(No Model.) 2 Sheets—Sheet 1.

B. S. FLANDERS.

DOOR FOR SIGNAL BOXES AND SIMILAR APPARATUS.

No. 346,847. Patented Aug. 3, 1886.

Fig: 1.

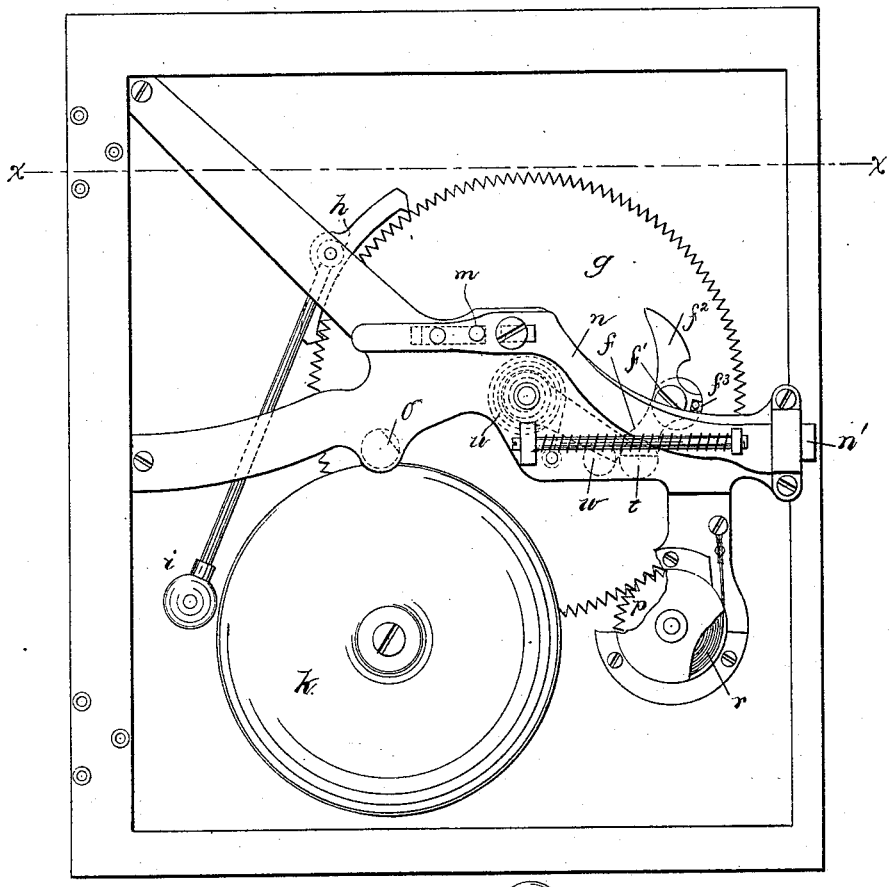


Fig: 2.

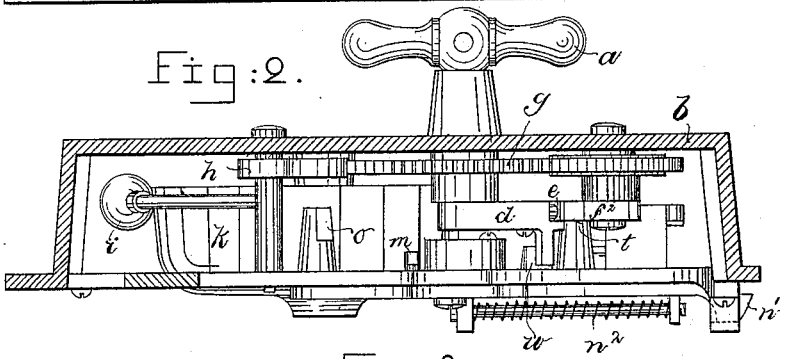
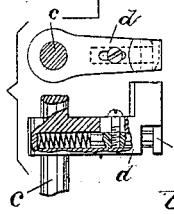


Fig: 3.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

B. S. FLANDERS.

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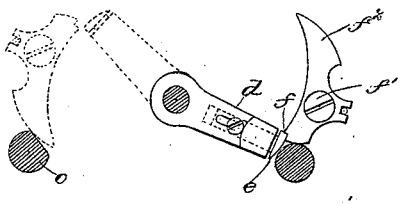
Fig. 4.



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UNITED STATES PATENT OFFICE.

BROWN S. FLANDERS, OF BOSTON, MASS., ASSIGNOR TO THE TOOKER FIRE ALARM IMPROVEMENT COMPANY, OF CHICAGO, ILL.

DOOR FOR SIGNAL-BOXES AND SIMILAR APPARATUS.

SPECIFICATION forming part of Letters Patent No. 346,847, dated August 3, 1886.

Application filed June 30, 1884. Serial No. 136,388. (No model.)

To all whom it may concern:

Be it known that I, BROWN S. FLANDERS, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Doors for Signal-Boxes and Similar Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is intended as an improvement on apparatus of that class shown in Letters Patent No. 164,406, dated June 15, 1875, in which a knob or handle is employed to actuate the latch of the door of a fire-alarm signal-box, so as to give access to the signal-transmitting mechanism; also actuates an audible alarm at the box, thereby attracting attention, and thus acting to deter persons from giving a false or unnecessary alarm.

The present invention consists in improvements in the mechanism that actuates the local alarm, and the latch of the door, having for its object to simplify the said mechanism and render it more perfect and easy in operation.

Figure 1 shows in elevation the inner side of the door with the unlocking or latch actuating and alarm-sounding mechanism; Fig. 2, a horizontal section thereof on line $x\,x$, showing the mechanism in plan view; and Figs. 3 and 4 details to be referred to.

The mechanism is actuated by a knob, or preferably a T-shaped handle, a, at the outside of the door b on the box, which may contain a fire-alarm-transmitting mechanism or any other apparatus which is intended to be accessible to persons when necessary, but which it is desirable to protect from being tampered with at other times. The said handle a is fixed upon a shaft or spindle, c, extending through the door b, and provided at its inner end with a crank, d, the end of which is provided with a sliding spring-pressed projection, e, which normally engages a shoulder on a catch or pawl, f, connected by a pivot, f', with a toothed disk, g, turning loosely on the shaft c. The teeth of the disk g are properly shaped to engage the pallets of an escapement-anchor, h, having attached to it a bell-hammer, i, which when the said anchor is vibrated by the teeth of the disk strikes upon a gong or audible signal device, k, producing a loud and continuous alarm while the said disk is being rotated. After the crank d has been rotated about half a turn, carrying the disk g with it, the end of the said crank arrives in proper position to act on a projection, m, connected with the latch or bolt n of the door, which is shown as having its end, n', beveled, and is acted upon by a spring, n^2, tending to throw the end of the bolt outward to engage the socket or recess in the box, which is not herein shown. At about the time that the crank d thus arrives in position to engage the bolt, so as to permit the opening of the door, the inclined end f^2 of the catch f engages a projection, o, which causes the said catch to turn on its pivot, disengaging it from the projection e of the crank d, and thus leaving the said crank free to turn independently of the disk g to operate the bolt n.

Fig. 4 illustrates the operation of the catch or pawl f and crank d, the parts being shown in full lines in the normal position with the projection e of the crank d engaged with the pawl, so that when the said crank is turned it will carry the pawl and disk with it until it arrives at the dotted line position, when the disengaging projection o turns the pawl or catch f to the position shown in dotted lines, disengaging it from the projection e of the crank d, so that the disk g is free to turn back. The disk g meshes with a toothed wheel, p, causing the latter to rotate when the disk g is turned by the crank d, and the wheel p is connected with a spring, r, which in the said rotation is strained, and thus stores sufficient power to rotate the wheel p and disk g in the reverse direction as soon as the latter is released or disengaged from the crank d by the tripping of the catch f by the projection o, as just described, and the said disk g in thus making its return movement also actuates the bell-hammer i, prolonging the alarm produced by the gong k. The movement of the catch f on its pivot f' is limited by projection f^3 entering a notch in the said catch and the return movement of the disk g when actuated by the spring r is limited by a stop, t, which also turns

the said catch into the position to engage the yielding end piece *e* of the crank. The spindle *c* of the crank and handle is acted upon by a spring, *u*, tending to turn it back to engage the catch *f*, and the end piece, *e*, of the said crank is made yielding, as shown in Fig. 3, to permit it to pass the catch *f* in the said return movement of the crank which is limited by a stop, *w*.

When it is desired to open the door, the operator turns the handle *a*, and with it the crank *d* and disk *g* engaged with the said crank by the catch *f*, thus producing an alarm on the gong, and also straining or winding up the spring *r*. At the end of the said movement the catch f^2 is tripped or disengaged by the projection *o* of the disk *g* and turned back by the spring *r*, producing a further operation of the alarm *k*. The crank *d* is thus left free to operate the bolt *n* and open the door.

I claim—

1. The handle and connected crank and toothed disk concentric therewith and a catch pivoted on the said disk for engaging the said crank, combined with a disengaging device for the said catch and a spring strained or wound up by the said disk in its movement produced by the crank, by which the said disk is rotated when disengaged from the said crank in the reverse direction to that produced by the crank, substantially as described.

2. The handle and connected crank, provided with a yielding projection, combined with the alarm-actuating toothed disk concentric with the axis of the said crank, and catch or pawl pivoted on the said disk engaged by the said projection, the spring-winding pinion or gear meshing with the said disk, and the stops co-operating with the said catch, by one of which the said catch is disengaged from the yielding projection of the crank and the disk permitted to turn back under the action of the spring, the other stop limiting the said backward movement and holding the catch in position to be engaged by the yielding projection of the crank, substantially as described.

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

BROWN S. FLANDERS.

Witnesses:
UZZIEL PUTNAM,
JOS. P. LIVERMORE.