

No. 635,784.

Patented Oct. 31, 1899.

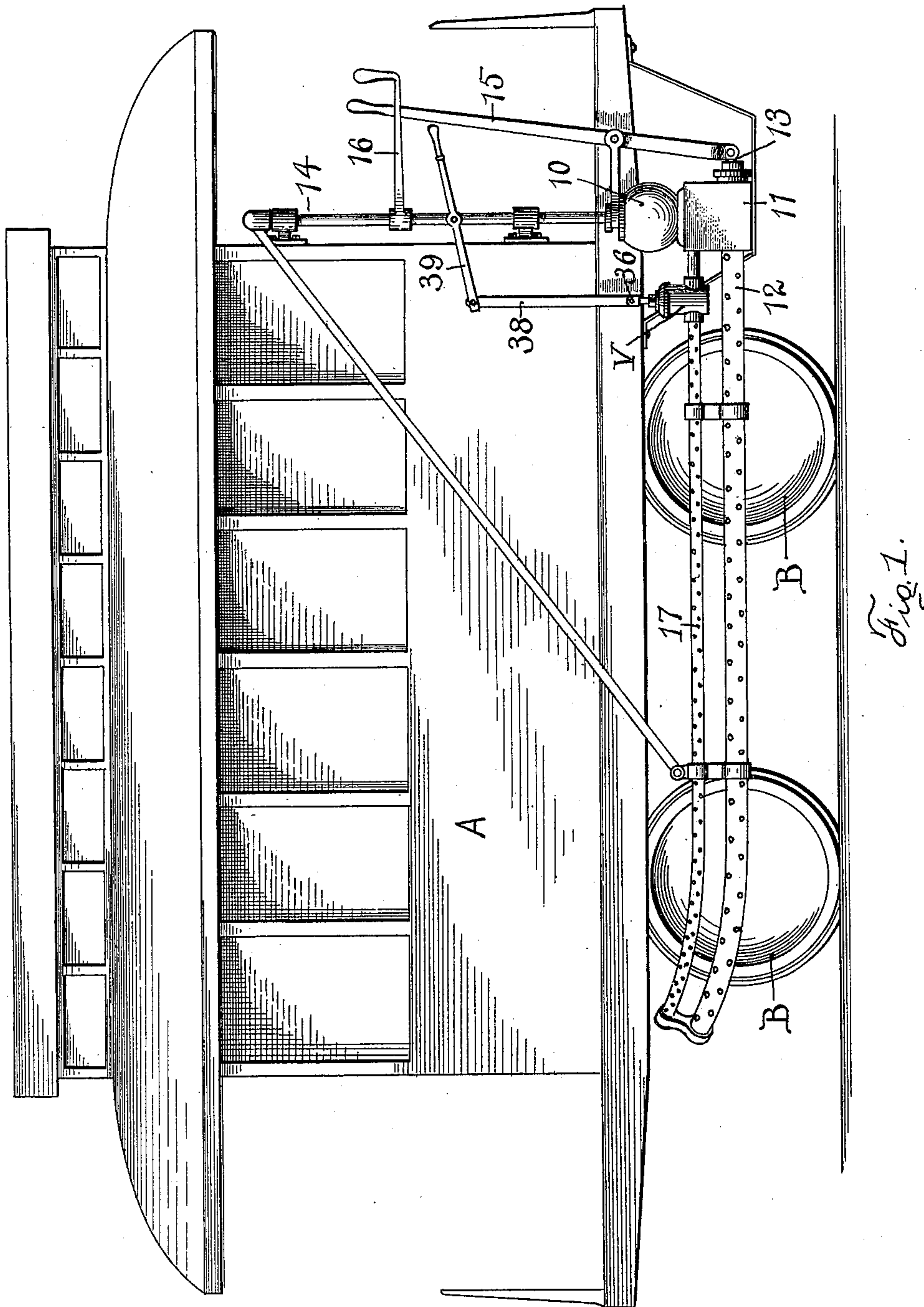
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SLIDING GATE VALVE FOR SPRINKLER CARS.

(Application filed May 8, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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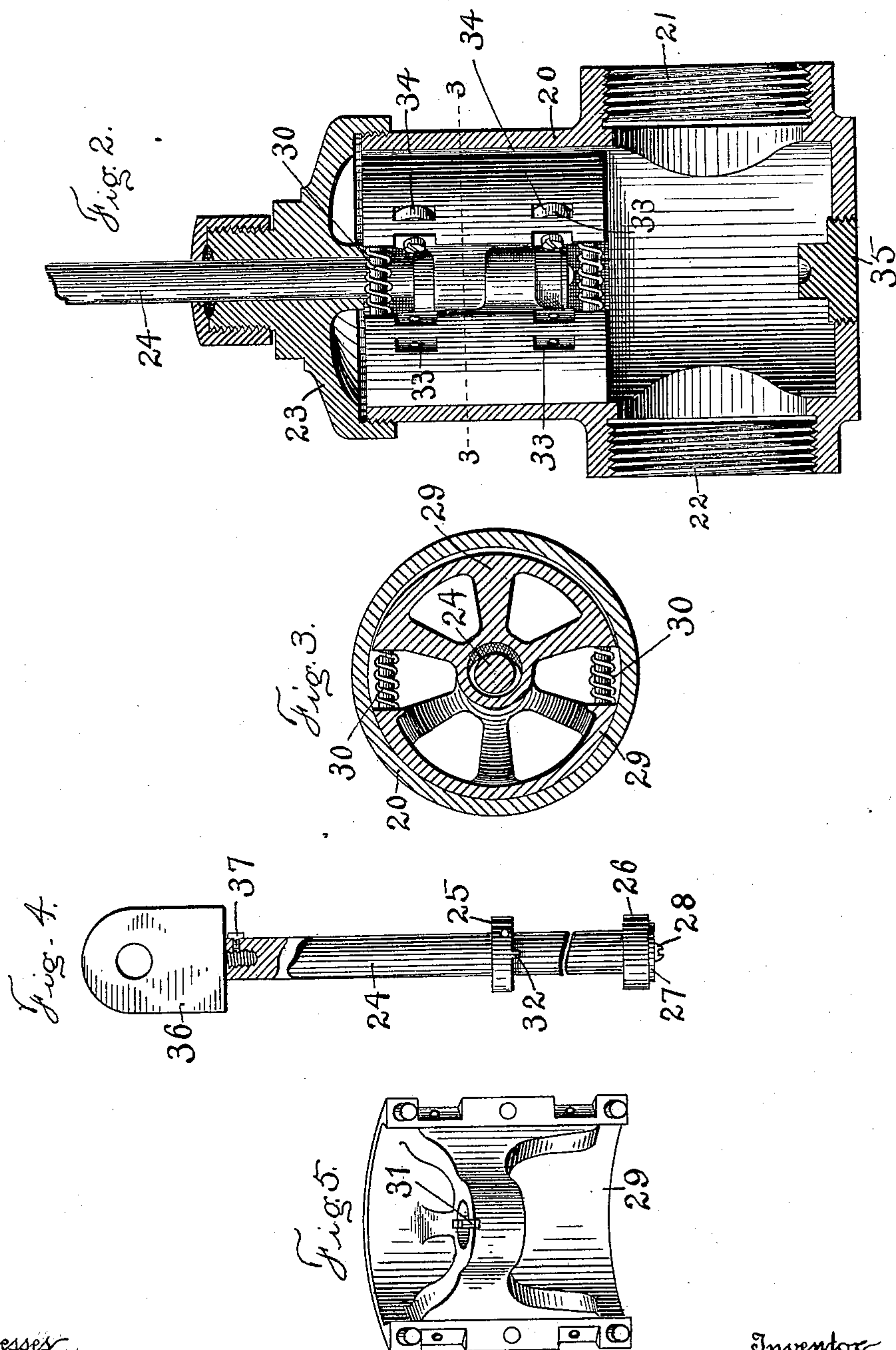
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# UNITED STATES PATENT OFFICE.

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## SLIDING-GATE VALVE FOR SPRINKLER-CARS.

SPECIFICATION forming part of Letters Patent No. 635,784, dated October 31, 1899.

Application filed May 8, 1899. Serial No. 715,908. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. KENISON, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Sliding-Gate Valve for Sprinkler-Cars and other Purposes, of which the following is a specification.

The object of my present invention is to provide a simple, efficient, and inexpensive sliding-gate valve having gate-sections and valve-seats arranged so that when one valve-seat and gate-section have become worn the parts may be adjusted so that another valve-seat and gate-section may then be used, and to combine a valve of this class with simple and efficient actuating connections for controlling the flow of water from the sprinkler-pipe of a sprinkler-car.

To these ends my invention consists of the sliding-gate valve and the combinations therewith, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying two sheets of drawings, Figure 1 is a side view of a sprinkler-car provided with a valve and actuating connections constructed according to my invention. Fig. 2 is an enlarged sectional view of the valve. Fig. 3 is a transverse sectional view thereof, taken on the line 3 3 of Fig. 2. Fig. 4 is a detail view of the valve-stem, and Fig. 5 is a detail perspective view of one of the gate-sections.

In the employment of that class of sprinkler-cars illustrated, for example, in United States Letters Patent to Gathright, No. 378,672, dated February 28, 1888, No. 570,990, dated November 10, 1896, and No. 570,991, dated November 10, 1896, it has been found difficult to provide shut-off devices for controlling the flow of water through the sprinkler-pipe. This arises from the fact that the shut-off connections of sprinkler-cars of this character are necessarily located near the tracks on which the cars run, so that it is difficult to prevent dirt and grit accumulating upon the same. Furthermore, dirt or grit is frequently carried in suspension by the water employed in sprinkler-cars of this class, and in practice I have found that this grit or dirt, as well as the dirt or grit which works in from

the outside, causes the valves to wear rapidly and become leaky. To overcome this difficulty, I propose to provide sprinkler-cars of this class with sliding-gate valves of simple and inexpensive construction which may be readily cleaned, each of said valves comprising valve-seats and sliding-gate sections arranged so that when one valve-seat and a sliding gate have become worn from the presence of grit or from other causes the parts may be adjusted so that another valve-seat and sliding gate may then be used.

Referring to the drawings and in detail, A designates a car-body, which may be mounted to run on wheels B and may carry a tank, substantially as described in the Gathright patents before referred to. Secured at one side of the car-body and connected to the tank in the usual way is a casing 10. A turn-plug section 11 is mounted to swivel or turn in the casing and may be operated or swung by means of a vertical shaft 14 and operating-handle 16, substantially as shown in the Gathright patents, Nos. 570,990 and 570,991, before referred to. Extending from the turn-plug section 11 is a main sprinkler-pipe 12.

The supply of water for the main sprinkler-pipe may be controlled by a valve of substantially the same form as that shown in the Gathright patent, No. 570,991, which valve may be operated by a valve-stem 13 and lever 15.

Extending from the turn-plug section 11 and connected to the main sprinkler-pipe 12 is a supplemental sprinkler-pipe 17. To control the flow of water through the supplemental sprinkler-pipe 17, I provide the sliding-gate valve V, as illustrated most clearly in Fig. 2. The valve V comprises a valve-casing of a substantially inverted-T shape having a cylindrical body portion 20, with an inlet-port 21 and an outlet-port 22 near the bottom thereof.

Extending up through a stuffing-box in the cover 23 of the valve-casing is a valve-stem 24. The valve-stem 24 is provided near its lower end with a fixed collar 25 and a removable collar 26 for holding the gate-sections on the valve-stem. On the lower end of the valve-stem 24 is an elastic washer or cushion 27, secured in place by a screw 28.



The gate-sections 29 are substantially semi-cylindrical in shape and are provided with hubs fitting loosely on the valve-stem, as shown most clearly in Fig. 3. Dowel-pins are arranged to loosely connect the gate-sections 29, and mounted on these dowel-pins are coiled springs 30, normally tending to hold the gate-sections into engagement with the sides of the valve-casing. To prevent the gate-sections from turning on the valve-stem, the upper hub is provided with a transverse slot or keyway 31, engaging a pin or key 32, extending down from the collar 25 of the valve-stem.

The gate-sections 29 are provided near their edges with sockets 33, and removably mounted in the sockets 33 of one of the gate-sections are small rollers 34. These rollers 34 extend out from the surface of the gate-section 29, in which they are journaled far enough to hold the gate-section away from the side of the valve-casing, leaving a clearance between one valve-seat and one sliding-gate section, as shown most clearly in Fig. 3. By means of this construction it will be seen that only one of the sliding gates is allowed to engage with its valve-seat at a time, and when one of the sliding gates and the seat therefor become worn to an undesirable degree it is simply necessary to transfer the rolls 34 from one gate-section to the other gate-section in order to bring the other valve-seat and gate-section into action. When this change is made, the valve-casing is also preferably reversed, so that the port 22 will become the inlet-port and the port 21 will become the outlet-port, so that the gate-section in action will close with the pressure rather than against the pressure of the water, although this reversal of the valve-casing is not necessary when the water-pressure is comparatively light.

Removably threaded into the bottom of the valve-casing is a washout-section 35, having an upwardly-extending stem cooperating with the washer or cushion 27 on the valve-stem 24 to form a stop, limiting the motion of the sliding gates. Where the location of the valve does not allow convenient access to a washout-section in the bottom of the casing, washouts may of course be removably threaded into the sides of the casing or other convenient part thereof.

In applying a valve of this construction to a sprinkler-car a yoke-piece 36 is preferably threaded on the upper end of the valve-stem 24 and is held from turning thereon by a set-screw 37. Extending up from the yoke-piece 36 is a link 38, which connects with an operating-lever 39, pivoted on the upright shaft 14, so that the operating connections will turn with the valve as the sprinkler-pipe is swiveled or turned out from the side of the car, and these operating connections will hold the valve-stem from turning with respect to the valve-casing. In operating a sprinkler-car as thus equipped the supply of water from the main sprinkler-pipe may be turned on or

off, as desired, by the lever 15, and the water distributed through the supplemental sprinkler-pipe 17 may be graduated or varied to suit the different conditions of roadway upon which the sprinkler-car is being employed, the handles or levers for controlling the action of the car being conveniently located for the use of the operator.

I am aware that numerous changes may be made in the construction of my sliding-gate valve by those who are skilled in the art and that valves constructed according to my invention may be applied and used to advantage for other purposes besides that of controlling the supply of water delivered by a sprinkler-car. I do not wish, therefore, to be limited to the construction which I have herein shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a sliding-gate valve, the combination of a valve-casing having inlet and outlet ports, a valve-stem, two spring-pressed gate-sections mounted on the valve-stem, and means for holding either gate-section out of engagement with the adjacent side of the valve-casing, whereby when one valve-seat and gate-section have become worn the parts may be adjusted so that the other valve-seat and gate-section may then be used, substantially as described.

2. In a sliding-gate valve, the combination of an inverted-T-shaped valve-casing having a cylindrical body portion with inlet and outlet ports near the bottom thereof, a vertically-movable valve-stem, substantially semicylindrical gate-sections mounted on the valve-stem, and springs normally tending to hold the gate-sections in engagement with the casing, substantially as described.

3. In a sliding-gate valve, the combination of a valve-casing having inlet and outlet ports, a valve-stem, two spring-pressed gate-sections mounted on the valve-stem, and rolls removably journaled in either gate-section desired whereby when one valve-seat and gate-section have become worn the other valve-seat and gate-section may then be used, substantially as described.

4. In a sliding-gate valve, the combination of an inverted-T-shaped valve-casing having a cylindrical body portion with inlet and outlet ports near the bottom thereof, a vertically-movable valve-stem, semicylindrical gate-sections mounted on the valve-stem, means for holding the gate-sections from turning on the valve-stem, springs normally tending to hold the gate-sections in engagement with the casing, and rolls removably journaled in either gate-section desired whereby when one valve-seat and gate-section have become worn the parts may be adjusted so that the other valve-seat and gate-section may then be used, substantially as described.

5. In a sprinkler-car the combination of a car-body adapted to carry a tank, a sprinkler-pipe pivotally mounted thereon, a vertical



shaft for operating the sprinkler-pipe, a sliding-gate valve for controlling the flow of water through the sprinkler-pipe, and a lever mounted on the vertical shaft and connected to operate the sliding-gate valve, the parts of said valve being arranged so that when one valve-seat and gate-section have become worn another valve-seat and gate-section may then be used, substantially as described.

6. In a sprinkler-car, the combination of a car-body adapted to carry a tank, a casing carried by said car-body, a turn-plug section journaled in said casing, a vertical shaft for operating the turn-plug section, a main sprinkler-pipe extending from the turn-plug section, connections for shutting on or off the supply of water for said main sprinkler-pipe, a supplemental sprinkler-pipe extending from the turn-plug section, a sliding-gate valve for the supplemental sprinkler-pipe, and a lever pivoted on the vertical shaft and connected to operate the sliding-gate valve, said sliding-

gate valve comprising an inverted-T-shaped valve-casing having a cylindrical body portion with inlet and outlet ports near the bottom thereof, a vertically-movable valve-stem, semicylindrical gate-sections mounted on the valve-stem, means for holding the gate-sections from turning on the valve-stem, springs normally tending to separate the gate-sections, and rolls removably journaled in either of the gate-sections desired, whereby when one valve-seat and gate-section have become worn the parts may be adjusted so that the other valve-seat and gate-section may then be used, substantially as described.

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

JOHN B. KENISON.

Witnesses:

EDWARD S. NEWHALL,  
JOHN B. NEWHALL.