United States Patent [19]

Witkowski

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[54] **REMOTE CONTROLLED FIRE PROTECTION SYSTEM**

[76] Inventor: **Henry J. Witkowski,** 5625 E. Lade Rd., Erie, Pa. 16511

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[21] Appl. No.: **174,402**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 855,209, Sept. 4, 1969, abandoned.

[52] **U.S. Cl.** ..... **169/2 R,** 169/26

[51] **Int. Cl.** **A62c 35/00**

[58] **Field of Search** ..... 169/1, 2 R, 5, 16, 169/15, 14, 18, 23, 26

[56] **References Cited**

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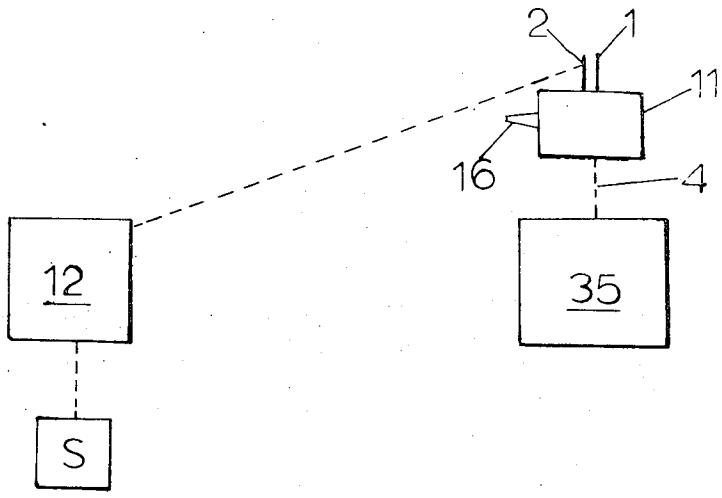
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Primary Examiner—M. Henson Wood, Jr.
Assistant Examiner—Michael Mar
Attorney—Charles L. Lovercheck

[57] **ABSTRACT**

This specification discloses a fire extinguishing system for use in a relatively small or large enclosure or building where goods are kept which might be damaged by the fire extinguishing medium. The invention is carried out by a dispensing device located at the center of the building which will dispense extinguishing medium to specific locations in the building, thus avoiding damage to goods in the areas where there is no fire. The dispensing device is directed by a mechanism on the dispenser and a number of fire sensing devices located at the several areas to be protected. One of the fire sensing devices is located in each sector of the enclosure that is to be protected. These fire sensing devices may be, for example, in the form of a switch actuated by a thermostat or a photo cell or any device sensitive to heat or light, which will actuate a radio transmitter. The signal from a transmitter can actuate a radio receiver which will in turn operate a motor or a direct wire controlled by a thermally actuated switching device, which will drive the nozzle to a position where it will direct its material to the area of the building where the fire has occurred.

3 Claims, 3 Drawing Figures



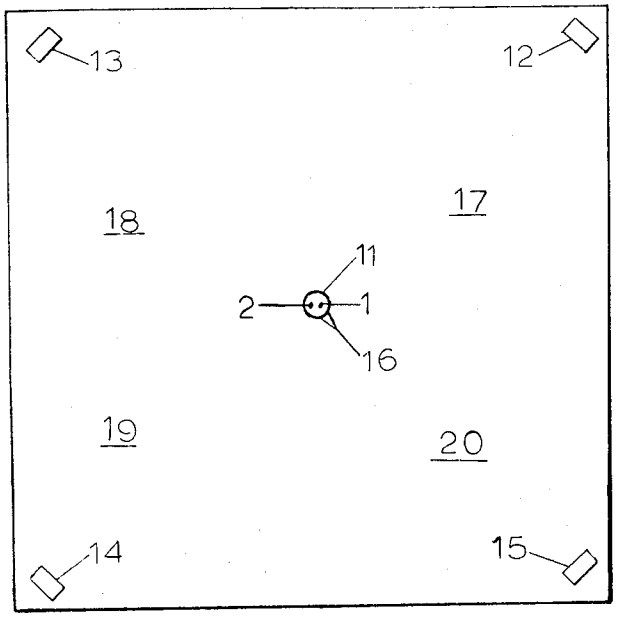


FIG. 1

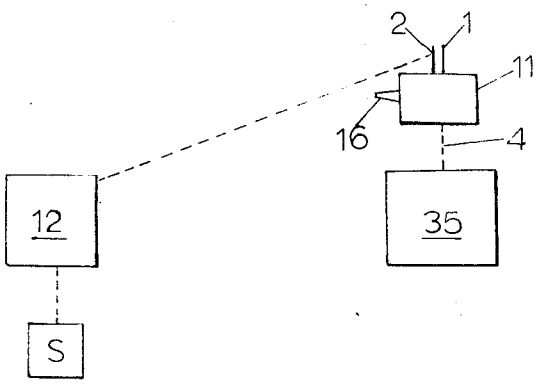


FIG. 2

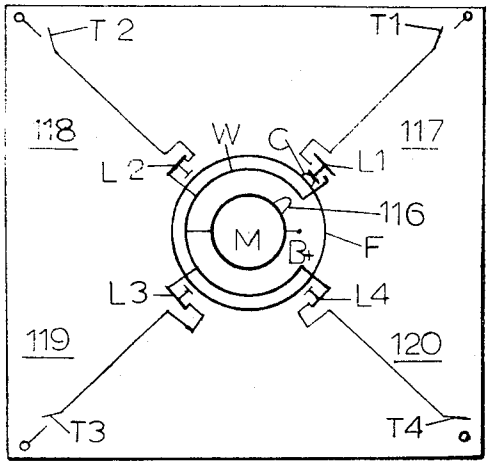


FIG. 3

REMOTE CONTROLLED FIRE PROTECTION SYSTEM

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of patent application, Ser. No. 855,209, filed Sept. 4, 1969 now abandoned.

STATEMENT OF INVENTION

This invention relates to fire protection devices and more particularly to fire protection devices for protecting relatively small or large areas.

OBJECTS OF THE INVENTION

It is an object of the invention to provide an improved fire extinguishing device.

Another object of the invention is to provide a fire extinguishing device that is simple in construction, economical to manufacture, and simple and efficient to use.

Another object of the invention is to provide a fire extinguishing device for extinguishing fires in an area made up of a number of sectors whereby the extinguishing device will dispense the extinguishing medium to the area in which the fire is located.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic view of an area to be protected from fire by a system according to the invention.

FIG. 2 is a schematic diagram of the apparatus for protecting the area shown in FIG. 1.

FIG. 3 shows another embodiment of the invention.

DETAILED DESCRIPTION OF THE DRAWINGS

Now with more particular reference to the drawings, an area **10** is shown wherein dispensing means **11** is disclosed at the center of the area. Detecting means **12, 13, 14,** and **15,** which could be transmitters, are disposed in each of the four sections **17, 18, 19,** and **20,** respectively. The detecting means may be in the form of a radio transmitter which will be actuated by a device that is sensitive to heat or smoke or other conditions, for example, a thermostat could be used to actuate the radio. The thermostat could be set at any predetermined temperature and would actuate the radio receiver **35** any time the temperature in the particular sector exceeded that predetermined amount. A photo cell thermometer or other heat sensitive device would be substituted for the thermostat and could be used to actuate the radio transmitters **12, 13, 14,** and **15.** The dispenser **16** is supported on a rotary table **35** that contains a direction finder arrangement such as shown in U. S. Pat. No. 3,149,335, for example. The antenna dipoles **1** and **2** are rotated by the motor **4** in the patent to point to the transmitter **12, 13, 14** or **15** that happens to be actuated by a sensing device or themostat switch such as S at each sector. The dispenser **16** is, therefore, rotated to point to that sector of the building, the dispenser **16** being driven by a motor as is the indicator **16** shown in the patent. Thus when the transmitter **15,** for example is actuated, the antenna is rotated around to point to the transmitter **15** and the dispenser is driven by the synchronous arrangement as is the bearing indicator in the patent. The antenna will be rotated to point to the sector containing any one of the transmitters that happens to be actuated by the fire. Thus the dispenser will dispense fire extinguishing material into the particular sector containing the fire and not into the other sectors.

The dispenser would be in the form of a foam dispenser, of a type familiar to those skilled in the art, which would be operated by a suitable radio actuating means or it could be a dispenser of other types of fire extinguishing medium. Thus, if a fire started in any one of the four sectors **17, 18, 19,** and **20** the only sector in which the goods would be damaged would be the sector in which the fire actually occurred.

The transmitter actuated by the heat in a particular sector will transmit a frequency to cause receiver **35** to actuate the motor and to rotate the antenna and the nozzle to point toward the transmitter.

The sensing device could be fusible links, thermostatic controls, or other temperature sensitive devices that would in turn operate the motor in the appropriate zone and thereby quench the fire in that zone only; no spray will go into the other zones.

In the embodiment of the invention shown in FIG. **3,** an arrangement is shown wherein the nozzle **116** will direct a fire extinguishing material to either of the sectors **117, 118, 119** or **120** depending on in which sector a fire may start. The thermoswitches T1, T2, T3 and T4 will close when they sense smoke, heat or any other dangerous condition.

The motor M is connected through limit switches L1, L2, L3 and L4 to thermoswitches T1, T2, T3 and T4 respectively. When a thermoswitch, for example T1, is closed, a circuit will be completed through limit switch L1 and through wire W to the motor and through the motor to B+. Thus the motor will drive the apparatus F until the cam C opens the limit switch L1. This will interrupt the circuit to the motor and stop the motor.

Then should any of the other switches, T4, close, the circuit will again be established through the motor M to B+ and it will drive the apparatus F until the cam opens the limit switch L1, L2, L3 or L4 corresponding to the thermoswitch that is closed.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claims.

I claim:

1. A fire extinguishing system in combination with an area to be protected,

said area being divided into a plurality of sectors,

a fire extinguishing material dispensing device located substantially equidistant from said sectors,

a fire sensing device in each said sector adapted to be actuated when a fire occurs in the particular sector,

a follow-up means on said dispenser adapted to rotate said dispenser to direct said extinguishing medium to said sector having said fire,

said fire sensing device comprises a radio transmitter located in each said sector,

and said follow-up means comprises a radio receiver supported adjacent said dispenser,

each said transmitter having a different frequency,

a motor actuated by said radio receiver and sensitive to the frequency of said transmitter,

said motor being adapted to be actuated by a signal of said frequency of said transmitter to direct said nozzle toward the said sector from which said signal is transmitted.

2. The fire extinguishing system recited in claim 1 wherein said fire sensing devices further comprise fusible links disposed in each said sector for actuating said transmitter when a fire occurs in any of said sectors.

3. The fire extinguishing system recited in claim 1 wherein said fire sensing devices further comprise thermostats,

one said thermostat being disposed in each said sector and connected to said radio transmitter whereby said transmitter is actuated when a fire occurs in said sector.

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