April 20, 1965 C. BANZATO 3,179,181

FIRE PROTECTING SYSTEM

Filed June 18, 1962

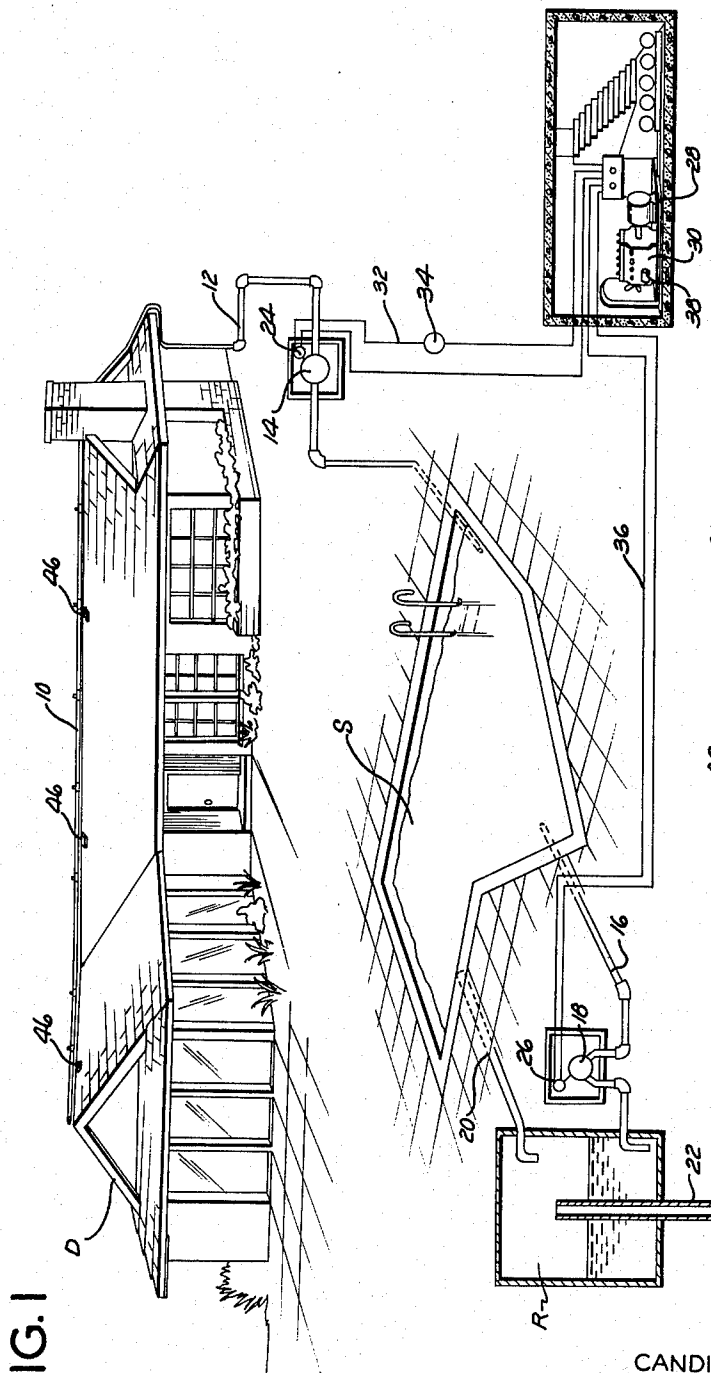


FIG. 1

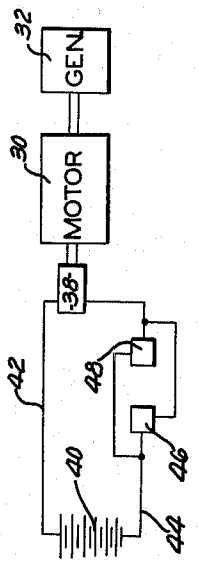


FIG. 2

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United States Patent Office 3,179,181
Patented Apr. 20, 1965

3,179,181

FIRE PROTECTING SYSTEM

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Filed June 18, 1962, Ser. No. 203,217
6 Claims. (Cl. 169—13)

The present invention relates generally to the art of fire protection and more particularly to a novel system for protecting buildings or other structures from brush or forest fires.

Annually, many buildings and other structures are destroyed by brush and forest fires. These structures are often located at some distance from the actual fire area, but are set ablaze by flying cinders or the like. In most instances the buildings could have been saved except for a failure in the public water supply. Such failure most often results from the removal of water from the water mains at areas remote from the burned-out building.

It is a major object of the present invention to provide a fire protecting system for buildings utilizing an independent water supply whereby it is not necessary to rely on the presence of water in the public water mains.

Another object of the invention is to provide a fire protecting system which is completely safe and foolproof in operation.

It is a further object to provide a fire protecting system for a building which includes sprinkler lines extending along the edges of the building's roof in an inconspicuous manner.

An additional object of the present invention is to provide a fire protecting system of the aforedescribed nature which may provide effective protection with a minimum quantity of water.

A further object of the present invention is to provide a fire protecting system of the aforedescribed nature which is completely automatic in operation whereby it may protect a building without requiring the operation of any human agency. The fire protecting system of the present invention is therefore particularly well adapted for use in remote areas.

These and other objects and advantages of the present invention will become apparent from the following detailed description, when taken in conjunction with the accompanying drawings wherein:

FIGURE 1 is a diagrammatic view showing a preferred form of fire protecting system embodying the present invention; and

FIGURE 2 is a circuit diagram showing a component of said fire protecting system.

Referring to the drawings, the fire protecting system of the present invention is adapted for use with a building or other structure D. The system includes a main water reservoir R and an auxiliary water reservoir, such as a swimming pool S, located adjacent the structure D. If a swimming pool is not present a tank may be used as the auxiliary water reservoir.

The roof 9 of the structure D is provided with conventional water sprinkling means 10. The water sprinkler means 10 is connected to the auxiliary water supply S by means of piping 12. A conventional pump 14 is interposed in the piping 12 to force water from the auxiliary water supply S to the sprinkler system 10. Although a single pump 14 is shown, it should be understood that a plurality of such pumps may be employed.

The auxiliary water supply S is adapted to receive water from the main water reservoir R by means of piping 16. A second conventional pump 18 is interposed in the piping 16. An overflow pipe 20 is provided for returning water from the auxiliary water supply S to the main

water supply R when the level in the former rises above a predetermined level. The main water supply R is adapted to be supplied through the public water main system or by natural water deposits in the area, as by means of a fill pipe 22. The auxiliary water supply S may also receive water from the community water mains in a conventional manner through piping that is not shown in the drawings.

The pumps 14 and 18 are driven by conventional electric motors 24 and 26, respectively. Electric current for the motors 24 and 26 is adapted to be provided by a conventional electric generator 28 which is driven by a conventional internal combustion engine 30. The electric motor 24 for operating the first pump 14 is connected to the generator 28 by means of a first circuit 32. A conventional electric timer 34 is interposed in this circuit for a purpose to be set forth hereinafter. The electric motor 26 for driving the second pump 18 is connected to the electric generator 28 by means of a second electrical circuit 36.

Referring now to FIGURE 2, the internal combustion engine 30 is adapted to be started by means of a conventional electrically operated starter 38. Electric current for the starter 38 is provided by means of one or more conventional electric storage batteries 40. A first lead 42 connects one terminal of the storage battery 40 with one side of the windings of the starter 38. The opposite side of the starter windings is connected to the opposite terminal of the storage battery 40 by means of a lead 44 having one or more conventional thermostatic switches 46 and a manually operated switch 48 interposed in parallel therein. The thermostatic switch 46 or a plurality thereof will be positioned on the roof 9 of the structure D. This switch means 46 is set to close when the temperature on the roof 9 exceeds a predetermined value.

Thus, should the roof 9 be exposed to hot cinders as from a brush or forest fire the thermostatic switch means 46 will automatically close. The operation of the thermostatic switch means 46 may be bypassed by means of the manually operated switch 48.

The electric generator 28 and its internal combustion engine 30 are preferably located in a fire resistant blockhouse 50. The blockhouse 50 may be arranged below the earth's surface. Sufficient fuel will be contained within interconnected drums 52 arranged within the blockhouse to insure operation of the internal combustion engine 30 over an extended period of time, the drums being connected with said engine.

In the operation of the aforedescribed apparatus, the main water reservoir R will be continually filled to a desired minimum level. Should the roof 9 of the structure D be exposed to unusual heat, as would be the case where flying cinders became deposited thereon, one or more of the thermostatic switches 46 will be closed. This will complete the circuit between the storage batteries 40 and the starter 38 of the internal combustion engine 30. The starter 38 would thereby be actuated so as to effect starting of the internal combustion engine 30. The engine 30 would in this manner bring the electric generator 32 into operation so as to provide current for the first and second electrical circuits 32 and 36. The pumps 14 and 18 will thereupon commence pumping water through the pipings 12 and 16 respectively.

The pump 18 would in this manner serve to maintain the swimming pool S filled with water from the main water reservoir R. Simultaneously, the pump 14 would transfer water from the pool S through the sprinkling means 10. The sprinkling means 10 preferably includes a plurality of conventional nozzles connected by noncorrosive pipes, these nozzles being distributed so as to direct water over the major area of the roof 9. Such

distribution of water serves to prevent ignition of the roof 9 as well as the remainder of the structure D.

The provision of the timer 34 will periodically deenergize the electric motor 24 for the pump 14. This arrangement serves to minimize the amount of water required to prevent a fire and additionally such arrangement prevents excessive water damage to the structure D or the surrounding landscaping. At such time as the timer 34 interrupts the operation of the pump 14, the pump 18 will continue to transfer water from the main water reservoir R to the auxiliary water supply S. Any excess water entering the auxiliary water supply S will be returned to the main water reservoir R through the overflow pipe 20. The provision of the manually operated switch 48 makes it possible to bypass the operation of the thermostatic switch means 46.

From the foregoing description it will be apparent that the fire protecting system of the present invention will automatically provide a watery cover for a fire-endangered structure, keeping it sufficiently wet so as to prevent ignition by approaching flames or flying cinders, with such water cover also maintaining the interior of the structure cool enough to avoid spontaneous combustion that can be caused by intense heat.

Various modifications and changes may be made with respect to the foregoing detailed description without departing from the spirit of the present invention or the scope of the following claims.

I claim:

1. A fire protecting system for a structure, comprising: sprinkler means on said structure; a water supply for said sprinkler means; pump means for transferring water from said water supply to said sprinkler means; power means for said pump means; control means for said power means that includes a heat-sensitive member for starting said power means only when said structure is exposed to fire; and a timer member that automatically starts and stops said power means independently of said heat-sensitive member.

2. A fire protecting system for a structure comprising: sprinkler means on said structure; a main water supply; an auxiliary water supply for said sprinkler means; first pump means for transferring water from said main water supply to said auxiliary water supply; second pump means for transferring water from said auxiliary water supply to said sprinkler means; an overflow pipe to return water from said auxiliary water supply to said main water supply; first and second power means for said first and second pump means; control means for said power means that includes a heat-sensitive member for starting said power means only when said structure is exposed to fire; and a timer that automatically starts and stops said second pump means independently of said heat-sensitive member.

3. A fire protecting system for a structure having a roof, comprising: sprinkler means on the roof of said structure; a main water supply; an auxiliary water supply for said sprinkler means; first pump means for transferring water from said main water supply to said auxiliary water supply; second pump means for transferring water from said auxiliary water supply to said sprinkler means; an overflow pipe to return water from said auxiliary water supply to said main water supply; first and second electric motors driving said first and second pump means, respectively; control means for said electric motors that includes a thermostatic switch means that effects starting of said motors only when said structure is exposed to the danger of fire; and a timer that automatically starts and stops said second pump means independently of said heat-sensitive member.

4. A system as set forth in claim 3, which includes an electrical generator that generates electric current for said electric motors, an internal combustion engine driving said generator and having a starter, an electrical storage battery that operates said starter, and said thermostatic switch means is interposed between said battery and said starter.

5. A system as set forth in claim 3, wherein said thermostatic switch means includes one or more heat-sensitive members arranged on the roof of said structure.

6. A system as set forth in claim 4, wherein said thermostatic switch means includes one or more heat-sensitive members arranged on the roof of said structure.

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