

**Sept. 15, 1925.**

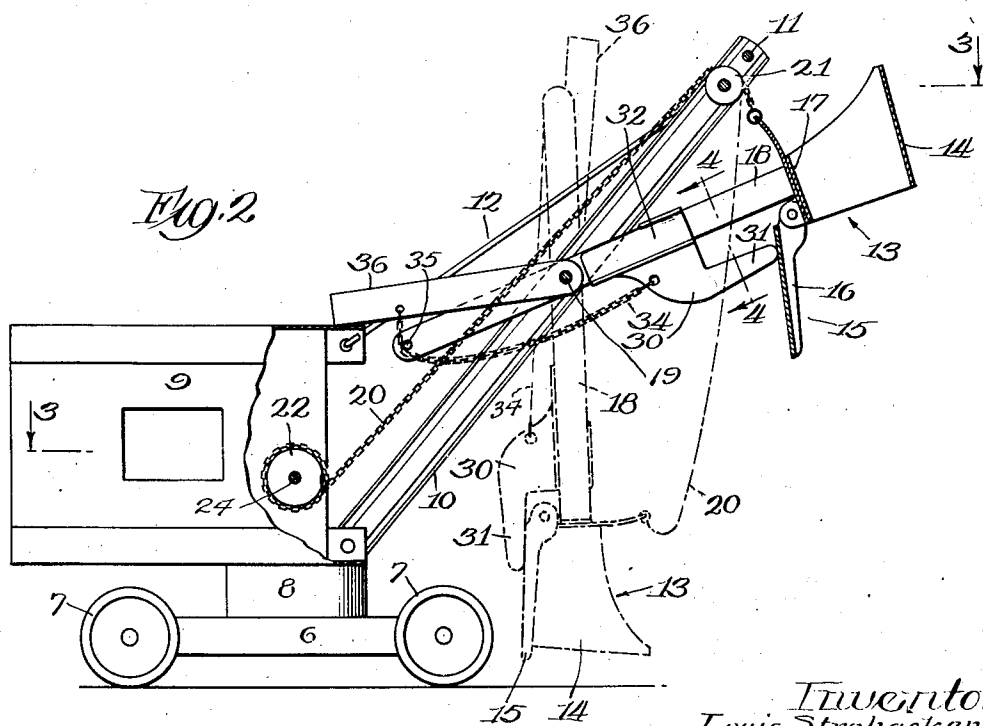
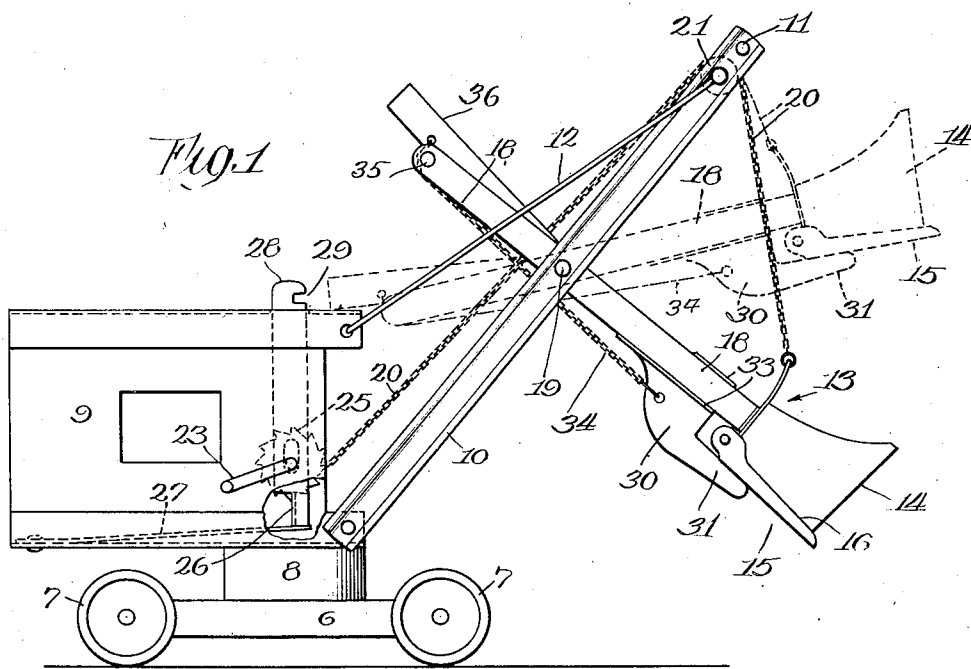
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**L. STROHACKER**

TOY STEAM SHOVEL

Filed Sept. 12, 1924

2 Sheets-Sheet 1



Sept. 15, 1925.

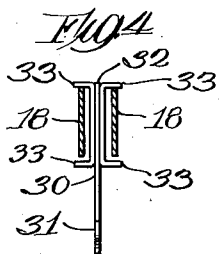
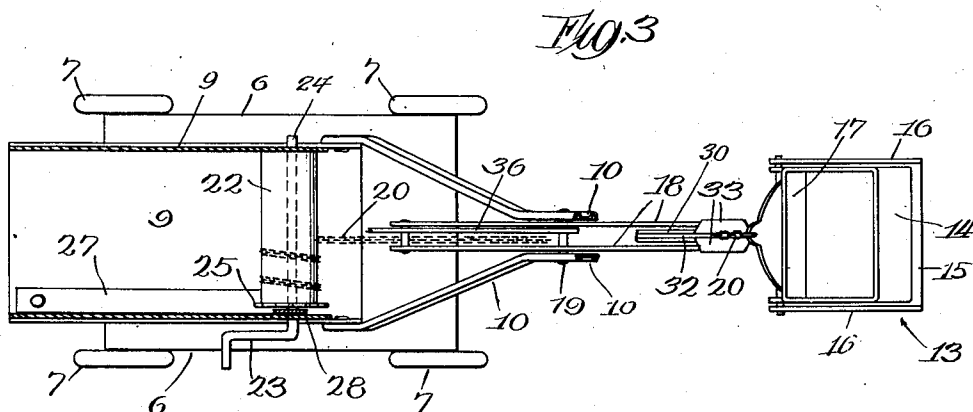
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TOY STEAM SHOVEL

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE.

LOUIS STROHACKER, OF FREEPORT, ILLINOIS, ASSIGNOR TO STRUCTO MANUFACTURING COMPANY, OF FREEPORT, ILLINOIS, A CORPORATION OF ILLINOIS.

## TOY STEAM SHOVEL.

Application filed September 12, 1924. Serial No. 737,270.

*To all whom it may concern:*

Be it known that I, LOUIS STROHACKER, a citizen of the United States, and a resident of Freeport, Stephenson County, and State of Illinois, have invented certain new and useful Improvements in Toy Steam Shovels, of which the following is declared to be a full, clear, and exact description.

This invention relates to toy steam shovels and its principal object is to provide an amusing, entertaining and instructive toy for children, and which shall simulate the action of a steam shovel or dredge, so far as it picks up a load, elevates it and dumps it. Another object is to provide a toy which is simple in construction, and which can be manipulated by young children, who have no particular skill or experience with mechanical appliances. With these ends in view, this invention consists in a toy having a mast or boom, a shovel supported thereby, and having a scoop provided with a trap door which may be opened to discharge the contents of the shovel, and manually operated shovel and trap door actuating mechanism operated from and by one drum. It further consists in a toy as set forth wherein the drum may be rotated in one direction to lower the shovel, close the trap door, raise the shovel and dump the load, and also turned in the reverse direction to accomplish the same result. It further consists in a toy as above set forth having a pawl and ratchet mechanism whereby the shovel may be held in any raised position. It further consists in the several novel features hereinafter fully set forth and claimed.

The invention is clearly illustrated in the accompanying drawings, in which:—

Fig. 1 is a side elevation of a toy steam shovel embodying a simple form of the present invention; Fig. 2 is a side elevation, partly broken out, showing the operative parts in different positions; Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2; and Fig. 4 is a cross section taken on line 4—4 of Fig. 3.

Referring to said drawings, which illustrate one embodiment of the present invention, the reference character 6 designates a platform, mounted on wheels 7, and having a turn table 8 secured thereon, on which is swiveled a housing or cabin 9. These parts

may be made of light metal work formed up and secured together in suitable manner. They comprise the body portion of the toy.

Secured to the front end of the bottom part of the cabin, and projecting upwardly in an oblique direction therefrom, is a mast or post 10 which is formed of two companion struck up, channel like members, that incline toward each other from the sides of the cabin (see Fig. 3) and then run parallel with each other to their outer ends, where they are spaced apart and secured together by a rivet 11. Oblique brace rods 12 run from the top of the cabin 9 to the end portion of the mast and rigidly hold said mast in its inclined position.

Fulcrumed to the mast 10 approximately midway between its ends is the shovel 13 which is capable of movement upon its fulcrum from the position shown in dotted lines in Fig. 2 to that shown in full lines in the same figure. In its preferred form the shovel comprises a rectangular box like scoop or receptacle 14 open at the front and back and having a trap door or bottom 15 hinged at the back to ears contained on the walls of the receptacle. Preferably the sides of the trap door or bottom are bent up to form flanges 16 that come up over the lower edges of the side walls of the scoop. Secured to and projecting from an end wall 17 of the scoop is an arm 18, preferably formed of two spaced strips or bars and said arm extends between the two channel like members of the mast 10 and are pivotally secured thereto by a pin or rivet 19. The length of the arm, beyond its pivot point is such that it clears the top of the cabin (see Fig. 2) when the scoop 14 of the shovel is swung to its uppermost position. A chain or other flexible connection 20, secured to the end wall 17 of the shovel receptacle 14, is trained over a sheave 21, journaled at the upper end of the mast, and runs to a drum 22, contained in the cabin, and operated by a crank 23. The chain 20 is fastened to the drum, and the drum is mounted on and fastened to a rod 24, which extends through the side walls of the cabin and is bent up to form the crank 23. The crank may be turned in one direction to wind up the chain 20, on the drum, thereby raising the shovel. The chain may then be unwound to lower the

shovel to the position shown in dotted lines in Fig. 2 and rewound on the drum, thereby raising the shovel to its uppermost position, by continuing to turn the crank in one direction.

In accordance with one phase of the invention a ratchet wheel 25 is secured to the crank shaft or drum and a spring pressed pawl 26 is secured in the cabin and engages with said ratchet wheel, whereby the ratchet wheel and therewith the drum may be held against retrograde rotation. The shovel is thereby held in any position in which it is raised. The spring 27 may be separate from the pawl, and the pawl may be formed on the lower end of a pawl disengaging finger bar 28, which extends down through a slot in the top or roof of the cabin, to the spring 27. The finger bar 28 is formed with a slot through which the crank shaft extends and guides the lower end of the bar, and the upper end of the bar is formed with a notch 29 adapted for engagement with the top or roof portion of the cabin. By pushing the bar 27 down and engaging the notch with the roof, the pawl is held disengaged from the ratchet wheel, and the drum may thereby be rotated in either direction. When the ratchet wheel is engaged by the pawl, the ratchet is released by pressing down on the bar 28.

Means are provided for locking and holding the trap door or bottom 15 of the scoop closed and for automatically releasing it from its closed, locked position, and the means shown will now be described.

Mounted on the arm 18 is a gravity latch 30 which has a finger 31 that is arranged to underlie the trap door or bottom 15, in one position of the latch 30 and thereby hold the trap door in closed, locked position. In the form of latch shown, the latch has a shank portion 32 which extends loosely, between and parallel with the two members of the arm 18. The latch 30 is guided to move longitudinally along the arm from the position seen in dotted lines in Fig. 2, where it locks the trap door closed, to that shown in full lines in the same figure where it releases or unlocks the trap door and permits it to swing open under the influence of gravity. The location and exact construction of the latch is immaterial to this invention, broadly considered, but it has been shown in this form for the purposes of illustration only. In the present form the latch is guided to move lengthwise of the arm 18 by flanges 33, which are secured on and project from the two side edges of the shank 32, and embrace the two members of the arm 18 between them. The latch is free to slide along the arm and the trap door, and the edge of the finger which engages the trap door extends at a slight angle to the length of the arm to enable the finger to freely engage the bottom

face of the trap door. When the shovel is lowered from the position seen in full lines in Fig. 2 to that shown in dotted lines in the same figure, the trap door swings shut by gravity and the latch drops by gravity, sliding along the arm 18, until the finger engages with the underside of the closed trap door.

For unlocking the trap door a release mechanism is provided, which in the form illustrated, comprises a chain 34 secured to the latch 30, and trained around a pin 35, at the end of the shovel arm 18, and secured to a trigger member 36, which is pivotally connected with the arm 18 as for instance by the pin 19. The trigger member 36 normally rests on the pin 35 and is of sufficient length to strike upon the top or roof of the cabin 9 whenever the shovel approaches its uppermost position. The chain 34 is fairly tight and when the trigger member strikes against the top of the cabin, its movement is arrested, whereas the adjacent end of the shovel arm 18 continues downward, as its other end moves upward, the result being that as the pin 35 on the arm 18 moves downward, it bends the chain out of a straight line and shortens the distance between the points of attachment of the chain to the trigger 36 and latch 30. The latch is thereby disengaged from the trap door and the latter is thereby permitted to drop.

In the operation of the toy above described the person turns the crank and winds the chain 20 upon the drum and unwinds it therefrom, thereby raising and lowering the shovel. Fig. 1 shows the shovel in full lines at a point intermediate its extreme upper and lower positions, with the trap door closed. As the scoop approaches its uppermost position, the trigger strikes against the roof of the cabin, and stops, while the shovel arm continues to move, thereby bearing down on the trigger chain 34 and releasing the latch to open and dump the contents of the scoop. This position of the parts is shown in full lines in Fig. 2. By turning the drum in the reverse direction, the shovel is lowered, the trigger released, and the latch falls by gravity and holds the trap door in locked position.

Among the advantages of this toy are its simplicity of construction and its mode of operation. Children can operate it without any difficulty. It is strong and substantial and not likely to get out of order. It is an amusing, an interesting and instructive toy.

More or less variation of the exact details of construction is possible without departing from the spirit of this invention; I desire, therefore, not to limit myself to the exact form of the construction shown and described, but intend, in the following claims, to point out all of the invention disclosed herein.

I claim as new, and desire to secure by Letters Patent:

1. A toy comprising a body portion, having a mast extending up therefrom, a shovel fulcrumed on said mast, and having a scoop at one end, the discharge opening of which is controlled by a trap door, a sliding latch having a relatively long finger formed with an inclined door engaging edge adapted to underlie and support the trap door in closed position, a drum mounted on said body portion, a flexible connection between said drum and shovel, and means controlled by the movement of said shovel for actuating said latch to unlock the trap door.
2. A toy comprising a body portion, having a mast extending up therefrom, a shovel fulcrumed on said mast, and having a scoop at one end, the discharge opening of which is controlled by a gravity trap door, a sliding gravity latch having a relatively long finger formed with an inclined door engaging edge adapted to overlie and support the trap door in closed position, a drum mounted on said body portion, a flexible connection between said drum and shovel, and means controlled by the movement of said shovel for actuating said latch to unlock the trap door.
3. A toy comprising a body portion, having a mast extending up therefrom, a shovel having an arm fulcrumed on said mast, and a scoop on one end of said arm, the discharge opening of which is controlled by a gravity trap door, a gravity latch slidably mounted on said shovel arm and having a relatively long door engaging finger formed with an inclined edge, arranged to locking-ly engage said trap door, a drum mounted on said body portion, a flexible connection between said drum and shovel and a latch actuating trigger carried by said shovel arm, and connected to said latch.
4. A toy comprising a body portion, having a mast extending up therefrom, a shovel having an arm fulcrumed on said mast, and a scoop on one end of said arm, the discharge opening of which is controlled by a gravity trap door, a gravity latch mounted on said shovel arm and arranged to locking-ly engage said trap door, a drum mounted on said body portion, a flexible connection between said drum and shovel, a latch releasing trigger fulcrumed on said shovel arm, a flexible connection between said trigger and latch, and a member on said shovel arm under which said flexible connection between the trigger and latch is trained, said trigger being arranged to engage a stationary element of the toy to thereby release the latch.
5. A toy comprising a support, a shovel fulcrumed on said support and having a scoop at one end, the discharge opening of which is controlled by a trap door, a sliding latch having a relatively long finger arranged to underlie and engage with said trap door to support and hold the same closed, and shovel and latch actuating means.
6. A toy comprising a support, a shovel having a shovel arm fulcrumed on said support and a scoop at one end of the arm, the discharge opening of which is controlled by a trap door, a sliding latch slidably mounted on said shovel arm and having a relatively long finger arranged to underlie and engage with said trap door to support and hold the same closed, and shovel and latch actuating means.
7. A toy comprising a support, a shovel fulcrumed on said support and having a scoop at one end, the discharge opening of which is controlled by a trap door, a sliding latch having a finger adapted to underlie the trap door and support the same in closed position, and shovel and latch actuating means.

LOUIS STROHACKER.