(No Model.) 4 Sheets—Sheet 1.

T. C. MYERS.

STREET SWEEPING MACHINE.

No. 457,746. Patented Aug. 11, 1891.

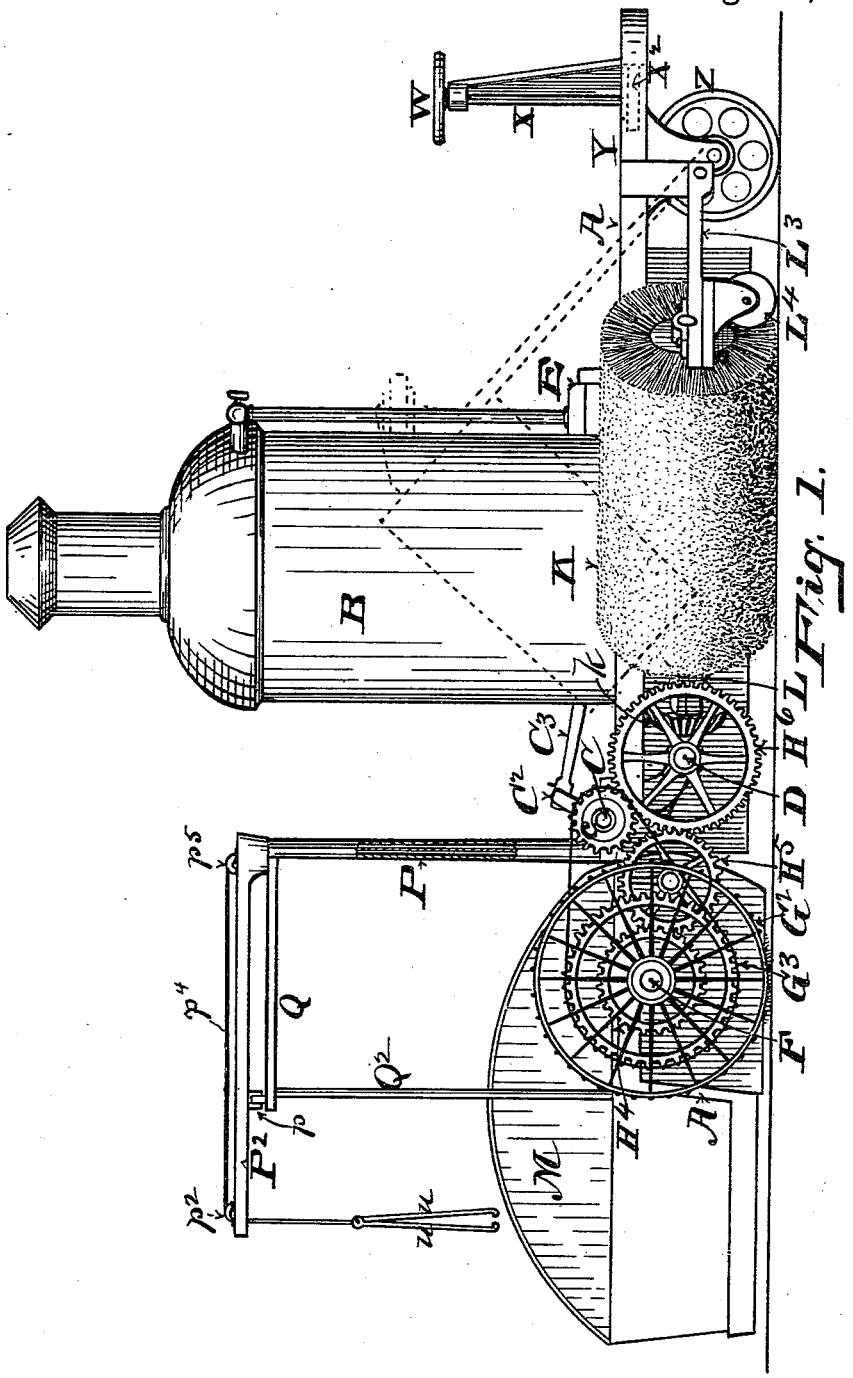

Fig. 1.

Witness,
L. R. Howlett.
E. Jay. Pinney

Inventor,
Thomas C. Myers.
By Geo. W. Tibbitts Atty.

(No Model.) 4 Sheets—Sheet 2.

T. C. MYERS.

STREET SWEEPING MACHINE.

No. 457,746. Patented Aug. 11, 1891.

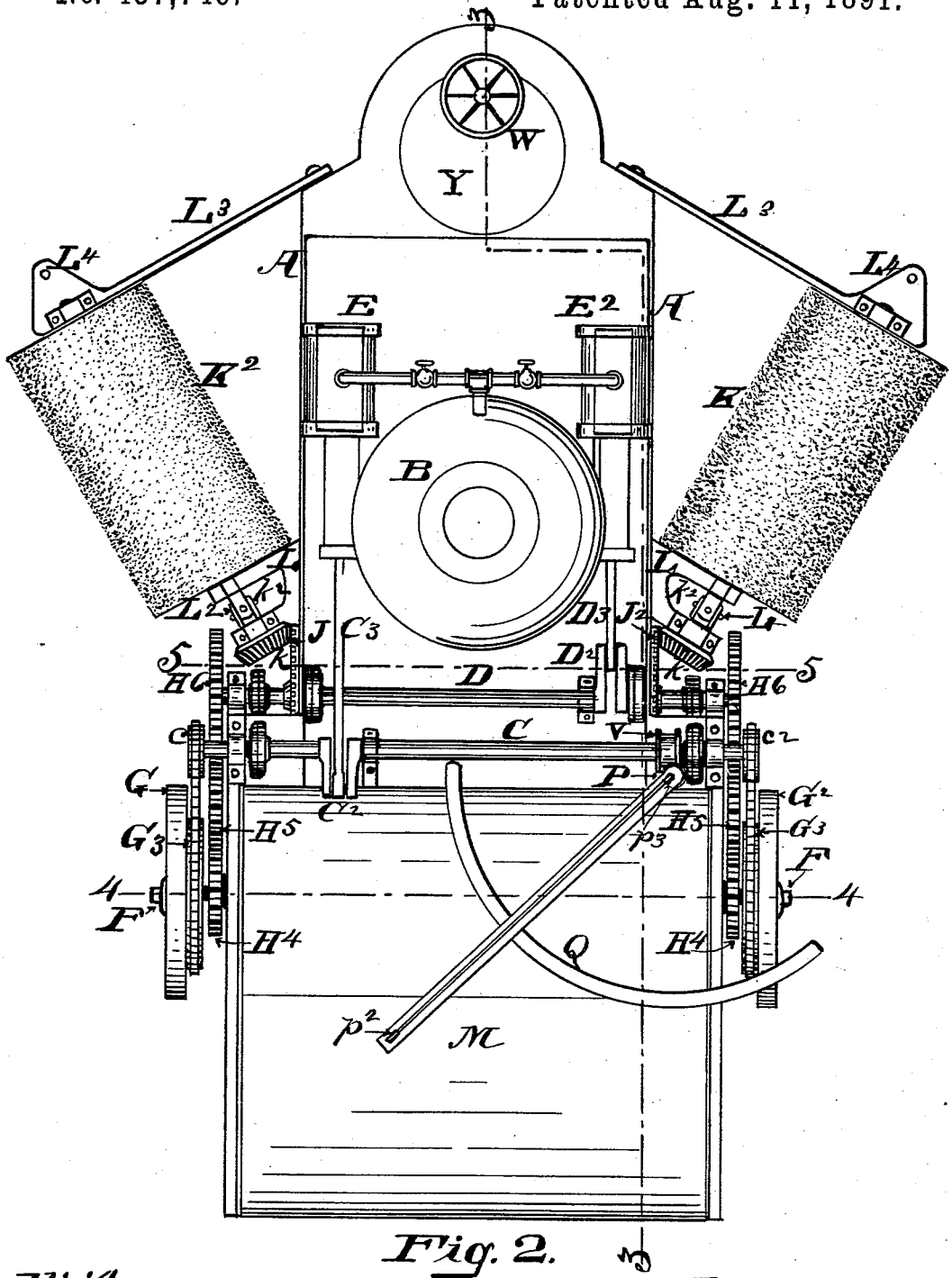

Fig. 2.

Witness,
L. R. Howlett.
E. Jay Rumney

Inventor,
Thomas C. Myers.
By Geo. W. Tibbitts Atty.

(No Model.) 4 Sheets—Sheet 3.

T. C. MYERS.

STREET SWEEPING MACHINE.

No. 457,746. Patented Aug. 11, 1891.

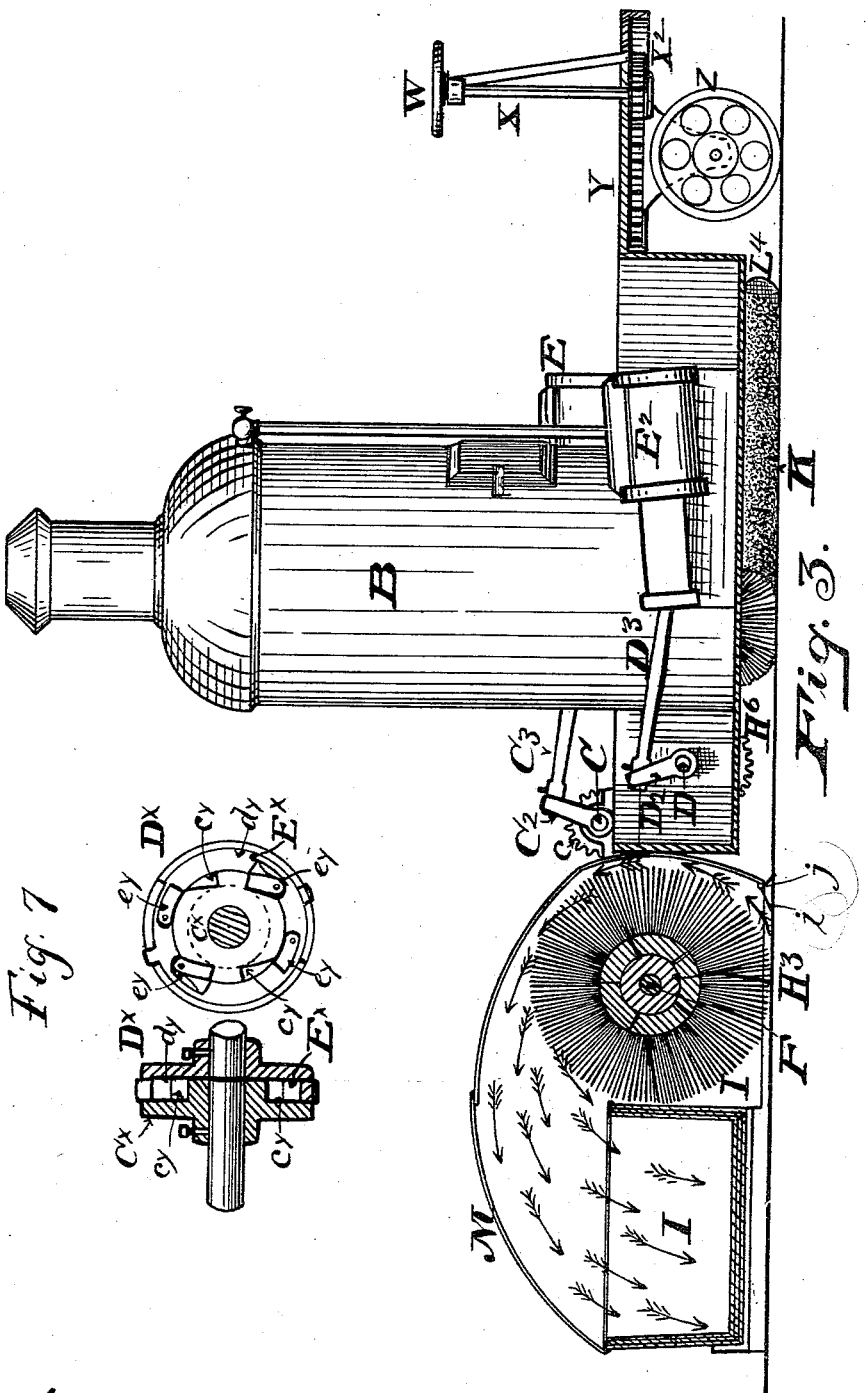

Fig. 3.

Fig. 7

Witness,
L. R. Howlett.
E. Jay Pinney

Inventor,
Thomas C. Myers.
By Geo. W. Tibbitts Atty.

(No Model.) 4 Sheets—Sheet 4.

T. C. MYERS.

STREET SWEEPING MACHINE.

No. 457,746. Patented Aug. 11, 1891.

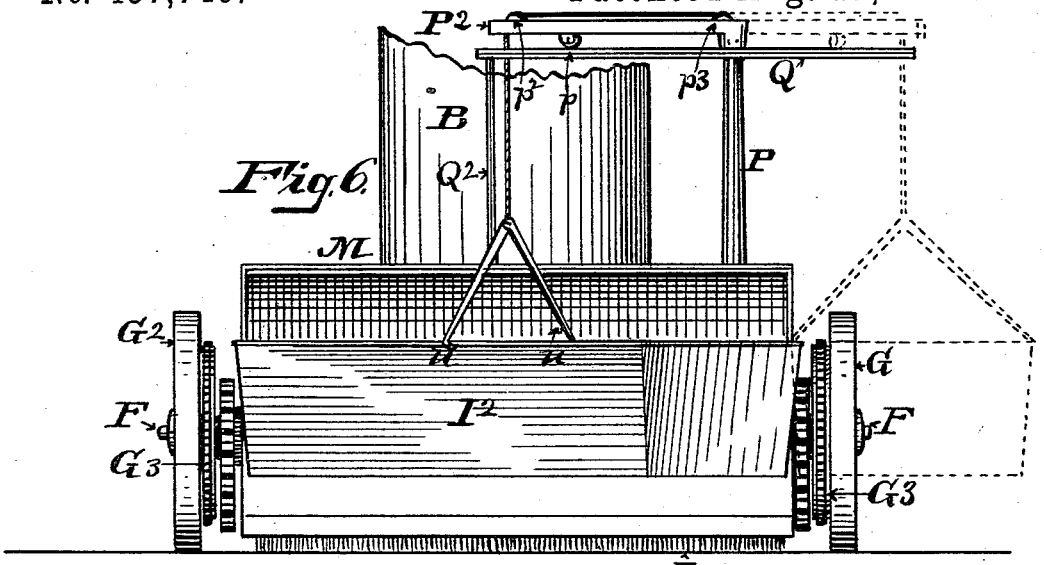

Fig. 6.

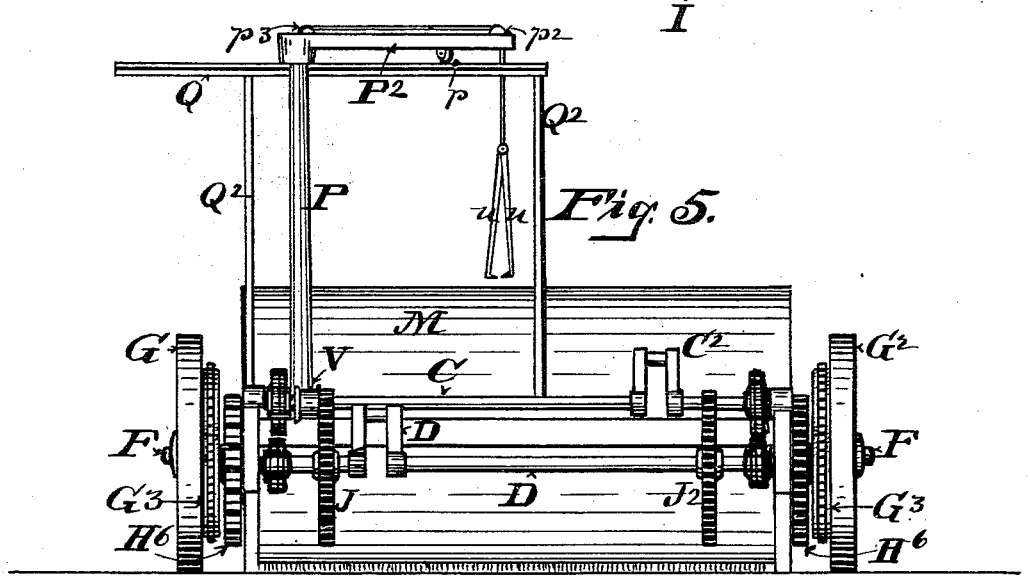

Fig. 5.

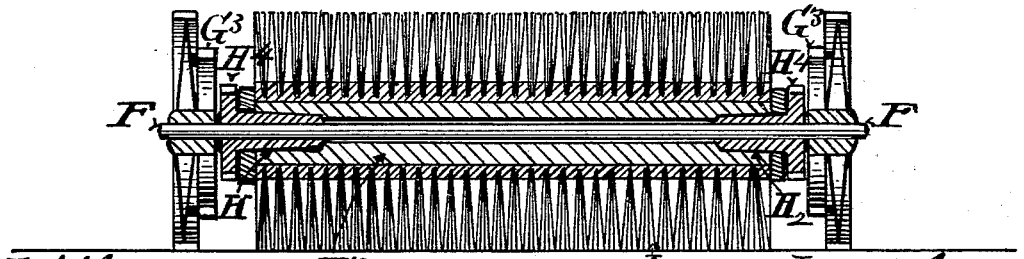

Fig. 4.

Witness,
L. R. Hoobler.
E. Jay Pinney

Inventor,
Thomas C. Myers,
By Geo. W. Tibbitts Atty.

UNITED STATES PATENT OFFICE.

THOMAS C. MYERS, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO EDWARD L. MARSHALL, OF HARBOR SPRINGS, MICHIGAN.

STREET-SWEEPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,746, dated August 11, 1891.

Application filed July 16, 1890. Serial No. 358,998. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. MYERS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Power Street-Sweeping Machines, of which the following is a specification.

This invention relates to machines for sweeping and cleaning streets; and it consists in the several novel features of construction and new combinations of parts hereinafter fully described, and definitely pointed out in the claims.

The invention is embraced in the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a longitudinal section on line 3 3, Fig. 2. Fig. 4 is a cross-section on line 4 4, Fig. 2. Fig. 5 is a cross-section on line 5 5, Fig. 2. Fig. 6 is a rear end view of the machine. Fig. 7 is a detached sectional view of the clutch.

A represents a strong frame.

B is a boiler setting in a pit, and E E^2 are two engines suitably arranged at each side of the boiler and suitably connected therewith. The engines are employed one for propelling the machine and the other for operating the brushes, respectively.

C is a shaft journaled to rotate crosswise of and above the frame, having a crank C^2, connected by a pitman C^3 with propelling-engine E. D is a second shaft similarly attached to the frame, but beneath it, having a crank D^2, connected by a pitman D^3 with brush-operating engine E^2.

F is also a shaft, forming both the driving-axle of the machine and the main brush-shaft, and is suitably journaled in box-bearings in the sides of the frame A. On its ends are secured the driving-wheels G G^2, on which are provided sprocket-wheels G^3 G^3, connected by chain belts with sprocket-pinions *c* c^2 on the ends of shaft C. H H^2 are sleeves fixed to rotate on said shaft F and are secured to the ends of hollow core H^3 of the brush I. The ends of said sleeves are provided with a gear H^4, meshing with the intermediate gear H^5, (seen in Fig. 1,) and this meshing again with gear-wheels H^6 on ends of shaft D. The brush is made in sections, as seen in Fig. 3, and secured to the hollow core by suitable means.

J J^2 are second gear-wheels secured on shaft D, and are designed for operating the side brushes K K^2.

To each side of the frame A are provided strong brackets L L^2, forming bearings for the journals of the side brushes K K^2, which are disposed at an angle from the center line of draft of the machine. The forward ends of said brushes are held by arms L^3, pivotally attached to the forward end of the frame A. The forward ends of the rushes are journaled in boxes on the ends of the said arms L^3, and there are also provided caster-wheels L^4 on the ends of said arms for said arms to ride on.

Motion is imparted to the side brushes by a bevel-pinion *k* on the journals of said brushes meshing with the gears J J^2. This journal of each of said brushes is provided with a universal joint k^2 for the purpose of allowing said brushes to be turned upward, as seen in dotted lines in Fig. 1, when not desired for use while transporting the machine or for use of the machine in narrow streets or lanes.

To the rear end of the machine is provided a means of depositing the sweepings, as indicated by the arrows in Fig. 3, into removable boxes or pans, which are of less height than the diameter of said brush. The frame A at the rear is made low down, so as to hold the boxes in suitable position and near the ground in rear of the main brush I, which, with the boxes, is covered by an arched dome M, the front wall of which reaches down in front of the brush and has a hinged apron *i* attached, which drags on the ground, so that the sweepings will be carried upward and over by the brush and deposited in the box immediately behind it. When desired, the apron may be turned up by means of a rod i^2. The ends of the brush I and the boxes I^2 are shut in by the end walls of the dome-chamber, so that all sweepings and dust are confined within the said chamber. The rear half of the top of the dome is made so that it may be slid over

the front half to uncover the boxes I^2 for the purpose of enabling the boxes to be removed, for which a swinging crane is provided, consisting of a hollow post P, standing on the frame A, to the top of which is pivoted an arm P^2, resting and riding on a curved elevated track Q, supported on posts Q^2, the arm P^2 having a roller p attached for running on the said track. In the outer end of the arm P^2 is provided a pulley p^2, and in the pivoted end there is also provided a pulley p^3. Over these a rope p^4 passes, the swinging end having hooks $u\ u$ for catching and holding a box, the other end of the rope passing down the hollow post P and engaging with a drum V on the shaft C, by means of which the boxes may be raised and then swung around to be left at the side of the road, as represented in Fig. 6. The boxes are made with slanting sides and ends, so that a number of boxes may be set and nested together, thus carrying several boxes at a time for filling and unloading them successively.

To the forward end of the frame A is provided a turn-table Y, having a guide-wheel Z. An upright X, with a pinion X^2, connected with a gear in the rim of the turn-table and provided with a hand-wheel W, is employed for steering the machine in its movements.

Each of the shafts C and D is provided with clutches for purposes as follows: In propelling the machine power is applied to both driving-wheels. When, however, it is desired to turn the machine about or to make a short turn, one of the drivers should be released. Then the machine may be turned in its own length, and again one of the side brushes is to be turned up and out of use, then requiring that they may be disconnected from the power while the other remains in use. Such clutch is shown in detail in Fig. 7, and is described as follows: The shafts C D are divided, and the divided portions are connected by clutches C′ D′, which consist of a disk C^x, having a shoulder with notches c^y, a disk D^x attached to the other portion of the shaft and having an annular recess d^y. In this recess is placed loosely a ring E^x, provided with recesses having dogs e^y pivoted in them, designed for engaging with the said notches c^y. The ring also has two lugs extending through slots in the rim of disk D^x, by means of which the ring may be shifted. The working of this is as follows: When the ring is in the position shown, two of the dogs are engaged with notches in the opposite disk C^x, so that the whole shaft must turn. Now, if desired to take off the power from the driver on one side of the machine, the ring E^x is turned sufficient to withdraw the dogs from the notches; but if desired to reverse the ring is turned clear over and brings the opposite dogs into the opposite notches.

Having described my invention, I claim as follows:

1. In a power street-sweeping machine, the combination of a frame A, a boiler and engines mounted thereon, shafts C and D, journaled thereon and operated, respectively, by said engines, shaft F, mounted on said frame A, rotary brush mounted on said shaft F, sleeves H H, fixed in the ends of the brush-cone and revolving on said shaft F and provided with gears H^4, intermediate gears H^5, and gears H^6, mounted on shaft D, all constructed to operate substantially as specified.

2. In a street-sweeping machine, the combination, with the drivers, brushes, the frame, having steering mechanism at its front end, a boiler mounted on said frame, and engines, as E E^2, also mounted on said frame, of divided shafts C and D, geared with said drivers, clutches connecting the parts of said divided shafts, and pitmen connecting said shaft C and engine E and shaft D and engine E^2, all substantially as described, whereby the machine can be turned in its own length by releasing one of said drivers.

3. The combination, with sectional brush I, mounted on hollow core H^3, of the sleeves H H^2, having pinion-gears H^4 H^4, mounted on shaft F, and means, substantially as described, for revolving said brush, as and for the purpose specified.

4. The combination, with divided shafts C D, of the clutches consisting of disk C^x, having shoulders provided with notches c^y, disk D^x, having recesses d^y, and the ring E^x, provided with recesses and having dogs e^y, constructed to operate substantially as and for the purpose specified.

5. The combination, in a street-sweeping machine, of a receptacle adjacent to the sweeping mechanism for receiving the sweepings therefrom, and means for removing said receptacle, consisting of a hollow post P, a swing-arm P^2, a curved track Q and supports Q^2, rollers p, pulleys p^2 and p^3, rope and hooks $u\ u$, and rotating drum, all substantially as described and shown.

THOMAS C. MYERS.

Witnesses:
GEO. W. TIBBITTS,
M. G. NORTON.