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SPRAY BOOTH AND FIRE EXTINGUISHING MECHANISM FOR THE SAME

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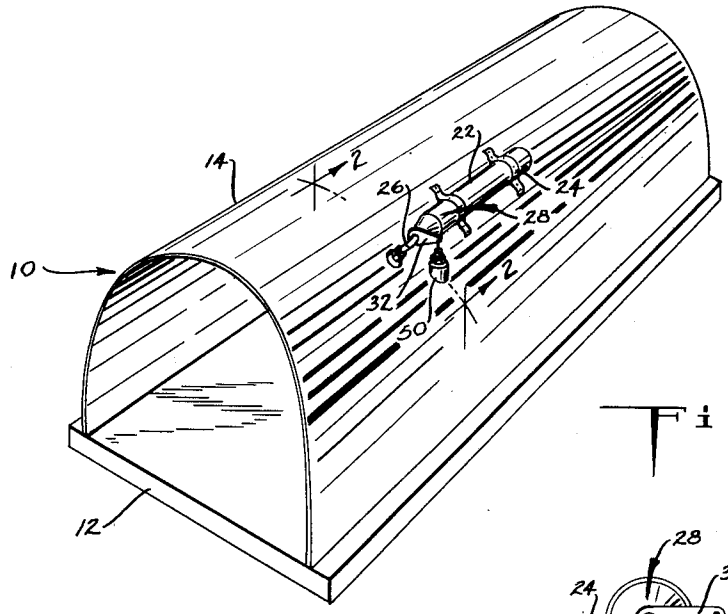


Fig. 1.

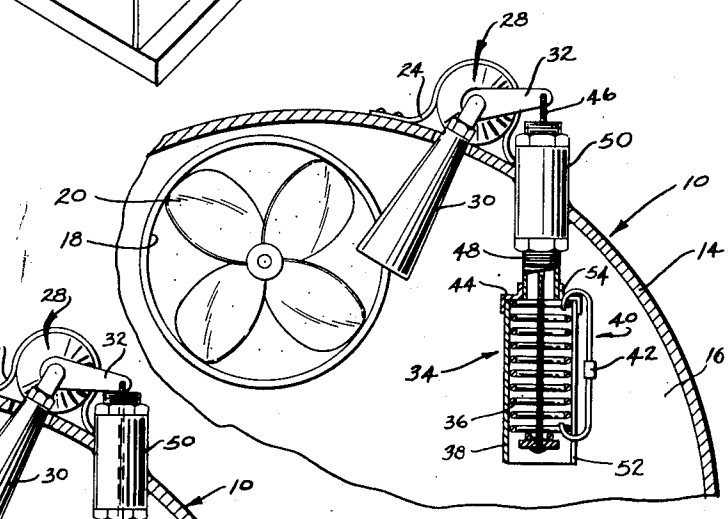


Fig. 2.

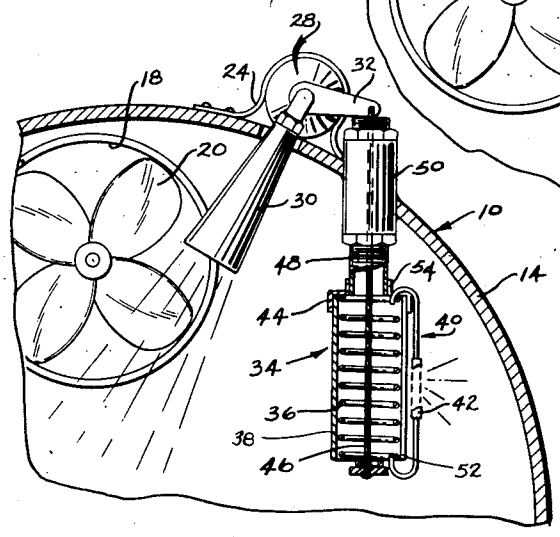


Fig. 3.

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SPRAY BOOTH AND FIRE EXTINGUISHING MECHANISM FOR THE SAME

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4 Claims. (Cl. 169—2)

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This invention relates to spray booths and fire extinguishing mechanisms for the same.

Booths in which objects are spray coated with a solid dissolved in a volatile fluid carrier present a serious fire hazard.

It is an object of my invention to provide a spray booth which is so equipped that immediately upon the initiation of fire, an extinguishing medium will be injected under conditions proper to quench the fire forthwith.

It is another object of my invention to provide a spray booth and extinguishing mechanism of the character described which is comparatively inexpensive, simple, reliable and foolproof.

Other obects of my invention in part will be obvious and in part will be pointed out hereinafter.

My invention accordingly consists in the features of construction, combinations of elements and arrangements of parts which will be exemplified in the apparatus hereinafter described and of which the scope of application will be indicated in the appended claims.

In the accompanying drawings in which is shown one of the various possible embodiments of my invention,

Fig. 1 is a prospective view of a spray booth and fire extinguishing mechanism constructed in accordance with my invention;

Fig. 2 is an enlarged fragmentary view taken along the lines 2—2 of Fig. 1, the same being illustrative of the construction and location of the component elements of the fire extinguisher and showing the trigger mechanism in cocked position; and

Fig. 3 is a view similar to Fig. 2, but with the trigger mechanism in actuated position.

Referring now in detail to the drawings, the reference numeral 10 denotes a spray booth comprising a floor 12 and curved sheet metal roof and side walls 14. One end of the spray booth may be open, the other end being closed by a wall 16 having an exhaust outlet 18, in which an exhaust fan 20 is located. If desired, the open end of the booth may be closed by a wall having a door. It will be appreciated that this construction of the spray booth is conventional, and that any other well known and standard type of spray booth construction may be employed in lieu thereof.

The spray booth is provided with a fire extinguisher cylinder 22, in which there is contained under pressure any one of the well known fire extinguishing chemicals, as for example, carbon dioxide, and/or a foaming composition. The

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cylinder is secured on the outer surface of the spray booth, for example, by straps 24. The head of the cylinder mounts a conventional conduit 26 connected to the cylinder by a valve 28. As is well known, opening the valve will permit the fire extinguishing chemicals to be ejected at high velocity through the conduit 26 to a conventional spray nozzle 30 which is secured to the free end of the conduit. Said spray nozzle is located in the main inside the spray booth, the base thereof extending through a suitable opening in the roof of the booth.

The valve 28 is operated by a handle 32. When the handle 32 is in its up position as shown in Fig. 2, the valve is closed. When the handle is in its down position as shown in Fig. 3, the valve is open.

The handle is actuated by a triggering means 34 which comprises a helical compression spring 36 disposed within a tube 38. The spring is held under compression by a band 40, an intermediate section 42 of which constitutes a fusible link. One end of the spring is seated against a shoulder formed by an apertured cap 44 in which an end of the tube is fixed. The other end of the spring is attached to a chain 46. Said chain runs through the spring and cap, and through a pipe 48 passing through the roof of the booth and secured thereto by a sleeve 50. The other end of the chain is secured to the valve handle 32, and said chain is of such length that there is little or no slack in it when the valve is closed and the spring is held under compression by the band 40 as shown in Fig. 2.

The opposite ends of the band are hooked and engage the ends of the spring, the tube being provided with a longitudinal slot 52 to accommodate the band. The cap 44 is formed with a slot 54 for the same purpose.

The spray nozzle is located to cover a maximum area inside the booth.

As soon as the ambient temperature in the spray booth becomes too high, the link 42 will fuse, releasing the spring which through the chain 46 pulls the valve handle to open position and causes a fire extinguishing chemical spray to be directed through the nozzle into the booth.

The apparatus can be reused simply by recompressing the spring, holding the same in its cocked position with a fresh band and slipping it inside the tube 38. It will be noted that the spring should be cocked and repositioned before the chain is secured to the valve handle 32.

An apparatus such as described is particularly useful for quenching fire in a spray booth, since

the principal components are located on the outside of the spray booth, where they will be unaffected by the fine mist of fluid dissolved solid which is prevalent within the booth. This mist would settle around and permeate the valve 28, possibly causing the same to freeze if the valve were within the booth. However, the only moving parts in the booth are those of the triggering means and said parts are motivated by fusion of a link and expansion of a powerful spring, both of which are unaffected by the solid deposited from the mist.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein described or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, a spray booth and a fire extinguisher including a cylinder containing a fire extinguishing composition under pressure, a valve for controlling discharge of said composition from the cylinder, a spray nozzle, conduit means connecting said valve and spray nozzle, the discharge end of said spray nozzle being located within the spray booth, said valve and cylinder being disposed on the exterior of said booth, a trigger mechanism located within said spray booth, and an element connecting said valve and trigger mechanism, said element extending through a wall of said booth, said trigger mechanism including a tube having a seat, a compression spring within said tube having an end resting on said seat, and a band external to the tube and engaging the ends of the spring and holding the spring under compression, said band including a low temperature fusible element, said connecting element being secured to the end of the spring opposite to the seated end.

2. In combination, a spray booth and a fire extinguisher, said first extinguisher including a cylinder containing a fire extinguishing composition under pressure, means to mount said cylinder externally on a wall of said booth, a handled valve for controlling discharge of the composition from the cylinder, said valve being located on the outside of the booth, a spray nozzle whose discharge end is located within the booth, conduit means connecting the spray nozzle to the valve, a triggering means located within the booth, said triggering means including a pipe extending through a wall of the booth, a tube carried by the pipe within the booth, said tube having a seat near the pipe, a compression spring within said tube having one end resting on said seat, and a band external to the tube and having hooked ends and a low temperature fusible portion, said tube and seat having aligned slots accommodating the band, one of said hooked ends extending through the slot in the seat and engaging the adjacent end of the spring, the other hooked end of the band extending through the slot in the tube and engaging the other end of the spring to maintain the spring under compression, and an elongated flexible element extending through the spring, the tube and the pipe, one end of said element being connected to the end of the spring remote from the seat, and the other end of the element being connected to the valve handle.

3. A triggering means for a fire extinguisher, said means including a tube having a seat, a spring within said tube having an end resting on said seat, a band external to the tube and having hooked ends and a low temperature fusible link, said tube and seat having aligned slots accommodating the band, one of the ends of the band extending through the slot in the seat and engaging in the associated end of the spring, the other end of the band extending through the slot in the tube and engaging the other end of the spring, said band holding the spring under compression, and a fire extinguisher actuating element connected to the end of the spring remote from the seat.

4. A triggering means for a fire extinguisher, said means including a tube having a seat, a spring within said tube having an end resting on said seat, a band external to the tube and having hooked ends and a low temperature fusible link, said tube and seat having aligned slots accommodating the band, one of the ends of the band extending through the slot in the seat and engaging in the associated end of the spring, the other end of the band extending through the slot in the tube and engaging the other end of the spring, said band holding the spring under compression, and a fire extinguisher actuating element connected to the end of the spring remote from the seat and extending through the spring and tube.

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