

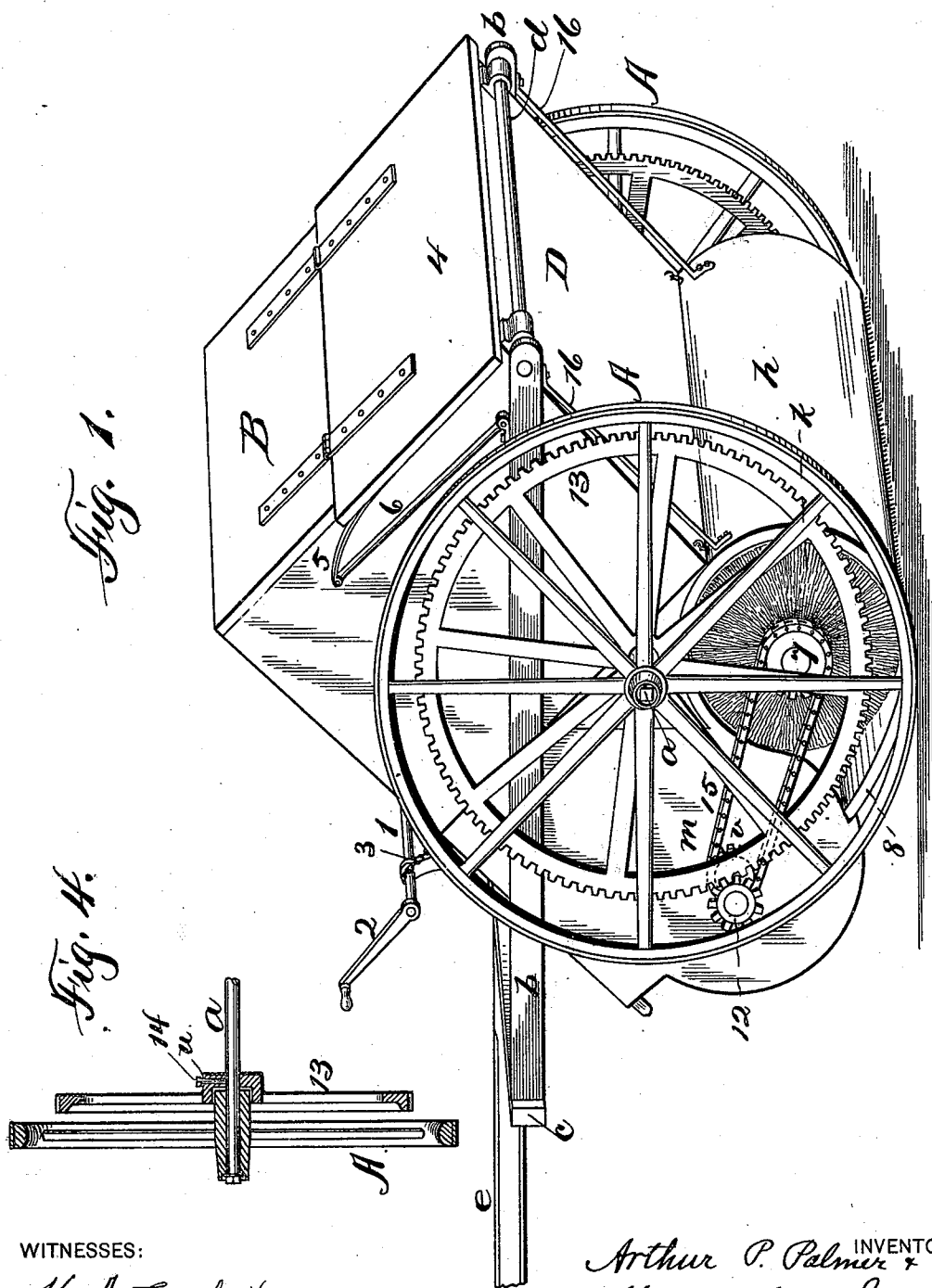
(No Model.)

2 Sheets—Sheet 1.

A. P. PALMER & H. L. PHELPS.
STREET SWEEPER.

No. 511,543.

Patented Dec. 26, 1893.



WITNESSES:

H. A. Carhart.

C. B. Kimo

Arthur P. Palmer INVENTORS

Homer L. Phelps

By Smith & Donison

ATTORNEYS.

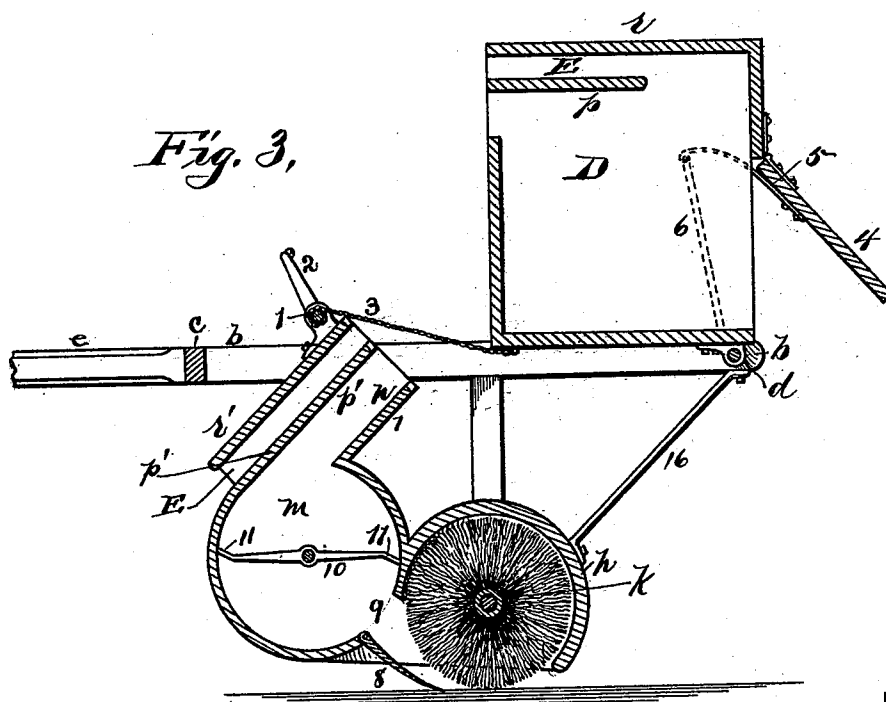
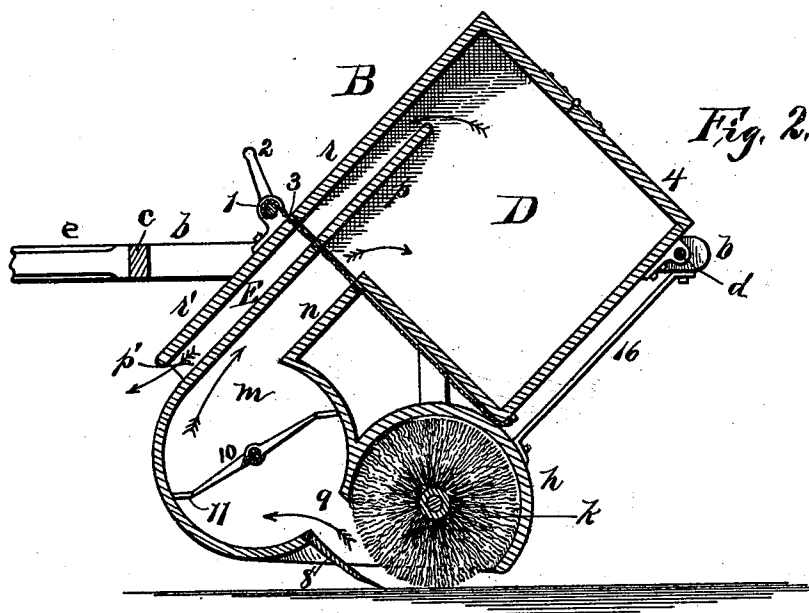
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INVENTORS

Arthur P. Palmer &
 Homer L. Phelps
 By Smith & Devisser
 his ATTORNEYS.

UNITED STATES PATENT OFFICE.

ARTHUR P. PALMER AND HOMER L. PHELPS, OF ATHENS, PENNSYLVANIA.

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 511,543, dated December 26, 1893.

Application filed November 28, 1892. Serial No. 453,306. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR P. PALMER and HOMER L. PHELPS, of Athens, in the county of Bradford, in the State of Pennsylvania, have invented new and useful Improvements in Sweepers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to sweepers and particularly to that class which are adapted to elevate the dirt, &c., into a receiver, in which it is collected and retained until dumped into a cart or wagon.

Our object is to provide a sweeper in which the brush operates to throw the sweepings into a primary receiving chamber, over a dust-pan made flexible so that it will automatically conform itself to the surface of the ground or pavement, and located in front of the brush; in which a rapidly rotating shovel passes the sweepings from said primary chamber into the main receiver through a flue; in which the blast of air, if any, being first given an opportunity in the main receiver to settle out the dust in flotation, passes out from said receiver through a reverse flue; in which the main receiver is also a dump-box, in that it is adapted to be swung over upon a pivot so as to dump the sweepings into a cart; and in which the whole operating force is centrifugal.

Our invention consists in the several novel features of construction and operation which are hereinafter described and which are specifically set forth in the claim hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is a perspective view of the sweeper, one end of the brush sheath being removed. Fig. 2, is a vertical transverse section of the same. Fig. 3, is a like view showing the main receiver partly tilted to dump the sweepings. Fig. 4, is a sectional detail of one supporting wheel, its axle shaft, and the drive gear secured thereto.

A. A. are the main supporting wheels, secured upon the axle shaft —a— which may be in a single piece upon which both wheels are secured, or it may consist of two independent sections, suitably journaled in or upon the body —B—. This body is carried by a frame comprising the side rails —b— the

front cross bar —c— and the rear cross-rod —d—, and the draft is applied to said front cross-bar in any ordinary manner, as by a pole —e— for a two-horse machine, or by ordinary thills for a one-horse machine.

The body is divided into two parts, the lower of which is stationary and comprises the sheath —h— for the brush —k— comprising the front *h'* and the rear *h''*, the primary chamber —m— with the top *m'* and the bottom *m''*. for receiving the sweepings and the flue —n— leading upward therefrom into the upper part —D— of said body, which constitutes the main receiver which is rearwardly and pivotally mounted upon the cross-rod —d— while its lower edges abut against and rest upon the lower sections, being also provided with an aperture —n'— adapted to coincide with the flue —n— and with a transverse partition —p— coinciding with the wall —p'— of the lower section, and the front —r— of the upper section also coincides with the front —r'— of the lower section, said walls —p—p'— and —r—r'— together creating a reverse air-escape flue —E— for the passage of the air from the main receiver or dump-box —D—.

Upon the lower body section a windlass shaft —1— is mounted in suitable bearings and provided with a suitable crank, or cranks —2—, and —3— is a chain (or chains) secured to said shaft, and having its lower end connected to the lower corner or rear face of the dump-box, in such manner that when the chain or chains are wound upon the shaft, said dump-box is raised and tilted upon its pivot, as shown in Fig. 3, until the sweepings are dumped therefrom into a cart, or in a heap upon the ground. The dump-box is provided with a cover —4— hinged to the body, projecting beyond its sides, and —5— is a spring or other arm secured to said cover projection, its free end being hinged to the rod —6— which in turn is hinged to the side frame bar. A like arm and rod may also be connected to the projection of the other end of the cover. Then when the dump-box is tilted said connection operates both to open said cover and to hold it open; and also to hold it closed tight when said arm —5— is a spring.

The brush —k— is mounted upon a central shaft suitably journaled and is provided with

a sprocket gear —7— on one or both ends, and may be of any construction desired, and is adapted to be rotated adjacent to the rear edge of the dust-pan —8—, which is of rubber, canvas, or other flexible material so that it will adapt itself to or conform to and follow closely all of the inequalities of the ground or pavement, having its front edge secured to the lower edge of that part of the body which constitutes the primary receiving chamber. This chamber is circular in transverse section, having an opening —9— above the dust-pan, and in it, upon a shaft suitably journaled, the rotary shovel is mounted, comprising arms —10— radiating from said shaft, and provided with blades —11—, parallel to said shaft, which scrape the interior of said chamber, and when driven rapidly picks up the sweepings, and centrifugally throws them through the flue —*n*— into the dump-box.

The shovel shaft is provided upon one or both of its projecting ends with a pinion —12— which meshes with the drive gear —13— comprising a geared rim, spokes and a hub —*u*— secured together, said hub being recessed to fit over the hub of the supporting wheel, and is secured to the axle-shaft by a set-screw —14—.

A sprocket wheel —*v*— (not shown) is secured upon the shovel shaft within and contiguous to the pinion —12— and —15— is a belt passing over it and the sprocket —7—, so that the rotation of the main wheel rotates

the axle-shaft, the drive gear, the shovel and the brush.

When the sweepings are thrown into the dump-box, the air blown into it, also carries more or less dust, which has an opportunity to settle out in said dump-box, and said air thence escapes through the reverse flue —*E*—, and thus the machine is substantially, if not absolutely, dustless in its operation.

Suitable braces —16— support the brush sheath from the side bars of the frame.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination with the rotating brush, and its chamber, the rotating shovel and its chamber, the axle, the frame in which the axle and the brush and shovel shafts are journaled, the drive gear mounted upon the axle, the pinion upon the shovel shafts, the sprockets upon the brush and shovel shafts and the belt around said sprockets, of the flue leading from the shovel chamber to the dump-box, the tilting dump-box receiving the sweepings from the shovel, the sectional reverse flue partly in said dump-box and partly exterior thereto, and means to tilt said box.

In witness whereof we have hereunto set our hands this 18th day of November, 1892.

ARTHUR P. PALMER.
HOMER L. PHELPS.

Witnesses:

LOUIS E. HOYT,
JOSEPH HINES.