ABSTRACT OF THE DISCLOSURE

Signal transmitting switch for fire alarm or other purposes is held in the non-transmitting condition by glass or like breakable rod and is biased to the active signal transmitting condition so that breakage of the restraining element will effect signal transmission.

The invention herein disclosed relates to fire alarm and other signal transmitting stations of the "break-glass" type and the objects of the invention have been to provide a simple, low cost, readily installed construction, consisting of but few readily available parts and which while restrained against accidental or unwarranted operation, will show on quick observation just how it may be operated by one simple action, and which when so released in any manner will automatically send in the predetermined alarm signal.

Other desirable objects accomplished by the invention and the novel features of construction, combination and relation of parts through which such objects are attained, are set forth and will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates a practical commercial embodiment of the invention. Structure, however, may be modified and changed as regards the present illustration; all within the true intent and scope of the invention as hereinafter defined and claimed.

FIG. 1 in the drawing is a partial sectional front elevation of a fire alarm station form of the invention in the normal "ready" condition of the same.

FIG. 2 is a side elevation of the same, partly in broken section, as on line 2—2 of FIG. 3.

FIG. 3 is a broken plan view of the station.

In the illustration, the supporting bar structure is shown in the form of an open front box call box 7, closed by a front cover in the nature of a face plate 8, carrying the usual, familiar operating instructions.

For general purposes, this face plate may be in the form of a casting and it is shown as having a generally central opening 9 therethrough and projecting lugs 10, 11 on the front of the same, spaced equally to opposite sides of and in line with such opening.

One lug, 10, is shown as having a horizontal opening 12 extending entirely therethrough and internally screw threaded at 13.

The other lug 11 is shown as having a horizontal disposed opening 14 extending partly therethrough with the open end toward the other lug and with a terminal wall 15 closing the outer end of the opening.

These openings in the lugs are horizontally aligned and positioned on a line extending across and close to the opening 9 in the face plate.

The sectional view, FIG. 2, shows the signal transmitting switch mechanism in the form of a spring biased switch 16, carrying terminals 17, 18, 19 for the signal wires and having a tubular screw threaded supporting neck 20 at the front extending through the opening 9 in the face plate and rigidly secured there by jam nuts 21, 22 on the threaded portion of the neck, at the opposite sides of the face plate.

This switch is of the spring biased type, having a toggle operating lever 23 projecting out through the neck over the front of the face plate, between the two spaced lugs.

This switch is secured in position with the toggle lever operating through a vertical arc intersecting the center line 24, connecting the aligned passages in the supporting lugs and with the spring bias of the switch operating to throw the toggle lever from an upwardly angled position to a downwardly angled position.

This spring biased switch in this relation is connected to transmit signal in the downwardly angled position of the toggle lever and to withhold transmission in the upwardly angled position of the toggle lever.

As a consequence, the switch will automatically send in an alarm signal when the toggle lever is released from restraint and will not transmit such a signal when the toggle lever is held in an upwardly inclined position such as indicated in FIGS. 1 and 2.

The toggle lever is restrained and held in the upwardly angled non-transmitting position by a bar 25 of glass or other readily breakable fragile material, of a size to be slipped through the screw threaded through opening in the lug 10 into seated engagement in the opposite closed end opening in the companion lug 11.

With the toggle lever momentarily held in the upwardly inclined non-signal transmitting position, the restraining bar may be readily inserted into holding position, extending across and close to the outer end of the supporting neck of the switch and relatively close to the pivoting center in the toggle lever.

After inserting the fragile bar into switch restraining position, it is locked in this relation by a screw plug 26, entered in the screw threaded opening in back of the outer end of the bar.

This locking action is accomplished by an authorized person, having a special key to fit the key socket 27 in the head of the screw plug.

The breakable restraining bar is shown as of tubular form, providing a light, strong, but easily broken element, fully capable of holding the switch toggle restrained against the spring action of the switch, but easily broken to permit the automatic spring action of the switch.

The location of the restraining bar close to the pivot center of the toggle lever enables it to safely hold the toggle lever but provide desired leverage for breaking the rod by downward pull of the toggle lever.

As the switch operates automatically in the signal transmitting direction of movement, it is only necessary to break the restraining rod by any means, if not by actually pulling down the toggle lever, then by any manner of means of breaking this exposed supporting portion of the rod.

The breakable rod and the toggle lever are fully exposed on the front of the station and hence provide a desirable notice of fire protection and instantly understandable information for sending in a necessary alarm.

The complete electrical equipment is carried by the face plate, which may be secured to the box by readily releasable means, such as screws 28, making it possible for an authorized agent to quickly remove or replace a face plate and complete electrical unit.

The outstanding supporting lugs on the front of the cover plate may be relatively closely spaced so as to expose only a reasonably short length of the breakable rod and so as to serve as a measure of protection against accidental breakage of the rod.

The complete unit consists of but few compactly arranged small parts, taking up small space and therefore adapting it for use with an inexpensive light weight form of wall or outlet box.
3,356,801

What is claimed is:

1. A break-glass station comprising the combination of:
   a removable face plate closing the front of the box,
screw means removably securing said face plate in closing position over the front of the box,
said face plate having a generally central opening therethrough and provided with projecting lugs spaced apart horizontally to opposite sides of said opening,
said lugs having horizontally aligned openings therein, the opening in one of said lugs extending entirely therethrough and being screw threaded,
   a removable face plate closing the front of the box,
said face plate having a generally central opening therethrough and provided with projecting lugs spaced apart horizontally to opposite sides of said opening,
said lugs having horizontally aligned openings therein, the opening in one of said lugs extending entirely therethrough and being screw threaded,
   the opening in the other lug extending only part way therethrough and with the opening end of the same facing the through opening in the first mentioned lug,
aspring biased signal transmitting switch having a supporting neck portion extending through and secured in said opening in the face plate and having an operating toggle lever projecting out over the front of said face plate exposed to sight and manual operation,
said switch being mounted with the toggle lever of the same operating through a vertical arc and said switch being connected to transmit signals with said lever in a lower position and to not transmit signals with the lever in an upper position,
said switch being spring biased to the lower signal transmitting position of the toggle lever,
said vertical arc of toggle lever movement intersecting a center line connecting said openings in said lugs,
as breakable rod of frangible material extending through said through opening in the first mentioned lug into seated engagement in the closed end opening in the second mentioned lug,
said rod being thereby supported below the projecting toggle lever in the upwardly directed position of the same for holding said toggle lever restrained in the non-signalling position, ready to be released in the spring biased downward direction of signal transmitting movement of the lever on breakage of said restraining rod, and
   a screw plug entered in the outer end of said screw threaded opening in back of said rod for confining said rod in the restraining position, and
   having a key socket in the end of the same requiring the use of an authorized key for removing and replacing said screw plug for the purpose of replacing broken restraining rods.

2. A break-glass station comprising the combination of:
   an open front signal box,
screw means removably securing said face plate in closing position over the front of the box,
said face plate having a generally central opening therethrough and provided with projecting lugs spaced apart horizontally to opposite sides of said opening,
said lugs having horizontally aligned openings therein, the opening in one of said lugs extending entirely therethrough and being screw threaded,
   the opening in the other lug extending only part way therethrough and with the opening end of the same facing the through opening in the first mentioned lug,
aspring biased signal transmitting switch having a supporting neck portion extending through and secured in said opening in the face plate and having an operating toggle lever projecting out over the front of said face plate exposed to sight and manual operation,
said switch being mounted with the toggle lever of the same operating through a vertical arc and said switch being connected to transmit signals with said lever in a lower position and to not transmit signals with the lever in an upper position,
said switch being spring biased to the lower signal transmitting position of the toggle lever,
said vertical arc of toggle lever movement intersecting a center line connecting said openings in said lugs,
as breakable rod of frangible material extending through said through opening in the first mentioned lug into seated engagement in the closed end opening in the second mentioned lug,
said rod being thereby supported below the projecting toggle lever in the upwardly directed position of the same for holding said toggle lever restrained in the non-signalling position, ready to be released in the spring biased downward direction of signal transmitting movement of the lever on breakage of said restraining rod, and
   a screw plug entered in the outer end of said screw threaded opening in back of said rod for confining said rod in the restraining position, and
   having a key socket in the end of the same requiring the use of an authorized key for removing and replacing said screw plug for the purpose of replacing broken restraining rods.

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