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TEMPERATURE RELEASED LATCH FOR DOORS AND THE LIKE.

APPLICATION FILED SEPT. 20, 1912.

1,085,705. Patented Feb. 3, 1914.

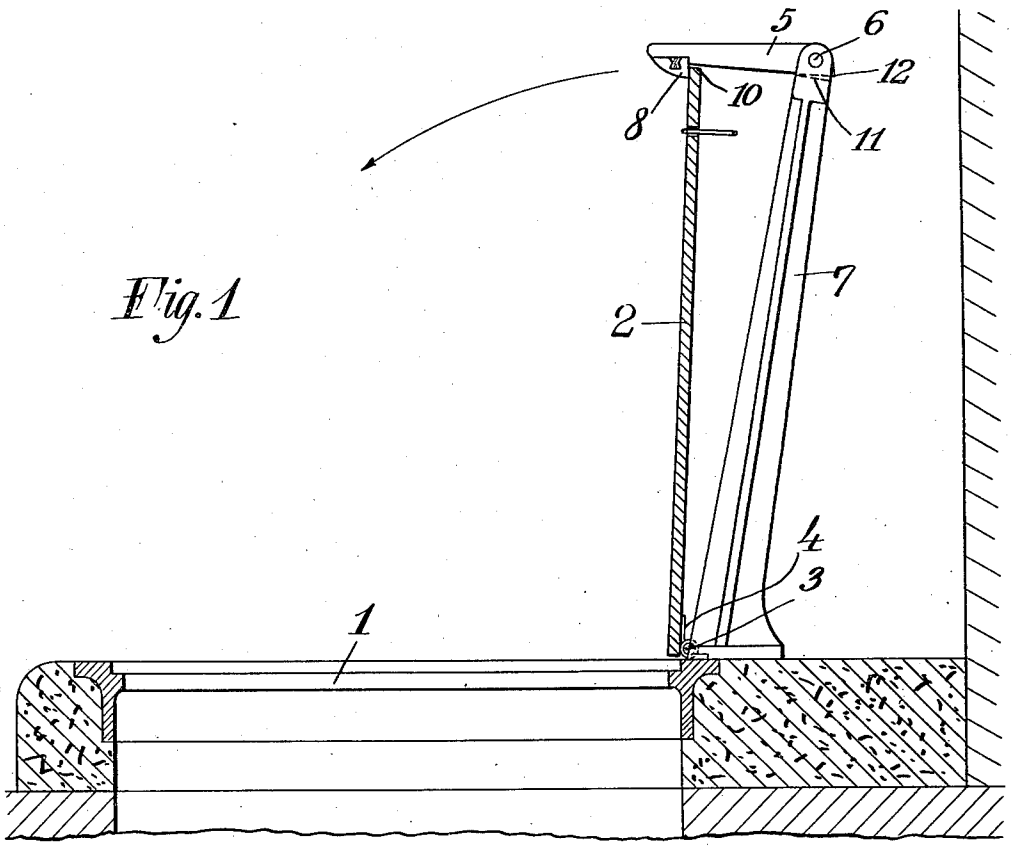


Fig. 1

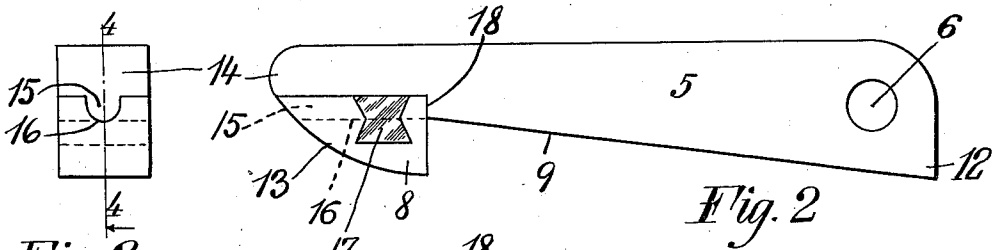


Fig. 3

Fig. 2

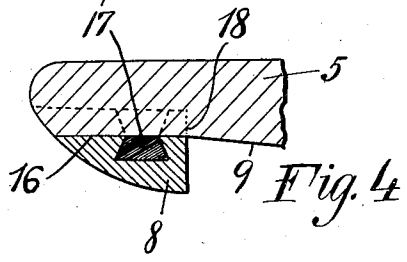


Fig. 4

WITNESSES

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TEMPERATURE-RELEASED LATCH FOR DOORS AND THE LIKE.

1,085,705. Specification of Letters Patent. Patented Feb. 3, 1914.

Application filed September 20, 1912. Serial No. 721,413.

To all whom it may concern:

Be it known that I, EDWARD F. SCHNUCK, a citizen of the United States, residing at Greenburg, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Temperature-Released Latches for Doors and the like, of which the following is a full, clear, and exact specification.

This invention relates to latches for doors, skylights, switches, and other devices, wherein upon the attainment of a predetermined temperature the device being retained will be released, and thereby the operation of a door, skylight, switch, or other device, be effected.

It has heretofore been proposed to provide chains having fusible links for releasing a door, skylight, switch, or the like, upon the attainment of a predetermined temperature to permit it to open or close as the case may be, but in many situations it is impracticable or inconvenient to use a chain, or the operation of such a device has been uncertain and unreliable or obstructs the opening.

The object of the present invention is to provide a latch or keeper which will contain a fusible element which will melt upon the attainment of a predetermined temperature and thereby release the door, skylight, switch, or other device, which is to be controlled.

The characteristic feature of the latch of this invention is that the fusible portion, as in the case of a hatchway, door or skylight, will project into the region where the increase in temperature will be most marked, without being shielded by the door so that the fusible connection will thereby be more certain and reliable in action and promptly release the device to be controlled.

As herein specifically shown, the invention is shown in combination with a hatchway or bin door which is normally biased to close, as by a spring, and which can be manually controlled to open and close the door and also automatically released upon the attainment of a predetermined temperature. The device is so constructed that the holding portion or keeper is mechanically connected with the main body portion of the latch so that ordinary operation does not affect the fusible connection, yet permitting the fusible connection when melted to offer no obstruction to separation of the latch and thereby affect the operation of the controlled part.

While specifically shown in connection with a door, the invention is capable of use in many other relations such as for controlling switches, alarms, sprinklers, etc., whenever it is desired to cause a predetermined temperature to release the controlled device.

In the accompanying drawings, Figure 1 is an elevation partly in section of an opening, such as a bin or hatchway, provided with the invention; Fig. 2 is a detail view of the latch; Fig. 3 is an end elevation; and Fig. 4 is a detail section on the line 4—4 of Fig. 3 showing the manner of attaching the holding portion or keeper to the body portion of the latch.

1 represents the opening to be protected, such as the top of a storage bin in a warehouse, the contents of which are subject to spontaneous combustion, and 2 represents a door which is fitted to close the opening 1. The door is hinged at 3 preferably by a spring hinge 4, which normally tends to shut the door.

5 represents the latch which is pivoted at 6 to a suitable support as 7, the latch having a holding portion or keeper 8 which projects below the lower surface 9 of the latch, and engaging the edge 10 of the door as shown in Fig. 1. The support 7 is provided with a slotted surface 11 forming a stop to limit the fall of the latch, the end 12 of the latch being extended to engage the slot 11 to limit the upper movement, so that the latch will not be thrown over out of operative position in case the door is suddenly swung back. The latch is thus held by these stops in position to ride over and drop down to hold the edge of the door and also to prevent it flying upwardly and out of operative position. The front end of the holding portion or keeper 8 is curved or beveled as at 13, to coincide with the curved or beveled front end 14 of the body portion, forming a smooth surface which will not interfere with or catch in the edge of the door. The body portion is provided with a tongue 15 and the keeper 8 with a corresponding groove forming a dove tail and thereby avoiding a notch or slot on the engaging edge 13 of the latch. At the same time the keeper 8 is steadied against lateral movement by reason of this interlocking connec-

tion with the body portion. The bottom edge 16 of the tongue is in a line forming a continuation of the lower edge 9 of the keeper, and the latter is fusibly connected to the body. This is preferably done by the dove tailed fusible connecting piece 17, which when melted leaves no projection tending to hold the door from operating. The dove tailed connecting piece 17 is formed of a composition metal which is fusible at a predetermined temperature, such composition being well known and unnecessary to be particularly specified, the composition, of course, varying with the temperature at which it is to melt and thereby disconnect the keeper 8. Instead of using a separate fusible key, the body portion and keeper may be soldered together with fusible solder of proper melting point, the parts bing first galvanized to protect against rust, and also to cause the solder to hold. The dove tailed connecting piece 17 is formed by pouring the metal into the dove tailed space formed when the keeper 8 is properly assembled with the body portion 5 and when cool locks the keeper firmly to the body portion and prevents displacement until melted. In order to relieve the fusible connecting piece 17 of the strain due to the latching of the door, the body portion 5 is provided with opposite shoulders 18 so that latching strains will be taken up by the body portion independently of the fusible connecting piece 17. Thereby, it will be seen that the keeper or holding piece 8 is firmly attached to the body portion against ordinary strains, and yet when the connecting piece 17 melts no obstruction will be offered to operation of the door, switch, skylight, or other device, being controlled.

A particular advantage of the invention for fire protection purposes resides in the location of the fusible connection piece in the direct path of the heat or flames as will be seen in Fig. 1, so that a prompt operation is more certain to occur than with a chain for example, which would in many instances have to be placed behind the door and thereby shield it from a direct heat.

It will be seen that the invention is susceptible of various modifications in the shape and arrangement of parts, the location of the fusible connecting piece and the keeper with respect to the body portion of the latch, and that various other forms of doors, skylights, switches, valves, etc., may be controlled by the same device, without departing from the scope of the appended claims.

Having thus described my invention, I declare that what I claim as new and desire to secure by Letters Patent, is:—

1. A temperature released latch comprising a body portion, a projecting holding portion having a beveled edge alined therewith, said portions having longitudinal interlocking engagement, a transverse fusible key holding said portions together, said holding portion engaging said body portion to transmit latching strain independently of said fusible key.

2. The combination with a support, of a pivoted latch comprising a body portion, a beveled holding portion at one end, said holding portion being engaged with said body portion to prevent movement toward said support, fusible means attaching said portions together, and means limiting the pivotal movement of said latch relatively to said support.

3. A temperature released latch for a movable member, comprising a body portion, a holding portion, said holding portion being constructed to permit the movable member to ride thereon when moved in one direction, and a fusible key for connecting said holding portion to said body portion, said body portion being constructed to prevent independently of said fusible key the displacement of said holding portion in said one direction.

4. A temperature released latch comprising a body portion, a holding portion attached to one face thereof and interlocking therewith to resist transverse strains, and a fusible key passing transversely through said interlocking portions to normally secure said portions together.

In testimony whereof I affix my signature, in presence of two witnesses.

EDWARD F. SCHNUCK.

Witnesses:

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