 32, supporting them by the straps 33. These shoes being in alinement with the openings for the brushes prevent any of the dust from being thrown laterally outside.

Upon the rear axle 3 and outside of the wheels 34 are secured cable-wheels 35, and 36 are cables connecting said wheels with the slip-clutches 37, mounted upon the brush-shaft 11, so that by the forward movement of the machine the brushes will be rotated in the direction indicated by the arrows in Fig. 3.

Adjacent to the outer end of the shaft 11 is a ratchet 38, rigidly secured to said shaft, and upon the end of said shaft 11 is a grooved wheel 38^a, loosely mounted, having upon its inner face a pawl 39, having a foot 40, which pawl is adapted to engage with the ratchet 38. The inner face of the grooved wheel 38^a is also provided with a spring 41, having one end bent over, as shown at 42, with which either the side of the spring 39 or its foot 40 engages. When the pawl 39 is in engagement with the ratchets 38, the spring holds it in position, and the same is true when the pawl is turned up so that the foot engages it, so as to hold the pawl out of contact with the cams.

It will be observed that by rotating the brush so as to have the bristles move forward upon the ground, the dust or dirt is more readily thrown up in the dust-pan and carried along, being confined by the transverse partition 14 until it is deposited in the rear end of the case.

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

1. In a street-sweeper, the combination with a case suitably mounted, and provided with means for vertical adjustment at its forward end, of a rotating brush mounted transversely therein and adapted to engage the surface to be swept, a curved transverse partition in said forward end of said case, a weighted sectional dust-pan hinged to the case, and means for raising said dust-pan for the purposes set forth.

2. In a street-sweeper, the combination with a case suitably mounted, of a rotated brush mounted transversely therein, adapted to engage the surface to be swept, a curved transverse partition in said forward end of the case, a weighted sectional dust-pan hinged to the case, and means for raising said dust-pan for the purposes set forth.

3. In a street-sweeper, the combination with a case suitably mounted, of a rotating brush mounted transversely therein and adapted to engage the surface to be swept, a curved transverse partition in the forward end of said case, a dust-pan hinged to said case, means for raising the same, and spring-fingers secured to the bottom of the case forward of the brush and dust-pan for the purposes set forth.

4. In a street-sweeper, the combination with a case suitably mounted, of a rotating brush mounted transversely therein and adapted to engage the surface to be swept, a curved transverse partition in the forward end of said case, a dust-pan hinged to said case, means for raising the same, and means for holding them raised, spring-fingers secured to the bottom of the case forward of the brush and dust-pan for the purposes set forth.

5. In a street-sweeper, a case suitably mounted and having the bottom of the rear portion hinged at its rear end, the end-board hinged at its upper edge, a rigid connection between said bottom and the end-board, so that by raising or lowering the forward end of the bottom, will operate said end-board and means for raising said bottom for the purposes set forth.

In witness whereof I have hereunto set my hand this 1st day of February, 1898.

DAVID I. LANGWORTHY.

In presence of—
MARY A. FRANKLIN,
HOWARD P. DENISON.