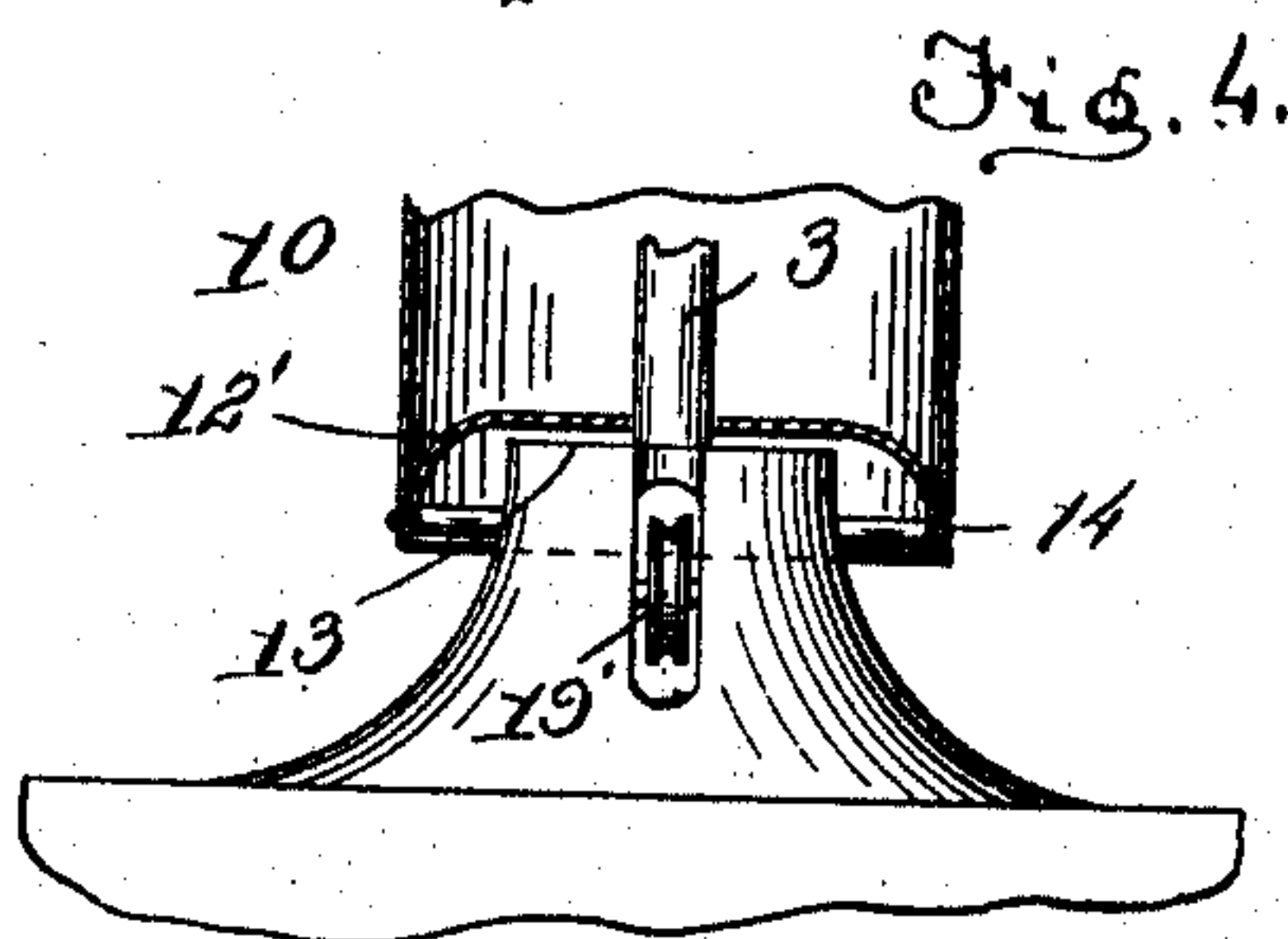
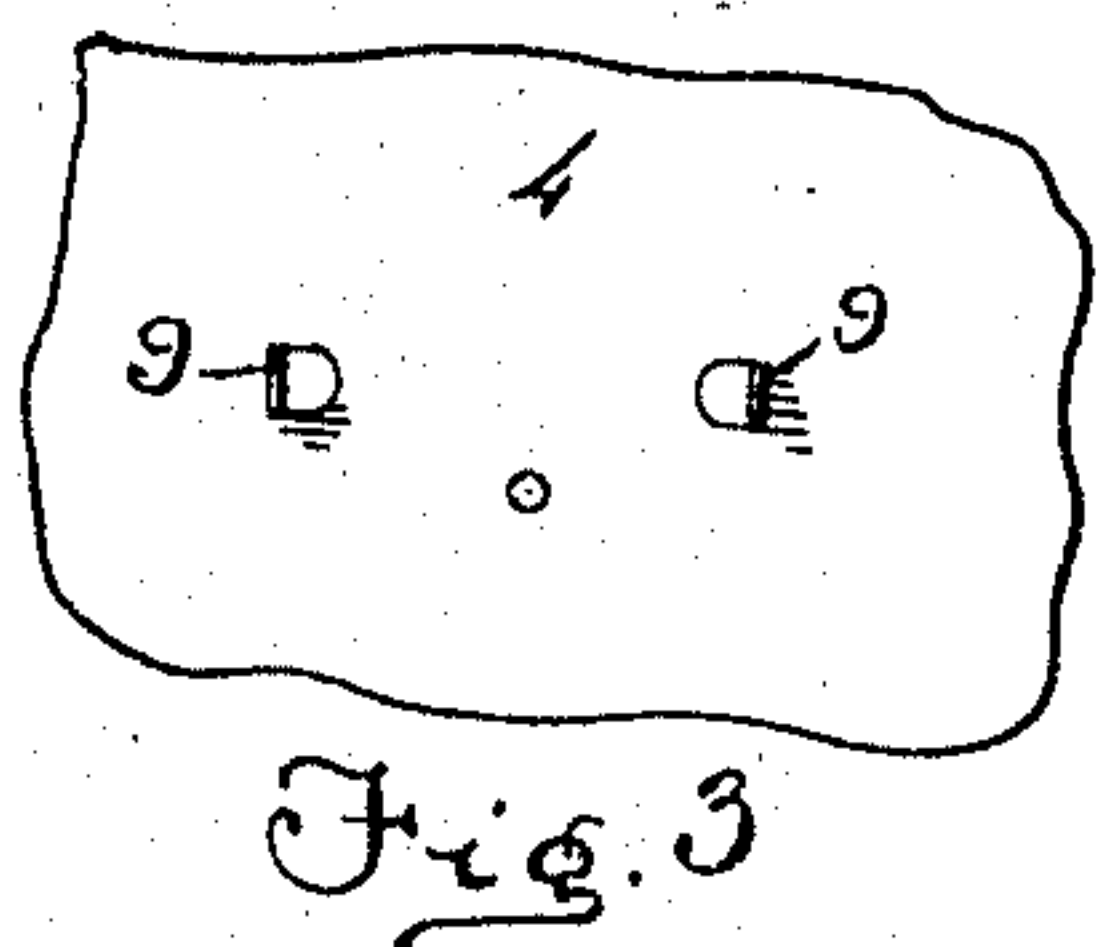
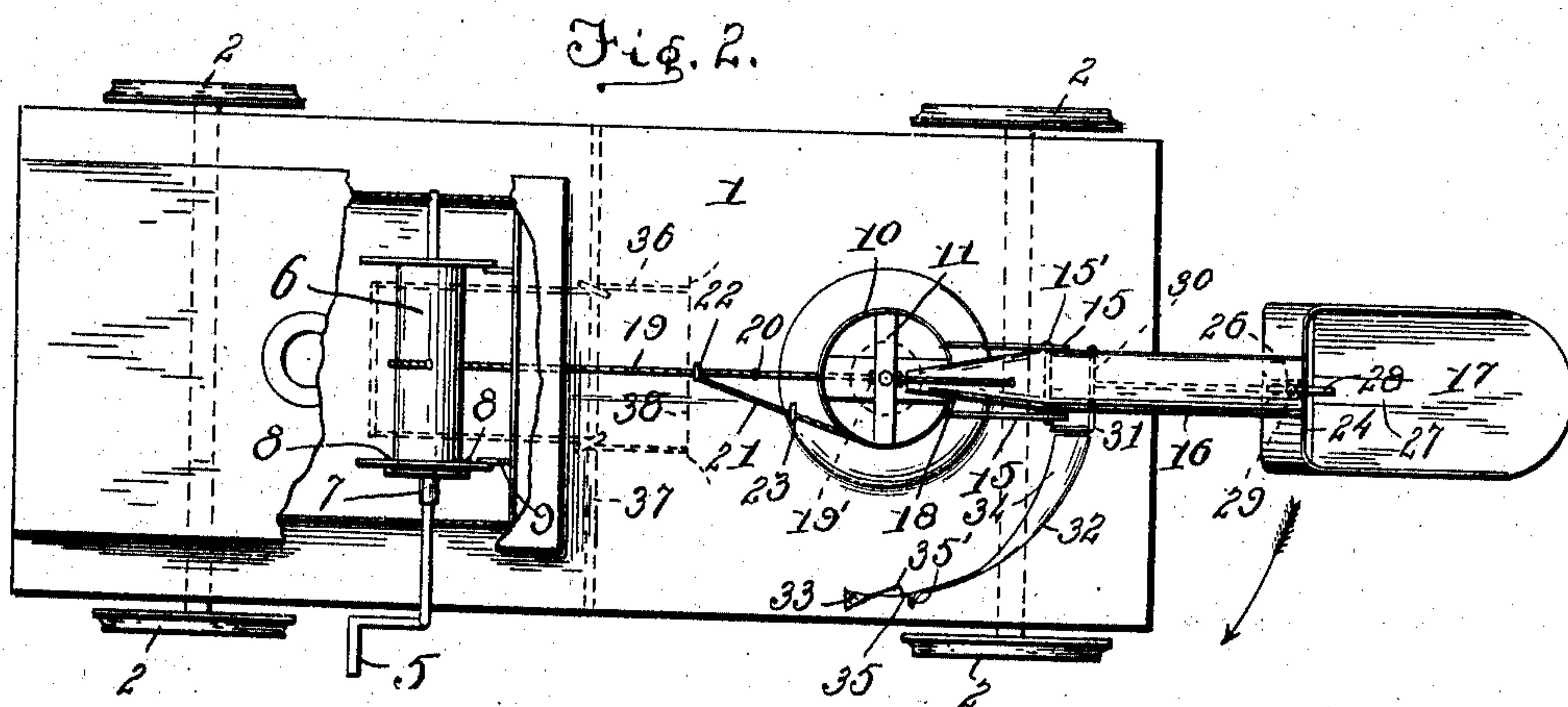
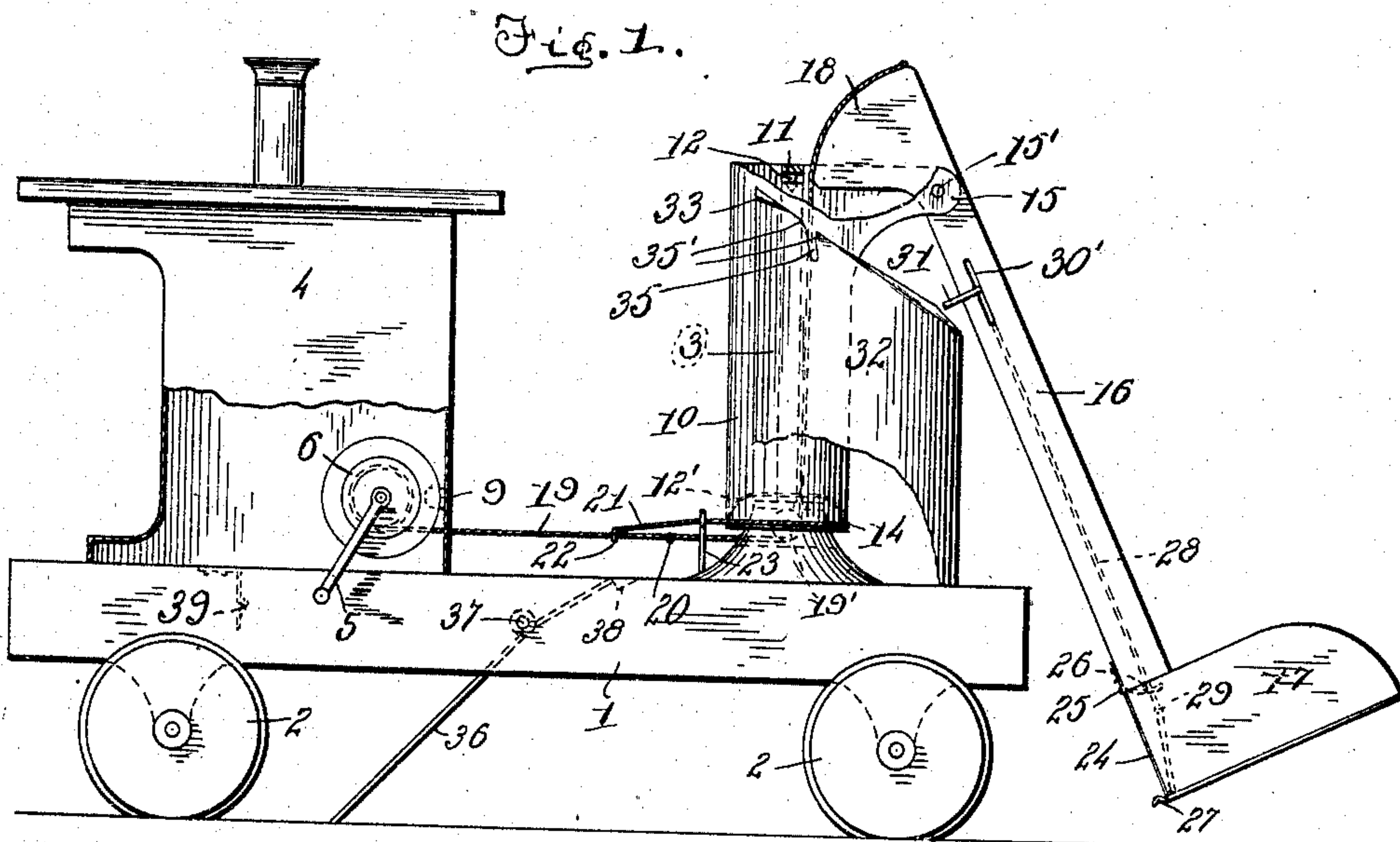


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W. D. GROESBECK.
TOY.

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TOY.

No. 830,783.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER D. GROESBECK, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Toys, of which the following is a specification.

The object of my invention is to produce a cheap, readily-constructed, and interesting toy in the general appearance of a steam-shovel, all movements of filling, lifting, swinging, and dumping of the receptacle or shovel of which will be effected by the motion of a single crank.

One embodiment of my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, having parts broken away to more clearly show the construction. Fig. 2 is a plan view, also showing parts broken away; and Figs. 3 and 4 are detail views hereinafter referred to.

On a suitable base 1, provided with wheels 2, are secured a mast or stud 3 and a housing 4, the latter being an imitation of an engine-house and having journaled in the sides thereof a crank 5, carrying a drum 6. Secured to the crank is a disk or member 7, having struck-up spurs 8, which pass through suitable slots in the end of the drum 6, as clearly shown in Fig. 2. The drum 6, being loosely mounted on the shaft 5, is prevented from endwise movement by the lugs 9, which may be struck up from the forward portion of the housing 4, as clearly shown in Fig. 3. Thus prevented from endwise movement, the drum 6 may be disconnected from the crank 5 by moving the latter laterally, so as to disengage the lugs 8 from the slots in the end of the winding-drum.

Surrounding the stud 3, at the forward part of the base of the toy, is a hollow cylinder 10, having a cross-piece 11, on the lower side of which is provided a conical point which rests in a corresponding conical socket in the top of the stud 3. To prevent lateral movement of the lower part of this cylinder, it is provided with a curved transverse piece 12', having a central perforation sufficiently large to pass over the stud 3, as clearly shown in Fig. 4, and resting near the upper portion 13 of the base 14, in which is secured the stud 3. Pivoted in ears or brackets 15, preferably integral with the cylinder 10, as at 15', is a shovel-beam member 16, carrying the receptacle or shovel 17 at its outer end and

having at its inner end an arc-shaped portion 18 to provide a uniform leverage for the lifting mechanism.

Attached to the top of the member or arm 18 is a cord or wire 19, which for strength and flexibility is preferably composed of a number of very fine wires woven or braided together after the manner of picture-wire. This cord passes downward from the upper end of the shovel-beam, beneath the pulley 19', (clearly shown in Fig. 4,) and thence backward and is attached to the drum 6. At an intermediate point of the cord or wire 19 is a knot or enlargement 20 for a purpose hereinafter described. At a point on the forward side of the curved pulley 14, carried at the lower end of the cylinder 10, is attached a second cord 21, which cord has at its opposite end a ring 22, embracing the cord 19 between the enlargement 20 and the drum 6. The guide 23 may be provided to prevent the cord 21 from leaving the pulley 14.

The shovel member 17 is provided with a swinging door 24, hinged at 25, and having a bifurcated bell-crank member 26 integral therewith and extending within the shovel member 17 or the beam 16, which latter is preferably of an inverted-U shape in cross-section, as will be readily understood. At the lower or outer side of the shovel 17 is a spring-catch 27, which is preferably formed by slitting the metal of the shovel, as shown in Fig. 2, or the spring may be a separate piece secured to the bottom of the shovel member in any suitable manner.

Slidingly mounted in suitable guide-pieces in the beam member 16 is a wire or other suitable device 28, having near the lower end thereof a knot or enlargement 29 to cooperate with the arm 26 of the door member 24 in the manner hereinafter to be described. To the upper end of the wire 28 is secured a cross-piece 30 to act as a guiding means, said cross-piece moving freely in a slot 30', as clearly shown in Fig. 1, and having at one end thereof a downturned portion 31, as shown in both Figs. 1 and 2.

Suitably attached to the base 1 and concentrically surrounding a portion of the drum 10 is a cylindrical member 32, beveled at its top, as clearly shown in Fig. 1, and having at its extreme upper and rearward corner a cam projection 33, while near its lower and forward side it is provided with an inwardly-turned cam-surface 34. Intermediate of these two cam-surfaces is a notch or slot 35,

having at each side thereof projections turned the one inwardly and the other outwardly, as best shown in Fig. 2.

In order to prevent the backward movement of the toy upon its track or support, I provide a U-shaped brace member 36, pivoted on a rod 37, as shown in Fig. 1 and in dotted lines in Fig. 2, and having the upper ends thereof adapted to rest against a lug 38. When not in use, this brace member may be lifted and secured beneath the base 1 by passing it over the catch 39. (Shown in dotted lines in Fig. 1.)

The operation of the device is as follows: Taking the parts in the positions shown in Figs. 1 and 2, the crank 5 is turned, which will operate to lift the shovel with its load of sand or other material in the vertical plane of its axis, as shown in the position in Fig. 2, until the knot 20 of the lifting member 19 contacts with the ring 22 on the cord or wire 21. Thereafter both cords or wires will move rearwardly together, giving the shovel member both an upward lift and a lateral swing in the direction shown by the arrow in Fig. 2. As the shovel swings to its extreme rearward position the downturned end 31 of the wire 28 will contact with the cam 33, thrusting the wire 28 outwardly and releasing the catch 27 to permit the door 24 to drop and discharge the contents of the shovel. As soon as the shovel is dumped the crank 5 is drawn out longitudinally, disengaging the spurs 8 from the end of the drum 6, whereupon the shovel will drop on the inclined upper edge of the guide member 32 and will be carried downward and swung backward to its original position, the member 31 being in the meantime guided through the notch 35 by the outwardly-turned cam-piece 35' and by its further swing contact with the inner edge of the cam-surface 34, thus raising the wire 28 through a somewhat greater distance than it was formerly thrust outward, bringing the notch or enlargement 29 in contact with the forked portion 26 of the door member 24 and quickly swinging the latter upwardly to its closed position. It will thus be seen that all the necessary motions of loading, lifting, swinging, and dumping the shovel are effected by simply turning the crank 5 and that by disengaging the latter from the drum 6 the shovel swings backward to its first position by its own weight and the door is automatically closed to provide it for lifting a new load.

Many changes may be made in the details of my device without departing from the spirit of my invention, since

What I claim is—

1. In a toy, a receptacle, a single lifting-cable therefor, and means operated from said cable for first moving said receptacle to fill the same and then moving it in a plurality of planes.

2. In a toy, a receptacle, a single lifting-cable therefor, and means operated from said cable for giving said receptacle motion first in a single plane and then in a plurality of planes.

3. In a toy, a receptacle, a single cable, and means operated from said cable for lifting and swinging said receptacle.

4. In a toy, a dumping-receptacle, a single winding-drum, and means operated therefrom for lifting, swinging and dumping said receptacle.

5. In a toy, a dumping-receptacle, means for lifting, swinging and opening said receptacle, means for returning said receptacle to its initial position and automatically reclosing it during said return movement; substantially as described.

6. In a toy, a dumping-shovel, a single member for lifting, swinging and opening said shovel, and gravity-operated means for reclosing said shovel and returning it to its initial position; substantially as described.

7. In a toy, a movable receptacle, pivoted means for preventing the movement of the main frame of the toy during the operation of the receptacle and a catch for holding said means in inoperative position; substantially as described.

8. In a toy, a dumping-shovel, a single lifting-cable therefor, and means operated from said lifting-cable, for swinging and dumping said shovel after it has been given a limited movement in a single plane; substantially as described.

9. In a toy, a shovel having a door, means for lifting and swinging said shovel and automatic means for opening said door at a predetermined point in the swing of said shovel; substantially as described.

10. In a toy, a shovel having a latch-supported door, means for lifting and swinging said shovel, a stationary cam and means operated thereby for retracting said latch at a predetermined point in the swing of said shovel; substantially as described.

11. In a toy, a shovel having a drop-door, means for holding said door in closed position, means for filling, lifting and swinging said shovel, a stationary member having a stationary cam-surface, intermediate means actuated by said cam-surface for disengaging said door-holding means at a predetermined point in the swing of said shovel, and a second cam-surface on said stationary member for actuating said intermediate means to close said door upon the return of the shovel to its initial position; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER D. GROESBECK.

Witnesses:

EDWIN S. CLARKSON,
ROBERT WATSON.