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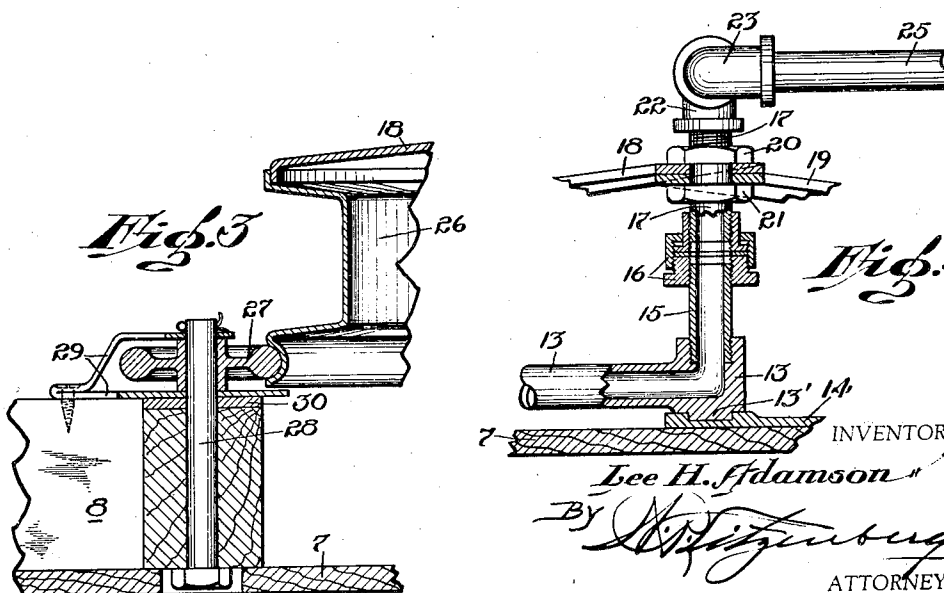
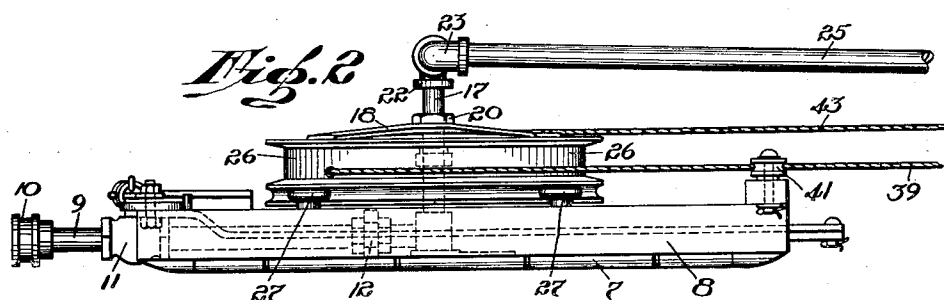
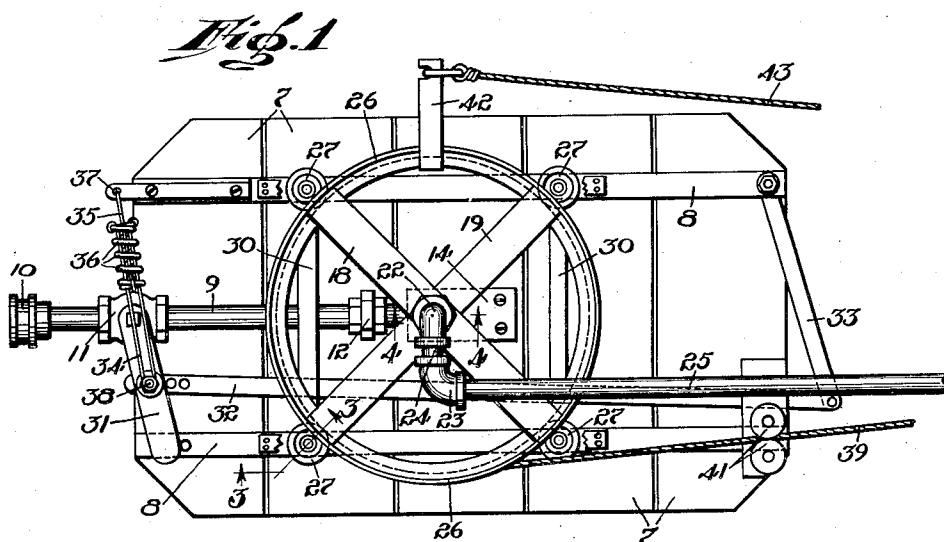
L. H. ADAMSON

1,975,596

TRAVELING SPRINKLER

Filed July 18, 1933

2 Sheets-Sheet 1



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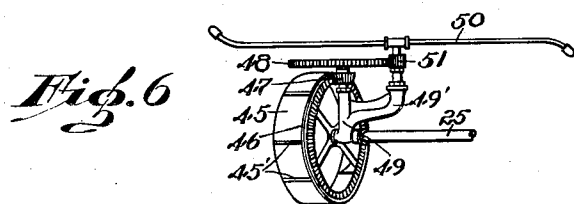
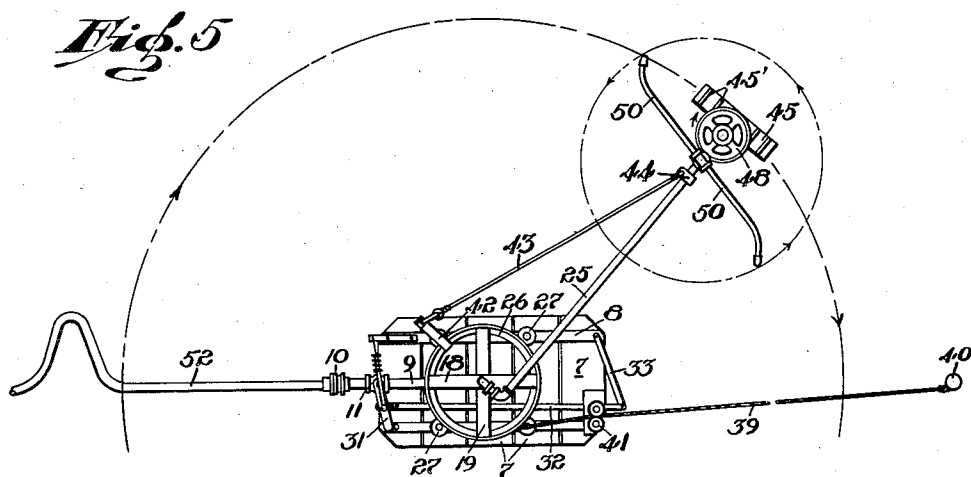
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

1,975,596

TRAVELING SPRINKLER

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Application July 18, 1933, Serial No. 680,959

6 Claims. (Cl. 299—50)

Among the salient objects of my invention are:

To provide in combination with a revoluble sprinkler element adapted to be driven by the force of the water discharged therethrough, improved power means capable not only of moving the entire sprinkler apparatus bodily over the area being sprinkled, but also of pulling a long heavy line of hose therewith.

To provide a traveling sprinkler apparatus in which a sprinkler element is turned on its own axis by the force of the water discharged therethrough, with a carrier wheel therefor and with driving connections therefrom for propelling said carrier wheel and said sprinkler element around a circle surrounding said entire sprinkler apparatus.

To provide in connection with a sprinkler apparatus of the character referred to a drum adapted to be driven to wind a cable thereupon, said drum having an arm projecting beyond its periphery with connections therefrom to a traveling carrier wheel driven by a revoluble sprinkler element for turning said drum, whereby, when said cable is anchored at its outer end at a distant point, said power driven drum will wind said cable thereupon and pull the entire sprinkler apparatus bodily along said cable simultaneously with the travel of the sprinkler element and said carrier wheel around said sprinkler apparatus.

To provide in a sprinkler apparatus of the character referred to a long horizontal arm revolubly anchored at one end on a main carrier and having its outer end connected with a carrier wheel, said carrier wheel being propelled by a revoluble sprinkler element driven by the force of water discharged therethrough to move said horizontal arm around its anchor axis, and a drum on said main carrier with connections from said arm and carrier wheel for turning said drum to wind a cable thereon for moving said sprinkler apparatus bodily along said cable; and, in general, to provide an improved sprinkler apparatus with greater power means for moving the same bodily and for pulling a long line of hose therewith for sprinkling greater areas without the necessity of a personal attendant except at long intervals, means being provided for automatically shutting off the water supply at the sprinkler when said sprinkler has traveled the predetermined distance for which it was originally started.

Other objects and advantages will be apparent from the following description of one practical embodiment of my invention, taken in connection with the accompanying two sheets of drawings, in which—

Figure 1 is a top plan view of an apparatus embodying my invention;

Figure 2 is a side elevation thereof;

Figure 3 is a fragmentary sectional view taken on the line 3—3 of Fig. 1;

Figure 4 is an enlarged fragmentary sectional view taken on the line 4—4 of Fig. 1;

Figure 5 is a plan view of an entire sprinkler apparatus with operating connections and embodying my invention; and

Figure 6 is a perspective view of a revoluble sprinkler element and its carrier wheel, this mechanism furnishing the power for turning a drum upon which a pull cable is wound for moving the entire sprinkler apparatus.

Referring now in detail to the drawings, my invention as here illustrated for descriptive purposes, includes a main carrier 7, in the form of a drag, with two stringers 8, 8, lengthwise thereof.

Mounted on said main carrier 7 is a pipe 9, with coupling 10, valve 11, and union 12, connecting it with a casting 13, the bottom of which has a boss 13' formed thereon to seat in a member 14, secured in the bottom of said main carrier, substantially as shown. A nipple 15 connects said casting 13, with a union 16, the other part of which connects with another threaded nipple 17, on which are placed two cross arms or members 18 and 19, held in place between two lock nuts 20 and 21, as seen in Fig. 4. On the upper end of said nipple 17 is an elbow 22, connected with another elbow 23 by means of a short nipple 24, with which elbow 23 there is connected a long pipe or arm 25, hereinafter referred to and its function described.

A drum or cable receiving member 26 is rotatably mounted on said main carrier and held in place by four bearing wheels or roller members, 27, 27, each of which is mounted on a bearing pin 28, held in place by means of a yoke member 29, secured on the top of the stringer 8, as clearly shown in the enlarged view in Fig. 3. The cross arms or members 18 and 19 are detachably seated in the inner top part of said drum 26, as shown and function as thrust members to prevent undue lateral movement of the nipples 15 and 17 and their connections with the pipe 25. Two connecting cross straps or members 30, 30, connect the opposite roller members on the stringers 8, 8, as shown and prevent any expansion of said bearing rollers or wheels 27, 27, as will be understood from the showing in Fig. 1.

A valve operating lever 31 is shown connected with the valve 11, and an operating bar 32 is connected at one end with said lever 31, and at its

other end is pivotally connected with another lever or link 33, pivotally connected by a bolt to one of the stringers 8, as seen in Fig. 1. When said link 33 is moved inwardly, as when engaged by any fixed member or object as said main carrier moves, it operates through the bar 32 to move said valve operating lever 31 and close the valve. To facilitate the movement of the lever 31, two hooked members 34 and 35, in a coiled spring 36, and connected at opposed ends, as at 37 and 38, are shown. When the valve operating lever 31 is moved to the left of the position shown in Fig. 1, as it crosses the center of the valve, the spring causes a quick action or movement of the valve closing lever 31, as will be understood from the showing.

A cable 39 is attached to the drum 26, to be wound thereon when said drum is turned, the outer end of said cable being anchored at a distant place to a fixed stake or member, as at 40, again referred to. Said cable is guided through suitable pulleys, as at 41, on the main carrier 7—8, clearly shown in Figs. 1 and 2.

In the present showing, I have provided the cable drum 26 with an arm 42, to which is attached a cable 43, connected at its outer end to a collar 44 on the outer end of the pipe 25, as seen in Fig. 5, for a purpose hereinafter referred to.

I will now describe the power furnishing mechanism which operates the drum for taking up the cable 39. At the outer end of the pipe 25, operating as an arm, is a carrier wheel 45, having traction ribs 45' across its face, and having a rack or gear 46 around its inner face and with which meshes a pinion 47, driven by a gear 48, said gear 48 and pinion 47, have a bearing support in a forked casting 49, as shown in Fig. 6, on said pipe or arm 25. Revolvably mounted in the outer fork portion 49' of said casting is a sprinkler element or arm 50, driving a pinion 51, which meshes with the gear 48, as clearly shown. The casting 49 connects with the pipe 25, and the fork portion 49' forms a communication from the pipe 25 to the sprinkler arm 50, in a well known manner, whereby said arm is driven.

A water supply hose 52 is shown connected with the pipe 9 on the main carrier 7—8, and this hose will be pulled with said sprinkler apparatus as it moves in a manner now to be explained.

As the water supply is furnished through the hose 52, pipe 9, and up through the connections to the arm or pipe 25 and thence to the sprinkler arm or element 50, said sprinkler element is driven by the force of the water pressure there-through. This operates through the pinion 51, gear 48, pinion 47, gear 46, to drive the traction wheel 45, with the result that said traction or carrier wheel 45 travels around the entire apparatus, as indicated by the larger dot and line circle in Fig. 5, the smaller circle indicating the revolutions of the sprinkler element 50. The arm 42, secured to the cable drum 26, being attached by the cable 43 to the outer end of the pipe 25, is pulled by said cable as said carrier wheel 45 travels around the main carrier, thus turning said drum 26, and winding said pull cable 39 thereupon, pulling the entire sprinkler apparatus along the cable 39 during the operation of the sprinkler element. When the main carrier 7—8 reaches the anchor stake 40, the link 33 will engage it and be moved inwardly, moving the thrust bar 32 and the valve operat-

ing lever 31 rearwardly to close the valve 11 and cut off the water supply.

It will thus be seen that this improved means of developing power will furnish sufficient power not only to pull the main carrier across a large area, but will also pull therewith a long line of heavy hose. The leverage furnished by connecting the cable drum 26, through the arm 42 and the cable 43 with the carrier wheel mechanism at the outer end of the pipe 25, gives a maximum of leverage. As said carrier wheel travels around the main carrier, it will have to move over the hose 52, and this is facilitated by means of the traction ribs 45' on said carrier wheel.

The union 16, Fig. 4, not only makes it possible for the pipe 25 to revolve, but it provides a convenient means for disconnecting the pipe 25 and the cross arms 18—19, and lifting them from the drum 26. These cross arms 18—19, as before stated, afford means for holding the connected end of the pipe 25 from moving laterally, for the ends of said cross arms will abut against the outer rim of the top of the drum 26.

While I have shown and described one practical embodiment of my invention, I am aware that changes in the details of construction and arrangement can be made therein without departing from the spirit of the invention, and I do not, therefore, limit the invention to the showing here made, except as I may be limited by the hereto appended claims.

I claim:

1. In combination, a main carrier, a power drum thereon, an arm revolvably anchored at one end to burn about the axis of said drum on said main carrier and having a carrier wheel for its outer end, a sprinkler element carried by said carrier wheel and adapted to be driven by the force of the water discharged therethrough and having connections therefrom for propelling said carrier wheel to move said arm and carrier wheel around said main carrier, means for connecting a water supply hose to said apparatus for supplying water to said sprinkler element, a pull cable to be wound upon said drum, and connections from said carrier wheel and arm for turning said drum to wind said cable thereupon.

2. In combination, a main carrier, a power drum thereon, a pipe revolvably anchored at one end centrally of said drum on said main carrier and having a carrier wheel for its outer end, a sprinkler element carried by said carrier wheel and connected with said pipe and adapted to be driven by the force of the water discharged there-through from said pipe and having connections therefrom for propelling said carrier wheel to move said pipe and carrier wheel around said main carrier, means for connecting a water supply hose to the anchored end of said pipe on said main carrier, a pull cable to be wound upon said drum at one end, with its outer end anchored at a distance, and connections from said carrier wheel and pipe for turning said drum to wind said cable thereupon.

3. A traveling sprinkler apparatus including a main carrier, a drum thereon, a pipe pivotally anchored at one end centrally of said drum on said main carrier and at its outer end provided with a carrier wheel therefor, a sprinkler element revolvably mounted over said carrier wheel and adapted to be driven by the force of water discharged therethrough from said pipe, means for connecting a supply hose for water with said pipe and said sprinkler element, driving connec-

tions from said sprinkler element to said carrier wheel for propelling said wheel and said pipe around said main carrier, connections from said carrier wheel and pipe to said drum for turning the same as said pipe and carrier wheel move around said main carrier, and a cable anchored at one end at a distance with its other end around said drum, whereby the turning of said drum pulls said entire sprinkler apparatus along said cable to said cable anchor.

4. In a traveling sprinkler apparatus, a main carrier, a cable receiving member thereon with cable having its outer end anchored at a distance, an arm pivotally anchored at one end on said main carrier and at its outer end having a carrier wheel, a revoluble sprinkler element carried by said carrier wheel, means for connecting a supply hose for water with said apparatus and said sprinkler element, driving connections from said sprinkler element for propelling said carrier wheel around said main carrier, connections between said carrier wheel and said cable receiving member, whereby the travel of said carrier wheel around said main carrier turns said cable receiving member to wind said cable thereupon and move said main carrier along said cable, a valve in the water supply line to said sprinkler element and a valve closing member on said apparatus adapted to engage and be moved by a fixed object in the path of travel of said apparatus when said main carrier moves against it for closing said valve to shut off the water supply.

5. In combination, a main carrier, a power drum thereon, an arm revolubly anchored at one end centrally of said drum on said main carrier and having a carrier wheel for its outer end, a

sprinkler element carried by said carrier wheel and adapted to be driven by the force of the water discharged therethrough and having connections therefrom for propelling said carrier wheel to move said arm and carrier wheel around said main carrier, means for connecting a water supply hose with said apparatus for supplying water to said sprinkler element, a pull cable to be wound upon said drum, connections from said arm to said drum for turning said drum to wind said cable thereupon, whereby to pull said main carrier along said cable, a valve and valve closing means on said main carrier for automatically cutting off the water supply to said sprinkler element when said main carrier reaches a predetermined stopping place, said valve-closing means being adapted to engage and be moved by a fixed object at said stopping place.

6. In a traveling sprinkler apparatus, a main carrier having a water supply hose connected therewith to be pulled thereby as said main carrier moves forwardly, a revoluble sprinkler element to be driven by the water pressure discharged therethrough, a pipe on said main carrier for connecting said water supply to said sprinkler element, a carrier wheel for said sprinkler element connected to be propelled thereby during its operation, said carrier wheel moving said sprinkler element bodily around said main carrier, said pipe being connected therewith for guiding it, and power means operable by said traveling carrier wheel, pipe and said sprinkler element for bodily moving said main carrier forwardly and pulling said hose therewith as said carrier wheel travels therearound.

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