G. SCHLATTER.

REGULATING DEVICE FOR ROAD SPRINKLERS.

APPLICATION FILED OCT. 4, 1916.

1,304,384.

Patented May 20, 1919.

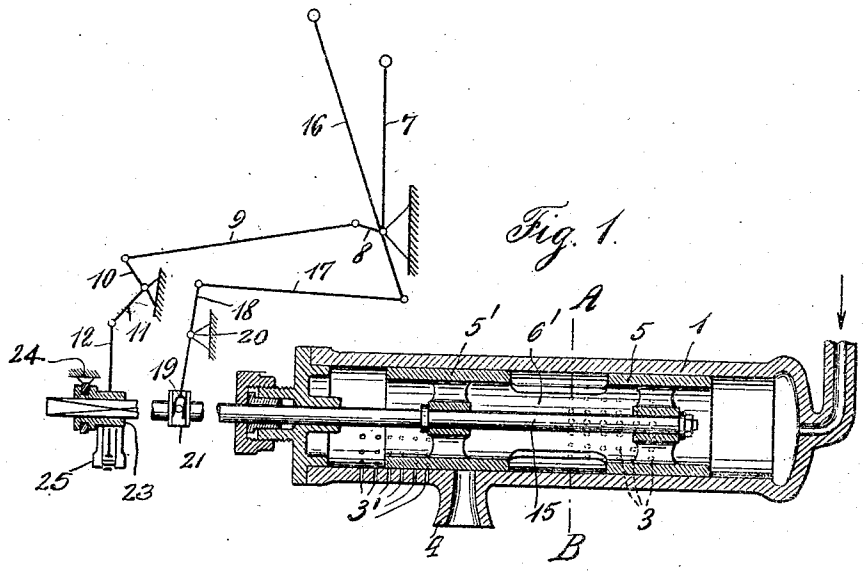


Fig. 1.

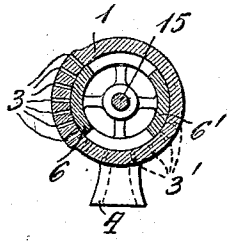


Fig. 2

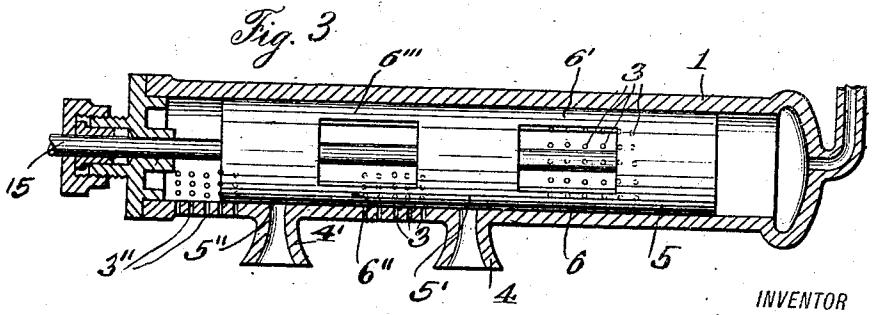


Fig. 3

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REGULATING DEVICE FOR ROAD-SPRINKLERS.

1,304,384. Specification of Letters Patent. **Patented May 20, 1919.**

Application filed October 4, 1916. Serial No. 123,642.

To all whom it may concern:

Be it known that I, GUSTAV SCHLATTER, a citizen of the Swiss Republic, and resident of Steinach, Switzerland, have invented a new and useful Regulating Device for Road-Sprinklers, of which the following is a specification.

My invention relates to a device by means of which the sprinkling width as well as the output of road sprinklers can be regulated independently. The device comprises a valve which is adapted to revolve and slide in a sprinkler head, thereby opening and closing certain of the perforations in said head. It is formed by two or more cylinders which are connected by pairs of cylindrical, diametrically opposite sectors of the same diameter. When the valve is axially displaced in the sprinkler head, its cylinders will open or close a greater or lesser number of perforations, thereby reducing or increasing the output. The sprinkling width is regulated by revolving the valve so that its sectors open or close more or less those perforations which have been left open by its cylinders.

The construction of the valve with a plurality of cylinders enables each of such cylinders to control a separate supply of water while the arrangement of pairs of diametrically opposite sectors avoids one-sided pressure on the valve. Such pressure occurs in those valves where a sector is formed on one side of the cylinder only. My improved device, therefore, can easily be manipulated so that the valve as well as its operating mechanism is not exposed to undue strain.

Reference is to be had to the accompanying drawings in which I have illustrated two forms of my invention by way of example.

Figure 1 is a longitudinal and Fig. 2 a cross section on line A—B of a sprinkler head provided with a valve having two cylinders and two intermediate sectors, and Fig. 3 is an elevation with parts in section, showing a sprinkler head with a valve having three cylinders and four intermediate sectors.

As clearly shown in Fig. 1, the regulating valve in the sprinkler head 1 is formed by two cylinders 5 and 5^1 and two sectors 6 and 6^1 connecting them. The sprinkler head has two groups of perforations, 3 and 3^1 and a hollow stud 4 which constitutes the flushing nozzle.

In the examples shown, the water is admitted at one end of the sprinkler head, and the cylinders or pistons are made with longitudinal ducts or openings, so that water may pass from the water inlet to the several outlets. The sectors as well as the cylinders connected thereby have cylindrically curved surfaces controlling the outlets or egress means.

As mentioned above, the output of the sprinkler is regulated by displacing the valve axially in the head 1 while its sprinkling width is regulated by revolving said valve. The axial movement of the valve is effected by means of a double-armed lever 16 which is preferably arranged at or near the driver's seat. This lever is, by a rod 17, connected to another double-armed lever 18 which is mounted to pivot about a pin 20 supported on the car frame. The forked end 19 of this lever engages a sleeve 21 on the rod 15 of the regulating valve. By moving lever 16, the valve is displaced axially so that its cylinders 5 and 5^1 open or close the perforations of group 3 and simultaneously those of group 3^1, thereby regulating the output of the sprinkling head.

In order to regulate the sprinkling width, the valve must be revolved in the sprinkling head so that the sectors 6 and 6^1 open or close certain of the perforations in groups 3 and 3^1 which have been left open by cylinders 5 and 5^1. At the end of rod 15 there is a portion of square cross section which passes with a sliding fit through an opening of like cross section in a sleeve 23 mounted to turn in a suitable bearing 24 on the car frame but held against longitudinal movement. Fixed on this sleeve is a lever 25 to which is linked a rod 12. The other end of this rod is engaged by an angular lever 10, 11 which, in turn, is connected by the link 9, to the arm 8 of a bell-crank lever 7, which, like the lever 16, is arranged near the driver's seat.

When it is desired to operate the flushing nozzle, the valve is, by means of levers 7 and 16, placed in such position as to cover all the

perforations 3 and 3^1 whereupon, by further manipulation of lever 16, the valve is pushed to the left until nozzle 4 is laid open.

In the modification illustrated in Fig. 3 a third cylinder 5^{11} is connected to the cylinders 5 and 5^1 by means of additional sectors 6^{11} and 6^{111}. This third cylinder and its sectors may serve for any purpose. For example, they may control another flushing nozzle 4^1 and regulate the output and sprinkling width of a further group of perforations 3^{11} while groups 3 and 3^1 and the flushing nozzle 4 are regulated by cylinders 5 and 5^1 and sectors 6, 6^1. Any other number of cylinders and sectors connecting them may be provided.

The arrangement of two or more cylinders gives a good guiding to the valve and, in connection with the diametrically opposite arrangement of the sectors and consequent relieving of the valve from one-sided pressure, causes the valve to work smoothly when sliding as well as when revolving. Since the several regulating operations are effected by separate sections of the valve, the relative position of the perforations and of the flushing nozzle can easily be varied. By combining as many cylinders and sectors as is practicable, I provide a valve by which a corresponding number of regulations may be effected. As the valve may be moved to either side and revolved in either direction, its regulating action can be varied in many ways.

I claim:

1. In a regulating device for road sprinklers, in combination, a sprinkler head, means for supplying water to and ejecting water from said sprinkler head, a valve in said sprinkler head adapted to control said ejecting means and means for moving and means for revolving said valve, said valve comprising a plurality of cylinders and sectors connecting them, the sectors connecting adjacent cylinders being in duplicate and arranged diametrically opposite each other, said cylinders and the sectors as well having cylindrically curved surfaces controlling said ejecting means.

2. In a regulating device for road sprinklers, in combination, a sprinkler head, means for supplying water to said sprinkler head, groups of perforations for ejecting water from said sprinkler head, a valve in said sprinkler head adapted to open and close said perforations and means for moving and means for revolving said valve, said valve comprising a plurality of cylinders, one for each group of perforations, and sectors connecting said cylinders, the sectors connecting adjacent cylinders being in duplicate and arranged diametrically opposite each other, said cylinders and the sectors as well having cylindrically curved surfaces controlling said groups of perforations.

3. In a regulating device for road sprinklers, in combination, a sprinkler head, means for supplying water to said sprinkler head, groups of perforations and a washing spray for ejecting water from said sprinkler head, a valve in said sprinkler head adapted to open and close said perforations and spray, and means for moving and means for revolving said valve, said valve comprising a plurality of cylinders, one for each group of perforations, and sectors connecting said cylinders, the sectors connecting adjacent cylinders being in duplicate and arranged diametrically opposite each other, said cylinders and the sectors as well having cylindrically curved surfaces controlling said groups of perforations, while one of said cylinders also controls said spray.

4. In a regulating device for road sprinklers, in combination, a sprinkler head, means for supplying water to said sprinkler head, groups of perforations and a plurality of washing sprays for ejecting water from said sprinkler head, a valve in said sprinkler head adapted to open and close said perforations and sprays, and means for moving and means for revolving said valve, said valve comprising a plurality of cylinders, one for each group of perforations, and sectors connecting said cylinders, the sectors connecting adjacent cylinders being in duplicate and arranged diametrically opposite each other, said cylinders and the sectors as well having cylindrically curved surfaces controlling said groups of perforations, while said cylinders also control said sprays.

5. A sprinkler head having means for the entrance and egress of the liquid, a valve movable lengthwise of said head and also mounted to turn relatively thereto, and means for shifting said valve lengthwise and for turning it to control the egress of the liquid, said valve comprising a plurality of cylinders and sectors connecting them, said cylinders and the sectors as well having cylindrically curved surfaces controlling said egress means, and the sectors connecting adjacent cylinders being located on opposite sides of the axis about which the valve turns.

6. A sprinkler head having means for the entrance and the egress of the liquid, the egress means being provided in a plurality of places, a valve movable lengthwise of said head and also mounted to turn relatively thereto, and means for shifting said valve lengthwise and for turning it, said valve comprising a plurality of cylinders in operative relation to the respective egress means, said cylinders being spaced and connected by means of smaller circumferential extent than the adjacent wall of the head, said last-named means having cylindrically curved surfaces controlling said egress means.

7. A sprinkler head provided at one end with means for the ingress of liquid and also having a cylindrically curved surface provided with means for the egress of liquid at different points of its length, a valve movable lengthwise within said head and also mounted to turn therein, said valve being constructed with a plurality of cylinders having through passages so that liquid may pass therethrough, and with sectors connecting adjoining cylinders at opposite sides of the axis of said head, the outer surfaces of said cylinders and of said sectors as well being curved cylindrically and in engagement with the cylindrical inner surface of said head, to control the egress means thereof.

8. A sprinkler head having means for the ingress and the egress of the liquid, a valve movable lengthwise of said head and also mounted to turn relatively thereto, and controlling said egress means, said valve comprising a plurality of cylinders and sectors connecting them, said cylinders and the sectors as well having cylindrically curved surfaces controlling said egress means, and the sectors connecting adjacent cylinders being in duplicate and arranged diametrically opposite each other.

In testimony whereof, I have signed this specification.

GUSTAV SCHLATTER.

Witnesses:
FRANK DIMUCKE,
EMIL MEILE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."