

No. 616,685.

Patented Dec. 27, 1898.

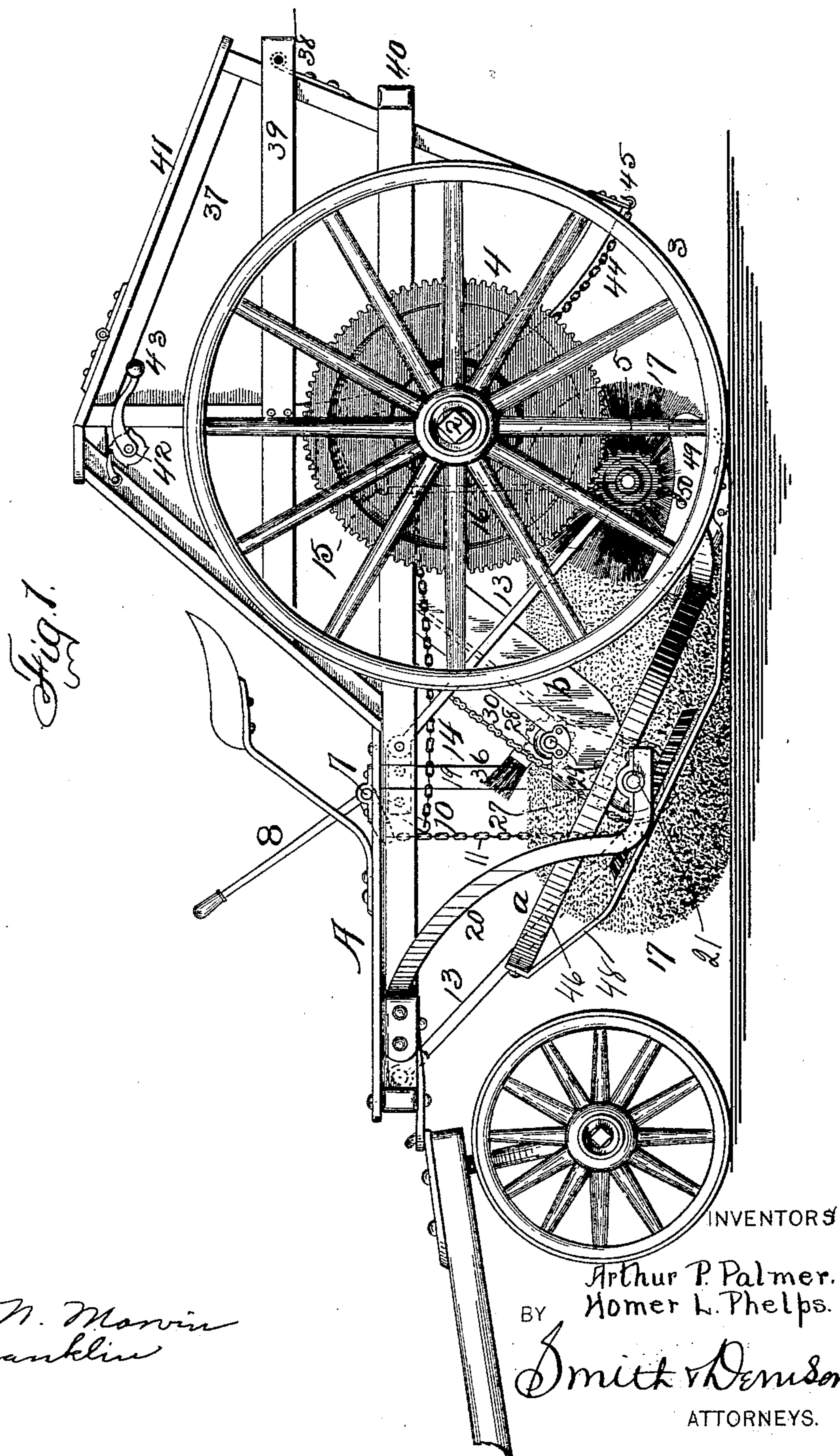
A. P. PALMER & H. L. PHELPS.

STREET SWEEPER.

(Application filed Oct. 11, 1897.)

(No Model.)

4 Sheets—Sheet 1.



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INVENTORS

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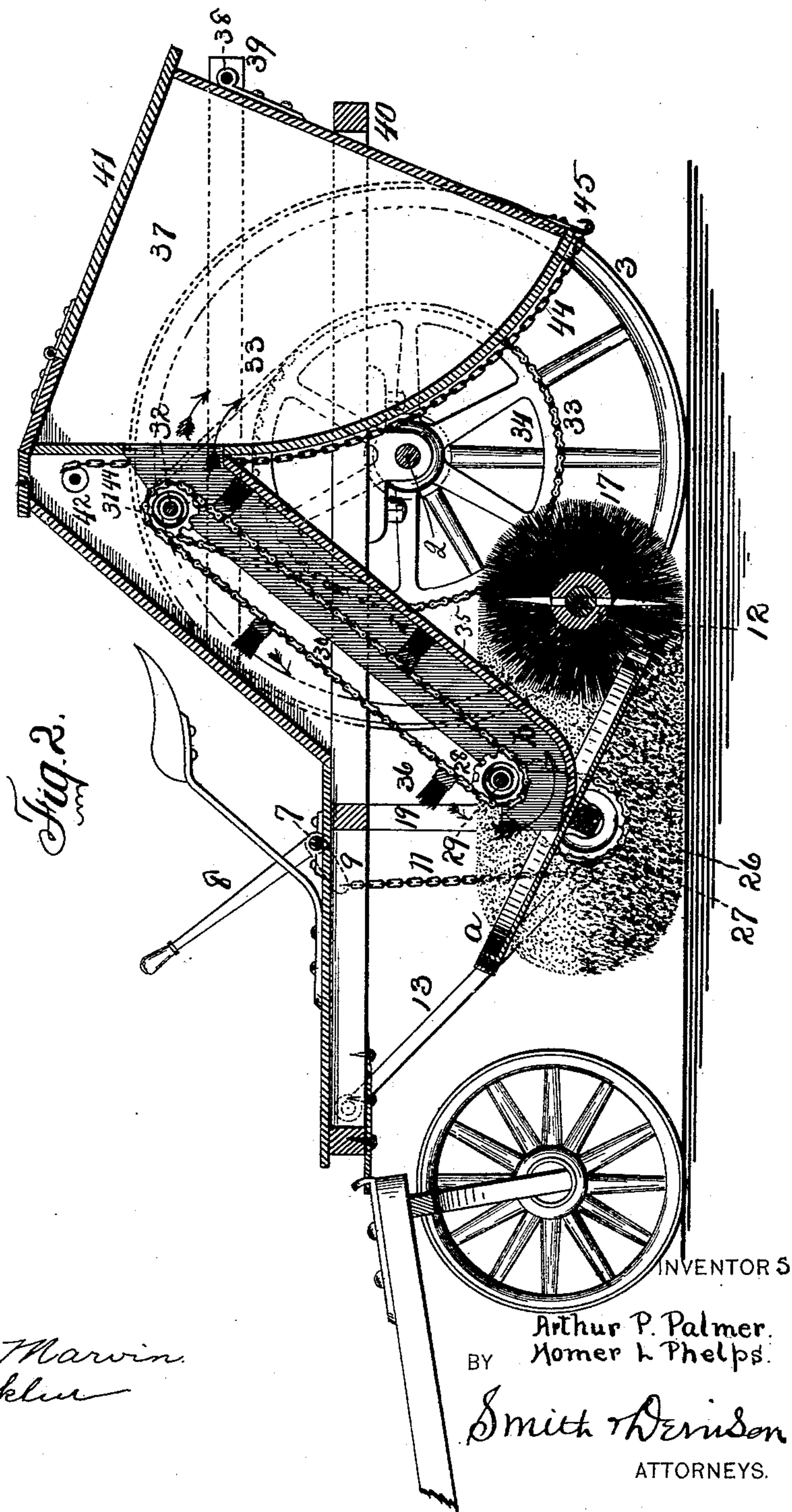
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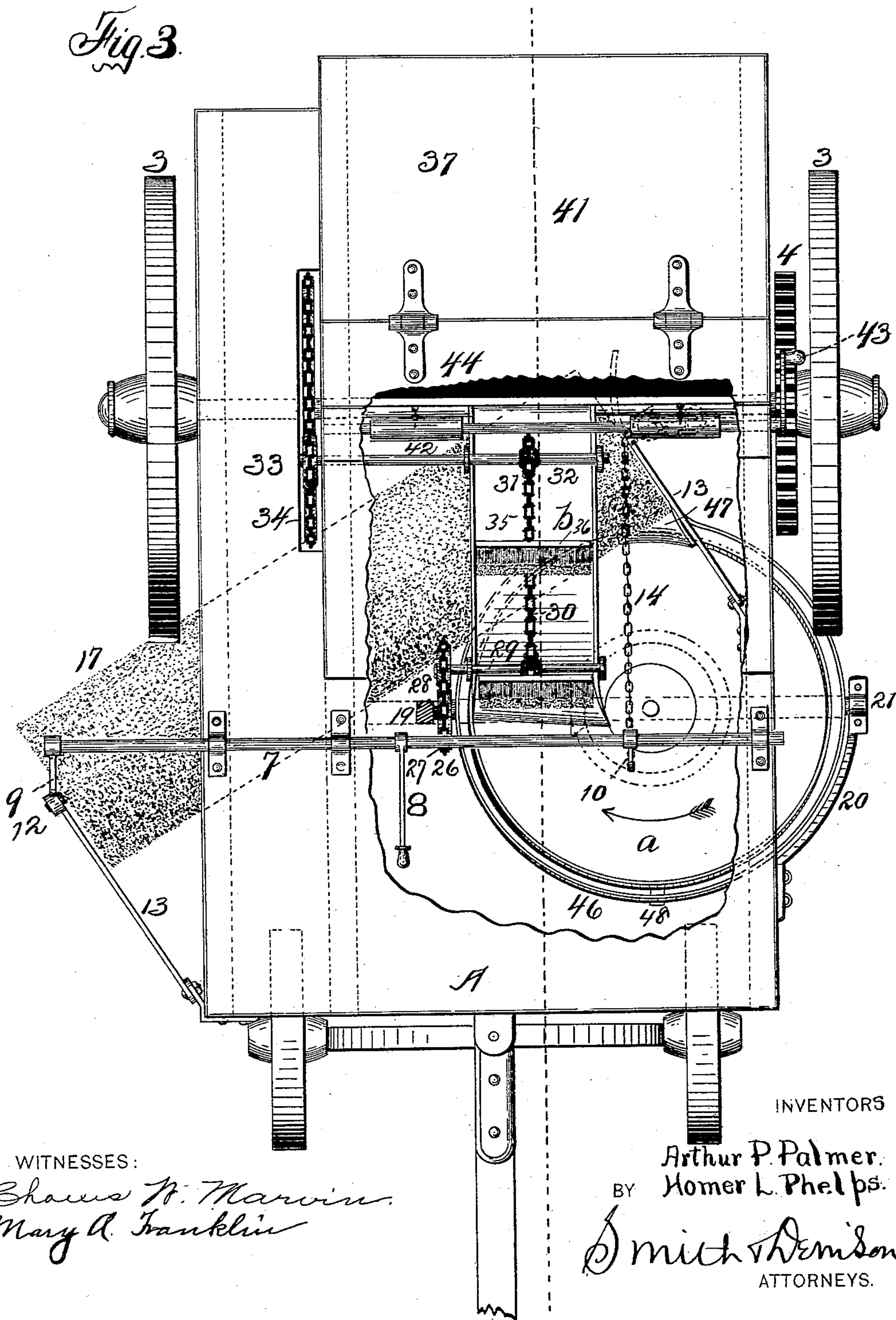
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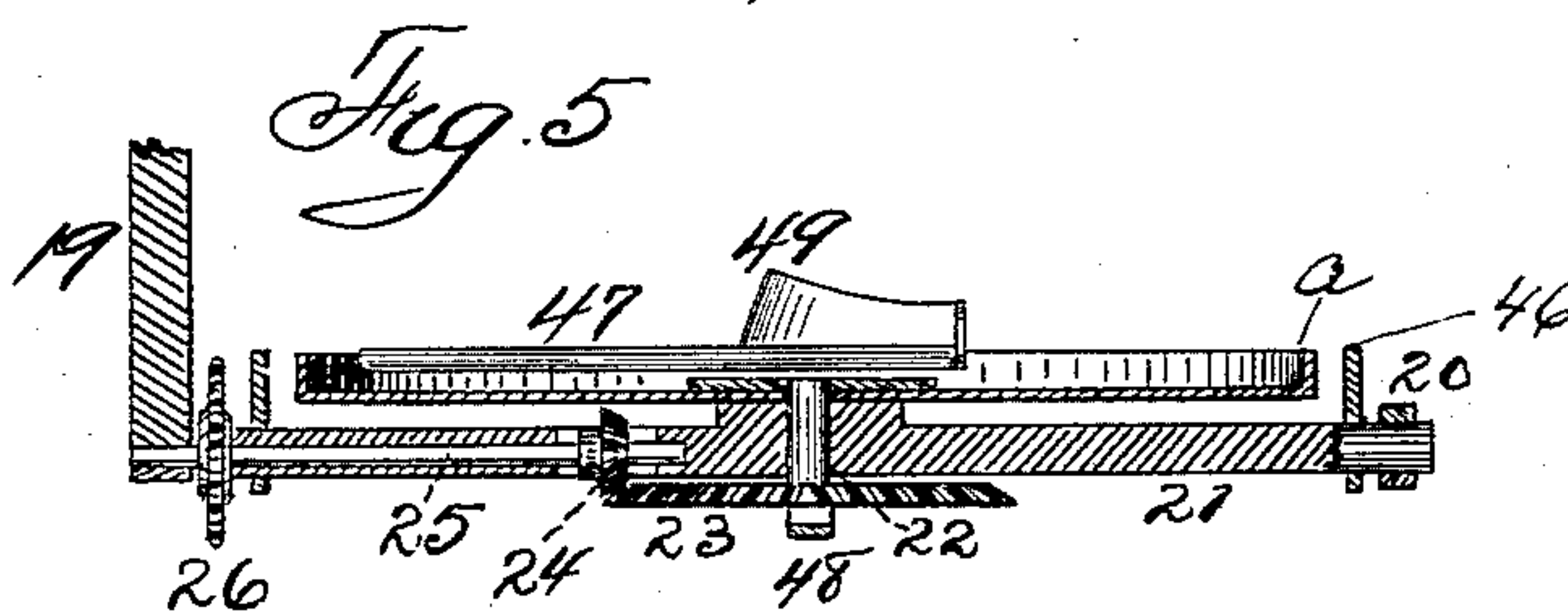
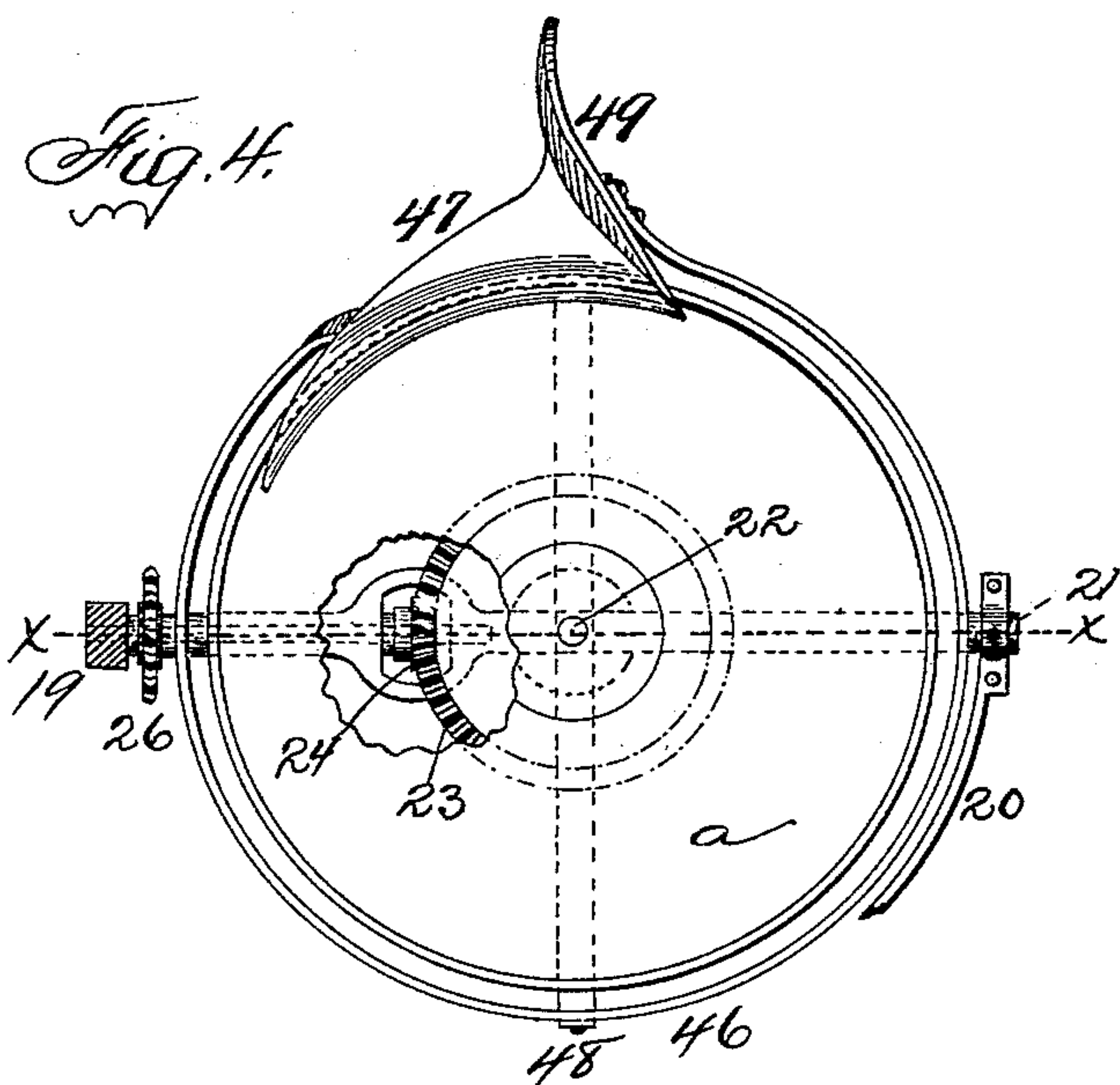


Fig. 6.

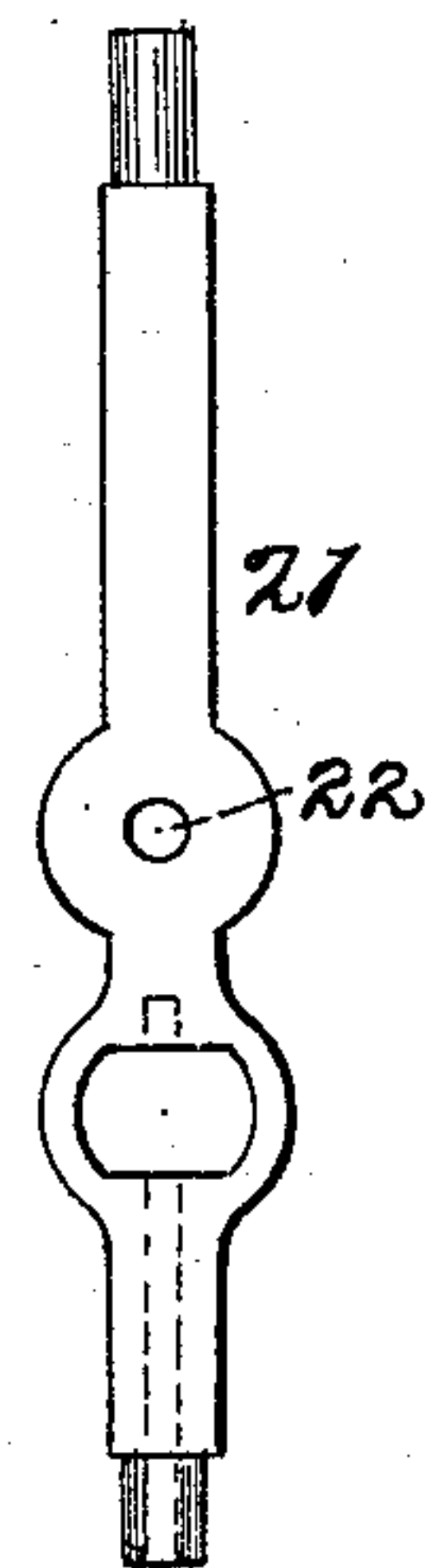
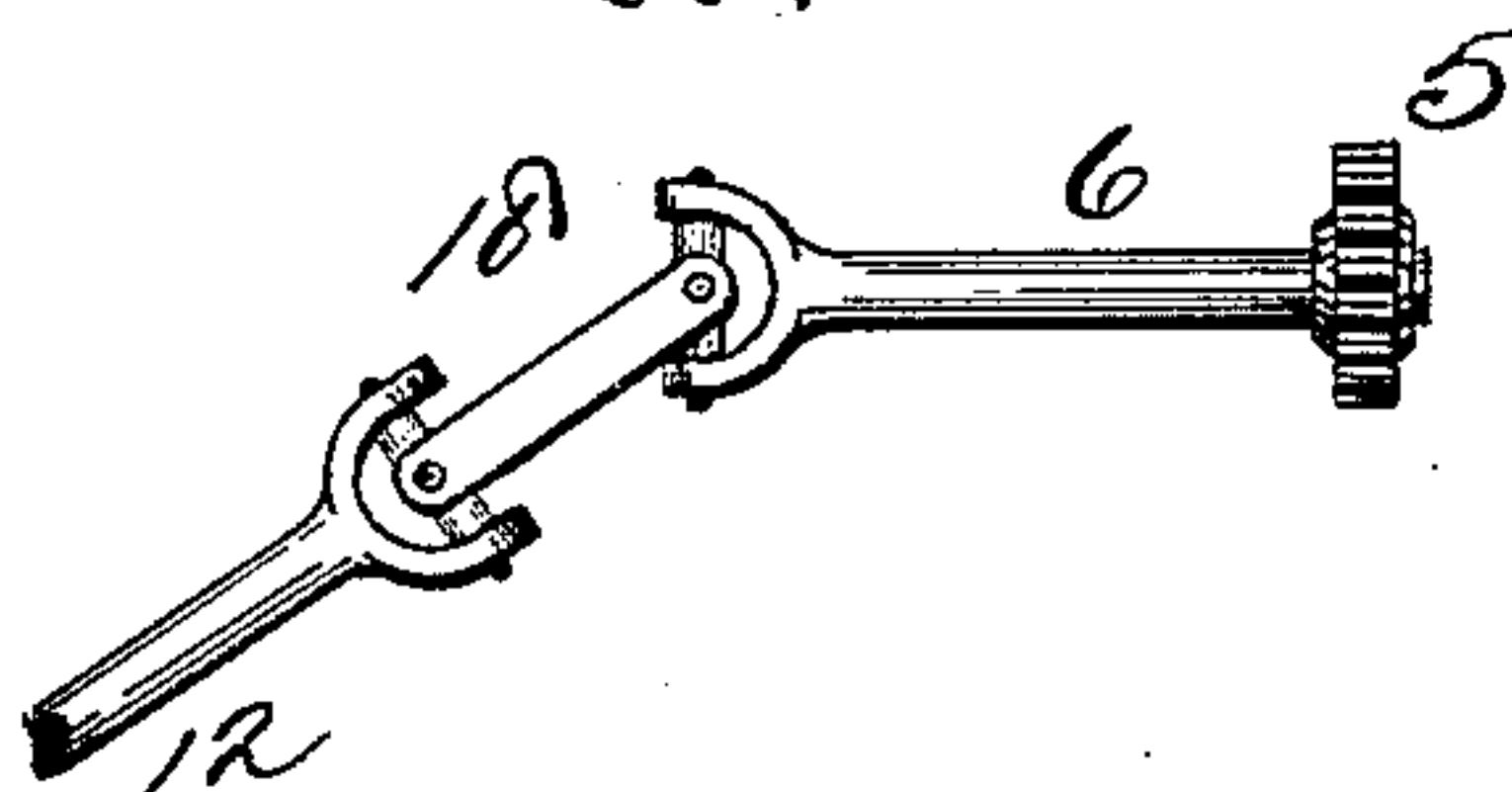


Fig. 7.



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UNITED STATES PATENT OFFICE.

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

STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 616,685, dated December 27, 1898.

Application filed October 11, 1897. Serial No. 654,756. (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 Street-Sweepers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to street-sweeping machines of the class in which the dirt is gathered and conducted into a receptacle, whence it is dumped into a vehicle to be carried away.

Our object is to produce a sweeper having a suitable frame and wheels, a sweeping-brush driven by power generated by the travel of the machine, a dust-pan in front of and extending only a part of the length of the brush, whereby the forward portion of the brush operates solely to gather the sweepings into the line of the rear portion, to be thereby thrown onto the dust-pan, a rotating pan receiving the dirt from the dust-pan and brush and by its rotation conducting said sweepings around to the foot of an elevator, by which they are carried up into a tilting receptacle, from which they are dumped into a wagon or other vehicle to be carried away.

Suitable means are also provided for elevating or lowering the brush, for supporting the dust-pan and raising or lowering it, for rocking, raising, or lowering the rotating pan, and for supporting and tilting the box for dumping.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the machine in use. Fig. 2 is a longitudinal vertical section thereof on the dotted line in Fig. 3. Fig. 3 is a top plan, part of the box being broken away to show the interior. Fig. 4 is a top plan of the rotating and dust pans and the mechanism for driving the rotating pan. Fig. 5 is a section thereof on the dotted line in Fig. 4. Fig. 6 is a plan view of the shaft upon which the rotating pan is carried. Fig. 7 is a detail of the flexible joint by which the brush-shaft is connected to the driving-shaft to be driven at an angle thereto.

A is a frame, suitably mounted upon an

axle 2, upon which one or both of the wheels 3 are mounted to drive it and the driving-gear 4 upon said axle, which drives a pinion 5 upon a driving-shaft 6, which is journaled in a suitable hanger pendent below or from the main frame, and not shown, as being of any construction well known to a mechanic and being behind the gear 4 in Fig. 1. A rock-shaft 7 upon said frame is provided with an operating-lever 8 and cranks 9 10. The crank 9 is connected by a chain 11 to one end of the brush-shaft 12, which is in a swinging support 13. The crank 10 is connected by a chain 14 to a bell-crank 15 upon the frame and a chain 16 (dotted lines, Fig. 1) to a swinging support 13, in which the other end of said brush-shaft is journaled, whereby said shaft with the brush 17 thereon is raised or lowered.

A flexible or angular coupling 18 of ordinary construction connects the drive-shaft 6 to the brush-shaft.

Bars 19 20 support a rock-shaft 21, in which is journaled a shaft 22, driven by a bevel-gear 23 and pinion 24 upon a shaft 25, which is driven by a sprocket-gear 26 and chain 27, driven by a sprocket 28 upon a shaft 29, a chain 30, sprocket 31 upon a shaft 32, suitably driven by a belt or chain 33, driven by a suitable pulley or sprocket 34 upon the axle. The shafts 29 and 32 are suitably journaled in or upon the sides of the elevator-leg 35, and the chain 30 carries the elevating-brushes 36. The upper end of this elevator-leg is suitably supported by and secured to a cross-bar (not shown) between the sides of the body erected upon the main frame more or less contiguous to the front of the tilting receiver, and its lower end is either carried wholly by the rotary collector *a* or upon a cross bar or arm (not shown) secured to the vertical bar 19.

Upon the shaft 22 a flanged pan or sweepings-collector *a* is suitably mounted to be rotated by it, and the curved end of the elevator-leg *b* comes into close contact with the bottom of said pan on one side of its center and is beveled to act more or less as a scraper to direct the contents of said pan into proper position to be carried up by said brushes and discharged into the tilting box 37, which is mounted to swing upon a rod 38, suitably mounted in bars 39, suitably mounted above

the main frame, said box when in its normal position being supported more or less by a cross-beam 40 in said frame. This box is provided with a suitable cover 41. A shaft 5 42, provided with a crank 43 and adapted to wind up a chain 44, suitably connected to said bar, as at 45, affords means whereby it can be tilted upon said rod 38 to dump its contents from an elevated position, as into a 10 wagon. A ring 46 nearly encircles said pan, and 47 is a dust-pan suitably mounted thereon, and a bar 48, across said ring, supports the shaft 22 and gear 23, the end of said shaft 22 below said gear being suitably stepped into 15 said bar 48. The bottom of said dust-pan extends forward over the flange of said rotating or collecting pan and rearward into proper position with reference to the revolving brush to guide the sweepings into said rotating pan, 20 to be by it carried around to the elevator-leg. The dust-pan is also provided with a vertical side or wall 49, by which the sweepings are prevented from being thrown in such a direction that they will not be caught by said pan. 25 A cord or chain 50 also connects said dust-pan to the brush-shaft, so that when said brush is raised, as when out of use, said dust-pan will also be raised and the rotating pan will be tilted, its support rocking. 30 It will be seen that the rear edge of the dust-pan is not parallel to the brush-shaft, that it is of such length that only a short section of said brush will cooperate with it, and that the greater part of said brush operates solely to 35 throw the sweepings over into position to be thrown, by its lesser part, over the dust-pan and into the rotating collecting-pan. It will also be seen that the rotating pan or collector is normally inclined toward the brush 40 and operates to carry the sweepings around to the foot of the elevator and that the action of the elevator-brushes, combined with the scraping action of said foot, will conduct them into and through said leg and into the collecting box or bin and that the gathering at the 45 foot of the elevator is out of the path of the sweepings into the collector, while the elevator-leg and sides operate to baffle the current of air created by the rotation of the brush. 50 Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a sweeper, the combination with a

main frame, and a rotating brush upon a shaft extending upon a diagonal line to said frame, of a dust-pan in front of said brush, and having its rear edge extending inwardly from the outer end of the brush upon a line diagonal to and forwardly diverging from the vertical plane of said shaft whereby the rear outer corner of said dust-pan is under said brush in substantially the plane aforesaid. 60

2. In a sweeper, a main frame, a diagonal brush supported thereby, and means to drive it, combined with a substantially triangular 65 dust-pan having its rear edge diagonal to the vertical plane of the brush-shaft and provided upon its outer side with an upturned flange extending across the outer end of the brush to a point substantially under said shaft, and creating an abutment or fender for the sweepings. 70

3. In a sweeper, the combination with a main frame, a rotating brush, a dust-pan and a rotating collector receiving the sweepings 75 from said brush, of a sweeping-elevator having its foot in said collector.

4. In a sweeper, the combination with a frame, a brush, and an elevator, of a rotating collector receiving the sweepings by the brush 80 and from its rotation carrying them direct to the foot of said elevator within the periphery of said collector.

5. In a sweeper, the combination with a main frame, of a brush supported therefrom, 85 a dust-pan connected to the brush-shaft, a rotating sweepings-collector mounted upon a rock-shaft and connected to said dust-pan, and means to raise or lower said brush and dust-pan and tilt said collector simultaneously. 90

6. In a sweeper, a frame, an axle, and wheels mounted to revolve on said axle, combined with a rotating brush, a rotating sweepings-collector, and an elevator driven simultaneously by power transmitted from said 95 axle having its foot in and taking the sweepings direct from the surface of said collector.

In witness whereof we have hereunto set our hands this 14th day of September, 1897.

ARTHUR P. PALMER.
HOMER L. PHELPS.

In presence of—

JOSEPH HINES,
HOWARD P. DENISON.