No. 648,414. Patented May 1, 1900.

J. B. KENISON.

SPRINKLER CAR.

(Application filed Dec. 27, 1897.)

(No Model.) 2 Sheets—Sheet 1.

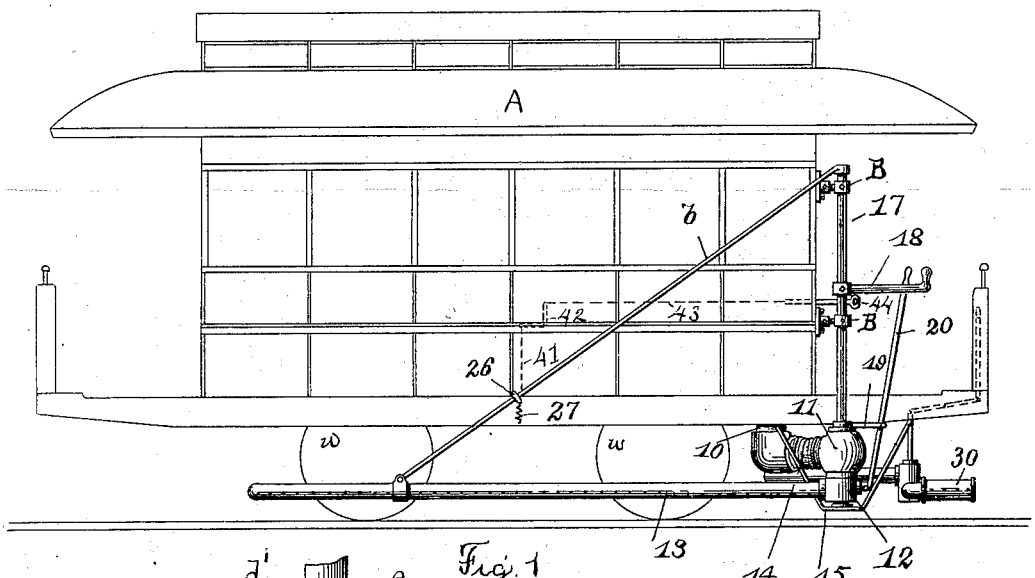

Fig. 1.

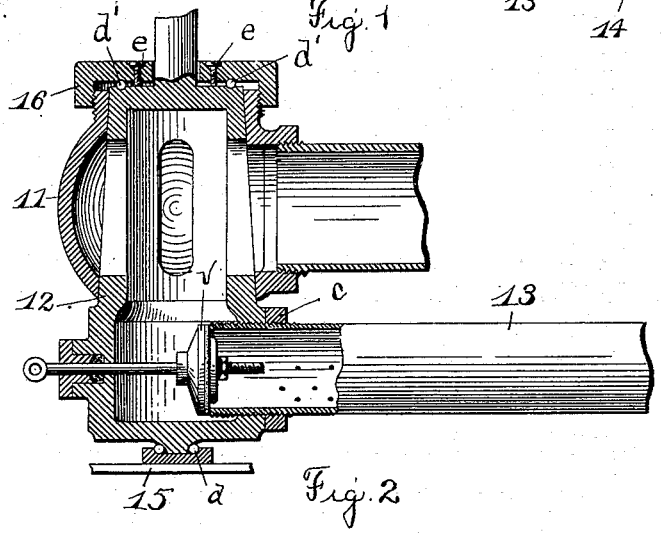

Fig. 2.

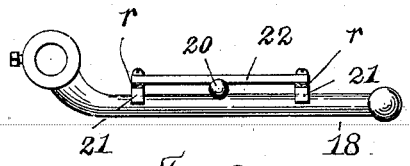

Fig. 3.

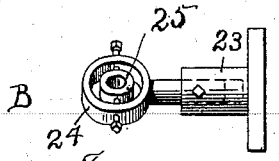

Fig. 4.

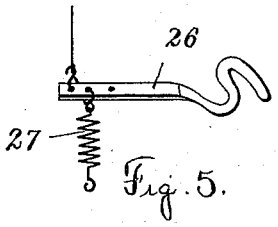

Fig. 5.

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SPRINKLER CAR.

(Application filed Dec. 27, 1897.)

(No Model.) 2 Sheets—Sheet 2

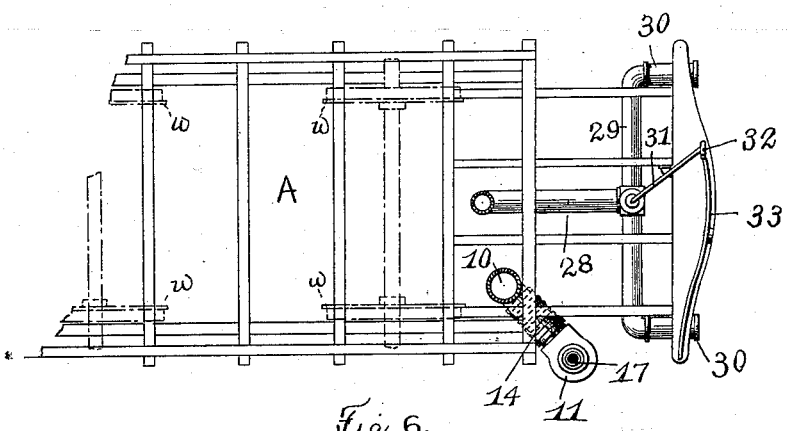

Fig. 6.

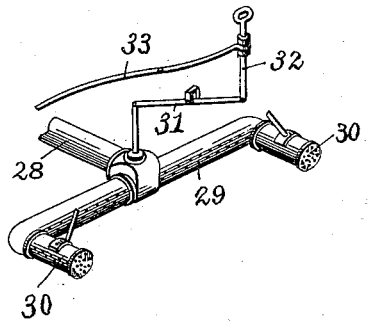

Fig. 7.

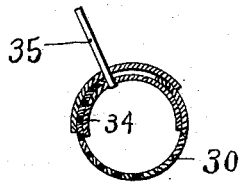

Fig. 8

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UNITED STATES PATENT OFFICE.

JOHN B. KENISON, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN CAR SPRINKLER COMPANY, OF WORCESTER, MASSACHUSETTS.

SPRINKLER-CAR.

SPECIFICATION forming part of Letters Patent No. 648,414, dated May 1, 1900.

Application filed December 27, 1897. Serial No. 663,532. (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 Improvement in Sprinkler-Cars, of which the following is a specification.

My invention relates to that class of sprinkler-cars shown in United States Patents to Gathright, Nos. 378,672, 570,990, and 570,991.

The especial object of my invention is to provide improved connections for supporting and operating the pivoted perforated sprinkler-pipe and to provide improved connections for controlling the track-sprinkler used in connection therewith.

To these ends my invention consists of the parts and combinations of parts, 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 constructed according to my invention. Fig. 2 is an enlarged sectional view of the swivel-joint which supports the perforated sprinkler-pipe. Fig. 3 is a plan view of the operating crank arm or handle. Fig. 4 is a detail view of the adjustable hanger for the operating-shaft. Fig. 5 is a detail view of a catch for locking the sprinkler-arm in position alongside of the car. Fig. 6 is a partial plan view illustrating the connections preferably employed for operating the valve of the track-sprinkler. Fig. 7 is a perspective view of the track-sprinkler and its operating devices; and Fig. 8 is a detail sectional view, to be hereinafter referred to.

Referring to the drawings and in detail, A designates a car-body mounted to run on wheels *w* in the ordinary manner. A tank may be supported in the car-body A in the ordinary way, as illustrated in the Gathright patents before referred to. Connected to and leading down from the tank in the car-body A is a pipe 10 for supplying water to a perforated sprinkler-pipe 13, which is connected to a swivel-joint. This swivel-joint is preferably formed by means of a casing 11, having a tapering or plug section 12 fitting therein, as shown most clearly in Fig. 2.

In the side-arm sprinkler-cars which have heretofore been employed the swivel-joint of the perforated sprinkler-pipe has been ordinarily connected by a rigid fitting or pipe to its supply-pipe. In practice I have found that the use of a rigid connection in this location is objectionable on account of the difficulty in keeping the same tight—that is to say, the jars and strains necessarily incident to the operation of the pivoted sprinkler-pipe tend to work threaded joints loose, so as to cause leakage at this point. To obviate this difficulty, I preferably employ a section of flexible pipe, as 14, for connecting the swivel-joint of the sprinkler-arm with its supply-pipe 10. By adopting this construction in practice I have been able to maintain absolutely-tight joints and have provided a construction which will adapt itself to the strains to which it is subjected and which can be more readily fitted in place than constructions heretofore used.

The plug-section 12 of the swivel-joint, as most clearly illustrated in Fig. 2, is suspended in or supported by a strap 15, and in order to diminish the friction between these parts I preferably provide a set of bearing-balls, as *d*, which are arranged in a suitable ball-casing, so as to support the plug-section 12. The shut-off valve *v* for controlling the admission of water to the perforated sprinkler-pipe 13 is mounted in the plug-section 12 of the swivel-joint and is preferably of the ordinary cylindrical form. The perforated sprinkler-pipe 13 extends some distance into the plug-section 12 and is held in its adjusted position by means of a check-nut C. The end of the perforated sprinkler-pipe 13 is located in position to coöperate with the shut-off valve 13, and by utilizing the pipe 13 to form a seat for the shut-off valve *v* I avoid the necessity of finishing or truing up a seat in the plug-section 12 itself. Threaded onto the upper end of the casing 11 is a cover-plate 16. A second set of bearing-balls *d'* are secured in place in suitable grooves between the cover-plate 16 and the top of the plug-section 12.

In practice considerable difficulty has been encountered in properly adjusting the ground taper joint formed between the casing 11 and

the plug 12. It is necessary that these parts should work freely with respect to each other, while at the same time leakage should not be permitted between the same. It will be seen that the construction just described forms a simple and efficient means for adjusting these parts. For example, by screwing down the cover-plate 16 the casing 11 will be raised and the joint loosened, while by turning the cover-plate 16 in the opposite direction the casing 11 will move down and the taper joint will be tightened.

Threaded into the cover-plate 16 are small set-screws *e*, which form stops for holding the cover-plate 16 in its adjusted position.

The vertical operating-shaft 17 is supported in adjustable bearings B. Each bearing-piece B, as illustrated most clearly in Fig. 4, comprises a base piece or socket 23 for adjustably receiving a yoke-piece 24. Adjustably mounted on center screws in the yoke-piece 24 is the piece 25, which forms the bearing of the vertical operating-shaft 17.

In practice it has been found to be a difficult matter to line up the vertical operating-shaft 17 with exact accuracy in the first instance, and as the use of water frequently causes the framing of the car to warp or change its form it has been necessary in a number of instances to shift the bearing-pieces for the vertical operating-shafts of cars which have heretofore been used. By using adjustable bearings for the vertical operating-shaft I have provided a construction which can be more readily assembled than the constructions heretofore used, and which can be adjusted or changed to compensate for the swelling or warping of the car-frame.

The valve-stem of the shut-off valve *v* is connected at its outer end to an operating-lever 20, pivoted on an arm 19, projecting from the operating-shaft 17. The handle or crank-arm 18 for turning the vertical shaft 17 is provided with lugs or projections 21, secured upon which is a strip 22 for confining the vertical valve-operating lever 20 in place, as most clearly shown in Fig. 3. In practice I preferably employ small blocks of rubber *r* or other compressible material between the lugs 21 and the side strip 22, so that these parts may be taken up to provide a substantially-tight guideway for the operating-lever 20.

In the use of the sprinkling device constructed according to my invention the operator grasps the handle or crank-arm 18 with one hand and the valve-lever 20 with the other hand. By mounting the valve-operating lever 20 in the manner above described and by connecting the same to the crank-arm 18 it will be seen that I have provided a construction in which the operator is enabled to use both hands in swinging or turning the perforated sprinkler-pipe without releasing his control of the valve-lever 20.

When the perforated sprinkler-pipe 13 is turned back alongside of the car, it is desirable to provide some means for locking the same in this position, so that it will not accidentally swing out when the car is moving. The construction which I preferably employ for this purpose is most clearly illustrated in Figs. 1 and 5. As shown in these figures, *b* designates the brace or stay for supporting the outer end of the perforated sprinkler-pipe 13. Arranged to engage the brace or stay *b* I preferably provide a catch 26, which is normally held up in position to engage the catch or stay *b* by means of a coiled spring 27. I preferably provide connections for releasing the catch 26 from the car-platform. As illustrated, these releasing connections comprise a wire 41, a bell-crank lever 42, a second wire 43, and a handle 44, which is located in position to be conveniently grasped by the operator on the car-platform. By means of this construction it will be seen that when the sprinkler-pipe 13 is turned back alongside of the car its brace *b* will engage the catch 26, which will engage with and lock the sprinkler-pipe in this position until the catch is released by operating the handle 44.

Where sprinkler-cars of the class to which my invention relates are operated by electricity, two men are necessarily employed, one man acting as the motorman and the other man ordinarily having control of the sprinkling devices. In practice I have found that the sprinkling-operator has to give practically his whole attention for operating the pivoted sprinkler-arm and controlling the supply of water thereto, so that he is able to pay comparatively little attention to the sprinkling devices for sprinkling the space between the tracks upon which the car runs. It frequently happens, therefore, that the water is allowed to flow continuously through the track-sprinkling devices, and the water is not shut off, as it should be, when the car passes over cross-walks. To avoid this difficulty, I have provided the valve of the track-sprinkler which I preferably employ with connections which can be operated either by the motorman or the sprinkling-operator. The connections which I employ for this purpose are most clearly illustrated in the second sheet of drawings. As shown therein, 28 designates a supply-pipe connected to a transverse sprinkler-pipe 29. The transverse sprinkler-pipe 29 is connected at its ends to spraying-cylinders 30. The shut-off valve for the track-sprinkling devices is located in the fitting which connects the supply-pipe 28 with the sprinkler-pipe 29, and may be of substantially the same construction as that employed for controlling the supply of water admitted to the sprinkler-arm. The valve-stem is connected to one end of a lever 31, the opposite end of said lever being connected to a handle 32, which extends up in convenient position to be operated by the motorman. An operating-lever 33 is also preferably pivotally supported on the dasher of the car and extends from the handle 32 over in position to be conveniently operated by the sprinkling-oper-

ator. Fitting inside of each of the spraying-cylinders 30 is a regulating-plate 34, which may be shifted by an arm 35, which can be controlled, if desired, by a handle extending up through the car-platform. When the regulating-plate 34 is moved back to uncover all the perforations in a spraying-cylinder 30, the water from the spraying-cylinder 30 will be thrown some distance from the side of the track, and by means of this construction the width of street sprinkled by the track-sprinklers can be regulated or adjusted as desired.

I am aware that changes in my construction may be made by those skilled in the art and that various features of my invention may be used in different locations and in different connections without departing from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the exact forms which I have shown and described; but

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

1. In a device of the class described, the combination of a car-body, a water-tank carried thereby, a swivel-joint comprising a casing fixed to the car-body, and a plug-section journaled in the casing, a perforated sprinkler-arm carried by the plug-section of the swivel-joint, and a flexible pipe connecting the swivel-joint and tank, substantially as described.

2. In a device of the class described, the combination of a car-body adapted to support a water-tank, a supply-pipe adapted to connect to said tank, a swivel-joint pivotally supporting a perforated sprinkler-pipe, a vertical operating-shaft for said pipe, and adjustable brackets for supporting said operating-shaft, substantially as described.

3. In a device of the class described, the combination of a swivel-joint, a pivoted sprinkler-pipe supported thereby, a vertical operating-shaft, a crank arm or handle therefor, a shut-off valve located in the swivel-joint, an operating-lever for said shut-off valve, and means for connecting the operating-lever to the crank arm or handle so that the operator may use both hands in turning the sprinkler-pipe, substantially in the manner set forth.

4. In a device of the class described, the combination of a car-body adapted to support a water-tank, a supply-pipe, a perforated sprinkler-arm, and a ball-bearing for pivotally supporting said sprinkler-arm, substantially as described.

5. In a device of the class described, the combination of a swivel-joint for supporting a perforated sprinkler-pipe, said joint comprising a casing 11, and a tapering or plug section 12 fitting therein, a collar 16 adjustably mounted on the casing 11, and a set of bearing-balls d' confined between the collar 16 and plug-section 12, whereby the tightness of the swivel-joint can be regulated by adjusting the collar 16, substantially as described.

6. In a device of the class described, the combination of a swivel-joint comprising a casing 11 and a tapering or plug section 12, a collar 16 threaded onto the upper end of the casing 11, a set of bearing-balls d' confined between the collar 16 and plug 11, said parts being arranged so that the tightness of the swivel-joint can be regulated by adjusting the collar 16, and stop-screws e for holding the collar 16 in its adjusted position, substantially as described.

7. In a device of the class described, the combination of a car-body adapted to support a water-tank, a supply-pipe adapted to be connected to said tank, track-sprinkling devices, and connections for controlling the valve of said track-sprinkling devices arranged to be operated from the center or from one side of the car-platform, substantially as described.

8. In a device of the class described, the combination of the track-sprinkler comprising a perforated sprinkler-pipe 29, and spraying-cylinders 30, said spraying-cylinders 30 having regulating-plates 34 mounted therein to regulate the width of roadway sprinkled thereby, and connections for operating the shut-off valve of the track-sprinkling device from the center or one side of the car-platform, substantially as described.

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

JOHN B. KENISON.

Witnesses:
EDW. C. PERRY,
PHILIP W. SOUTHGATE.