

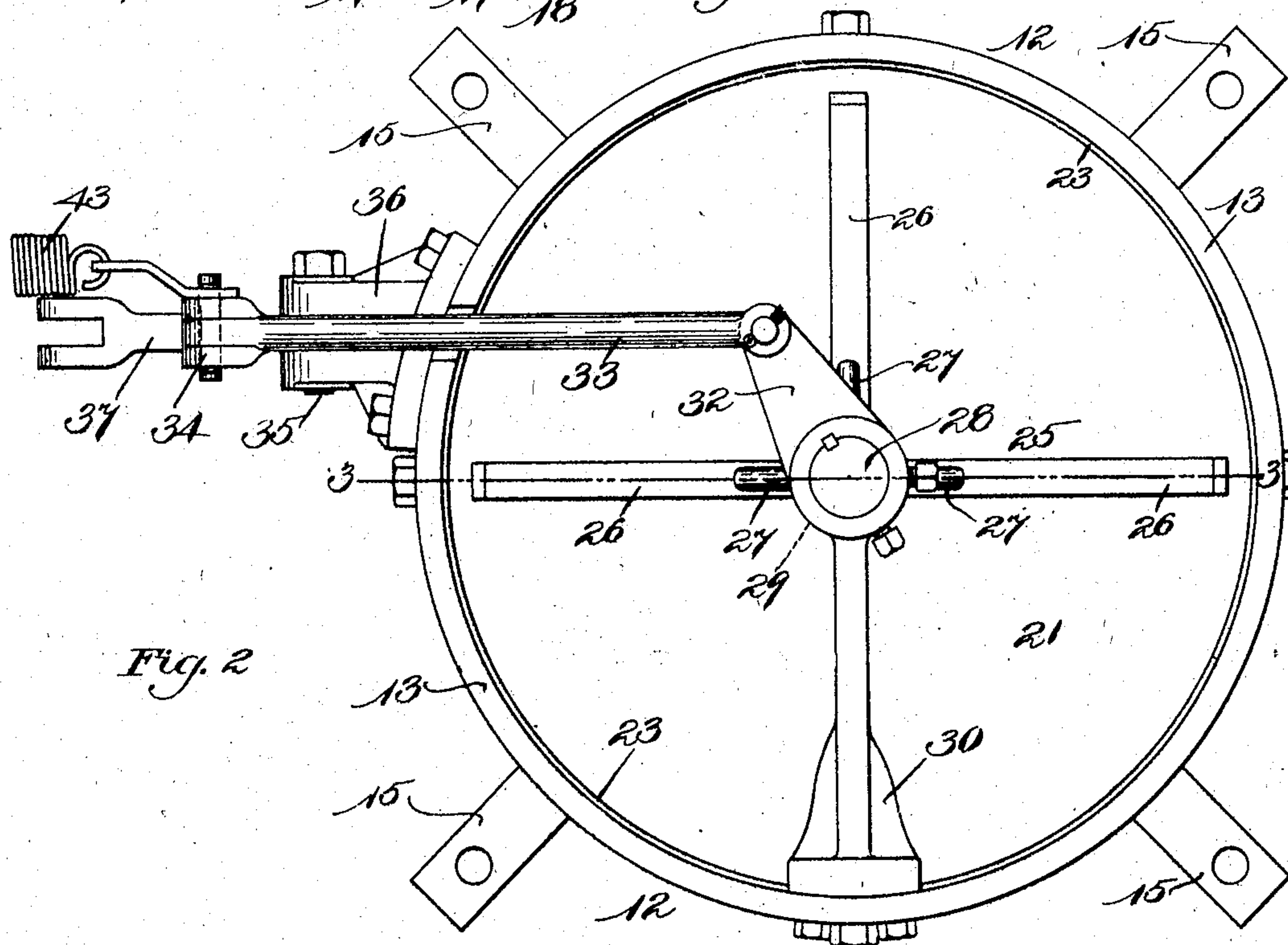
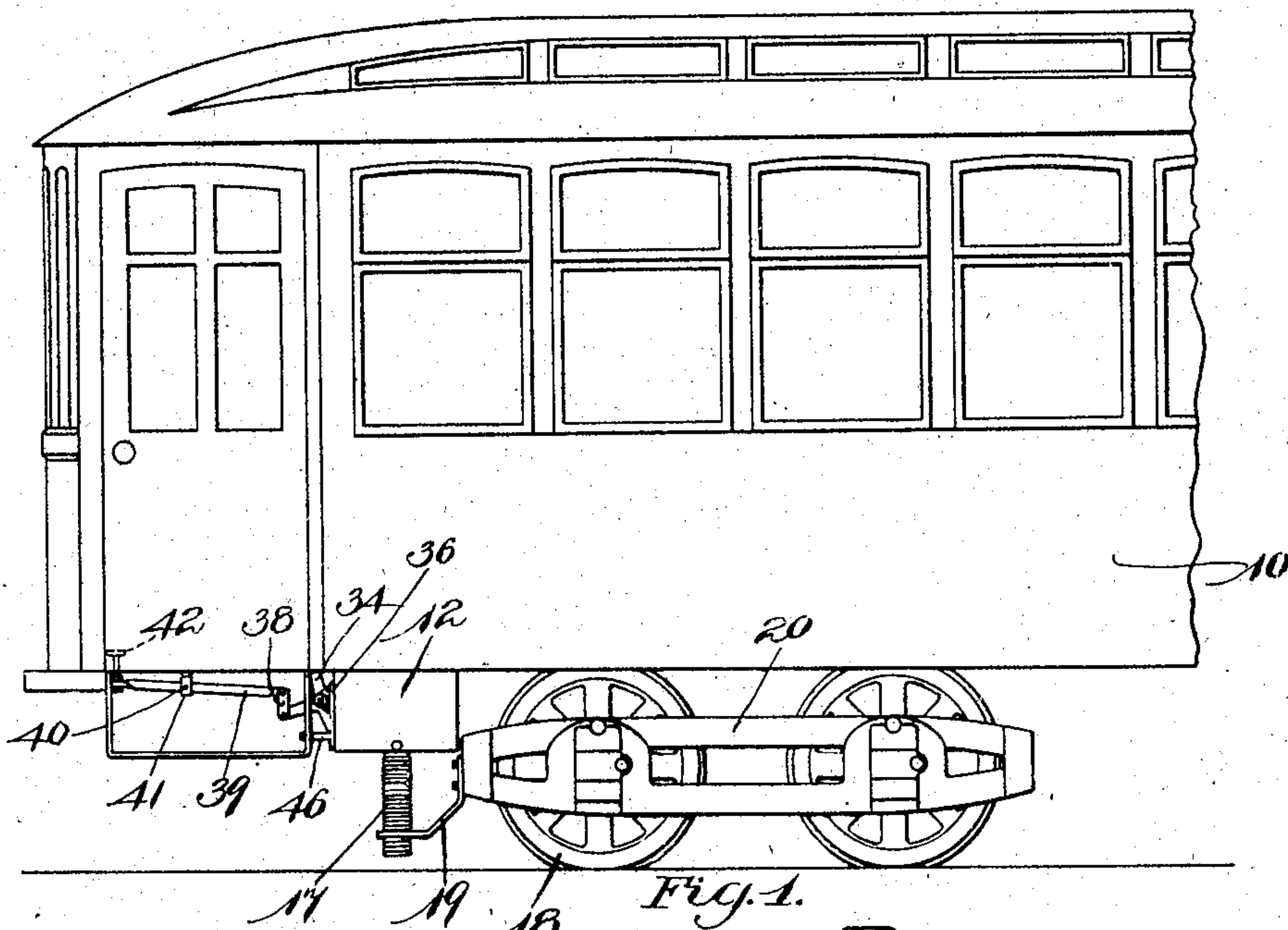
No. 796,319.

PATENTED AUG. 1, 1905.

G. GIOIOSA.
SAND DISTRIBUTING MACHINE.

APPLICATION FILED MAR. 20, 1905.

3 SHEETS—SHEET 1.

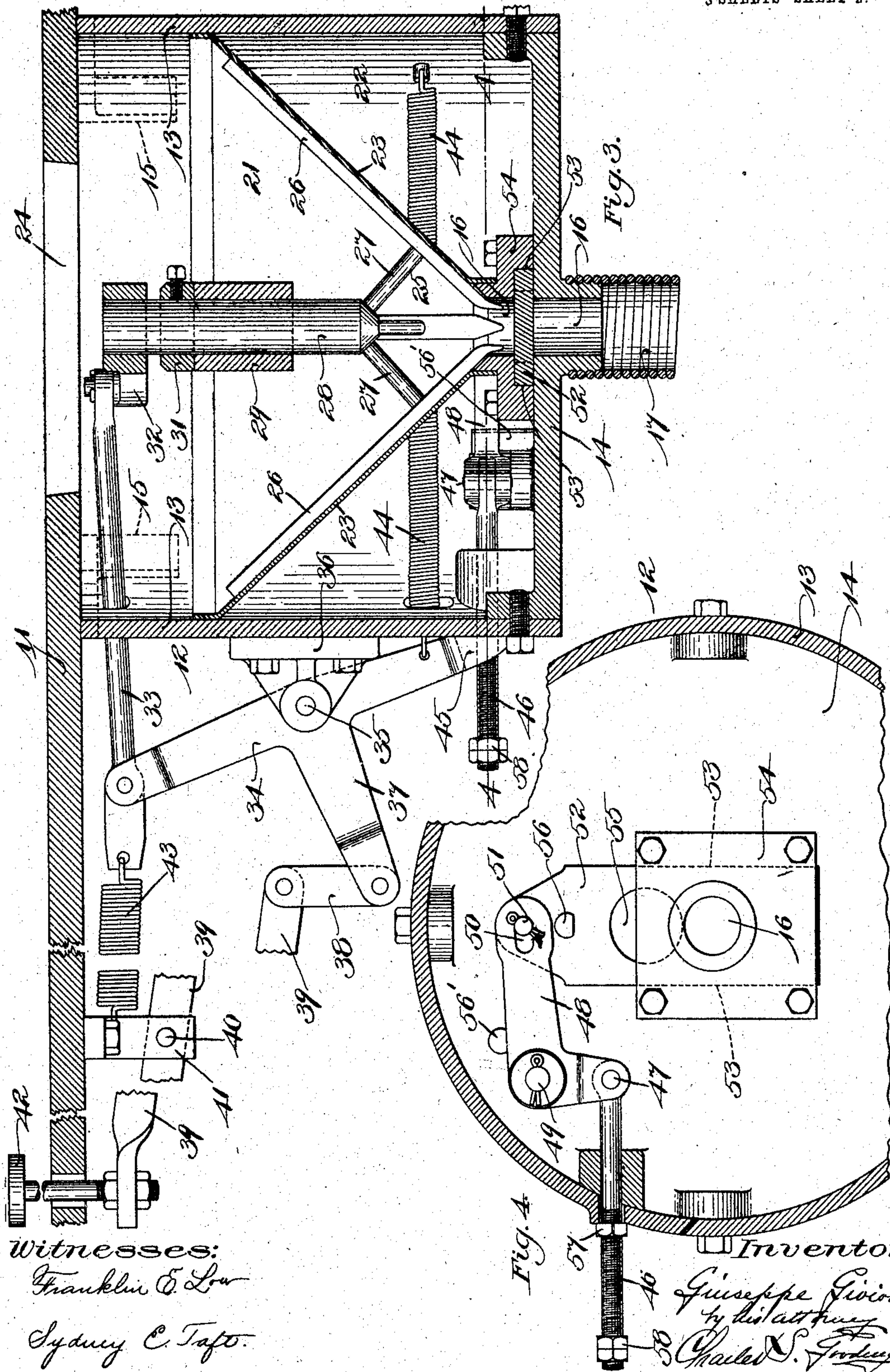


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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

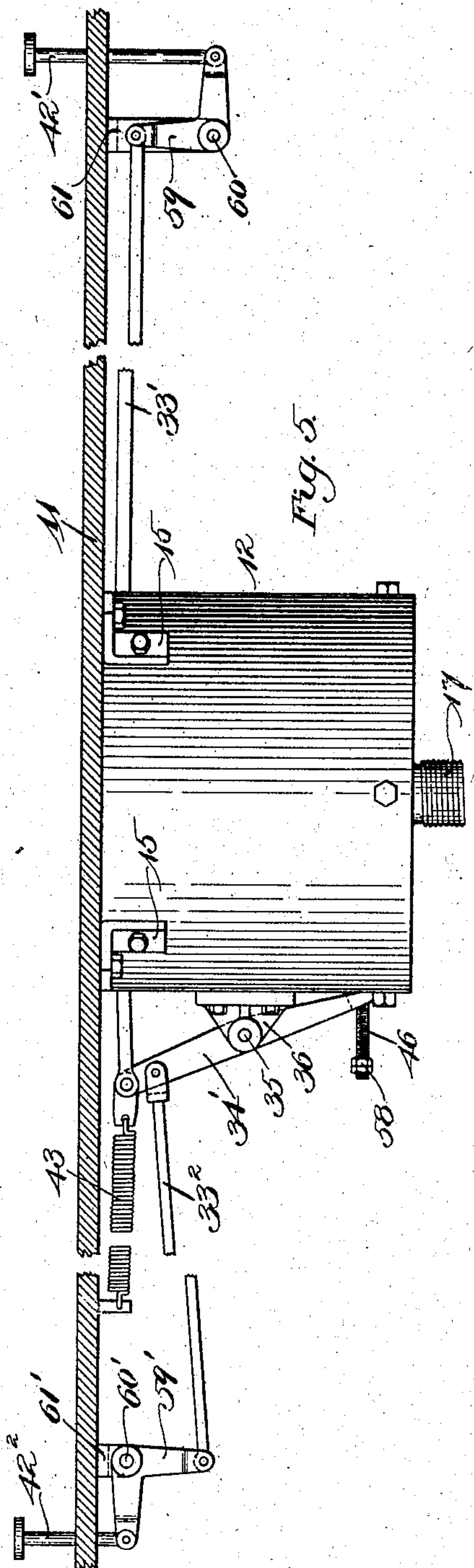


Fig. 5.

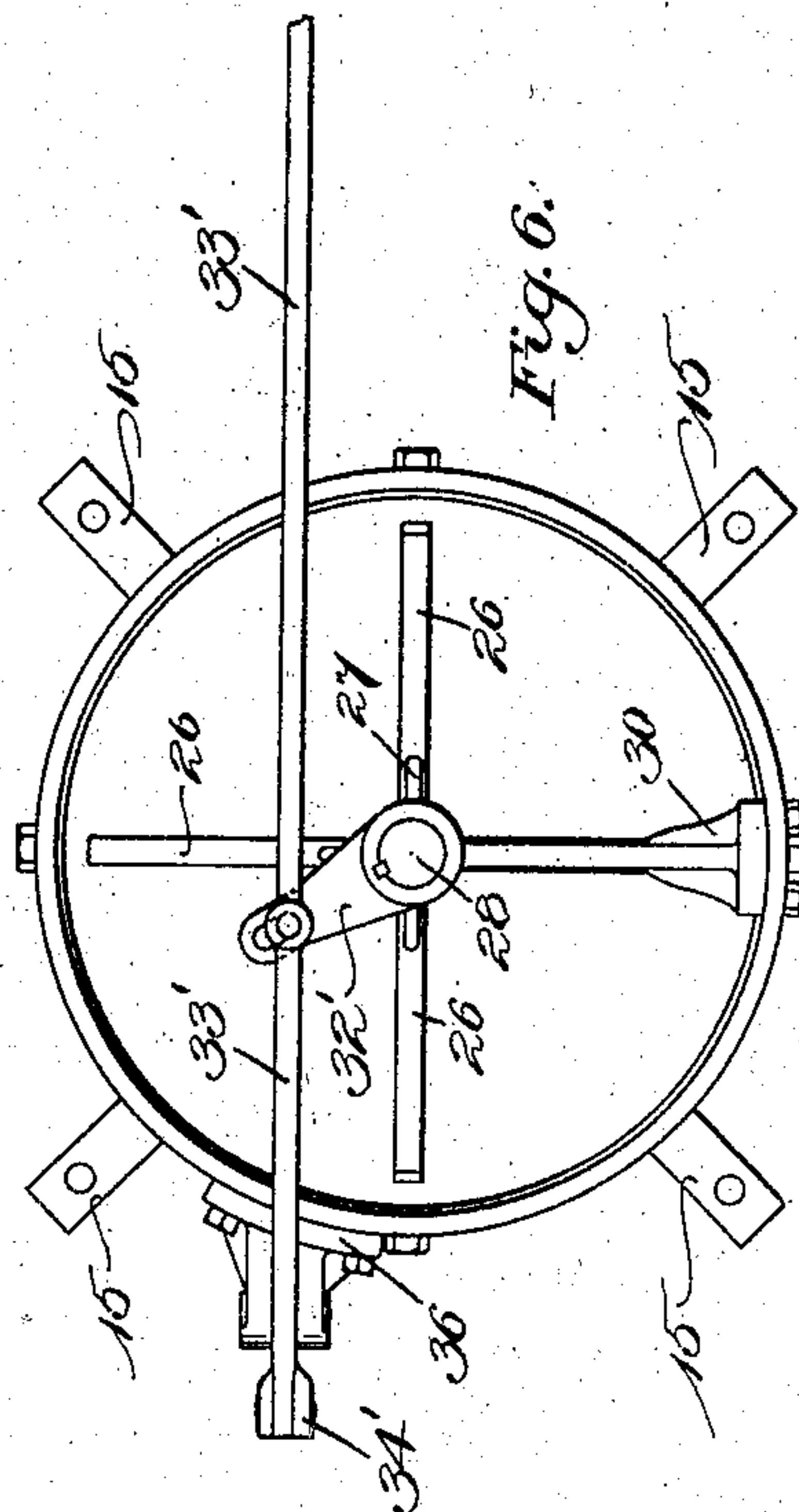


Fig. 6.

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UNITED STATES PATENT OFFICE.

GIUSEPPE GIOIOSA, OF EAST BOSTON, MASSACHUSETTS.

SAND-DISTRIBUTING MACHINE.

No. 796,319.

Specification of Letters Patent.

Patented Aug. 1, 1905.

Application filed March 20, 1905. Serial No. 250,984.

To all whom it may concern:

Be it known that I, GIUSEPPE GIOIOSA, a citizen of the United States, residing at East Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Sand-Distributing Machines, of which the following is a specification.

This invention relates to sand-distributing mechanism for cars, the object of the invention being to provide a strong, durable, and cheaply-constructed mechanism whereby sand may be distributed upon the railway-tracks in advance of the wheels of the car to prevent said wheels from slipping upon the track.

The object of this invention is, further, to provide a device of the character described in which either dry or wet sand may be used without clogging.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a side elevation of a portion of a car with my improved distributing mechanism attached thereto. Fig. 2 is an enlarged plan of the sand-receptacle and the mechanism by which the sand is stirred or agitated in said receptacle. Fig. 3 is a section, partly in elevation, taken on line 3 3 of Fig. 2, illustrating my improved sand-distributing mechanism attached to the floor of a car, the same being partly broken away to save space in the drawings. Fig. 4 is a section, partly in elevation, taken on line 4 4 of Fig. 3, illustrating the slide which opens and closes the bottom of the sand-receptacle and the mechanism by which said slide is operated. Fig. 5 is a side elevation of my improved sand-distributing mechanism, partly broken away to save space in the drawings and showing the same attached to the bottom of a car, said car-bottom being shown in section and broken away, the device being illustrated as operated from both ends of the car. Fig. 6 is a plan view of the sand receptacle and agitator, illustrating the mechanism connected therewith used when the said agitator is intended to be operated from opposite ends of the car.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is a street-car of well-known type, and 11 the floor of said car.

12 is a sand-receptacle having a cylindrical wall 13 and base 14, fastened together and at-

tached to the floor 11 of the car by angle-irons 15. The base 14 of the receptacle 12 has an aperture 16 extending therethrough, which opens into a chute or conductor 17, which is preferably formed of a spiral spring and leads from the bottom of the receptacle 12 to a point directly above the rail of the track in front of the forward wheel 18. In order to keep the lower end of the chute 17 continually over the rail, even when the car is passing around a curve, said lower end is connected by a bracket 19 to the forward end of the truck-frame 20.

The sand-receptacle 12 is divided into an upper and a lower chamber 21 and 22, respectively, by a conical partition 23, said conical partition forming a bottom for the upper chamber, and in said upper chamber the sand to be distributed upon the track is placed, the same being put into said chamber through an opening 24, formed in the floor 11.

An agitator 25 is located in the interior of the chamber 13, said agitator consisting of a plurality of radioconical arms 26, lying adjacent to the partition 23, the lower ends of said arms projecting downwardly into the upper end of the aperture 16. Said arms are connected by braces 27 to a shaft 28, journaled to rotate in the hub 29, forming part of a bracket 30, fast to the wall 13. A collar 31, fast to the shaft 28, regulates the height at which the radioconical arms 26 may be located relatively to the partition 23.

A crank-arm 32 is fast to the upper end of the shaft 28 and is connected by a link 33 to the upper end of a lever 34, pivoted at 35 to a bracket 36, fast to the exterior of the cylindrical wall 13. Said lever has an arm 37 midway between its ends, which is connected by a link 38 to a treadle 39, said treadle 39 being shown broken in the drawing Fig. 3 to save space. The treadle 39 is pivoted at 40 to a bracket 41, fast to the floor of the car, and the left-hand end of said treadle is provided with a foot-piece 42, which is conveniently located to be operated by the foot of the motorman. The lever 34 is rocked in one direction by pressure upon the foot-piece 42 and in the opposite direction by the springs 43 and 44. The lower end of the lever 34 is forked at 45 to straddle a link 46, which is pivotally connected at 47 to a lever 48, pivoted at 49 to the base 14. The lever 48 is slotted at 50, and through said slot projects a pin 51, fast to a slide 52, guided in ways 53, formed in a plate 54, fast

to and forming, in effect, a portion of the base 14. The slide 52 has a hole 55 extending there-through, adapted to aline with the aperture 16 when the slide is moved into correct position therefor. A stop 56, fast to the slide 52, abuts against the plate 54 when the hole 55 is in alinement with the aperture 16, and thus limits the extent of movement of said slide in one direction, and a stop 56', fast to the base 14, limits the movement of the lever 48, and consequently of the slide 52, away from the aperture 16 when they arrive at the position of parts indicated in Fig. 4. The link 46 is screw-threaded and has a stop-nut 57 in screw-threaded engagement therewith at one side of the forked portion 45 of the lever 34 and upon the opposite side is provided with nuts 58, adjustably secured to said link 46.

The form of my invention illustrated in Figs. 5 and 6 is the same as that illustrated in Figs. 1 to 4, inclusive, except that a link 33' connects a lever 34' to the crank-arm 32', said link 33' being pivotally connected at its opposite end to a treadle bell-crank lever 59, pivoted at 60 to a bracket 61, fast to the floor of the car. The treadle bell-crank lever 59 is actuated by a foot-piece 42'. The lever 34' is also connected by a link 33² to a treadle bell-crank lever 59', pivoted at 60' to a bracket 61', fast to the floor of the car, and said treadle bell-crank lever is actuated by a foot-piece 42², pivotally connected thereto at its lower end.

The operation of my improved sand-distributing mechanism is as follows: Assuming the upper chamber 21 to be filled with sand and the slide 52 to be in the position illustrated in Figs. 3 and 4—i. e., with the opening 55 out of alinement with the aperture 16, so that the sand cannot pass downwardly through said aperture into the chute 17—the slide 52 may be moved to bring said opening 55 into alinement with the aperture 16 by depressing the foot-piece 42, thus rocking the treadle 39 upon its pivot 40, raising the link 38, Fig. 3, and rocking the lever 34 by means of the arm 37 upon its pivot 35, thus moving the lower forked end 45 toward the left, Fig. 3, until it contacts with the nuts 58 upon the link 46. A further movement of the foot-piece through the connections hereinbefore referred to will move the link 46 toward the left and rock the lever 48 upon its pivot, carrying the slide 52 forward from the position illustrated in Fig. 4 until the stop 56 abuts against the plate 54 and the opening 55 is brought in alinement with the aperture 16. During this movement of the slide 52 the link 33, Fig. 3, will be moved toward the right, from the position in said figure and from the position illustrated in Fig. 2, rocking the crank-arm 32 and shaft 28, together with the agitator-arms 26, and stirring or agitating the sand contained in the upper chamber 21, so that whether the sand be wet or dry it will be

stirred and agitated in such a manner as to cause it to pass downwardly through the aperture 16 when the opening 55 in the slide 52 is in alinement with said aperture, and after passing through the aperture 16 the sand passes downwardly through the interior of the chute 17 and is deposited on the track in front of the wheels.

It will be noted that the space between the adjacent ends of the nuts 57 and 58 is considerably greater than the width of the forked end 45 of the lever 34, the object of this construction being so that the motorman may rock the lever 34 to a slight extent, thus rocking the agitator 25 through the link connection 33 without moving the slide 52, so that whether the opening 55 is in alinement with the aperture 16 or not the sand in the chamber 21 can be agitated by a slight movement of the foot-piece 42 and treadle 39.

In the form of my invention illustrated in Figs. 5 and 6 the operation is substantially the same as that hereinbefore described in relation to the form of my invention illustrated in Figs. 1 to 4, inclusive, except that the agitator may be worked from either end of the car in the case of the form illustrated in Figs. 5 and 6, and in said form by the motorman pressing upon the foot-piece 42' the link 33' will be moved longitudinally thereof, thus rocking the lever 34' and imparting a reciprocatory motion to the slide 52, rocking to the agitator 25, with the result that the sand will pass through the aperture in the bottom of the sand-receptacle and be conveyed by the chute to the track. If the motorman presses upon the foot-piece 42², the link 33² will be moved longitudinally thereof, thus rocking the lever 34' and imparting a reciprocatory motion to the link 33' and to the slide 52 and a rocking motion to the agitator 25.

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

1. In a sand-distributing machine, a receptacle for sand provided with an aperture in the bottom thereof, a slide extending transversely of said aperture, an agitator journaled to rotate in said receptacle, and mechanism to impart a rocking motion to said agitator, and a reciprocatory motion to said slide, said mechanism adapted to rock said agitator, while said slide remains stationary.

2. In a sand-distributing machine, a receptacle for sand provided with an aperture in the bottom thereof, means to open and close said aperture, an agitator journaled to rotate in said receptacle, and mechanism to impart a rocking motion to said agitator, and to operate said aperture opening and closing means, said mechanism adapted to rotate said agitator, while said aperture opening and closing means remains stationary.

3. In a sand-distributing machine, a receptacle for sand provided with an aperture in

the bottom thereof, a slide extending transversely of said aperture and having a hole extending therethrough, an agitator comprising in its construction a plurality of radial arms journaled to rotate in said receptacle, and mechanism to impart a rocking motion to said agitator, and a reciprocatory motion to said slide, said mechanism adapted to rock said agitator, while said slide remains stationary.

4. In a sand-distributing machine, a receptacle for sand having a conical bottom with an aperture therein, a conical agitator comprising in its construction a plurality of radial arms journaled to rotate in said receptacle, and mechanism to impart a rocking motion to said agitator.

5. In a sand-distributing machine, a receptacle for sand having a conical bottom with an aperture therein, a conical agitator, comprising in its construction a plurality of radial arms adjacent to said conical bottom and projecting at their lower ends into said aperture, journaled to rotate in said receptacle, and mechanism to impart a rocking motion to said agitator.

6. In a sand-distributing machine, a receptacle for sand provided with an aperture in the bottom thereof, a slide extending transversely of said aperture, an agitator journaled to rotate in said receptacle, mechanism to impart a rocking motion to said agitator, mechanism to impart a reciprocatory motion to said slide, a treadle, and a lever connected to said treadle, one end of said lever connected to said agitator-actuating mechanism, the other to said slide-actuating mechanism, the latter connection provided with lost motion between the forward and backward movement thereof and vice versa, whereby a rocking movement may

be imparted to said agitator, while said slide remains stationary.

7. In a sand-distributing machine, a receptacle for sand provided with an aperture in the bottom thereof, a slide extending transversely of said aperture, an agitator journaled to rotate in said receptacle, mechanism to impart a rocking motion to said agitator, mechanism to impart a reciprocatory motion to said slide, a treadle, a lever connected to said treadle, one end of said lever connected to said agitator-actuating mechanism the other to said slide-actuating mechanism, and a spring acting to move said treadle in one direction, the latter connection provided with lost motion between the forward and backward movement thereof and vice versa, whereby a rocking movement may be imparted to said agitator, while said slide remains stationary.

8. In a sand-distributing machine, a car, two treadles at opposite ends, respectively, thereof, a receptacle for sand provided with an aperture in the bottom thereof, a slide extending transversely of said aperture and having a hole extending therethrough, an agitator journaled to rotate in said receptacle, mechanism to impart a rocking motion to said agitator, mechanism to impart a reciprocatory motion to said slide, and a lever connected to said treadles, one end of said lever connected to said agitator-actuating mechanism, the other to said slide-actuating mechanism.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GIUSEPPE GIOIOSA.

Witnesses:

CHARLES S. GOODING,
ANNIE J. DAILEY.