

S. W. NETHERTON.  
 FLOAT CONTROLLED SWITCH FOR FILLING TANKS.

APPLICATION FILED AUG. 9, 1907.

Patented Mar. 23, 1909.

2 SHEETS—SHEET 1.

916,183.

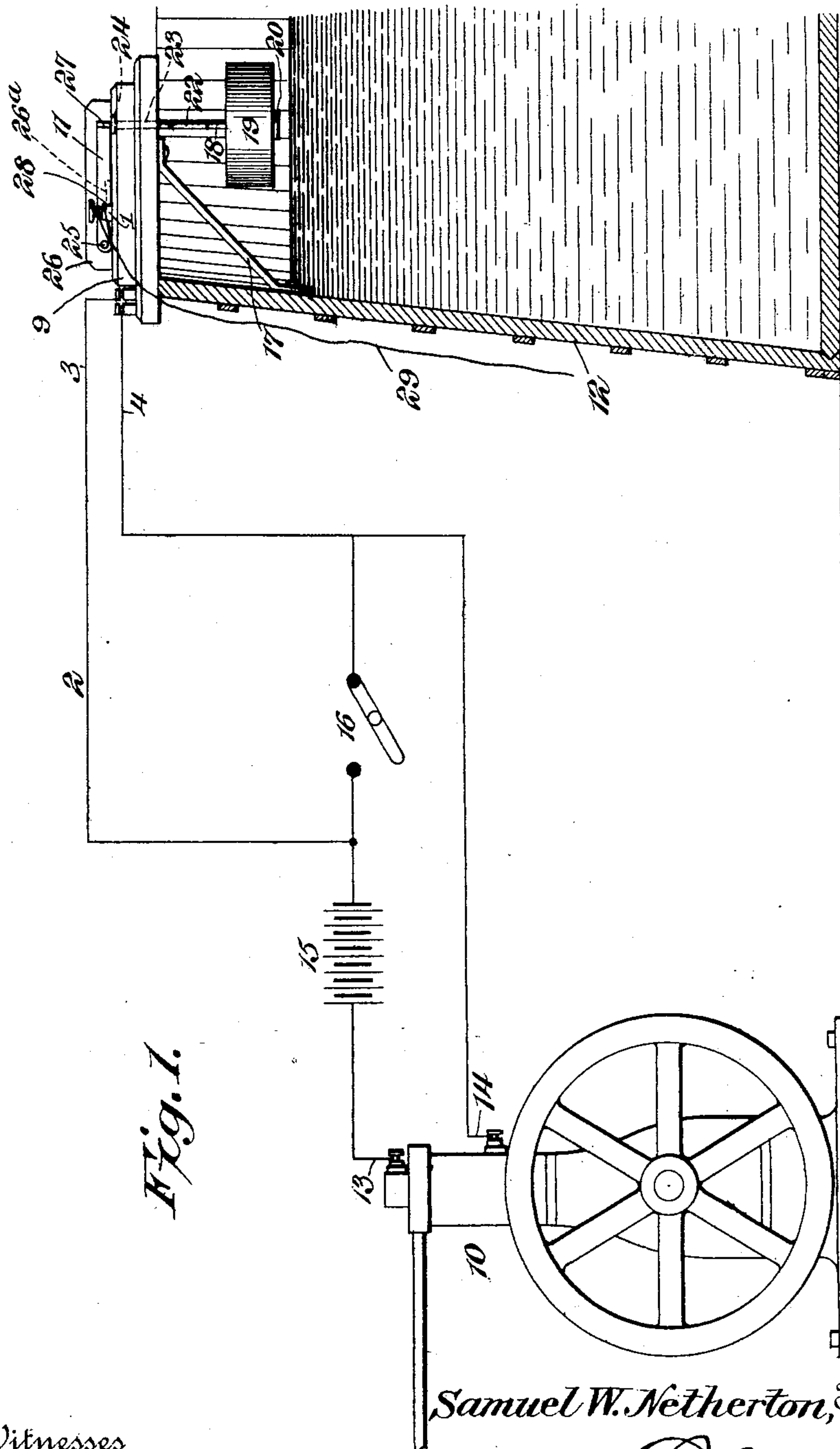


Fig. 1.

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Witnesses

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Fig. 2.

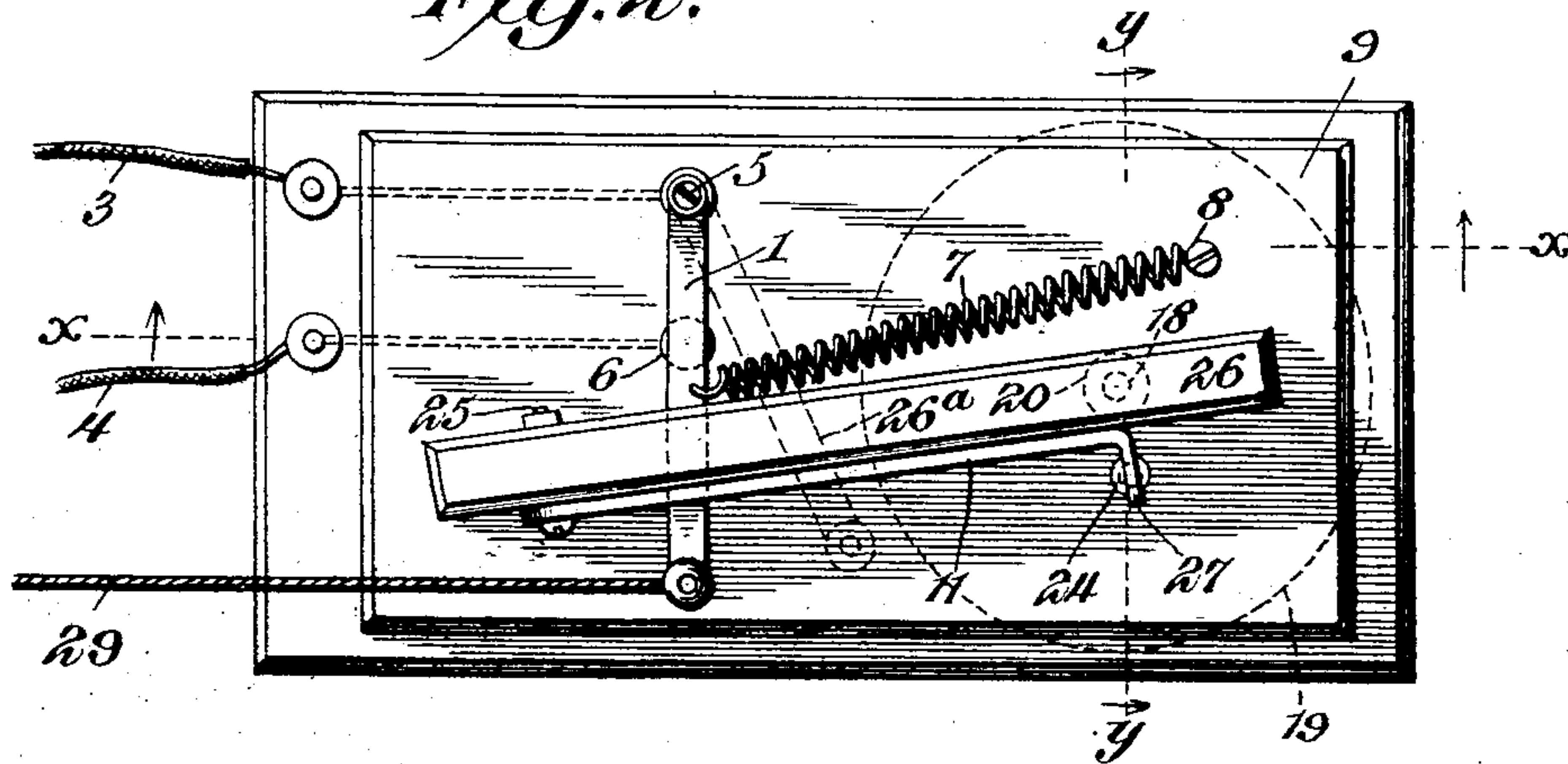


Fig. 3.

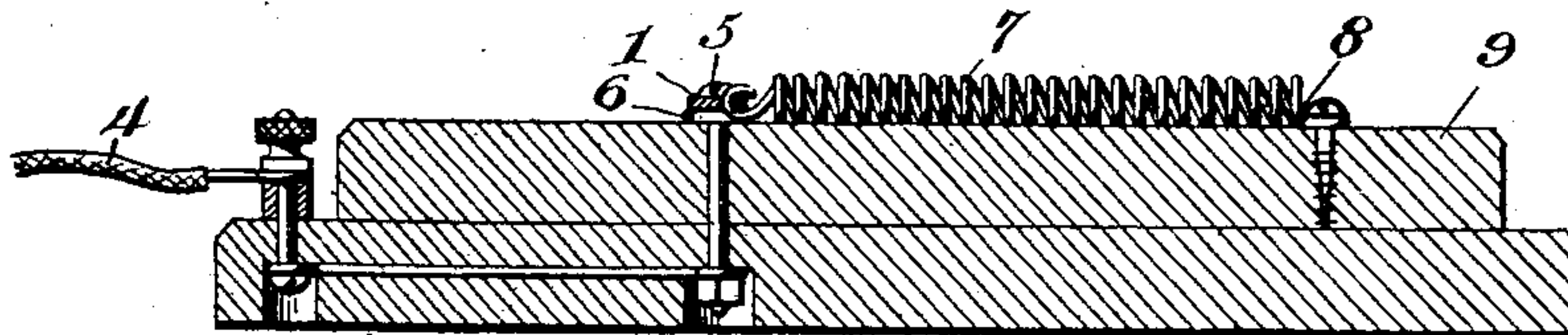
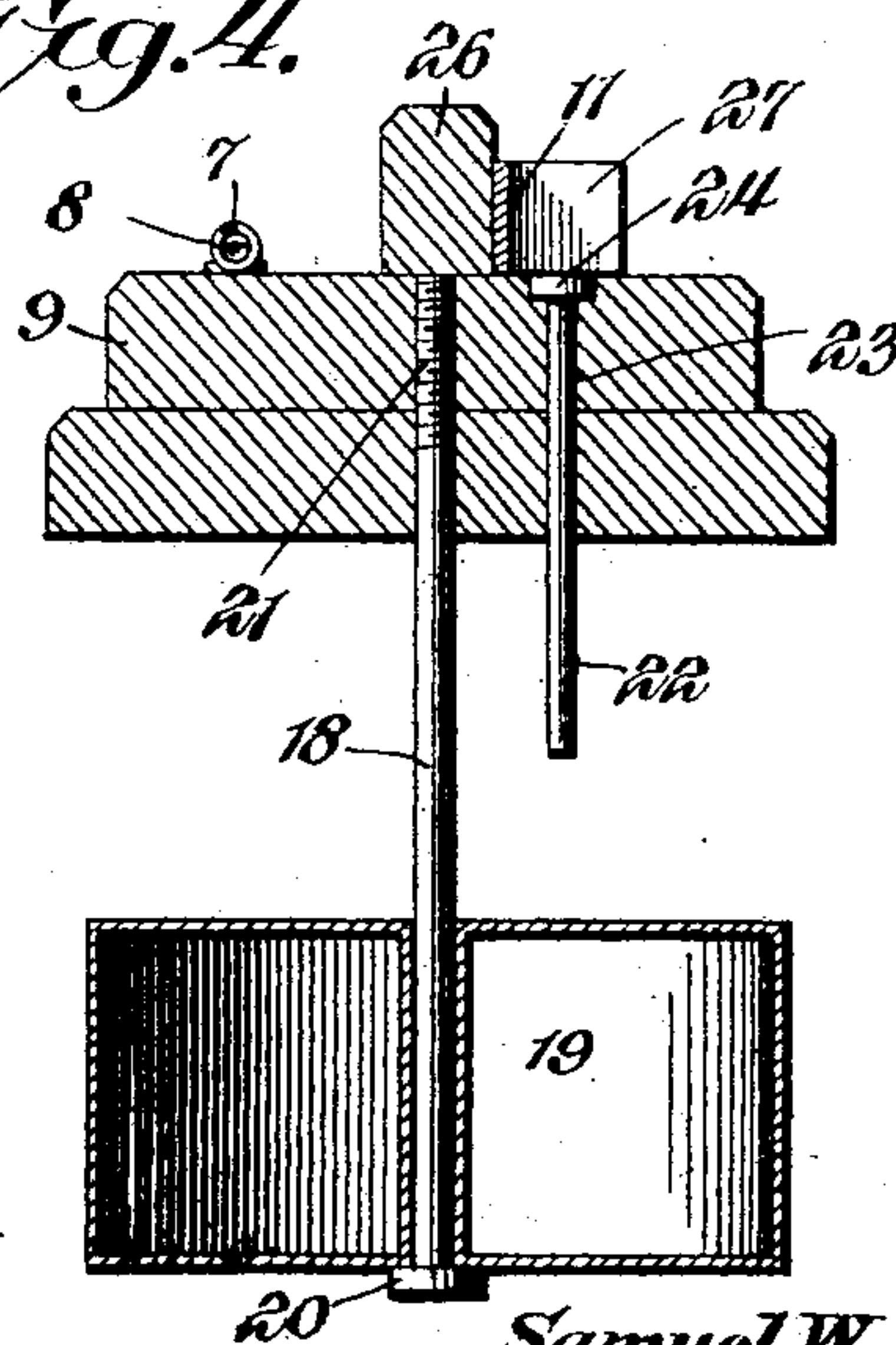


Fig. 4.



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# UNITED STATES PATENT OFFICE.

SAMUEL W. NETHERTON, OF ROBERTS, ILLINOIS.

## FLOAT-CONTROLLED SWITCH FOR FILLING TANKS.

No. 916,183.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed August 9, 1907. Serial No. 387,919.

*To all whom it may concern:*

Be it known that I, SAMUEL W. NETHERTON, a citizen of the United States, residing at Roberts, in the county of Ford and State of Illinois, have invented a new and useful Float-Controlled Switch for Filling Tanks, of which the following is a specification.

The invention relates to a float controlled switch for filling tanks.

10 The object of the present invention is to provide a simple, inexpensive and efficient device, designed for use on tanks into which water is pumped by means of a gasoline engine, and adapted when the water reaches a  
15 predetermined level to automatically stop the pumping by throwing the engine out of operation.

A further object of the invention is to provide a device of this character, having a float  
20 controlled switch, adapted to be automatically operated to open the sparker circuit of a gasoline engine for stopping the latter, when the tank is full.

With these and other objects in view, the  
25 invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various  
30 changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

35 In the drawings:—Figure 1 is a diagrammatic view, the tank being partly in section, showing a float controlled switch and illustrating the arrangement of the circuit for connecting the device with a gasoline engine.  
40 Fig. 2 is an enlarged plan view of the device. Fig. 3 is a longitudinal sectional view, taken substantially on the line  $x-x$  of Fig. 2. Fig. 4 is a transverse sectional view, taken substantially on the line  $y-y$  of Fig. 2.

45 Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a switch arm, which is adapted to open and close a circuit 2, having terminals 3 and 4 connected, respectively, with the  
50 pivot 5 of the switch arm and a contact 6. The switch arm is connected with one end of

a coiled spring 7, which is secured at its other end 8 to the board or support 9 upon which the switch is mounted, and the said coiled  
55 spring 7, which is distended when the switch is closed, is adapted to automatically actuate the said switch arm to open the circuit and stop a gasoline engine 10, when the said  
60 switch arm is released from engagement with a lever 11, as hereinafter fully explained.

The gasoline engine, which is designed to be operated for pumping water into a tank 12, is provided with an electric sparker of any well known construction, and is con-  
65 nected with the terminals 13 and 14 of the circuit, as indicated in Fig. 1 of the drawings. A battery 15, or other generator is placed in the circuit 2, and the wires thereof extend therefrom to the board or support 9 of the  
70 float controlled switch mechanism. When the switch arm 1 is in engagement with the contact 6, the circuit is closed and the engine, so far as the electrical connections are concerned, is in condition for operation, and  
75 when the switch arm is moved away from the contact 6 the circuit is opened, which stops the engine and the pump, as will be readily understood. The circuit is also provided at  
80 an intermediate point between the float controlled switch mechanism and the batteries with a supplemental switch 16 for enabling the sparker circuit to be closed, when it is desired to use the gasoline engine for other  
85 purposes than pumping water into the tank 12. The supplemental switch 16 is adapted to close the circuit, when the switch arm 1 of the float controlled mechanism is in the open position, illustrated in dotted lines in  
90 Fig. 2 of the drawings.

The support 9, which is located at the top of the tank, extends inwardly over the same and its inner portion is connected with the side of the tank by means of a brace 17, secured at one end to the lower face of the sup-  
95 port and to the inner face of the adjacent side of the tank. The inner portion of the support is provided with a depending guide 18, consisting of a vertical rod and receiving a float 19 having a central opening for the  
100 passage of the rod and guided by the latter. The lower end of the rod is provided with a head 20, forming a stop for limiting the downward movement of the float, but any



other preferred form of stop may be employed. The upper end 21 of the rod 18 is threaded to engage the support, but it may be secured to the same in any other preferred manner.

When the water in the tank 12 rises above the lower end of the guide 18, the float will be caused to actuate a vertically movable rod or plunger 22, guided in the perforation 23 of the support, and provided at its upper end with a head 24, which is arranged to engage the lever 11. The lever 11, which is adapted to swing vertically, is pivoted at one end by a bolt 25 to one of the side faces of a bar or member 26 of the support 9, and its free end 27 is bent laterally and is arranged above the head 24 of the rod or plunger 22. As the laterally bent end of the lever 11 is arranged in the path of the vertically movable rod or plunger 23, the lever will be swung upwardly when the float engages and lifts the rod or plunger 22. The switch arm, which is arranged at an angle to the lever 11, extends beneath the bar or member 26, which is provided at its lower face with a recess or opening 26<sup>a</sup> for the switch arm. The lever 11 is provided at a point intermediate of its ends with a notch 28, forming a shoulder for engaging the switch arm 1 for holding the same against the contact 6 for closing the circuit. When the lever is swung upward through the upward movement of the float and the plunger 22, the shoulder 28 is carried out of engagement with the switch arm, which will then be thrown to its open position by the coiled spring 7.

The lever 11 is adapted to swing downwardly by gravity as the water falls within the tank, and a cord 29, or any other suitable operating means may be employed for swinging the switch arm from its open to its closed position. The lever 11 will automatically drop into engagement with the switch arm when the latter is swung in its closed position, if the float is out of engagement with the vertically movable rod or plunger and the latter is at the limit of its downward movement. The free end of the switch arm is also provided with a suitable knob to enable it to be readily operated by hand.

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

1. The combination of a circuit having a switch arm for opening and closing it, a spring for automatically actuating the switch arm to open the circuit, a lever provided with means for holding the switch arm in its closed position, said switch arm being movable independently of the lever to reset it, a float, and means arranged in the path of and operated by the float for actuating the said lever to release the switch arm.

2. The combination of a circuit having a switch arm for opening and closing it, a spring connected with the switch arm for automatically opening the circuit, a lever provided with means for holding the switch arm in its closed position, said switch arm being movable independently of the lever to reset it, a plunger arranged to actuate the lever to throw the same out of engagement with the switch arm, and a float for operating the plunger.

3. The combination of a circuit having a switch arm for opening and closing it, a spring for moving the switch arm to its open position, a float, a vertically movable plunger located above and arranged to be actuated by the float, a vertically swinging lever provided with means for holding the switch arm in its closed position and arranged in the path of the plunger, whereby it is adapted to be thrown out of engagement with the switch arm by the float and the plunger, said switch arm being movable independently of the lever to reset it.

4. The combination with a support, of a circuit including a switch arm for opening and closing it, a spring connected with the switch arm for moving the same to its open position, a float, mechanism for holding the switch arm in its closed position, and means actuated by the float for releasing the switch arm, the latter being movable independently of the setting mechanism to reset it.

5. The combination of a support designed to be mounted on a tank, a circuit including a horizontally movable switch arm, a spring connected with the switch arm for opening the circuit, a guide rod depending from the support, a float mounted on and guided by the said rod, a plunger movable through the said support and arranged in the path of the support, and a lever mounted on the support and provided with means for engaging the switch arm and adapted to be actuated by the plunger.

6. The combination of a support, a circuit including a horizontally movable switch arm mounted on the support, a spring connected with the switch arm for opening the circuit, a vertical guide rod fixed to and depending from the support and provided at its lower end with a stop, a vertically movable lever provided with means for engaging the switch arm, and a vertical plunger spaced from and arranged in parallelism with the guide rod and slidable through the support, said plunger being arranged in the path of the float and located beneath and adapted to raise the lever.

7. The combination of a support, a guide secured to the support, a circuit including a horizontally movable switch arm operating in the guide, a vertically movable lever piv-

oted to the guide and provided with means  
for engaging the switch arm, a vertically  
movable plunger operating through the sup-  
port and located beneath and adapted to  
5 raise the lever, and a float for operating the  
plunger.

In testimony, that I claim the foregoing as

my own, I have hereto affixed my signature  
in the presence of two witnesses.

SAMUEL W. NETHERTON.

Witnesses:

JOHN A. COTTEAUX,  
GEO. F. ROBERTS.