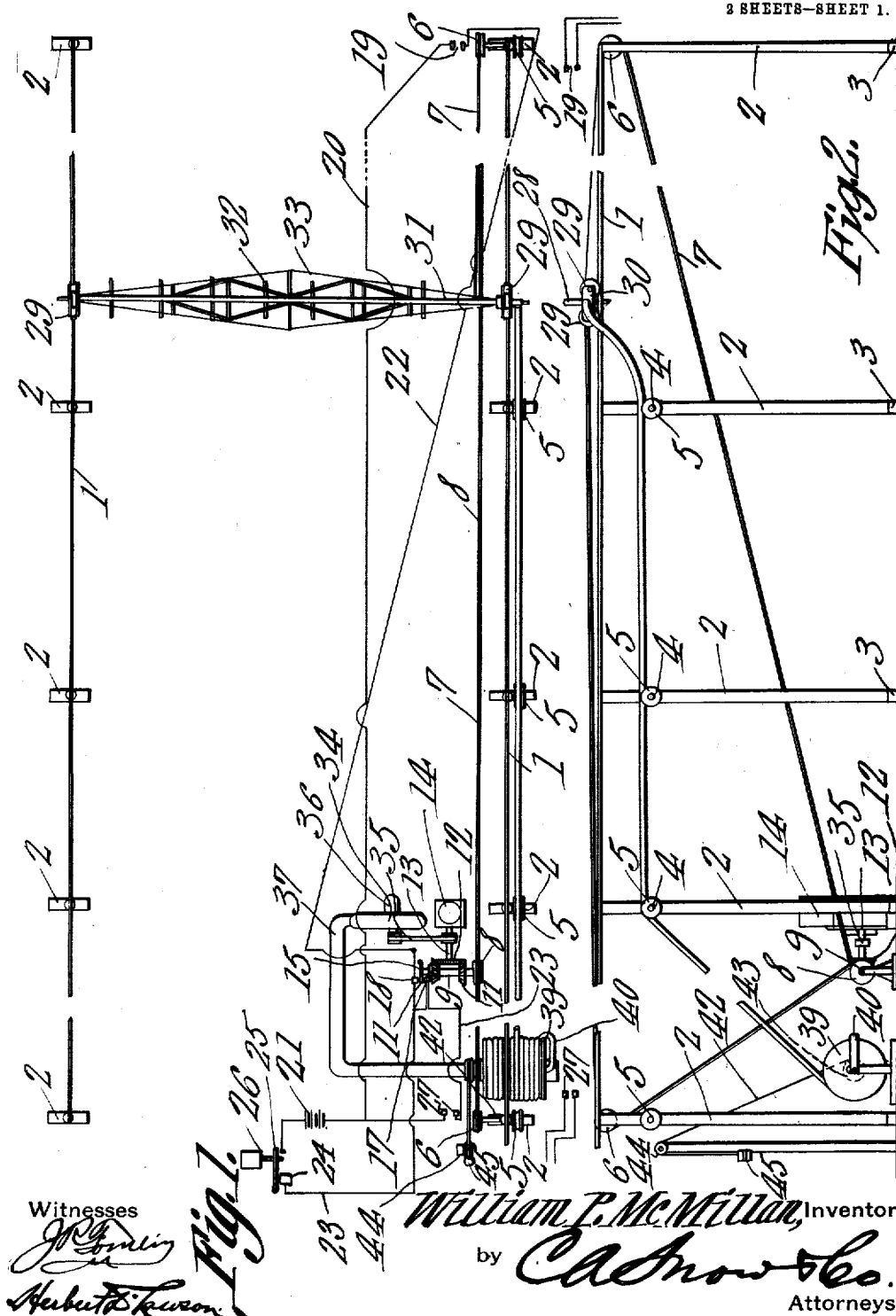


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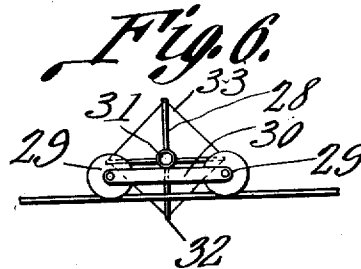
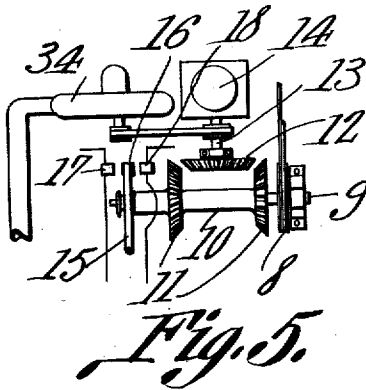
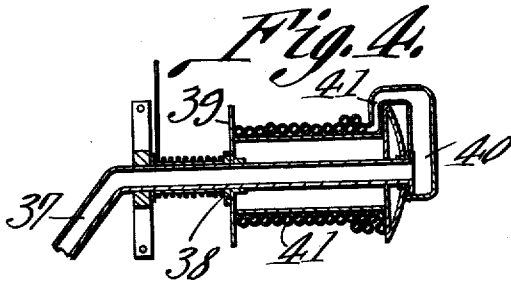
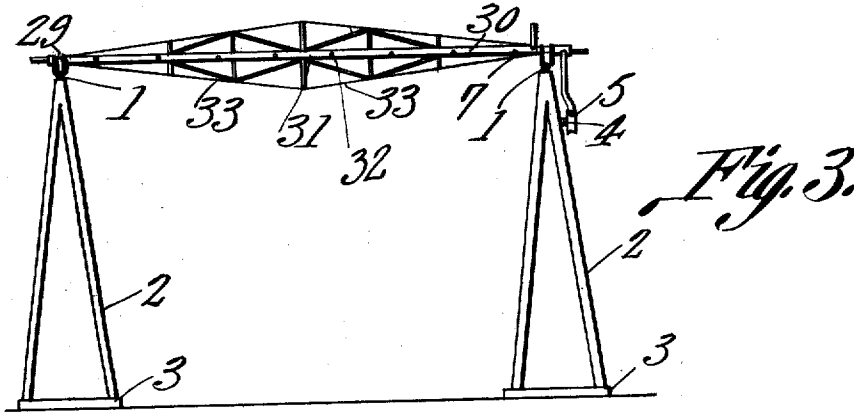
2 SHEETS--SHEET 1.



W. P. McMILLAN.
IRRIGATING APPARATUS.
APPLICATION FILED JULY 25, 1910.

Patented Feb. 13, 1912.
2 SHEETS—SHEET 2.

1,017,578.



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UNITED STATES PATENT OFFICE.

WILLIAM PERRY McMILLAN, OF TAMPA, FLORIDA.

IRRIGATING APPARATUS.

1,017,578.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed July 25, 1910. Serial No. 573,608.

To all whom it may concern:

Be it known that I, WILLIAM P. McMILLAN, a citizen of the United States, residing at Tampa, in the county of Hills-boro and State of Florida, have invented a new and useful Irrigating Apparatus, of which the following is a specification.

This invention relates to apparatus for irrigating plantations, orchards and so forth, the same being also used for extinguishing fires, washing streets, etc.

One of the objects of the invention is to provide inexpensive apparatus of this character which can be readily set up and which includes a sprinkler of considerable length mounted upon supporting cables and shiftable back and forth by means of a motor provided for that purpose, the said sprinkler discharging water continuously upon the surface thereunder during this back and forth movement.

Another object is to provide means for supplying water to the sprinkler during its movement.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a plan view of the apparatus, portions being shown diagrammatically. Fig. 2 is a side elevation. Fig. 3 is a transverse section. Fig. 4 is an enlarged section through one of the reels and the hose mounted thereon. Fig. 5 is an enlarged plan view of the reversing mechanism and the operating motor. Fig. 6 is an enlarged end view of one of the pipes and its supporting wheels.

Referring to the figures by characters of reference 1 designates supporting cables which may be of any length desired and which may be placed any desired distance apart, each of these cables being upheld by posts 2. Each post is made up of upwardly converging members bearing on a sill 3 and the posts which support one of the cables are provided with brackets 4 each of which carries a roller 5 for the purpose hereinafter set forth. The posts 2 which support the end portions of the cables 1 are provided close to said cables, with sheaves 6 on which are mounted actuating cables 7 each of which constitutes an endless belt. One

of the cables is secured, at an intermediate point to an actuating wheel or drum 8. This wheel is disposed adjacent one of the end posts and is mounted on a shaft 9. A sleeve 10 is feathered on this shaft and carries oppositely arranged bevel gears 11 either of which is adapted to mesh with a gear 12 secured to the drive shaft 13 of a motor 14. A lever 15 is fulcrumed adjacent the sleeve 10 and engages said sleeve so that, when said lever is swung in either direction, the sleeve 10 will be moved along the shaft 9 so as to bring one of the gears 11 into mesh with the gear 12. This lever 15 preferably carries an armature 16 which is interposed between two oppositely disposed magnets 17 and 18.

Spaced contacts 19 are supported adjacent one of the wheels 6 of one of the cables 7 and are electrically connected, by a conductor 20, with a source 21 of electricity and by a conductor 22, with the magnet 18. Another conductor 23 extends from this magnet to the source 21 and includes means, such as a magnet 24 and as armature 25, for tripping an alarm mechanism indicated generally at 26, which is preferably of the same type as ordinarily employed in clocks for striking the hours. Another set of spaced contacts 27 is located adjacent the other wheel 6 of said cable 1 and is connected with the magnet 17 and the source of electricity as well as with the mechanism indicated at 24 and 25. The cable 7 carries an upstanding circuit closer 28, adapted, when the cable is moved a predetermined distance in one direction, to move against the contacts 27 and thus complete the circuit through the magnet 17, and, upon completing its movement in the opposite direction, to move against the contacts 19 and thus complete the circuit to the magnet 18. When magnet 17 is energized, the armature 16 is attracted thereto and the sleeve 10 moved so as to bring one of the gears 11 into mesh with gear 12. When the magnet 18 is energized, the other gear 11 is placed in mesh with the gear 12. It will thus be seen that an automatic reversing mechanism is provided which is advantageous for the reasons hereinafter set forth.

Grooved wheels 29 are mounted on the supporting cables 1, these wheels being arranged in pairs, one pair being located on each cable, and the wheels of each pair being connected as indicated at 30. The

connections 30 constitute supports for a spraying pipe 31 extending across the space between the cables 1 and carrying a plurality of discharge pipes 32 extending in any direction desired, each of which may have a sprinkler at its free end. When the pipe 31 is of considerable length, it can be reinforced by securing trusses 33 thereon. The cable 7 is secured to one end portion of the pipe 31 and it will be seen, therefore, that when the wheel 8 is rotated in the manner hereinbefore described, the said pipe will be drawn longitudinally of the cables 1. The circuit closer 28 is located at one end of the pipe 31 so that, when said pipe reaches one limit of its movement, the circuit closer will come against the contacts 27, and, when it reaches the other limit of its movement, the circuit closer will move against the contacts 19.

A pump 34 is located adjacent the post at one end of one of the cables 1 and is driven by a belt 35 or the like, receiving motion from the motor shaft 13. A pipe 36 extends from this pump to a well or other source of supply and another pipe 37 extends from the pump to a tubular shaft 38 on which a reel 39 is mounted to rotate. A tubular arm 40 is swiveled upon one end of the shaft 38 and extends across one end of the reel and has one end of a flexible hose 41 secured to it. This hose is wrapped around the reel and is extended therefrom and upwardly to one end of the pipe 31. Said hose is mounted on one or more of the wheels or pulleys 5.

When the motor 14 is started, and the sleeve 10 shifted manually or otherwise, motion will be transmitted through gears 12 and 11 to shaft 9 and the two wheels 8 will therefore be rotated so as to shift the cables 7 in the direction of their length and thus cause the pipe 31 to move longitudinally of the cables 1. At the same time the pump 34, which is driven by the motor 14, will elevate water through the pipe 36 and force it through pipe 37 and into the shaft 38 of the reel 39. This water will pass through the tubular arm or extension 40 and into the hose wrapped upon the reel and thence to the pipe 31 from which it will be discharged in jets. During the movement of the pipe 31 toward the contacts 19, the hose 41 will be uncoiled from the reel 39 and will be drawn along the supporting wheels or rollers 5. This uncoiling of the hose can be utilized to wind a cable 42 upon a sleeve 43 which is secured to the reel 39 and rotates on the shaft 38. Said cable 42 extends upwardly a considerable distance and is supported at its upper end upon a sheave 44, there being a weight 45 at the free end of the cable. Obviously, when the cable 42 is wound upon the sleeve 43, the weight 45 will be elevated, this weight serving to hold the

hose taut. When the pipe 31 reaches one limit of its movement, the circuit will be completed through the contacts 19 by the circuit closer 28 and magnet 18 will therefore be energized and the armature 16 attached thereto so as to actuate the reversing mechanism. At the same time the alarm 26 will be operated so as to indicate that one trip has been made by the spraying pipe. Said pipe will then promptly begin its return movement, upon the completion of which the circuit through the contacts 27 will be closed and the reversing mechanism operated and the alarm 26 actuated so as to ring the bell twice and thus indicate that two trips have been made. This operation can be continued as long as desired. The operation of the motor can be controlled by any suitable electrically operated means and, if desired, this mechanism can be controlled by a person located at a considerable distance from the apparatus. The alarm 26 can also be located at any desired distance from said apparatus.

As has heretofore been stated the cables 1 can be any desired distance apart and of any length desired. Moreover the sprinkling pipe 31 can be as long as desired, the truss 33 being enlarged and strengthened in proportion to the increased length of the pipe. In large plantations or orchards, a series of supporting cables 1 may be utilized and the sprinkling apparatus can be transferred from one to the other of these series and the mechanism operated so as to cover the entire area. Moreover the supporting cables can be located at any desired elevations so as to carry the sprinkling over orchards, houses, etc.

While the apparatus is particularly designed for irrigating land, it can also be employed for extinguishing fires, for sprinkling streets, and for other purposes.

As has been heretofore pointed out, when the hose is being pulled off of the reel 39, the weight 45 is being elevated, and, during the movement of the pipe 31 in the opposite direction, this weight will cause the reel to wind the slack hose thereon.

Various changes can of course be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention as defined in the appended claim.

What is claimed is:—

Irrigating apparatus including parallel supporting cables, a longitudinally trussed spraying pipe extending thereacross, wheels mounted to travel along the cables and constituting supports for the pipe, a reel, a hose connection between the reel and the pipe, means for forcing water into the hose upon the reel and thence to the pipe, a motor continuously operating, means actuated by the motor for shifting the pipe along the

cables, electrically operated means for reversing said shifting mechanism, a pair of contacts at each limit of the path of the pipe and electrically connected to said electrically
5 operated means, means carried by the spraying pipe for engaging the contacts in the path thereof to close the circuit to said electrically operated means upon the completion of the movement of the pipe in each direction, and means acted on by gravity for
10 actuating the reel to wind the hose during the movement of the pipe toward the reel,

said pipe constituting means for pulling the hose and unwinding it from the reel during the movement of the pipe away from the reel. 15

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM PERRY McMILLAN.

Witnesses:

W. L. HENDIG,
W. H. WALKER.