This invention is particularly concerned with the control of a sprinkler of this character which serves to hold the parts of the device in condition for operation, when once so set, until a point is reached at which it is desired to stop the operation. The garden hose 16 will be understood to be of the standard type which is connected at a tap or faucet, usually projecting from the side of a building, and it extends to the sprinkler to supply water, the same being discharged into the inlet 20 of the water passage within the sprinkler. Stated differently, this invention is concerned primarily with the means by which the device will automatically stop the supply of water to the sprinkler, thereby stopping both the water distributing operation of the sprinkler and the movement of the sprinkler.

The device includes a valve casing 30 of substantially tubular character having a reduced screw-threaded portion 32 secured in a socket in the casing 10 for communication of the bore of the tubular member 30 with the inlet end of the water passage in the housing. The tubular member 30 has a bore of smaller diameter at one end portion than at the opposite end portion, thereby providing an interior shoulder or valve seat 34 preferably of conical form. A ball valve member 36 fits with clearance in the large diameter portion of the bore of the tubular part 30 and is adapted to bear against the seat 34 to close the tubular valve member in response to the pressure of fluid acting against said valve member. A tubular fitting 38 is screw-threaded in the large diameter end of the tubular member 30, defining a stop for limiting movement of the ball valve 36 away from the valve seat 34. The tubular fitting 38 is preferably provided with an enlarged head or end portion 49 which serves as a retainer for a cup-shaped internally screw-threaded coupling or fitting member 42 having at one end an truncated flange 44 which is received and retained between the end of the tubular member 30 and the enlarged end 40 of the tubular fitting 38, the fit between these parts being such as to accommodate rotation of the member 42 for the purpose of threaded connection thereof with the threaded end of a male coupling member 46 carried upon the end of the hose 16.

The tubular member 30 has a transverse bore extending through at least one wall thereof adjacent to the valve seat 34 within which is mounted a bushing 48 serving to journal a pin or shaft 50. The shaft 50 has a lateral projection or abutment 52 mounted thereon in a position adapted to engage the ball valve 36 when in the position illustrated in Figs. 3 and 4, for the purpose of holding that ball valve spaced from the valve seat 34. The parts are so constructed that when the shaft 50 is rotated through an angle of from 60° to 90°, the projection 52 will be positioned clear of the ball valve 36 so that said valve is free to move to the closed or sealing position bearing against the seat 34 in response to the pressure of water acting thereagainst supplied by the conduit 16.

At its outer end the shaft 50 mounts a spool member or disk 54 which is provided with a circumferential groove 56 serving to define a pair of spaced flange portions 58. Each of the flange portions 58 is preferably provided with a notch 60, said notches being axially aligned.

An elongated rod 62 has a sliding guide fit or mounting upon the frame 10 and extends forwardly from the valve unit to terminate in a head or abutment portion 64 which projects forwardly from the parts of the sprinkler adjacent thereto, and particularly forwardly with respect to rollers 14 and the foot or support members 18. The rod 62 is normally spring-urged forwardly for which purpose a coil spring 66 may be provided, bearing at one end against the abutment 64, and at its opposite end against the head 62. The rear end of the rod 62 is substantially hook-shaped, as best illustrated in Fig. 2, being upwardly return bent at 68...
to fit around the hub of the spool 54, that is, to fit within the groove 56. The length of the return bent hook portion is preferably such that when the spring 66 has been fully compressed, the hub portion of the spool will still be engaged by the hook substantially as illustrated in Fig. 2. At substantially the center of the return bend or hook portion is mounted a cross-pin 70. This pin is adapted to seat in the notches 60 formed in the flanges 58 of the spool when said notches are in a rotary position registering with said pin, as illustrated in Fig. 1. The arrangement of the parts, especially the hook engagement of the part 68 around the hub of spool 54 and the guiding means for slidably positioning the rod 62 with reference to the frame 10, coupled with the action of the coil spring 66 to urge the parts 62--68 to the position illustrated in Fig. 1, acts normally to restrain the spool 54 against rotation. The notches 60 are so located with respect to the lateral projection 62 upon the shaft 50 that said projection will be positioned as illustrated in Fig. 3, serving to hold the valve seat 34 when the pin 70 seats within the notches 66.

An elongated rod 72, here illustrated as substantially upright, is positioned tangentially with reference to the spool 54, being received at its lower end in the groove 56 of the spool 54 and being pivoted at 74 to the spool flange 58. The frame 10 includes an attached guide 76 through which the rod 72 extends. At its upper end rod 72 mounts an absent or upper head 78, and a coil spring 80 preferably encircles the rod 72, bearing at one end against the guide 76, and at its opposite end against the head 78 so as normally to urge the rod 72 upwardly and to rotate the spool 54 and the shaft 50 to the position illustrated in Fig. 2 in which the projection 52 is clear of the ball valve 36 so that said valve is permitted to seat in response to water pressure to close the valve.

The device provides simple and accurate, trouble-free, sturdy means assuring the desired operation of the sprinkler. For the purpose of setting the device to cause the operation of the sprinkler to commence, all that is required is depression of the rod 72 to the position illustrated in Fig. 1 against the action of the spring 80 to such an extent as to cause the spool 54 to rotate for registration of its notches 60 with the pin 70. When such registration occurs, the spring 66 is free to act to shift the rod 62 from the position illustrated in Fig. 2 to the position illustrated in Fig. 1, causing the pin 70 to enter the notch 60. This operation, as previously explained, rotates the interior shaft 50 in a position to engage the ball valve as seen in Fig. 3, and to prevent that valve from closing in response to pressure of water passing the same. The supply of water past the valve to and through the sprinkler causes the distribution of the sprinkler heads 28, and, due to the rotation thereof, the drive mechanism within the frame 10 is actuated, causing the rotation of the shafts 12 and the gripping of rollers 14. The gripping rollers embrace the hose 16 and travel therealong, serving to propel the sprinkler which moves upon the runners or supports 18. The movement is in such a direction that the abutment 64 is positioned foremost.

When the device has once been set, a fixed abutment will be positioned at that point along the length of the hose 16 at which the operation of the device is to be stopped. This abutment may constitute a brick, a peg or any other device found suitable, and so positioned as to be engaged by the abutment 64, and inserted a cross-pin 70. The abutment engages the end 62 of the rod 62 to be shifted rearwardly against the action of the spring 66. This shifting continues until the pin 70 is released from the notches 60. Upon this release, the spool 54 is free to rotate to the position illustrated in Fig. 2 under the influence of the spring 80 which pulls upwardly upon the rod 72 and causes the spool to be moved from the position shown in Fig. 1 to that shown in Fig. 2.

In the event it is desired to employ the valve construction in propulsion means for garden hose of the character illustrated in our co-pending application, Ser. No. 138,682, filed January 14, 1950, the parts will be so arranged that the rod 62 will extend from the valve in the direction opposite the direction in which the hose is pulled. The head 64 of that rod will be positioned clear of the frame of the mechanism adjacent to the hose being propelled thereby, so that it may be tripped by an abutment or a stop which is carried by the hose, such as a clamp or the like embracing the hose at a selected point thereof.

While the preferred embodiment of the invention is illustrated and described herein, it will be understood that changes in the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

We claim:

1. In a traveling lawn sprinkler of the type having means for propelling the same in one direction and powered by the flow of water which is distributed thereby, comprising a valve having a housing and a shaftlike valve element, a valve controller rotatable in said housing and having an open and a closed position, respectively, a spring-pressed endwise shiftable latch member releasably engageable with and projecting forwardly from said valve controller in the direction of travel of the sprinkler to hold the controller in open position, and an actuator pivotally connected to said valve controller eccentrically thereof and spring pressed to normally urge said controller to closed position upon release of said latch member.

2. In a water powered member having a frame and a control valve, a valve controlling member journaled in said frame and having two operative rotative positions, spring pressed means shiftably carried by said frame and pivotally connected to said valve control member for normally rotating said valve control member to a valve-closing rotative position, and a latch carried by said frame and spring pressed toward latching engagement with said valve control member when said control member is in valve-opening rotative position, said latch being shiftable longitudinally of said frame and including a part projecting forwardly of said frame.

3. In a water powered member having a frame and a control valve, a rotatable valve controller journaled in said frame and having an open and a closed rotative position, said controller including a notched part positioned exteriorly of said frame, a latch shiftably carried by said frame and spring pressed into engagement with said notched part, said latch being adapted to be acted in said notched part to lock said controller in valve opening position, and manually actuated means connected to said controller and spring urged for normally rotating said controller to valve closing position.

4. In a water powered member a frame and a control valve thereon, a rotatable valve controller journaled in said frame and including a notched part positioned exteriorly of said frame, a latch shiftably carried by said frame and spring pressed into engagement with said notched part, said latch being adapted to seat in said notched part to lock said controller in valve opening position, and means for rotating said controller to a valve closing position, said latch constituting a hook member for engaging about said controller and having means adapted to engage said notched part and having an elongated forwardly projecting stem guided by said frame for endwise movement.

5. In a water powered member a frame and a control valve thereon, a rotatable controller journaled in said frame on a transverse axis and including an exteriorly positioned circumferentially grooved disc having a peripheral notch, a hook seated in said groove and hav-
5. A liquid pressure device having an elongated forwardly projecting shank slidably carried by said frame, a projection carried by said hook and adapted to seat in said notch, a spring pressing said hook and projection into engagement with said disc, and spring means normally urging said control unit to a valve-closing position, said control unit being positioned in valve-opening position when said projection is seated in said notch.

6. In a liquid pressure device a frame and a control valve thereon, a rotatable control unit journalled in said frame on a transverse axis and including an exteriorly positioned spool having a notch, an elongated member terminating forwardly of said frame and slidable endwise on said frame, the rear end of said member being return bent in hooked engagement about said spool and including a projection adapted to seat in said notch, a spring urging said elongated member forwardly to press said projection against said spool, said unit holding said valve in open position when said projection seats in said notch, and means for normally urging said unit to valve-closing position.

7. In a liquid pressure device a frame and a control valve thereon, a rotatable control unit journalled in said frame on a transverse axis and including an exteriorly positioned spool having a notch, an elongated member terminating forwardly of said frame and slidable endwise on said frame, the rear end of said member being return bent in hooked engagement about said spool and including a projection adapted to seat in said notch, a spring urging said elongated member forwardly to press said projection against said spool, said unit holding said valve in open position when said projection seats in said notch, an endwise shiftable member carried by said frame and projecting substantially tangentially of and pivoted to said spool, and a spring urging said last named member to a unit-rotating position in which said notch is rotatively displaced from said projection.

8. In a liquid pressure device a housing and a control valve housing thereon having a valve element urged against a valve seat by water under pressure entering said housing, a member journalled in said housing adjacent to said valve seat and mounting a projection operative in one position to space said valve element from said valve seat, spring means normally rotatively positioning said member in a second position with its projection clear of said valve element, and a latch freely slidably mounted on said frame and spring urged into engagement with said member, said latch in its spring projected position interlocking with said member when said projection holds said valve element open said spring means being manually actuable to rotate said member to a position accommodating interlocking of said latch and member.

9. In a liquid pressure device having a frame and a control valve therein, a valve trip member journalled in said frame and having a valve-opening position and a valve-closing position, said positions being rotatively displaced, a latch member slidably carried by said frame and spring pressed into engagement with said trip member, said trip member and latch member normally interlocking when said trip member is in valve-opening position, said latch member including an abutment portion projecting forwardly of said frame, and a spring pressed shiftably mounted pivotally connected eccentrically to said trip member and guided by said frame to normally urge said trip member to valve closing position.

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