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2 Sheets—Sheet 1.

A. MAYER & H. G. STIEBEL.
SPRINKLING APPARATUS.

No. 408,631.

Patented Aug. 6, 1889.

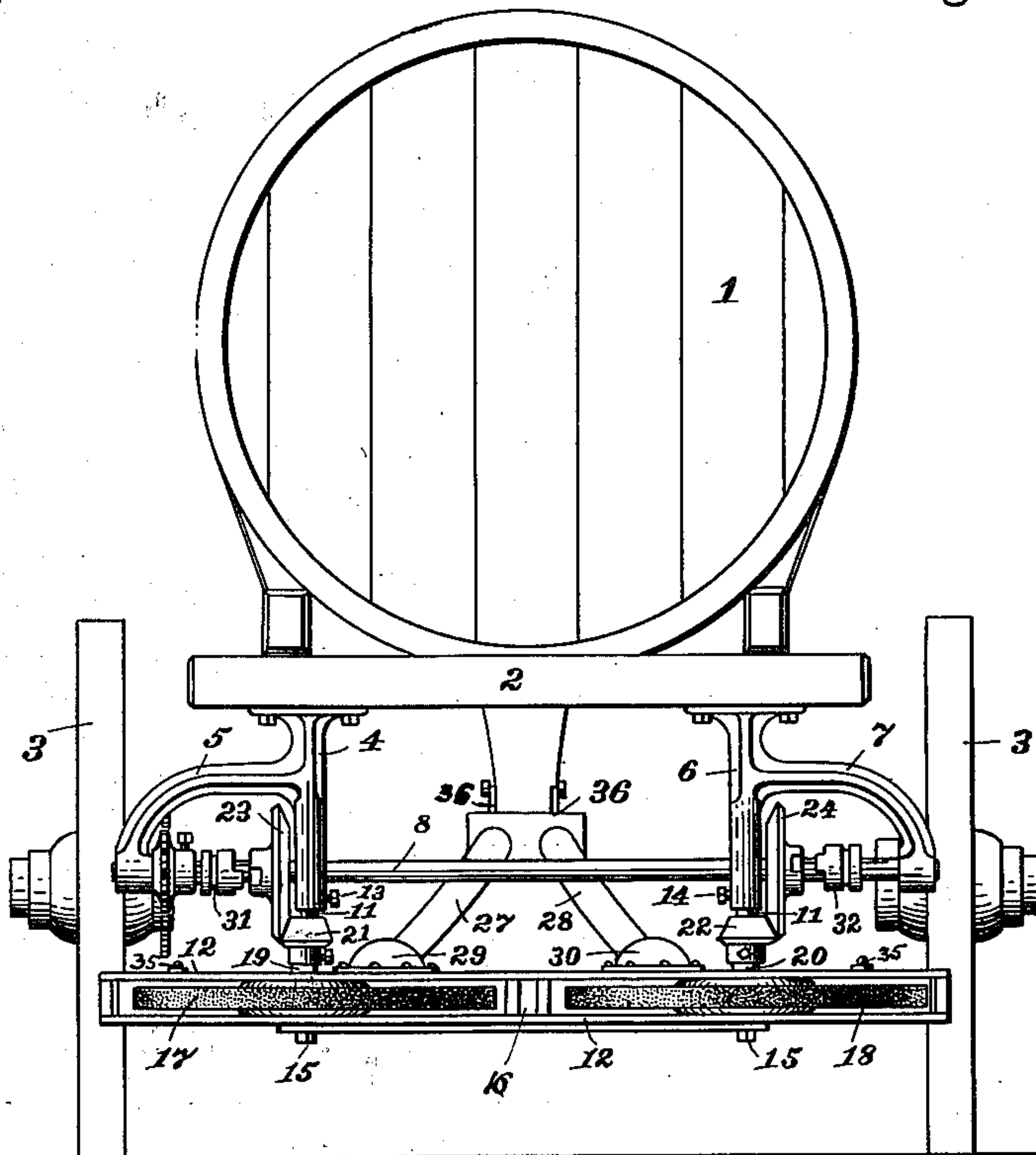


Fig. 1.

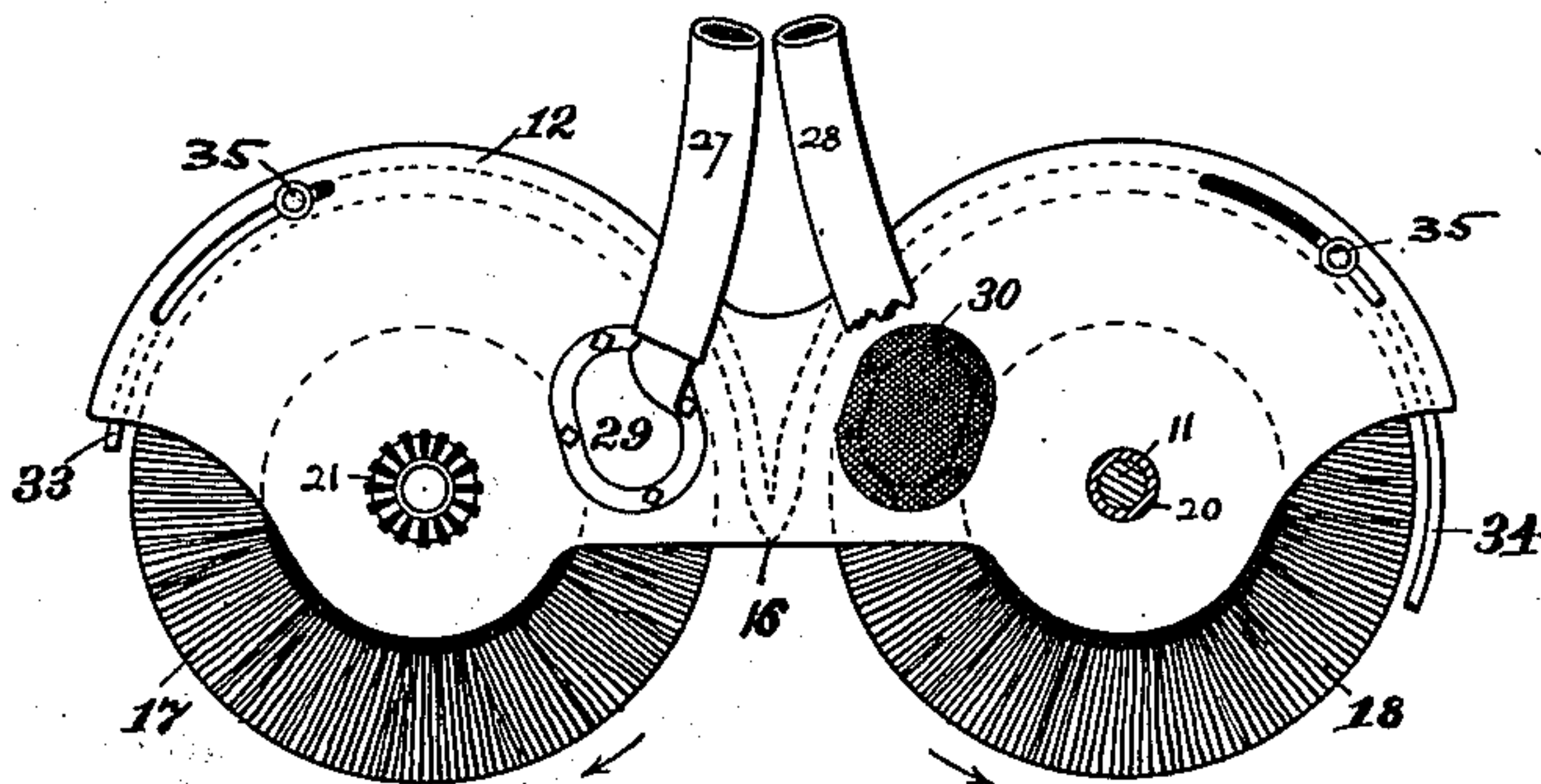


Fig. 2.

Attest.

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Hosea Merrill
Attys.

(No Model.)

2 Sheets—Sheet 2.

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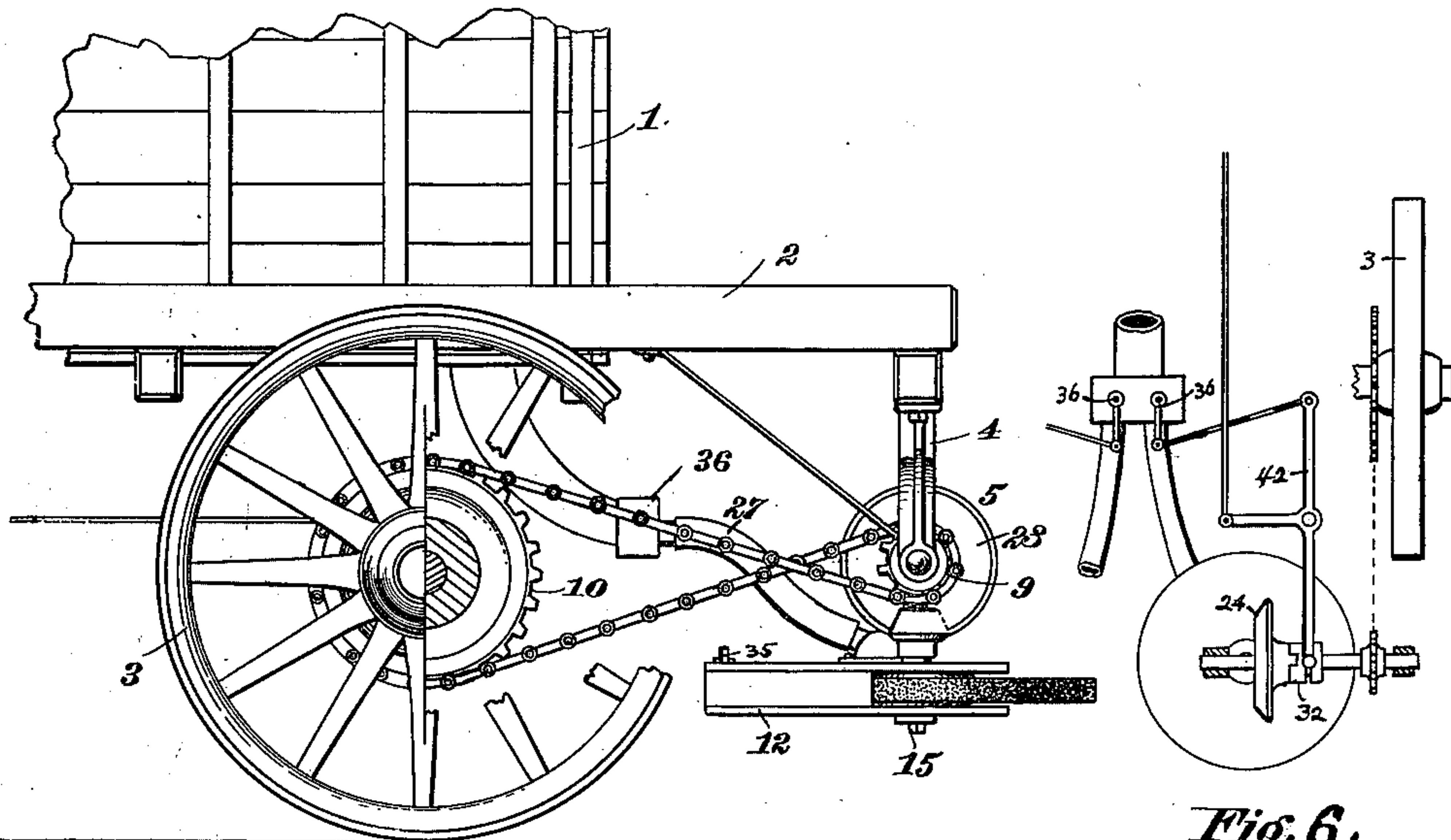


Fig. 3.

Fig. 6.

Fig. 4.

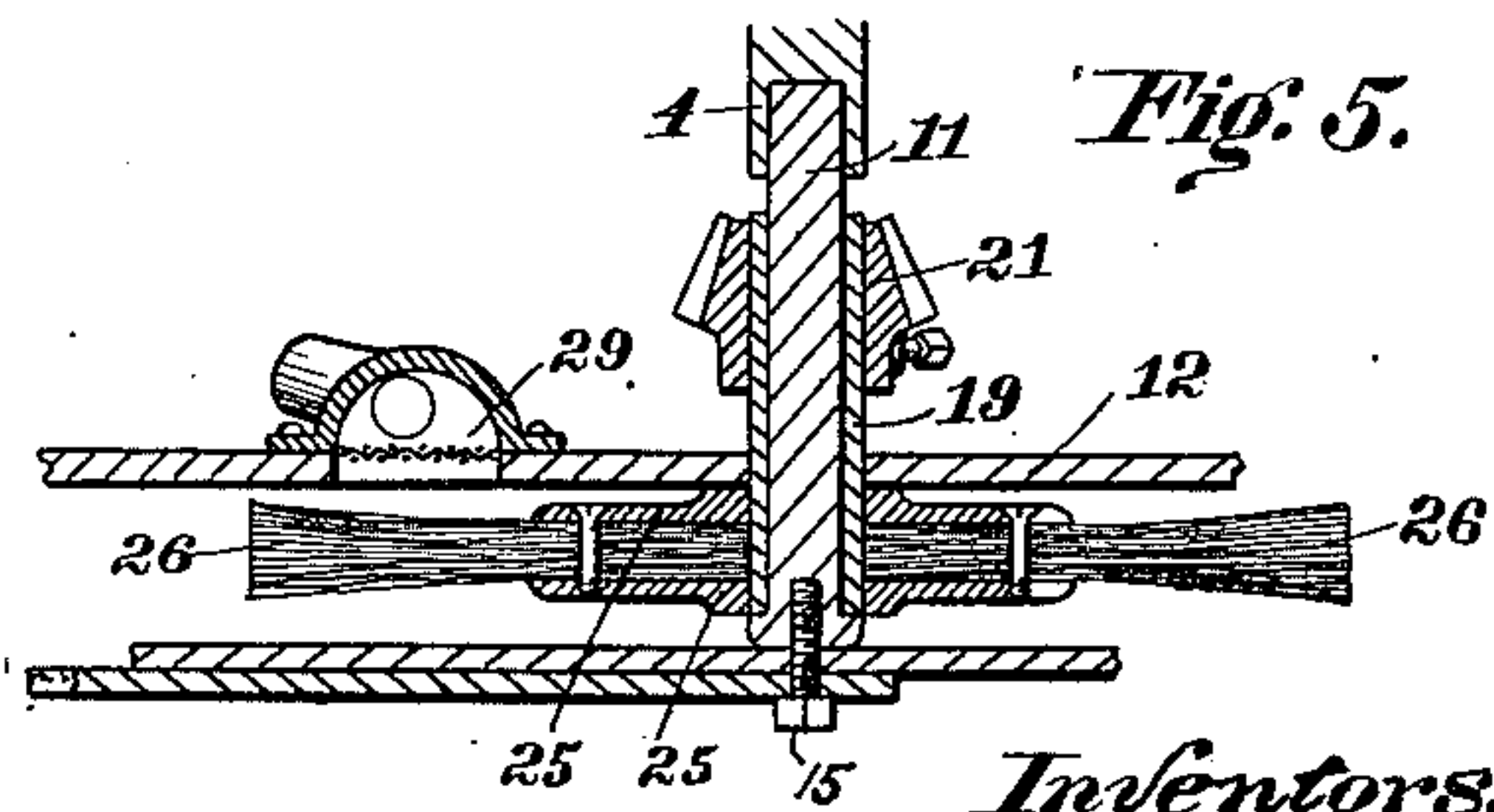
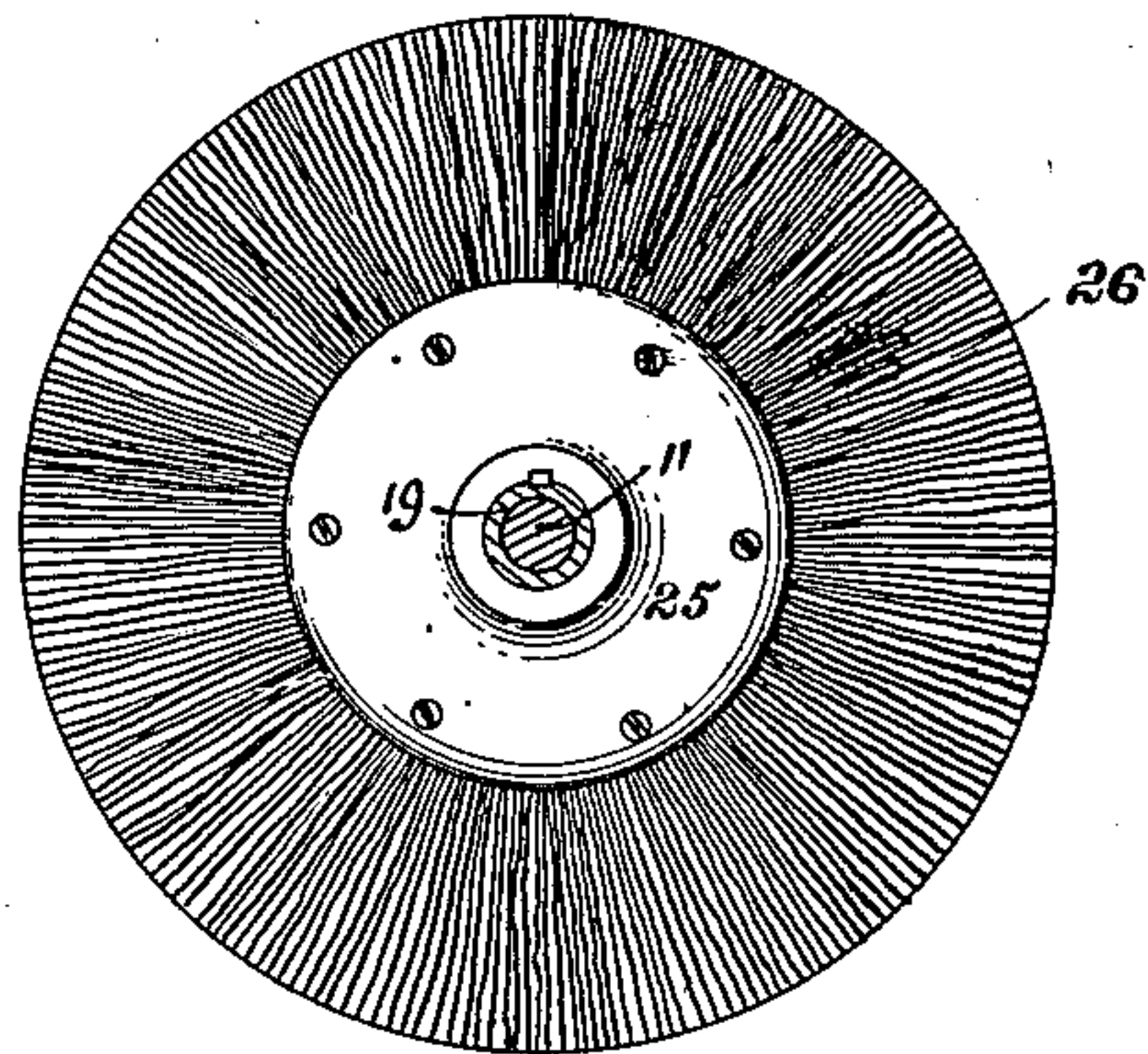


Fig. 5.

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C. L. Kern

Inventors.
Anton Mayer
Henry G. Stiebel by
Hosack & Merrill Attys

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UNITED STATES PATENT OFFICE.

ANTON MAYER AND HENRY G. STIEBEL, OF CINCINNATI, OHIO; SAID MAYER
ASSIGNOR TO SAID STIEBEL.

SPRINKLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 408,631, dated August 6, 1889.

Application filed June 22, 1887. Serial No. 242,174. (No model.)

To all whom it may concern:

Be it known that we, ANTON MAYER and HENRY G. STIEBEL, citizens of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Sprinkling Apparatus, of which the following is a specification.

Our invention relates to improvements in street-sprinklers, its object being to secure a more uniform and economical distribution of water with reference especially to use in cities.

To this end it consists in the apparatus and mechanism hereinafter described, constituting an attachment to a wheeled supply-tank, whereby the water is supplied to and distributed by one or more rotating brushes driven by the bearing-wheels. By means of this rotation the water is driven by centrifugal force in finely-divided particles in a widely-expanded horizontal shower covering the street-surface with great uniformity and "laying the dust" much more effectively than is usual with sprinkling apparatus. With properly-constructed machines a path covering the width of an entire street may be sprinkled at one passage of the cart without interference with ordinary traffic.

It also consists in certain minor features, in combination, tending to the more complete and perfect operation, all as more fully and at large hereinafter described, and set forth in the claims.

Mechanism embodying our invention is illustrated in the accompanying drawings, in which—

Figure 1 is a rear elevation of a sprinkling-cart to which our invention is applied; Fig. 2, a plan view of the rotating distributors and their casings detached from the tank; Fig. 3, a partial side elevation of the cart and our attachment. Fig. 4 is a plan view of one of the rotating distributors detached and upon a larger scale; Fig. 5, a detail vertical section of the distributor-casing and distributor; Fig. 6, a plan showing the connecting mechanism operating the clutch and stop-cock simultaneously.

In the drawings, 1 designates the supply-tank mounted upon a frame 2 carried upon the bearing-wheels 3 in the usual manner.

4 designates a standard provided with a lateral arm 5, constituting a double-armed bracket secured to and suspended from the under side of the frame 2 at the rear at one side of the wagon, and 6 7 a similar standard and arm occupying a corresponding position at the other side. Through the standards and their lateral arms is journaled a shaft 8, provided near one end with a sprocket-wheel 9, driven from a similar sprocket-wheel 10 upon the hub of the nearest bearing-wheel 3, thus rotating the shaft 8 as the wagon moves.

In the present illustration of our invention we have shown a single shaft with but one driving-gear; but in practice we may employ two shafts extending in the same axial line between and in the arms of each of the brackets with independent sprocket wheels and chains to opposite bearing-wheels, for a purpose presently to be explained.

Each vertical arm, as 4, is hollow near the bottom, forming a socket in which is held a short stud 11, extending downward through or to the bottom of the distributor-casing 12. The arm 6 is similarly provided with a stud 11, also extending down through or to the bottom of the casing. These studs are held in the sockets by set-screws 13 14, or in any other convenient manner, and in turn uphold the casing by bolts 15 15, passed through the casing from below into the studs.

The general form of the casing 12 is that of two flat half-cylinders merging at their joined peripheries, constituting in effect two casings separated by a partition 16 at their junction. In each division of the casing thus formed is mounted a rotating distributor in the form of a circular brush, these being designated by the numbers 17 18, carried respectively upon sleeves 19 20 surrounding the studs. These sleeves are provided respectively above the casing with bevel-gears 21 22, meshing with similar bevel-gears 23 24 upon the shaft 8, through which rotation is given the distributors.

The construction of the distributors is clearly indicated in Figs. 4 and 5. Each consists of two disks or hubs 25, between which and projecting outward radially is secured a

mass 26 of bristles, wires, or strips of any suitable material, of moderate stiffness. The relative positions of the distributors are indicated in Fig. 2, in which also the relative

5 direction of rotation is indicated by arrows.

Water is distributed to the two distributors from the tank 1 through separate pipes or hose 27 28 controlled by suitable valves, so that either or both may be shut off when de-

10 sired. Distribution through the casings is made through somewhat enlarged orifices 29 30, preferably covered with wire-netting, which assists in distributing the water more uniformly to the brushes of the distributors.

15 These openings are located preferably as shown, and distribute water to the brushes from above as the bristles pass in rotation below in the casing. The rotation of the brushes drives the water radially outward by

20 centrifugal force, modified as to the same by the tendency of the water to adhere to the bristles in a manner somewhat analogous to capillarity, and results in a horizontal ex-

25 panding shower of minute particles, which, as the wagon moves along, falls upon the ground evenly and gently. By the relative arrange-

ment of the rotating distributors and their supply-orifices 29 30 the two showers thus cre-

30 ated practically merge at the line of junction without excess at that point and thus cover an extraordinarily wide path. The centrifugal force thus obtained also enables us to

place the distributors at a very low level, so that the ordinary street-service is carried on

35 without reference to passing vehicles or horses. The bevel-gears 23 24 upon the driving-shaft 8 are normally loose upon said shaft, but are brought into engagement with it, when

40 desired, by clutches 31 32, by suitable connections in control of the driver. The clutch-connections are shown by the plan, Fig. 9.

In connection with the casing 12 we employ with each distributor an adjustable shield 33

45 34, formed to the arc of the outer wall of the casing and arranged to slide and be adjusted rearward, as shown on the right in Fig. 2. The shield thus projected cuts off a given seg-

ment of the radial shower, as will be obvious,

50 and is useful as a means of protection to passers-by, &c. The shields are guided and operated by means of pins 35, projecting up-

wardly from each through a curved slot in the upper wall of the casing, to which suitable

55 mechanism—such as manipulating-rods (not shown in the drawings)—may be attached, extending forward within control of the driver or attendant.

In practice each supply-pipe 27 28 is pro-

60 vided with a stop cock or valve 36, arranged at the junction of the supply-pipes with the tank-outlet, and we find it convenient to connect the handle of each stop-cock 36

with the clutch-shifting lever 42 of the ad-

65 jacent distributor, in order that the water may be turned on simultaneously with the

starting of the wheel and shut off simultaneously with the stoppage.

Where two such rotating distributors are employed as in the illustration the arrange-

70 ment just described is an especial convenience in city use where street-traffic is going on during the sprinkling.

The foregoing description has reference to the use of two co-operating distributors, by

75 which, generally, the best effects are obtained in ordinary street-service; but it will be seen that the action of each distributor is inde-

pendent. Hence but one may be used, or any convenient number employed together, as in

80 the illustration. We have also described the rotating brush as made up as radial strips—such as bristles, wire, &c.—but we may use

porous material—such as sponge-cloth or the like—in suitable strips or masses to carry the

85 water outward and distribute the same in a finely-divided form.

We claim as our invention, and desire to secure by Letters Patent of the United

States—

9 1. In a street-sprinkler, the combination of a wheeled reservoir, one or more circular brushes arranged to rotate horizontally at the rear of the same, driving-connections with the bearing-wheels and water-connections

95 with the reservoir, whereby the forward travel of the vehicle distributes the water to the rear and sides in a horizontal expanding shower of finely-divided particles from the brushes, substantially as set forth.

100 2. The combination, in a street-sprinkler, of a wheeled reservoir-cart, a containing-casing arranged behind the same and open at the rear, a circular brush arranged to rotate horizontally in said casing and through the

105 opening of the same as a distributor, driving-connections with the bearing-wheels of the cart for the rotation of said distributor, and water-connections with the reservoir entering the casing, arranged and operating to dis-

110 tribute the water horizontally in an expanding shower of finely-divided particles rearward and laterally across the path of the vehicle, substantially as set forth.

115 3. In a street-sprinkler, the combination, with the wheeled reservoir and its bearing-wheels, a double casing carried at the rear of the reservoir and having two independent adjacent semi-cylindrical compartments open at the rear, two brushes revolving horizon-

120 tally in said compartments and through the rear openings, respectively, in opposite directions, and a branched supply-pipe from the reservoir entering the casings, respectively, and driving-connections with the wheels for

125 the rotation of the distributors, substantially as set forth.

4. The combination, in a street-sprinkler, of a semi-cylindrical casing to and through

130 which water is distributed, a circular distributor or sprinkler mounted and rotated axially within the same, and one or more ad-

justable partitions extensible rearwardly across the radial lines of sprinkling action, substantially as set forth.

5 In a street-sprinkler of the character described, the combination, with a rotating sprinkler driven from the bearing-wheel of the cart, an adjustable clutch to determine the rotation or non-rotation of the rotating sprinkler, and a cock or valve governing the
10 water-supply to said sprinkler, of connecting mechanism between said stop-cock and the clutch-actuating devices, whereby the move-

ment of the clutch out of action closes the water-supply to the sprinkler, and vice versa, substantially as set forth.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses. 15

ANTON MAYER.
HENRY G. STIEBEL.

Witnesses:

L. M. HOSEA,
CHESTER W. MERRILL.