

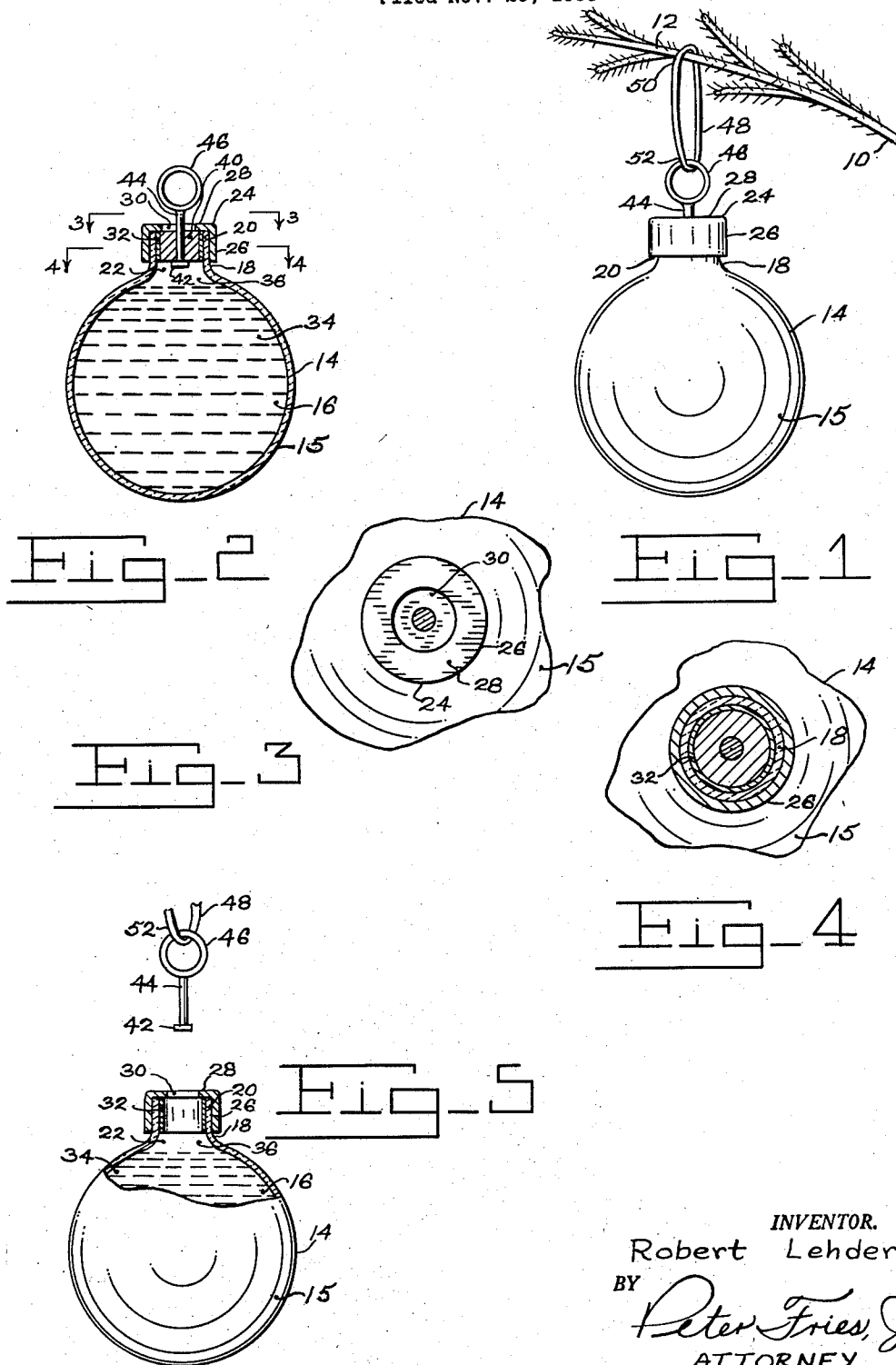
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FIRE EXTINGUISHER TREE DECORATION DEVICE

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FIRE EXTINGUISHER TREE DECORATION DEVICE

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1 Claim. (Cl. 169—26)

This invention relates to fire extinguisher tree decoration devices and the like.

An object of the invention is to provide a novel and improved tree decoration device which may be secured to a branch of a tree for decorating the same, and at the same time is constructed and arranged so that in the event of fire or unusual increase of temperature in the vicinity of the tree, said device will act as a fire extinguishing device.

Another object of the invention is to provide a novel and improved tree decoration device which includes a hollow body adapted to contain fire extinguishing fluid, and constructed for being secured to a tree branch or the like for hanging therefrom, the mode of hanging being inclusive of temperature responsive detaching means, whereby, upon elevation of the ambient temperature at or in the vicinity of the tree or of said decorations, to or past a predetermined temperature level, said hanging tree decoration device will automatically become detached from its attachment to said tree branch or the like, and fall to the floor, releasing the said fire extinguishing fluid, for acting upon any fire thereat so as to extinguish or impede the progress thereof.

A further object of the invention is to provide a novel and improved fire extinguishing tree decoration device in which there is a frangible envelope or housing adapted to contain a supply of fire extinguishing fluid, and to be hung from a branch of a tree, and constructed and arranged to break when falling to the floor to release the fire extinguishing fluid to fight the fire where it occurs, the device including temperature responsive means whereby said fire extinguishing tree decoration device is adapted to be released from its hanging position on said tree, so as to be free to fall to the floor, when a predetermined temperature in the vicinity of said tree is reached.

Still another object of the invention is to provide a tree formed with outwardly extending branches, with a plurality of hollow decorated envelopes or casings secured by temperature responsive self releasing means to said branches, the casings being both decorations for said tree, and at the same time being formed with interior chambers, so as to contain fire extinguishing fluid, the casings being frangible, so that upon a predetermined ambient temperature being reached in the vicinity of said tree, substantially all said hollow envelopes or casings are released from their said suspension, and allowed to fall to the floor, breaking open and releasing said fluid, to fight a fire or other cause of said temperature increase thereat.

Still a further object of the invention is to provide a novel and improved fire extinguishing device of the character described, which is simple in design, inexpensive to manufacture, highly effective for its intended purpose, and may be used like a conventional Christmas tree decoration, on any Christmas tree, without any changes whatever in the usual mode of such use, and with greatly enhanced fire prevention and safety.

Another object of the invention is to provide a novel and improved Christmas tree decoration device, which has

the well known conventional appearance of a ball, cone, bell, or other shape, formed in a hollow envelope having an interior chamber, opening into an upper neck portion which is engaged by a cap or the like, the neck portion being at least partially filled with a material which is of a predetermined relatively low melting point, so that it will melt whenever the ambient temperature rises substantially beyond a specified temperature above normal ambient temperature, that is to say, a temperature which would not be expected to exist unless there were a fire either in the tree or in the vicinity thereof, the hanging means by which the decoration engages the tree branch being secured to said low melting point material, so that upon melting thereof, the decoration is released from engagement with the hanging means, and is free to fall to the floor, breaking open to release the fire fighting fluid contained therein.

These and other objects of the invention will be apparent from the following description of a preferred embodiment of the invention, as illustrated in the accompanying drawings, forming a part hereof, and in which,

Figure 1 is an elevational view showing a tree decoration device according to the invention, as it might hang from a branch of a Christmas tree or the like, ready for use.

Figure 2 is a sectional elevational view of the tree decoration device shown in Figure 1.

Figure 3 is a fragmentary sectional plan view taken substantially on plane 3—3 of Figure 2.

Figure 4 is a fragmentary sectional plan view taken substantially on plane 4—4 of Figure 2.

Figure 5 is an elevational view similar to that of Figure 1, but showing the main hanger still in engagement with the branch of the tree, while the main housing or envelope and other parts are shown therebelow, upon separation therebetween, following the melting of the fusible temperature responsive securing element, the view being partly sectioned similar to Figure 2 for illustrative purposes.

Fire must be fought wherever it appears, and the present invention is intended to permit it to be fought automatically, especially when trees are used, such as Christmas trees. Such evergreen trees are highly inflammable, and further, their decorations are also in many instances highly inflammable. Where candles are mounted right on the tree branches and lighted, they of course provide a very high degree of fire hazard. As a result they have largely disappeared from common usage on such trees, but the hazard still remains. Electric wiring or electric light bulbs mounted on the tree may heat up to a great extent, so as to cause the tree to ignite, either directly, or by first igniting some of the other decorations. Cotton is frequently used to simulate snow on the tree, or on the floor therebeneath, and other non-fireproof materials are also frequently used either on the tree or spread out on the floor therebelow. A spark from the electric wiring, or from a cigarette, may be sufficient either to ignite them, or to cause them to smolder unseen for a long time, until the family have gone to bed, and then ultimately burst out into flame when there is no one around to detect the fire and extinguish it before it gains headway.

The present invention provides a convenient means for automatically extinguishing a fire which may start at or near such a tree, or otherwise. It includes a device which has the outward appearance of a common form of Christmas tree decoration, and has means for attaching it right to a branch of a tree without use of tools, just like usual tree ornaments. If a fire starts, the devices are right on the job, ready to fight the fire when the ambient temperature reaches a predetermined level, and then work automatically to put it out.

In order to understand clearly the nature of the invention and the best means for carrying it out, reference

may now be had to the drawings, in which like numerals denote similar parts throughout the several views.

As shown, there is a tree having a branch 10, and which may stand in a building, a room, or even outside in the open air. Also, the branch 10 may be detached from a tree, according to a modified form of the invention, and supported in any suitable manner, as to a portion of a wall, cornice, or other support. It is proposed to secure to one or more branches 10 of the tree, or to one or more branches 10 if detached from a tree, at least one, or more than one, envelopes containing a fire extinguishing or non-inflammable fluid. For example, the envelope or housing may be as shown at 14, that is in the form of a hollow sphere or other hollow shape, such as a bell shape, pear shape, or other shapes usually used for tree decorations, and having a relatively thin wall 15, formed preferably of frangible material, such as glass, plastic material or other material, such as clay, chinaware, or other material. The material forming the wall 15 of the reservoir should preferably be frangible, so that when it falls to the floor, on detachment from the tree branches, it will break instantly, releasing the fire fighting fluid 34 contained in its interior chamber 16.

The interior chamber 15 may be of any convenient shape, such as spherical, or other shape to conform to the curvature of the particular tree decoration figure which the particular fire fighting decoration resembles. A spherical contour would have advantages of optimum cubic contents for a given surface area, and has inherent strength to a high degree, to support the fluid 34 therein. However, since tree decorations commonly take a great variety of shapes and contours, the present fire fighting decorations will also be made in similar shapes and contours, so that when a person looks at a tree carrying several or a large number of my safety decorations, there will be nothing in their outward appearance to indicate that they are special devices of the character described.

The fire fighting fluid 34 may be of any suitable nature, one good example being liquid carbon tetra-chloride, which, when released will extinguish fires, since it and its vapor, which instantly rises therefrom, will not support combustion, and, having displaced the air, will put out the fire. By mentioning carbon tetra-chloride, it is not understood that this is the only such fluid to be used, since there are a great variety of suitable fluids, and in addition even water may be used inside the chamber 16, for this purpose.

The housing 14 may be provided with an upstanding neck 18, which is integral therewith, preferably, and has a bore 22 through which it may be filled with the fluid 34. A hanger device has its shank 44 extending downwardly from its upper ring 46 which is integral therewith or fastened thereto, and it is seen that the shank 44 extends downwardly through the neck bore 22 of the neck 18 of the device, being provided at its lower end with an enlargement or washer or foot 42. A fusible plug member 40 formed of a suitable metal or alloy of relatively low melting temperature, is disposed in the neck bore 22, so as to fill the same, so that if the neck bore is cylindrical, then the fusible plug 40 would be substantially cylindrical, and so on. It is seen that the elongated shank 44 of the hanger means extends through the bore 22 of the neck 18, and hence also extends through the fusible plug 40, being substantially embedded therein according to one form of the invention, with the enlargement or button-end 42 of the hanger therebelow to furnish additional support against being accidentally pulled out of engagement with the fusible plug.

Where the shank 44 is suitably shaped, or has serrations formed on its surface, the button 42 may be omitted, since the alloy 40 will be gripped with sufficient prehension by the serrated shank or shaped shank. Since the fluid 34 might escape from its chamber 16 if any leaks exist, it is preferable to seal the joint between the perimeter of the fusible plug 40 and the interior surface of the

neck 18, by suitable means, which may be a coating or deposit of suitable cement 32 or other sealing means may be employed, thus also confining the vapors of the carbon tetrachloride, if used, against evaporating also.

Where the alloy 40 firmly grips the shank 44 of the hanger, being molded around the same, such leakage will not normally exist, although, some cement may also be placed around the shank 44 anyway, to avoid even a little vapor leakage. Another way of avoiding such leakage is to make the shank 44 a little shorter, so that the button 42 is embedded in the fusible alloy 40 just above the lower surface of the alloy, and thus the said surface remains unpierced.

A collar member 24 may be provided to overlie the neck 18, and may have a top surface 28, with a depending skirt 26, and it may be made of metal, plastic material, or other material as desired, and materials which are not substantially heat insulators are preferred. As shown, the top wall 28 has a large opening 30 formed therein, through which the shank 44 of the hanger extends, and also it is seen that the hole 30 is made large, so that ambient air in the vicinity may come in contact with the upper surface of the fusible alloy plug 40, so that it will be subject to melting when the predetermined melting point of the particular alloy chosen has been reached. In addition, where the hanger 44 is made of metal, it may be made fairly massive, so that it will conduct ambient heat into the interior of the fusible plug more quickly, thus making it rapidly temperature responsive, and the button 42 similarly aids in carrying the heat to the fusible plug.

From Figure 1, it is seen that when the device is assembled with its collar 24, it has the outward appearance of a conventional type of Christmas tree decoration. A length of cord, twine, or wire 48 has its lower end 52 engaged in the ring 46, and has its upper end 50 engaged over the outer end 12 of the branch 10 of the tree, so as to suspend the entire decorative and fire fighting device therefrom in the manner shown. It is thus right in position to respond to the ambient temperature where most needed, that is right on the tree, which is highly inflammable if ignited. When a fire starts, thus raising the ambient temperature, the fusible alloy plug 40 will melt when its temperature reaches the predetermined level at which it is designed to melt. When this occurs, as seen in Figure 5, the shank 44 of the hanger is no longer in engagement with any fusible alloy in the bore of the neck 18 of the housing 14, and as a result, while the hanger 44 remains attached to the tree branch by means 48, the rest of the fire fighting device, shown in the lower portion of Figure 5, drops downwardly therefrom, and lands upon the floor, bursting open and releasing the fluid 34 to act upon the fire, and put it out, and where the fluid 34 is like carbon tetrachloride, its vapor rises also and moves about in the vicinity, smothering the fire.

It is apparent that where several or a great number of the tree decorations on a tree are also fire extinguishing devices of the character illustrated and described, and they all fall to the floor at the right time, that is when the fire exists, there is a considerable fire fighting effect brought into effective action right then and there, automatically, and without need of any action on the part of the occupants of the home, and the fire is put out thereby.

Instead of merely having a single fluid 34 in the housing 14, other forms of fire extinguishing fluids may also be employed. Thus where it is desired to use a soda-acid type of fire extinguishing action, then the soda mixture, and the acid may be placed inside the chamber 16, being suitably separated by compartmentation so as to prevent intermixture until the device falls to the floor when fire occurs, at which time, the frangible wall 15 of the chamber, and frangible walls of the compartmentation or individual containers placed inside the chamber 16 through its neck bore 22, are broken open.

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to allow intermixture to form the fire fighting fluid resulting therefrom.

Although I have described a preferred form of my invention in specific terms, it will be understood that various changes may be made in size, shape, materials and arrangement. It is also understood that the fusible plug 40 may be made of any suitable alloys to do the work intended, so that it will melt at a predetermined ambient temperature. For example, it might be desired to have it melt at an ambient temperature of about 140 degrees Fahrenheit, in which event the alloy chosen would be of a melting point of 140 degrees. The compounding of such low melting point alloys is well known in the art, some of them using a mixture of lead, tin and bismuth in varying proportions, depending on the melting point desired. Alloys are preferred, but other materials may be used where desired. The collar 24 may be made integral with the fusible plug 40 if desired, to hasten response to ambient temperature, according to a modified form.

I claim:

A fire fighting tree decoration consisting of a main housing formed of thin frangible material and defining a main chamber therein, with an opening formed in said main chamber, a fusible plug disposed in and blocking said opening, and constructed to be solid when ambient temperatures are under about 100 degrees Fahrenheit, and to melt when a predetermined ambient temperature thereabove is reached, indicating the presence of a fire thereat, a hanger including a shaft extending into and embedded in said fusible plug and projecting upwardly therefrom, with loop hook means for engaging a tree branch and the like to support said tree decoration there-

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on, washer means on said shaft forming an enlargement of the lower portion thereof so as to underlie said fusible plug lower end portion, so that when said fusible plug is melted due to excess ambient temperature, the weight of said housing disengages said housing from said hanger while said washer means scavenges out said fusible plug remains from said opening, to enhance said disengagement and provide communication between the interior of said housing and the surrounding air, fire extinguishing fluid disposed in said main chamber, whereby, upon reaching a predetermined ambient temperature, said fusible plug is meltable, disengaging said main housing from a tree branch or the like from which it is hung by said hanger, by disengaging said main housing hanger from said main housing, said washer means scavenging said melted fusible plug from said opening quickly, as the weight of said housing carries it downwardly, and falling onto the floor, to burst on contact impact therewith, releasing said fire extinguishing fluid to extinguish said fire.

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