F. KEELER.

AUTOMATIC SIGNALING OR RELEASING DEVICE FOR WINDOWS AND THE LIKE.

APPLICATION FILED MAY 18, 1914.

1,153,314. Patented Sept. 14, 1915.

Fig. 1.

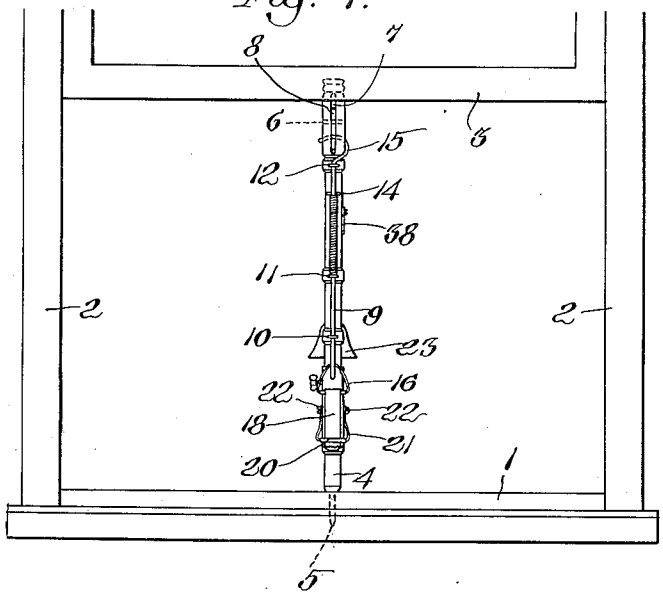


Fig. 2.

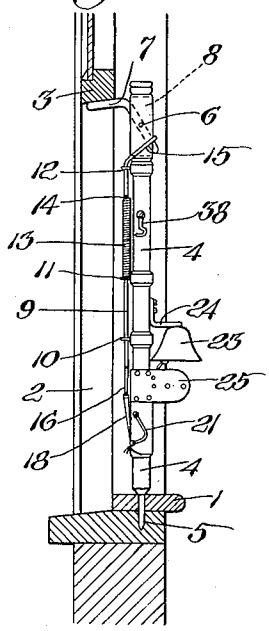


Fig. 3.

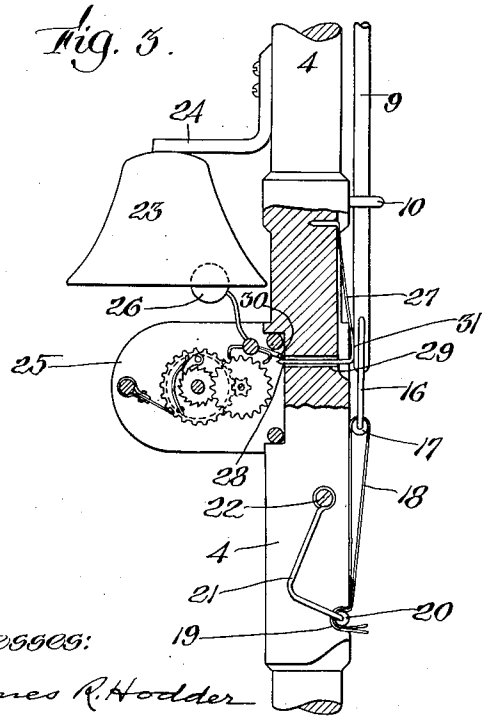
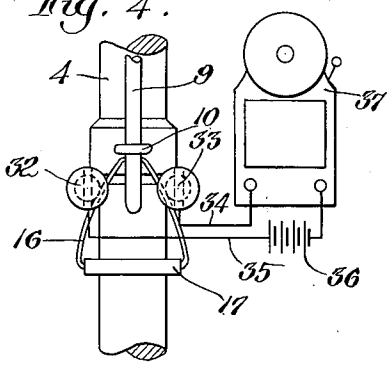


Fig. 4.



Witnesses:

James R. Hodder

Edward Maxwell

Inventor:

Frank Keeler,

by Geo. S. Maxwell,

Attorney.

UNITED STATES PATENT OFFICE.

FRANK KEELER, OF BOSTON, MASSACHUSETTS.

AUTOMATIC SIGNALING OR RELEASING DEVICE FOR WINDOWS AND THE LIKE.

1,153,314. Specification of Letters Patent. Patented Sept. 14, 1915.

Application filed May 18, 1914. Serial No. 839,244.

To all whom it may concern:

Be it known that I, FRANK KEELER, a citizen of the United States, and resident of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Automatic Signaling or Releasing Devices for Windows and the like, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present invention is an automatic releasing device intended to be operated by moisture, rain, or fire.

The invention is particularly intended to be applied to a window, and to automatically give a signal or release the window when open, permitting it to close in the event of rain beating in, or in the presence of flying sparks or fire.

Heretofore it has been proposed to employ fusible plugs or the like, which will melt when considerable heat is applied but, so far as I am aware, it is broadly new to provide an automatic releasing device which will operate by moisture, as well as by moisture and fire.

In carrying out my present invention, I prefer to utilize a thin paper seal as a retaining device, which paper seal will be quickly broken by rain beating against it, a spark flying against it, in case of fire, or even a very heavy wind. I may arrange this paper seal in any exposed or partially exposed position, so that it will be broken and release a spring to sound a signal, ring an alarm, trip a latch holding up a window, or the like.

In the preferred embodiment of the invention, illustrated in the annexed drawings, I have shown such a paper seal equipped to operate, upon being broken, a bell, electric alarm, or remove the prop supporting an open window.

Referring to the drawings, Figure 1 is a view of a window frame and my apparatus in position to hold the window open; Fig. 2 is a side view of the same; Fig. 3 is an enlarged detail view partly in cross section of the seal retaining mechanism; and Fig. 4 is a detail view of the arrangement to give an alarm.

As illustrated in Fig. 1, a window sill 1 and side frame 2 are shown, in which a sliding sash 3 is arranged, as is usual, the window sash 3 being preferably overweighted, so as to tend to fall and close automatically on removal of a prop. In the form of the invention herein illustrated, I provide a post 4 adapted to fit within a socket 5 approximately in the middle of the window sill 1; and near the top of the post 4, which may be of any suitable height, is pivoted at 6 a latch 7, which latch is a metallic bell crank member of brass or the like, extending through a slot 8 in the top of the post. A rod 9 is arranged to slide through screw eyes 10, 11, and 12, positioned approximately as shown on the post 4. A coiled spring 13 encircling a portion of the rod 9 and bearing between the intermediate screw eyes 11 and a pin 14 acts to normally move the rod into its uppermost position with the pin 14 bearing against the top most screw eye 12. The rod 4 is also formed within its upper end in the form of a hook or the like 15, bent backwardly to encircle the top of the rod 4 in which the member 7 is pivoted. As illustrated in Fig. 2, the member 7 is held extended by the hook portion 15 of the rod 9 bearing thereagainst when the rod is pulled downwardly, and when the spring 13 is permitted to act, forcing the rod 9 upwardly, the hook 15 releases the member 7, permitting the front portion to drop, as it swings downwardly on its pivot 6. To the lower portion of the rod 9 is pivoted a V-shaped or stirrup member 16, preferably formed of wire and with a roll 17 adapted to receive the paper strip 18. In order to hold the paper strip when it is passed around the stirrup member 16, I may provide any suitable device, as herein shown, utilizing a notch 19 and a roll 20 adapted to fit within said notch, which roll is carried on a pair of spring arms 21, pivoted to the rod 4 at 22.

When it is desired to use the apparatus to hold open a window, which holding device will be released and the window permitted to close upon rain beating in, the window sash is raised and the post 4 fitted in the socket 5 in the window, then the rod 9 is drawn downwardly, engaging the rearmost end of the member 7, locking it upon its pivot 6 and holding it outwardly, as illustrated in Fig. 2 in engagement with the bottom of the window sash 3. The rod is held in this lowermost position, against the tension of the spring 13, by the strip of paper 18, preferably of thin tissue paper, and doubled, passing around the roll 17 on the stirrup 16, and with the free ends caught

in the recess 19 by the roll 20. I prefer to mount the roll 20 on the wire 21, so that the same will "spring" into the recess 19 and firmly bind the ends of the paper strip 18 therein, as well as holding the roll 20 in said recess. With the device in this position, the window is held open indefinitely, until rain or the like beats in, striking against the thin tissue paper seal 18, whereupon this seal will be almost instantaneously broken, the spring 13 will at once act to move the rod 9 upwardly, releasing the member 7 and allowing the window sash to fall, thus permitting the window to close. It will be appreciated that fire, or flying sparks, striking the thin paper seal 18 will also act to release the device.

It may be desirable to arrange the appartus to sound an alarm, and to this end I have illustrated a mechanical bell ringing device, as well as an electrical alarm. In Fig. 3 the post 4 is shown provided with a bell 23 secured to a bracket 24, and with a spring actuated chain of wheels carried in plates 25 to agitate a tongue or clapper 26 and ring the bell. A spring member 27 having one end 28 projecting through a hole 29 in the post 4 in position to intercept a catch 30 is arranged so as to prevent the rotation of the gear wheels and the ringing of the bell when the rod 9 is held downwardly, said rod pressing against the spring member 27 at 31, see Fig. 3. On breaking the seal 18 and the upward movement of the rod 9, the spring 27 is released, the end 28 withdrawn, and the bell permitted to sound, until the mechanism runs down.

In Fig. 4 I have illustrated an electric signaling device utilizing the stirrup member 16, which is preferably of some conducting metal, to engage two binding posts 32 and 33 when the rod 9 is forced in its uppermost position by the spring 13 on the breaking of the seal. To these binding posts are attached wires 34 and 35 respectively, connecting a battery 36 with an electric bell signal, or the like, 37, the circuit being completed by the engagement of the stirrup member 16 across the space between the binding post 32 and 33, as will be readily understood.

The height of the post 4 or the window retaining member 7 may be of any suitable extent for a particular use, and may be employed with or without the mechanical alarm bell device, or electrical alarm, as desired. Although the apparatus may be positioned at either side or at any point of a window frame where it is deemed convenient, I prefer to apply same to the center, as illustrated in Fig. 1, and slightly within the window sill, substantially as illustrated in Fig. 2, so that the seal 18 will not be broken until rain actually beats into the window, or sparks are actually flying in. It may be convenient to fit a hook 38 at the side of the post 4 in convenient position so that it may be swung upwardly, and engage the pin 14 when the rod 9 is moved downwardly to seat the device, so that the rod may be held in this position while affixing the paper seal 18 about the roll 17 on the stirrup 16, and catching the ends in the recess 19, as already explained. When thus set, the hook 38 is removed and the apparatus is then ready, with the tension of the spring 13 bearing directly on the paper seal 18. This spring will not be of sufficient tension to break the seal 18 in a straight steady pull, but may be of appropriate strength to part the seal 18 when any portion of the paper is softened by a drop or two of water.

While I prefer to use a thin paper strip 18, it will be understood that any equivalent material which is readily fusible or melted through the action of rain or moisture, as well as being also breakable by fire, may be employed, but any paper seal or its equivalent, is a distinct novelty in this art, and I wish to claim the same and its resulting advantages broadly.

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

1. A closure controlling device comprising a standard, a latch movably mounted thereon, a destructible element secured to the standard, a latch engaging means controlled by the destructible element, and a spring for operating the latch engaging means when said means is released by the destructible element.

2. A closure controlling device comprising a standard, a latch pivoted thereto, a destructible element secured to the standard, a latch engaging means controlled by the destructible element, and an alarm set in operation by movement of the latch engaging means.

3. A closure controlling device comprising a standard provided with a recess, a latch pivoted to the standard, a destructible element, means for detachably securing the destructible element in the recess, and a latch engaging means connected to the destructible element.

4. A closure controlling device comprising a standard, a latch pivoted thereto, a rod slidably mounted on the standard, and provided at one end with a latch engaging hook, a looped member at the other end of the rod, a spring for moving the rod in one direction and a destructible element secured to the standard and engaging the looped member.

5. A closure controlling device comprising a standard, a latch pivoted thereto, a rod slidably mounted on the standard and provided at one end with a latch engaging hook, a looped member at the other end of

the rod, a spring for moving the rod in one direction, a destructible element in the form of a strip, said strip engaging the loop, and spring controlled means for detachably clamping the ends of the strip to the standard.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FRANK KEELER.

Witnesses:
JAMES R. HODDER,
EDWARD MAXWELL.