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E. W. HICKS.

FIRE EXTINGUISHING APPARATUS.

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NO MODEL.

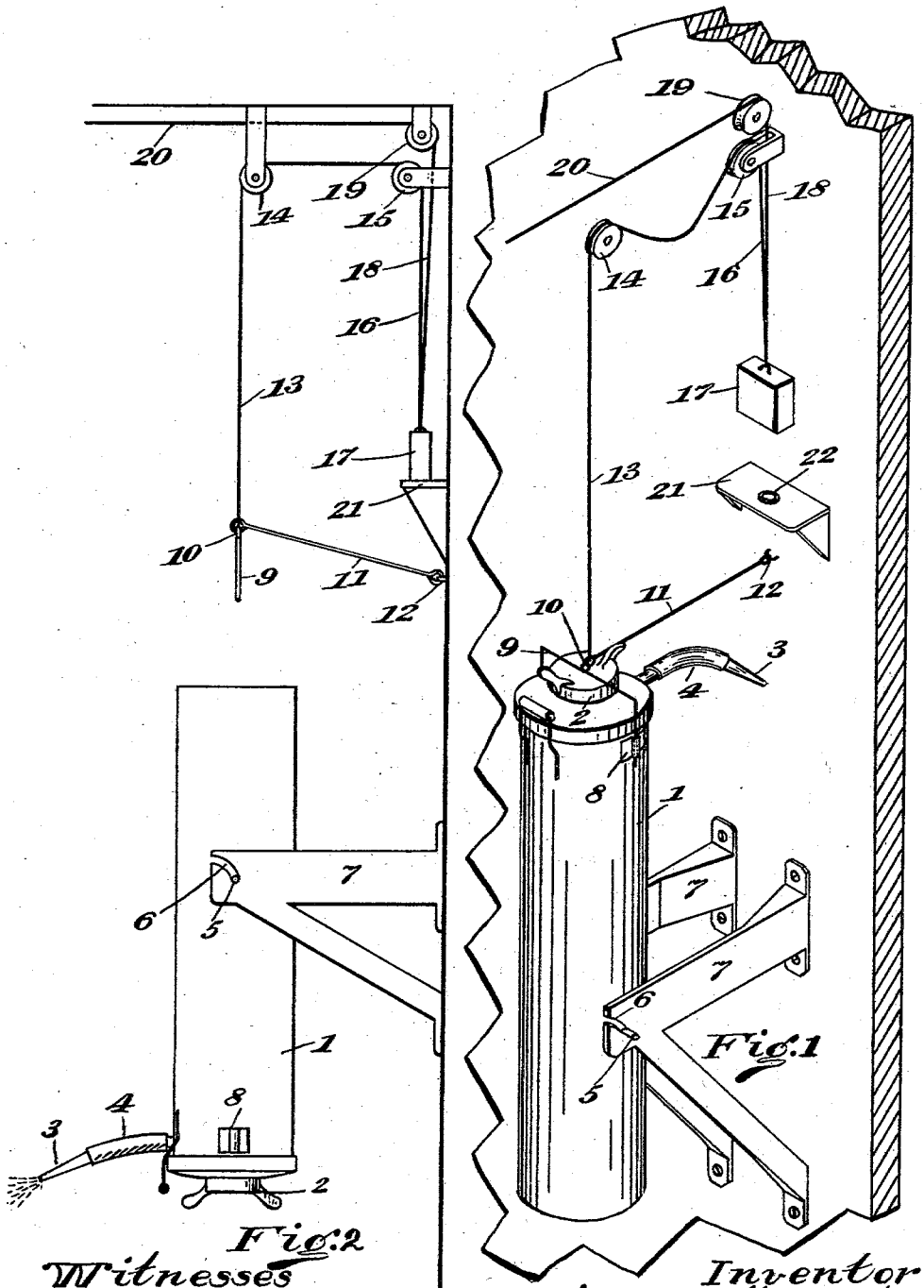


Fig. 1

Fig. 2

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No. 758,362. Patented April 26, 1904.

UNITED STATES PATENT OFFICE.

EDWARD W. HICKS, OF CYNTHIANA, KENTUCKY.

FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 758,362, dated April 26, 1904.

Application filed December 23, 1903. Serial No. 186,406. (No model.)

To all whom it may concern:

Be it known that I, EDWARD W. HICKS, a citizen of the United States of America, and a resident of Cynthiana, in the county of Harrison and State of Kentucky, have invented certain new and useful Improvements in Fire-Extinguishing Apparatus, of which the following is a specification.

This invention relates to certain improvements in fire-extinguishing devices, and more particularly in that class of such devices which are adapted to be actuated automatically upon the occurrence of sudden and excessive increases in temperature; and the object of the invention is to provide a device of this character of a simple and inexpensive nature which, while being securely held out of operation at ordinary times, will be positively and assuredly operated upon the sudden and excessive rise of temperature at the location whereat the improved extinguishing device is arranged.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved fire-extinguishing device, whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a perspective view showing a fire-extinguishing device constructed according to my invention with its parts in the positions wherein they are normally held when the temperature stands at normal elevations, and Fig. 2 is a side elevation showing the improved extinguishing device with its parts in the position wherein they stand when the device is in operation after an excessive rise of temperature.

The improved fire-extinguishing device as shown in these views comprises a cylindrical tank or vessel 1, having at its upper end a cap or closure 2 capable of removal for permitting the contents of the vessel to be replenished, but normally held tightly thereon, so that leakage is prevented. Adjacent to the end of the tank or vessel whereat the cap or closure 2 is arranged the said tank or vessel is provided with a discharge-nozzle 3, connected with the tank or vessel by a short flexible hose-section 4.

The end of the tank or vessel 1 opposite to the cap or closure 2 is of course made closed, and at opposite sides of the said tank or vessel and in a position nearest to said closed end thereof there are provided oppositely-extended trunnions or pivotal projections 5 5, which are adapted to be engaged in inclined slots 6, produced in the outer ends of metal arms or brackets 7 7, adapted for attachment to the wall of a room or building wherein the improved fire-extinguishing device is to be located. The structure and arrangement of the parts are such that the tank or vessel 1 is adapted to be swung pivotally upon its trunnions 5 5 from the position shown in Fig. 1 to that shown in Fig. 2. When the tank or vessel is in its normal position, as seen in Fig. 1, and when the temperature is not excessively elevated, the end of said tank or vessel whereat the cap or closure 2 is arranged stands uppermost, so that the liquid contents of the vessel is prevented from being discharged through the nozzle 3, but when the said tank or vessel is swung pivotally by means to be hereinafter described into its inverted position (shown in Fig. 2) upon the excessive rise of temperature the end whereat the cap 2 and nozzle 3 are located will be lowermost, so that the contents of the tank or vessel will be discharged at said nozzle 3 for extinguishing the fire.

The tank or vessel 1 is provided at opposite sides of that end whereat the cap or closure 2 is located with clips 8, having eyes or openings through which are adapted to extend, as seen in Fig. 1, the downwardly-extended or bent ends of a metal bail or detent 9, which has a central eye 10, with which is engaged an eye on the outer end of a rod or link 11, the opposite end of which is pivotally connected, as shown at 12, with the wall of the room or building or some other suitable support above the pivotal support of the tank or vessel 1, by which means it will be seen that the bail or detent 9 is adapted to be raised or lowered upon its link connection 11 and when raised

will be disengaged from the eyes or openings afforded by the clips 8 and with which they are adapted to be engaged when the bail or detent is lowered. By this arrangement it will be seen that when the bail or detent 9 is lowered and its ends are engaged in the eyes or openings afforded by clips 8 the tank or vessel 1 will be held in its normal position with its nozzle 3 elevated to prevent the discharge of its contents therefrom and when the bail or detent is raised, as seen in Fig. 2, to withdraw its ends from said eyes or openings the tank or vessel 1 will be released, and since its pivotal projections or trunnions 5 5 are below its center of gravity said tank or vessel will be permitted to turn pivotally until its heavier upper end whereat the nozzle 3 is located shall be lowermost, as seen in Fig. 2, whereupon the contents of the tank or vessel will be freely discharged and will serve to extinguish the fire. To insure the turning of the tank into its discharging position when released from the bail or detent 9, the pivotal projections or trunnions 5 5 will be preferably located at one side of the longitudinal axis of the cylindrical tank or vessel, as shown in Fig. 2.

For operating the bail or detent 9 I provide a flexible cord or connection 13, which may, if desired, be of metal and has connection with the central part of the bail or with the outer moving end of link 11 and is extended vertically upward and passed over a sheave or pulley 14, held in a hanger pendent from the ceiling or other support, whence the said connection is extended over another pulley or sheave 15 at the wall of the room or building. From said sheave or pulley 15 the connection 13 is extended downward, as seen at 16, and is coupled to a weight 17 sufficient to lift the bail or detent 9 and disengage same from the tank or vessel when the weight is released and permitted to drop. To said weight 17 is also connected a cord, wire, or other flexible connection 18, which is extended upward over a sheave or pulley 19 adjacent to the ceiling of the room or building whence said connection is extended, as shown at 20, across the ceiling or in any other location in which it is most likely to be exposed to sudden and excessive temperature changes.

In setting the device in normal position the bail or detent 9 will be engaged with the tank or vessel 1 to hold the same against discharging its contents, and that portion 20 of connection 18 which is designed to be extended in position for exposure to sudden and excessive temperature changes will be tightly stretched and held to maintain weight 17 in raised position, as shown in Fig. 1, so that said weight is prevented from falling and withdrawing the bail 9 from the tank or vessel 1 to release the same.

The portion 20 of the connection 18 which is to be exposed to sudden and excessive temperature changes will be made from combustible or fusible material and by excessive rise of temperature will be burned or fused so as to release the weight 17 and permit the same to fall upon the occurrence of such excessive increase in temperature, so that at such time the bail or detent 9 will be disengaged from the tank or vessel 1 and the same will be permitted to turn pivotally into position such that its contents may be discharged at nozzle 3 to extinguish the fire.

The provision of the short flexible pipe-section 4, by means of which the nozzle 3 is connected with tank or vessel 1, serves to impart a certain rotative or whirling effect to the stream discharged at the nozzle 3, by means of which a more effective action is attained for the distribution of the contents of the tank or vessel to various parts of the premises whereat the fire is raging.

Beneath the weight 17 I prefer to locate a shelf 21, upon which said weight is adapted to fall when released by the burning or fusing of the connection 20, so that too violent wrenching of connection 13 and bail 9 and link 11 is prevented, and upon said shelf 21 is arranged, as shown in Fig. 1, a fulminate cap or torpedo 22 to be exploded by the falling weight for giving an audible alarm of the occurrence of fire or the operation of the extinguishing device, so that persons may have immediate notice of the occurrence and location of the fire. In certain cases the audible alarm thus provided may take the form of an electrical device comprising a contact device at shelf 21 and adapted to be operated by the falling weight 17, which contact device will be in circuit in a well-known way with a battery and an annunciator. By such an arrangement (not shown herein) various portions or rooms in a building may be equipped with the improved extinguishing devices and connected with a single annunciator which will serve to indicate the occurrence and location of a fire at any of the locations guarded by the extinguishing devices.

From the above description it will be seen that the improved fire-extinguishing device constructed according to my invention is of an extremely simple and inexpensive nature and is especially well adapted for use by reason of the security with which it is held from operation when the temperature remains at normal points and the certainty with which it is actuated for extinguishing fires when the temperature rises to an excessive degree, and it will also be obvious from the above description that the device is capable of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts of the device herein shown in carrying out my invention in practice.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A fire-extinguishing device comprising a vessel pivotally supported below its center of gravity and adapted, when released, to swing pivotally and discharge its contents, a detent device supported for movement above the vessel and, when lowered, adapted for engagement with the vessel to hold the same out of discharging position and, when raised, to release said vessel, and means, controlled by thermal changes, for operating said detent device.

2. A fire-extinguishing device comprising a vessel pivotally supported below its center of gravity and adapted, when released, to swing pivotally and discharge its contents, said vessel having at opposite sides eyes, a bail having ends engageable in said eyes to hold the vessel against pivotal movement, a link whereon the bail is supported, and means, controlled by thermal changes, for operating the bail.

3. A fire-extinguishing device comprising a vessel pivotally supported below its center of gravity and adapted, when released, to swing pivotally and discharge its contents, a detent device supported for movement above the vessel and, when lowered, adapted for engagement with the vessel to hold the same out of discharging position and, when raised, to release said vessel, means, controlled by thermal changes, for operating said detent device, and an alarm device actuated simultaneously with the operation of the detent device.

Signed at Cincinnati, Ohio, this 10th day of November, 1903.

EDWARD W. HICKS.

Witnesses:
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