G. S. WILLIAMSON.

IRRIGATING APPARATUS.

APPLICATION FILED MAY 10, 1910.

1,079,817.

Patented Nov. 25, 1913.

2 SHEETS—SHEET 1.

Fig. 1

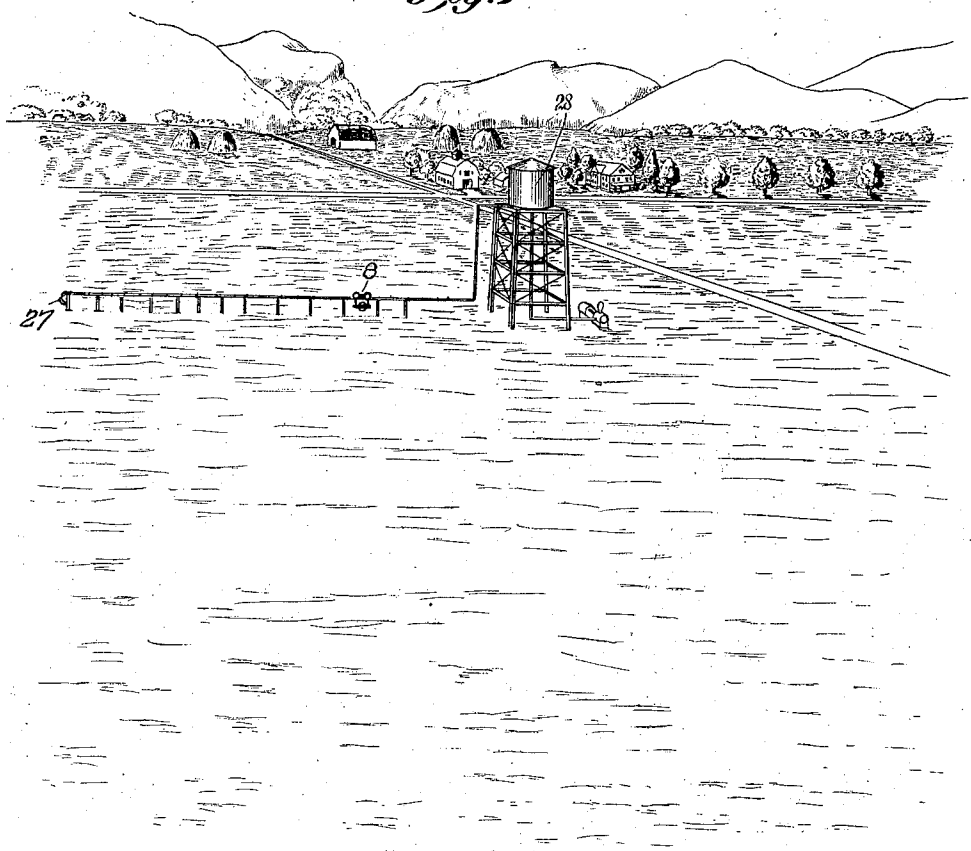
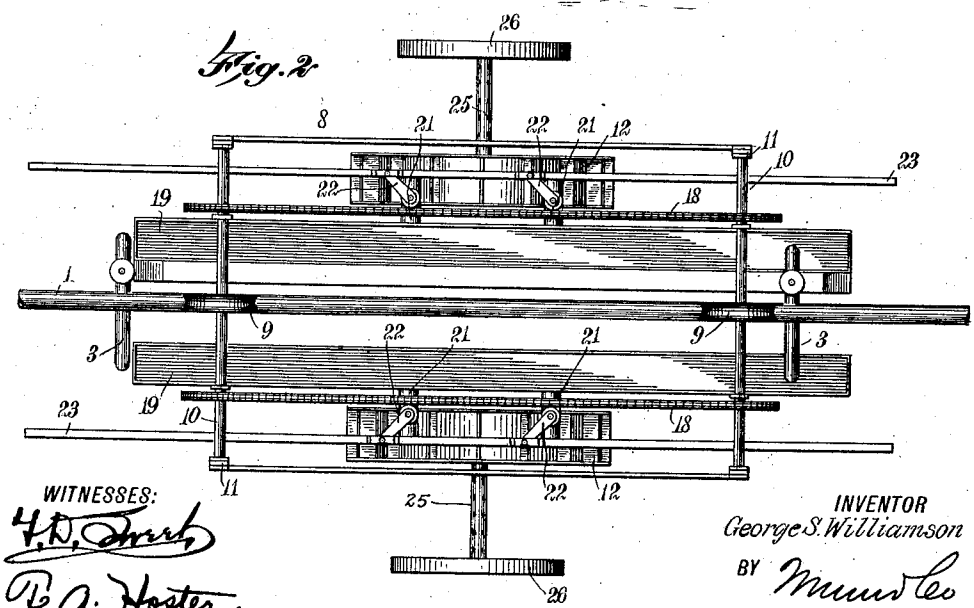


Fig. 2



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Fig. 3

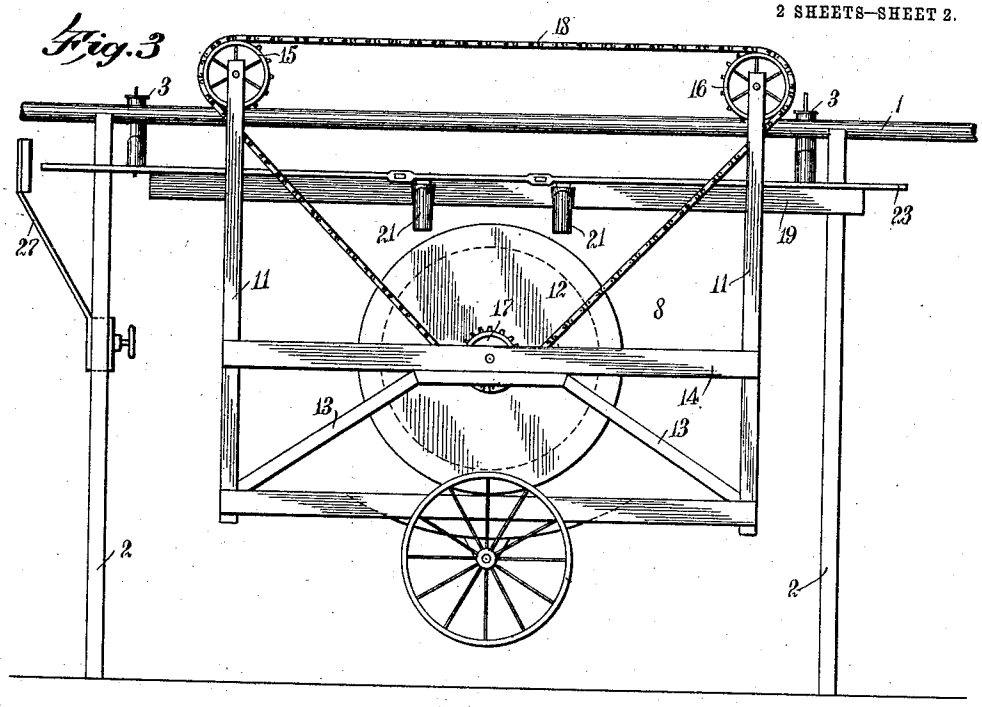


Fig. 4

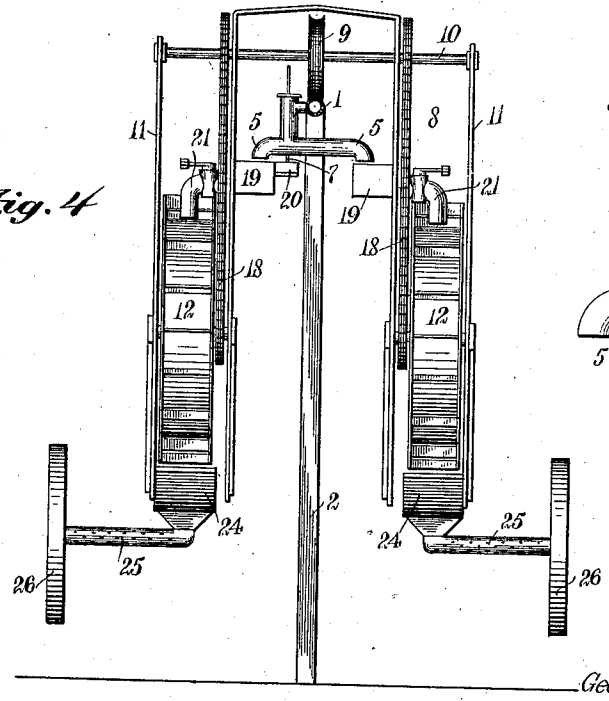
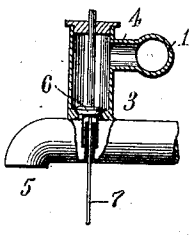


Fig. 5



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IRRIGATING APPARATUS.

1,079,817. Specification of Letters Patent. Patented Nov. 25, 1913.

Application filed May 10, 1910. Serial No. 560,449.

To all whom it may concern:

Be it known that I, GEORGE S. WILLIAMSON, a citizen of the United States, and a resident of Elk Grove, in the county of Sacramento and State of California, have invented a new and Improved Irrigating Apparatus, of which the following is a full, clear, and exact description.

The invention relates to irrigating and sprinkling, and has for an object to supply an irrigating apparatus adapted for use in sprinkling large fields and the like, the liquid employed in sprinkling being adapted to operate the sprinkling mechanism.

For the purpose mentioned use is made of a track pipe line provided with valves, and a carriage mounted to operate over the track pipe line and moved by a liquid taken from the track pipe line through the said valves, and transmitted to operating means on the carriage, after which the said liquid is ejected from a sprinkler mounted on the carriage.

Reference is to be had to the accompanying drawings constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view showing my irrigating apparatus in action; Fig. 2 is a plan view of the carriage of my device; Fig. 3 is a side elevation of a portion of the track pipe line showing the carriage mounted thereon, and the buffer for reversing the carriage; Fig. 4 is an end view of the carriage, with the track pipe line shown in cross section; and Fig. 5 is a partial sectional side view of one of the valves of the track pipe line.

Referring more particularly to the various views, I provide a track pipe line 1 mounted on suitable posts 2, as will be conveniently seen by referring to Fig. 1. The track pipe line 1 consists of a pipe adapted to convey a liquid, preferably water, and extended from the track pipe line at spaced distances are valve casings 3 having connections 4 with the track pipe line 1, and suitable outlet members 5 controlled by valves 6 secured to valve rods 7 slidably mounted in the valve casings 3.

A carriage 8 is suspended and travels over the track pipe line 1 by means of wheels 9 mounted on axles 10 in the upper part of the carriage. The carriage 8 has pairs of spaced depending members 11, and mounted to turn intermediate the members 11 are suitable paddle wheels 12, of any approved type. Bracing members 13 are provided to strengthen the carriage 8, and cross members 14 are disposed to provide a substantially strong bearing. Toothed wheels 15 and 16 are keyed to the axles 10, and toothed wheels 17 are keyed, one to each of the axles of the paddle wheels 12, with chains 18 provided to connect the wheels 15, 16 and 17 on respective sides of the wheels 9, as will be seen in Figs. 2 and 4.

On the frame of the carriage 8, sluices 19 are disposed, with one of the sluices provided with an extended member 20 constituting a valve control for the valve 6. Valves 21 are secured to the sluices 19, and mounted thereon by means of link members 22 are controlling rods 23 adapted to extend beyond both ends of the carriage 8. The valves 21 are mounted so that when the controlling rods are disposed so that the link members 22 point in one direction, one of the valves on the same side of the carriage 8 will be closed, while the other will be opened; and the same conditions are true of the valves 21 and controlling rod 23 on the opposite side of the carriage 8.

Directly beneath the paddle wheels 12 are catch basins 24, and extended therefrom on both sides of the carriage 8 are sprinklers 25, having mounted at their outer extremities suitable traction wheels 26.

A removable buffer 27 is provided, and adapted to be secured to one of the posts 2 so that the said buffer will be in horizontal alinement with the controlling rods 23. Before describing the operation of my device, it will be noticed that the valves 21 are disposed so that any liquid flowing from one of the valves will engage the paddles of the paddle wheel 12 beneath the said valve, so that the liquid will descend on the paddles on the same side that the valve is disposed and directly beneath the same.

In the operation of my device, the track pipe line 1 can be connected with any suitable supply such as an elevated tank 28,

thus constituting a gravity feed for the liquid from the tank to the track pipe line, and as all the valves 6 are normally closed the track pipe line will normally be filled with the liquid. For the purpose of more easily describing this operation, I will use water as the liquid to be used in the operation of my apparatus and for the irrigation of the field upon which the track pipe line is mounted.

The carriage 8 is mounted on the track pipe line so that the wheels 9 engage the track pipe line, as shown in Fig. 4, and the carriage will now be clear of the ground and suspended from the track pipe line. The carriage is pushed along until the valve control 20 engages a valve rod 7 of a valve 6, and in doing so the valve 6 is opened and the water flows from the track pipe line out through both outlets 5 into the sluices 19, disposed beneath the valve outlets 5. One of the valves 21 on each side of the carriage 8 is in open position while the other two valves, one on each side, are closed, and as the water flows into and fills the sluices 19, it flows out through the open valves 21 and descends upon the paddles of the paddle wheels 12. The open valves 21 being at the same end of the carriage 8, the water flowing from the valves engages the paddle wheels on their corresponding sides or ends and the paddle wheels will begin to turn around, thus transmitting motion to the wheels 9 by means of the wheels 15, 16, 17, and the chains 18, and causing the carriage 8 to move along the track 1. The valve control 20 is made a trifle longer than the distance between the valves 6, and thus one of the valves 6 will always be open and a steady stream of water is provided. As the paddle wheels 12 turn around to move the carriage 8, the water dripping from the paddle wheels is caught in the catch basins 24 and flows through the sprinklers 25, and the said sprinklers being perforated the water is softly sprinkled on the ground or grass over which the carriage 8 is operated.

The area of grass or ground to be sprinkled being known, a buffer is placed at the end of the ground to be sprinkled, in a manner described and shown in Figs. 1 and 3, and when the carriage 8 approaches the buffer, the ends of the controlling rods 23 engage the buffer and by means of the link members 22 connected with the valves 21 and the controlling rods 23, the valves 21 are reversed so that the valves that were previously open are closed while the closed valves are opened, and as will be easily understood this operation will cause the carriage 8 to move in the opposite direction to its previous movement, as the now open valves permit the water to descend on the opposite sides of the paddle wheels 12.

If it is desired to constantly sprinkle a certain tract of land, two buffers are employed, disposed on the posts of the track pipe line, at its respective ends, and thus it will be seen that the carriage 8 will operate back and forth, being controlled absolutely by the water in the track pipe line, and the buffers 27. If it should be desired to transpose the carriage 8 from one track pipe line to another, the carriage can be slipped off the end of the track pipe line and by means of the wheels 26, it can be conveniently moved to the other track pipe line.

From the foregoing description, it will be seen that an efficient irrigating apparatus is provided in which the control of the apparatus and the operation of the same are substantially governed by the liquid used in sprinkling; and it will be seen that besides water, any preferable liquid conveniently adapted for irrigating or fertilizing, can be used.

Although for the purpose of describing my invention, I have shown a particular form of the same, it will be understood that the scope of the invention is defined in the appended claims.

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

1. An irrigating apparatus, comprising a track pipe line, valves for controlling the flow of liquid from the track pipe line, a carriage mounted to travel on the track pipe line and provided with means for operating the valves, a trough on each side of the carriage and into which the said valves discharge, valves for each trough, means for automatically operating the last named valves, a paddle wheel on each side of the carriage and onto which the valves of the troughs discharge, means for operating the carriage from the paddle wheels, and a sprinkling device receiving the liquid from each wheel.

2. In an irrigating apparatus, a track pipe line, valves for controlling the flow of liquid from the track pipe line, a carriage mounted to travel on the track pipe line, a trough on the carriage for receiving the liquid from said valves, means on the trough for operating the valves, a paddle wheel, means for delivering the liquid from the trough to the paddle wheel, means for operating the carriage from the paddle wheel, and a distributing device receiving the liquid from the paddle wheel.

3. In an irrigating apparatus, a track pipe line, valves for controlling the flow of liquid from the track pipe line, a carriage mounted to travel on the track pipe line and provided with means for operating the valves, a trough on the carriage for receiving the liquid from the valves, valves on the trough, a rod connecting the last-named valves and projecting beyond one end of the

carriage, a stop with which the rod is adapted to engage to open one valve and close the other, a paddle wheel receiving the liquid from the valves of the trough, a sprinkling device to which the liquid is delivered from the paddle wheel, and means for operating the carriage from the paddle wheel.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE SHAW WILLIAMSON.

Witnesses:

JOHN MAHON,

E. E. BARRY.

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