July 12, 1927. 1,635,978

J. A. ROSS

TOY PUMP

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Fig. 1.

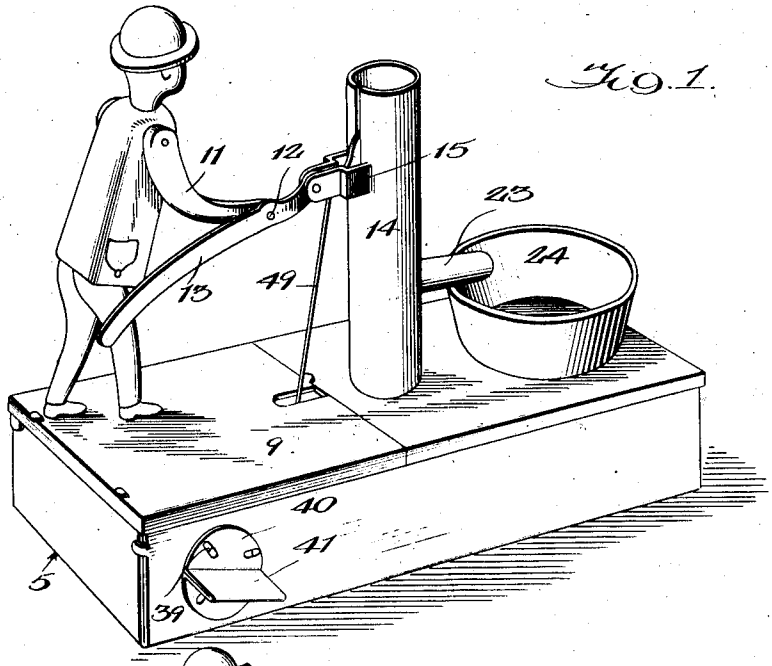
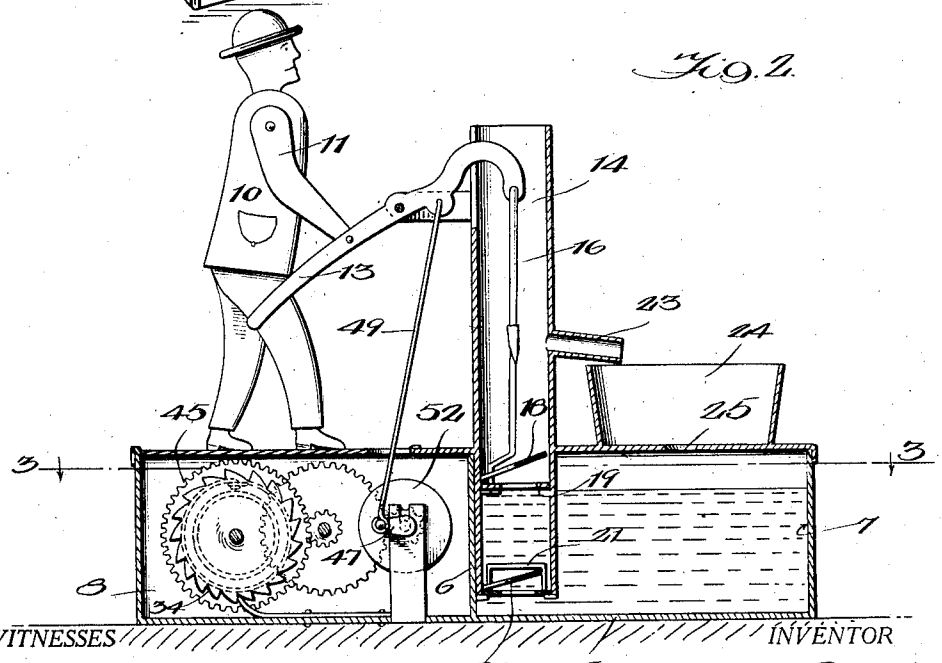


Fig. 2.



WITNESSES

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Fig. 3.

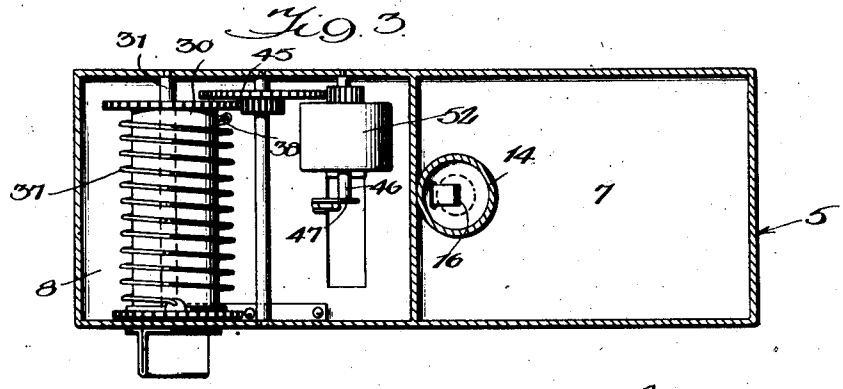


Fig. 4.

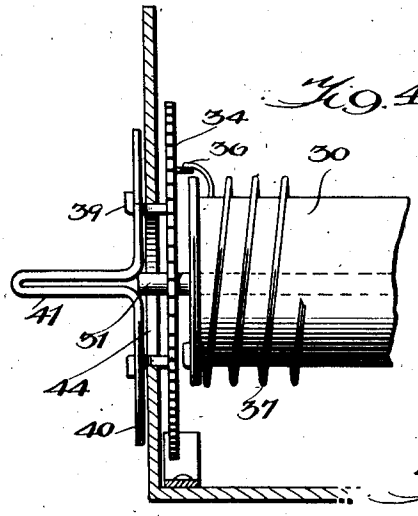


Fig. 5.

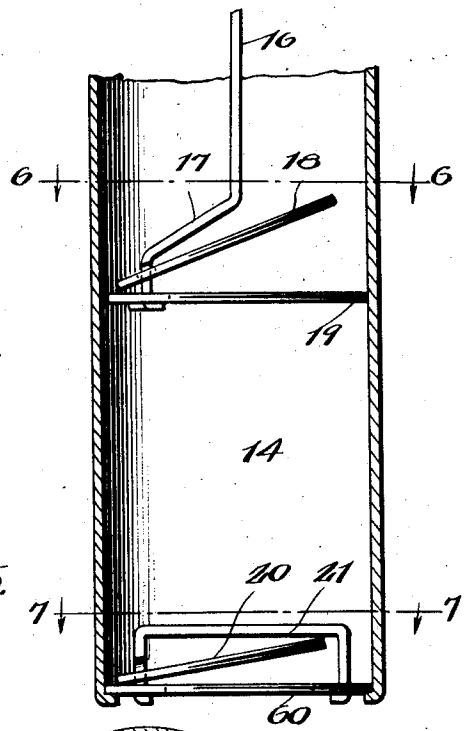


Fig. 6

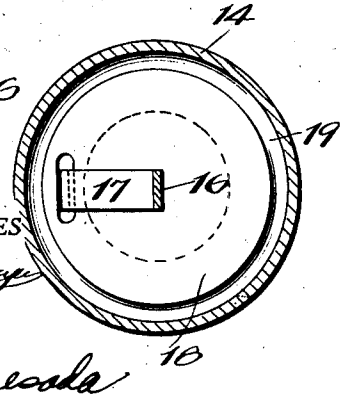
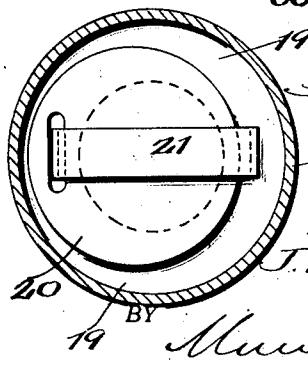


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

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TOY PUMP.

Application filed December 28, 1923. Serial No. 683,218.

This invention relates to toys and more particularly to a toy pump.

Briefly stated an important object of this invention is to provide a toy pump wherein the spring motor and the other parts of the structure are securely and positively held in position, so that the toy will withstand the hard usage to which devices of this character are subjected.

A further object is to provide a toy pump wherein the movement of the water to the pump will retard the action of the spring motor whereby to overcome the necessity of an elaborate escapement mechanism.

A further object is to provide a toy pump which is extremely simple to operate, durable in use and attractive in appearance.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective of the improved pump,

Figure 2 is a longitudinal sectional view through the same,

Figure 3 is a horizontal sectional view taken on line 3—3 of Figure 1.

Figure 4 is a detail sectional view illustrating the connection between the spring supporting drum and the winding means.

Figure 5 is a detail sectional view illustrating a pair of one-way valves embodied in the invention.

Figure 6 is a horizontal sectional view taken on line 6—6 of Figure 5.

Figure 7 is a horizontal sectional view taken on line 7—7 of Figure 5.

In the drawing wherein for the purpose of illustration is shown a preferred embodiment of the invention the numeral 5 generally designates a casing which as illustrated in Figure 2 is provided with a transverse partition 6, dividing the casing into a reservoir 7 and a motor chamber 8. The casing is also provided with a cover 9 constituting a platform upon which a figure 10 is mounted. The figure 10 is preferably in the form of a man and is provided with pivoted arms 11 one of which is connected as indicated at 12 to the handle 13 of a pump 14.

The handle 13 is pivotally connected to one or more brackets 15 and has connection with a pump plunger 16 the said pump plunger being extended through the tubular member 14 and having its lower end offset as indicated at 17 and connected to a flap-valve or one-way valve 18. The lower portion of the plunger 16 is also connected to the seat 19 of the valve and during the reciprocation of the plunger 16 the valve 18 and the seat 19 are operated so as to bring about the flow of water.

Figure 5 illustrates that a foot valve 20 is located in the lower portion of the barrel or casing 14 and has connection with one of the legs of a U-shaped yoke 21.

In operation the plunger 16 is reciprocated and water is drawn from the reservoir 7 into the lower portion of the casing 14 and the operation of the valves causes the water to flow up in the casing and out through the spout 23 into the tub or inlet 24. Figure 2 illustrates that the bottom of the tub 24 is formed with an opening 25 by means of which the water is permitted to return to the reservoir 7.

The spring motor comprises a drum 30 extended across the rear portion of the chamber or compartment 8 and having bearing pins 31. With particular attention to Figure 4, it will be seen that a ratchet wheel 34 is rotatably mounted upon one of the pins 31 and is provided with an outwardly projecting lug 36 to which one end of the coil spring 37 is connected. The other end is anchored to the drum 30 as indicated at 38.

In carrying out the invention the ratchet wheel 34 is provided with a plurality of spaced struck-out lugs 39 extended through openings 40 of the base of the winding key 41. The base 40 is arranged exteriorly of the casing and is securely connected to the ratchet wheel by the lugs 39 so that rotation of the key 41 will be imparted to the ratchet wheel.

It might be stated that the winding key 41 is formed from a single length blank of material bent upon itself intermediate its ends to define a finger grip portion and having its end portions extended laterally to provide the base 40. Figure 4 illustrates that one of the side walls is provided with an opening 44 to receive the lugs 39 and without engaging the wall 44 so as to hold the drum 30 and with winding key in position.

One end of the drum 30 has connection

with a train of gears 45 and as illustrated in Figure 3 one of the gears of the train 45 is mounted upon the shaft 46. The shaft 46 is provided with a crank 47 to which a pitman rod 49 is connected. Figure 2 illustrates that the upper end of the pitman rod 49 is pivotally connected to the handle 13.

In carrying out the invention a balance wheel 52 is secured on the shaft 46 and serves to swing the crank 47 beyond dead center on each stroke of the piston rod and the balance wheel 42 also makes the operation of the motor uniform.

In operation a quantity of water is poured into the reservoir through the opening 25 until the reservoir is full and until the tub is about half-full. The filling operation is to be finished while the pump is operating and the operation of the several valves sets up a constant circulation of water. It will be seen that the openings 19 and 60 may be varied so as to control the quantity of water pumped and by increasing the quantity of water pumped, the action of the spring motor is slowed down. This prevents the motor from unwinding rapidly.

Of course the spring motor is first wound up by the operation of the key 41 a power of the spring is utilized to operate the pitman rod 49. When the pitman rod 49 is operated the figure 10 is moved in a manner to represent a person pumping the pump.

A pump constructed in accordance with this invention is extremely durable and is capable of withstanding the hard usage to which devices of this character are subjected. Furthermore, because of the fact that this toy actually pumps water, the toy will be a source of amusement to both young and old.

Having thus described the invention, what is claimed is:

1. A toy pump comprising a substantially closed casing having means within the same defining a substantially closed reservoir and a substantially closed motor compartment, a receptacle on the top of the casing communicating with the reservoir, a tubular member extending above the casing and receptacle down into the reservoir, said tubular member having a spout discharging into the receptacle, the portion of the tubular member above the casing representing a pump body, reciprocable means within the tubular member for elevating water from the reservoir through the tubular member to the spout, a handle mounted on the tubular member and connected with the reciprocable means, a figure having a movable member associated with the handle for apparently actuating the same, and a motor concealed within the casing and operatively associated with the reciprocable means for reciprocating the reciprocable means.

2. A toy pump comprising a substantially closed casing, a transverse partition arranged within the casing and dividing the interior of the casing into a substantially closed reservoir and a substantially closed motor compartment, a tubular member extending down into the reservoir and projecting above the casing to present a pump body, said tubular member having discharge means, valves arranged in the tubular member, a plunger connected to one of the valves, a handle connected to the plunger, a figure having a pivoted member connected to the handle for apparently actuating the same, a pitman rod connected to the handle and extending down into the motor compartment, and a motor arranged and concealed in said motor compartment and connected to said pitman rod whereby the pump is operated to actually elevate the water.

JOSEPH A. ROSS.