

E. AXTHELM.

Self-Closing Annunciators.

No. 150,274.

Patented April 28, 1874.

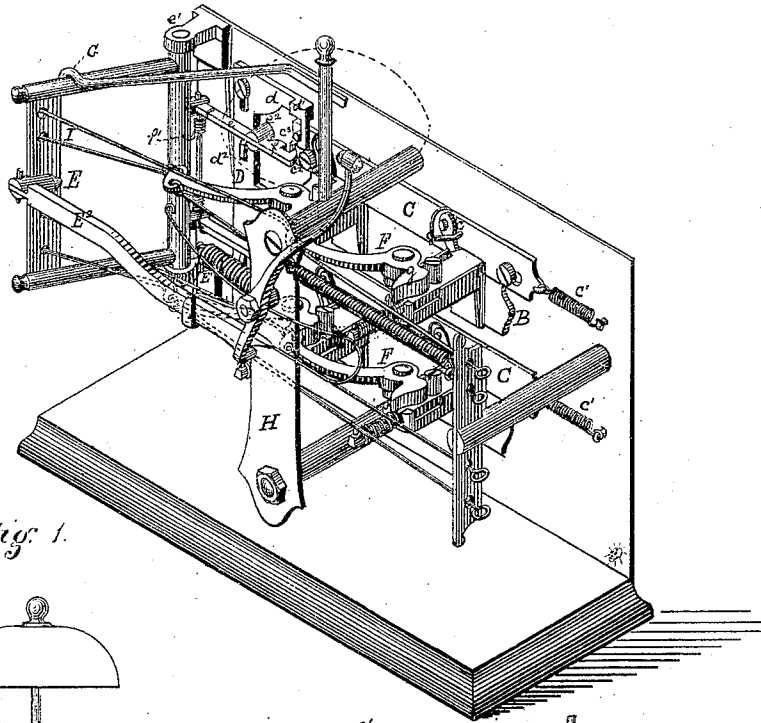


Fig. 1.

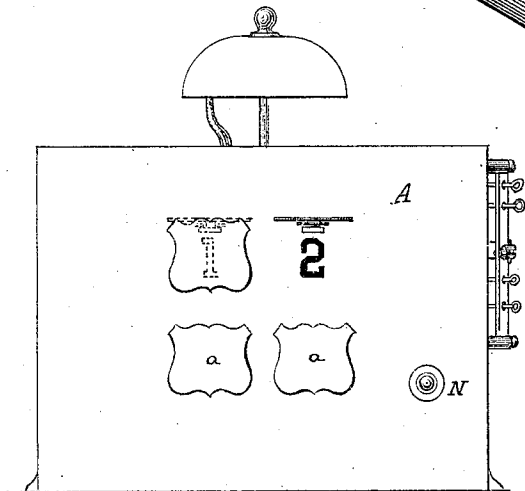


Fig. 2.

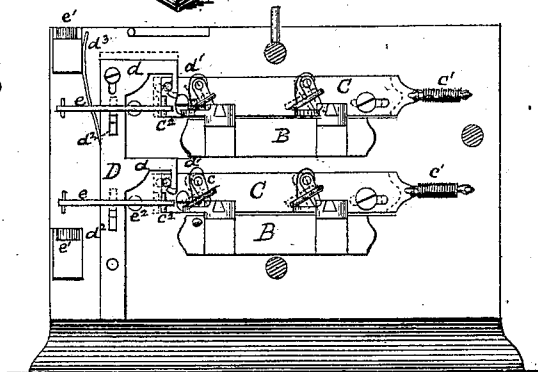


Fig. 3.

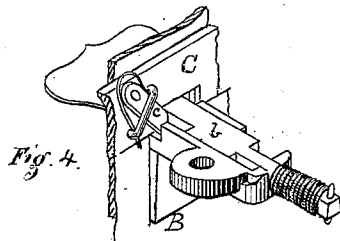


Fig. 4.

Witnesses } James L. Kay
Frederick Standish

Inventor Ernst Axthelm
by Bakewell & Kerr
Attys

UNITED STATES PATENT OFFICE.

ERNST AXTHELM, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN SELF-CLOSING ANNUNCIATORS.

Specification forming part of Letters Patent No. **150,274**, dated April 28, 1874; application filed April 6, 1874.

To all whom it may concern:

Be it known that I, ERNST AXTHELM, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Self-Closing Annunciators; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings forming a part of this specification, in which—

Figure 1 is an isometrical view of the rear operative portions of the annunciator. Fig. 2 is a front view, showing the face of the annunciator. Fig. 3 is a rear view, showing the bracket for supporting the bolt, the locking-slides, and the coupling-slide; and Fig. 4 is an isometrical view of the spring-bolt and its connections.

This invention relates to certain improvements in annunciators for hotels, private residences, and other buildings; and it consists, first, in a combination of devices such as spring-bolts, locking-slides therefor, a coupling slide or slides, with bell-wires or other equivalents, and intermediate mechanism, whereby the doors covering the room-numbers on the face of an annunciator are raised, held in position, and allowed to fall when the next alarm is struck; second, in a combination of a bolt provided with a retracting-spring, a locking-slide, having spring-catches, and a lever operated from the bell-wire for advancing the bolt, whereby swinging doors covering the room-number on the face of annunciator are raised and held up, or till such time as they are intentionally released; third, in details of construction more specifically hereinafter set forth.

A represents the face of the annunciator, provided with the usual series of figures indicating the several rooms, and provided with swinging doors *a* covering each figure. These doors are hinged above, and are raised by means of spring-bolts. This is clearly shown in Fig. 2. B indicates a bracket attached to the rear face of the annunciator supporting the spring-bolt *b*. The case of the spring-bolt has a projection upon it for pivoting the lever by which the bolt is operated. The bolt *b* has upon one side an inclined recess, and in rear thereof a square or shouldered recess, for the

purposes hereinafter specified. On the upper side of the bolt is a pin or projection, against which the short arm of the lever *F* operates for forcing out the spring-bolt. An arm of the spring-bolt extends to the rear of its casing, and is provided with a coiled or other spring which retracts the bolt when released by the lever.

I will first proceed to describe one of the locking-slides, which description will apply to the other, or any number which may be used. The same may also be said of the spring-bolts.

C represents a slide arranged above the bracket B, which sustains the spring-bolt *b*. This slide C is secured to the face of the annunciator by means of screws, so as to have a limited lateral movement, and is provided with a spring, *c*¹, and also with spring-catches *c*, the spring-catches being pivoted to the slide, and their movements controlled by a staple or strap. Upon one end of said slide are two projections, *c*² and *c*³, the projection *c*² being vertical upon the lower side of the slide, and the projections *c*³ being upon the upper portion of the slide. D indicates the coupling-slide. This coupling-slide consists of a vertical portion provided with slots, which permit of its being raised or lowered, having a series of arms corresponding in number to the series of locking-slides C employed. Each arm *d* has a downward projection, *d*¹, upon the end of which is a triangular projection, which works over the pin *c*³ of the slide C. Upon the vertical portion of the coupling-slide are a series of lugs, *d*², for raising the lever-catches *e*. *d*³ indicates a spring attached to the vertical coupling-slide D, for the purpose of pressing it forward and keeping it in proper position. This slide D may be raised and lowered, to couple or uncouple the slide C, by means of a knob, *n*, or by a rod or other extension of the vertical portion D. E represents a lever of peculiar construction, pivoted at the two points E¹, and is for operating the slides through the medium of the bell-wire. G represents a stop for the lever E. The lower arm of this lever is connected by the usual wire with the lever F, for operating the spring-bolts, and its short arm is provided with catches *e*, corresponding

in number to the number of slides C. The catches e are guided by recessed lugs or pins e^2 , secured to the rear face of the annunciator. These catches e are provided with inclines or projections f , which cause the catch to rise gradually on its backward movement, so as finally to release the slide C, which is at once retracted by the spring c^1 . f^1 are coiled or other springs to keep the catch e in position. A strong spiral or other spring, E^1 , extends from the short arm of the lever E to a projection upon the bracket or rear face of the annunciator and is intended to draw forward the short arm of the lever when the bell-wire is released. F represents the levers for operating the spring-bolt b . These levers are preferably made of the form shown—that is, with the wing-like projection g on the short arm of the lever, the object of which is to prevent the projection or pin of the spring-bolt b from escaping past the short arm. The lever F is pivoted to the case of the spring-bolt, or may be otherwise suitably pivoted. H is a brace-plate, on which the hammer of the gong is pivoted, said hammer being provided with its retracting-spring, as usual, and operated from the lever E, through the spring-catch arm E^2 . I indicates the bell-wires, which pass loosely through the long arm of lever E.

The arrangement of the wires and their connections with the alarm, and other points of the drawing not specifically described, are of the common form adopted in similar apparatus, and require no specific description.

I will now proceed to describe the operation of my devices, with the slides C C operating together by means of the coupling-slide D. The wire from room No. 1 being pulled, draws forward the long arm of the lever F, forcing the spring-bolt forward, and raising the door or said number. At the same time, through the lever E and the catches e , the several slides are drawn forward; but, owing to the inclined projection f on the under side of the catch e , after the slide has moved a short distance it is released, and, being drawn back to its first position by the spring, it takes into the recess in the side of the spring-bolt, holding it forward and sustaining the door of said number. When the wire of the second number, or any succeeding number, is drawn in the same manner, the lever of the spring-bolt corresponding to said number, forces that bolt forward, as described for No. 1, the levers E and catches e at the same time drawing forward the slides, as before described; but as the lever which forces forward spring-bolt No. 1 is now at rest, when the slide C is moved laterally the spring-bolt No. 1 is retracted by its spring returning to its original position, allowing the door of said number to fall. This will be the operation following each successive alarm when the coupling is in the position shown in Figs. 1 and 3. When the coupling-slide D is raised, as shown in dotted lines, Fig. 3, the projections d^2 upon the vertical

portion of said coupling-slide pass under the catches e of the lever, raising said catches out of contact with the lugs on the slide C'. At the same time the triangular projection on the end of the arms d^1 , working over the pin c^3 on the slide C, gives a simultaneous side movement to all the slides C, releasing the spring-bolts, and allowing all the doors a to fall. Now, any alarm sounded will operate only upon the spring-bolts b' through the lever F, and move the locking-slide C only sufficient to allow the passage of the shoulder of said bolt b beyond the slide, so as to be caught and held in position, raising the door a , but not enough to release any of the spring-bolts that have been previously carried forward. A second alarm will carry forward the bolt to the corresponding number, which, after passing the slide, will be caught by the spring-catch thereon, and so the successive doors will be raised as the alarms are sounded, and retained in position indefinitely, or until intentionally released.

When it is desired to release these doors, the coupler D is brought into its first position. The projection d^2 upon its vertical portion passing from beneath the catches E, and the projection on the arm d^1 working over the pins c^3 upon the slides, give a simultaneous lateral movement to all the slides, releasing the spring-bolts that sustain the doors.

By this means, it is within the power of the hotel-clerk or other party, by coupling the series of slides, to cause each door to fall when the successive alarms are struck, or, by uncoupling the slides, to cause all the doors to remain raised as long as required. The long arm of lever E is pierced with openings for the passage of each bell-wire, so that only one wire shall be operative or operated from the lever at the same time. Upon each movement of the lever E, by means of the spring-arm E^2 , motion is imparted to the hammer, and an alarm sounded.

It is evident, from the description of the spring-bolt and the incline thereon, that the spring-catch upon the slide C may be omitted, the spring-slide having a sufficient lateral movement. Upon being retracted, the side of the slot, through which the bolt passes, will perform the same function as the spring-catch; but this is not a desirable construction, as a more delicate adjustment is required than when the said spring-catches upon the slide E are used.

Having thus described my invention, I claim—

1. The combination of a bolt provided with a retracting-spring, a locking-slide having spring-catches and a lever operated from the bell-wire for advancing the bolt, substantially as and for the purpose specified.

2. The combination of the spring-bolts, locking-slides, coupling slide or slides, bell-wire, and intermediate mechanism, whereby the doors covering the numbers upon the face of

an annunciator are raised, held in position, and allowed to fall, substantially as specified.

3. The locking-slide C, provided with the spring-catches c , substantially as specified.

4. The coupling-slide D, provided with the arms d d^1 , in combination with the locking-slide C, having the pins or projections c^2 c^3 , substantially as specified.

5. The coupling-slide D, having the lugs d^2 ,

in combination with the catches e of levers E, substantially as and for the purpose specified.

In testimony whereof I, the said ERNST AXTHELM, have hereunto set my hand.

ERNST AXTHELM.

Witnesses:

T. B. KERR,

F. W. RITTER, Jr.