C. E. PIERCE.

Burglar Alarm.

No. 66,040. Patented June 25, 1867.

Fig. 1a

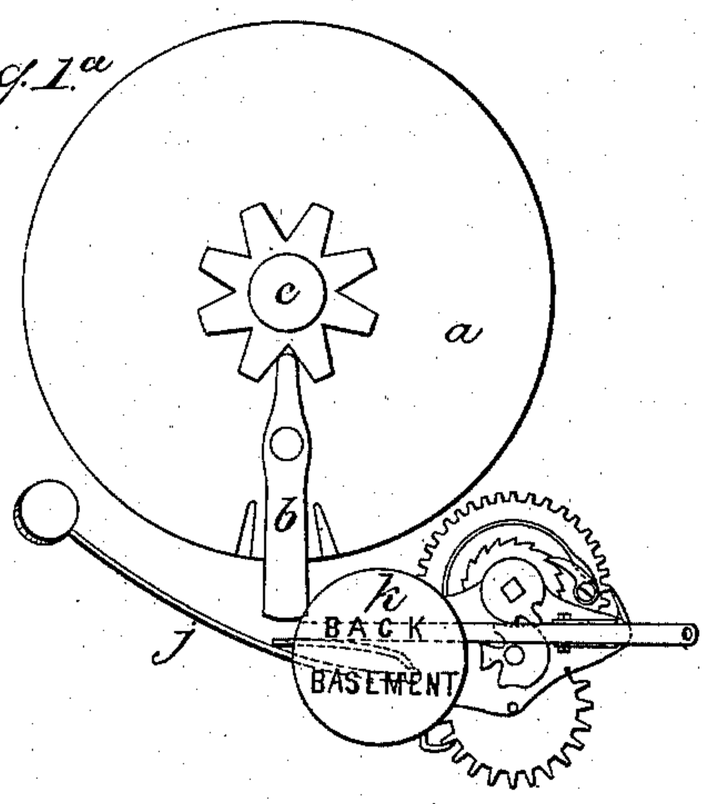


Fig. 1.

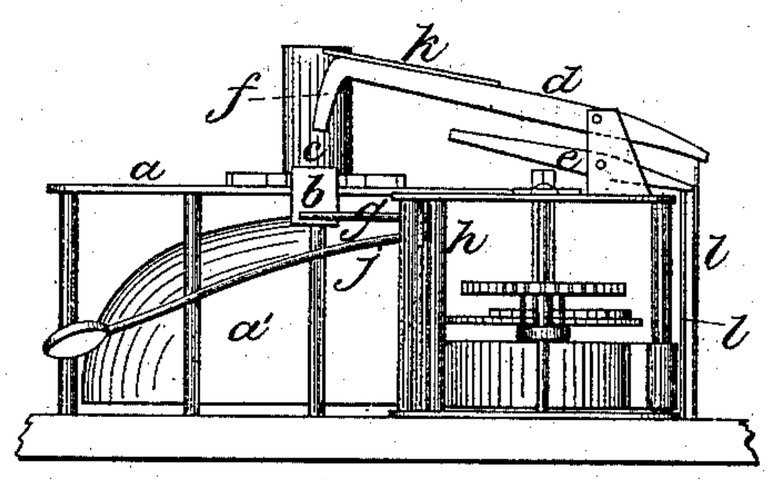


Fig. 2.

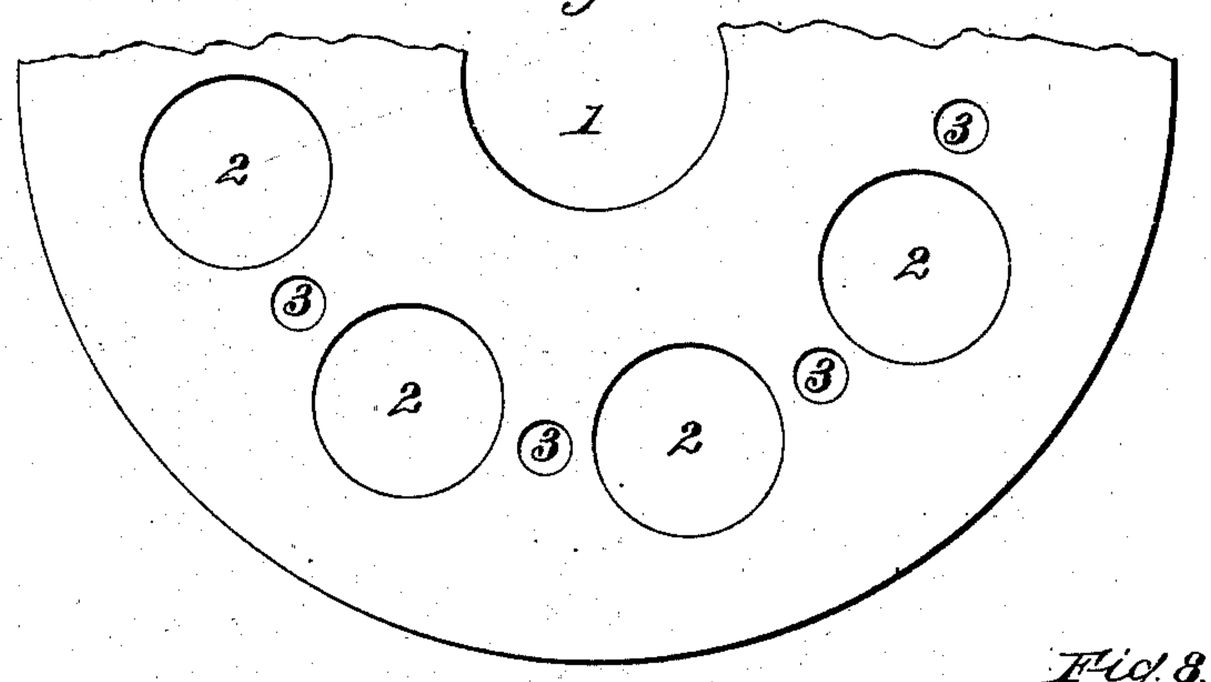


Fig. 7.

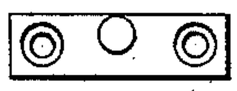


Fig. 6.

Fig. 3.

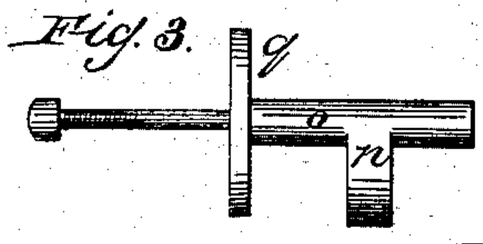


Fig. 4.

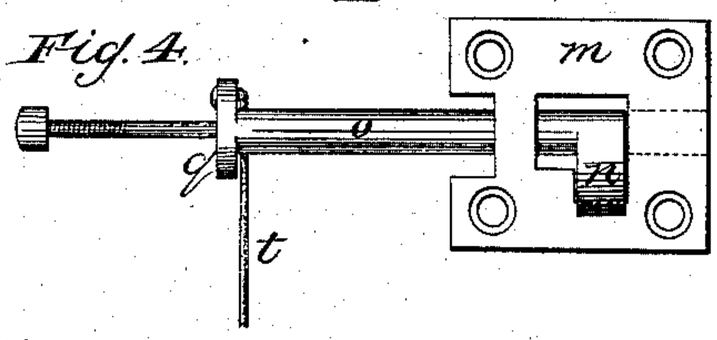


Fig. 5a

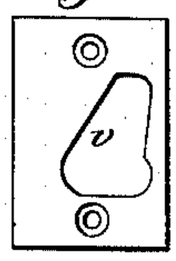


Fig. 5.

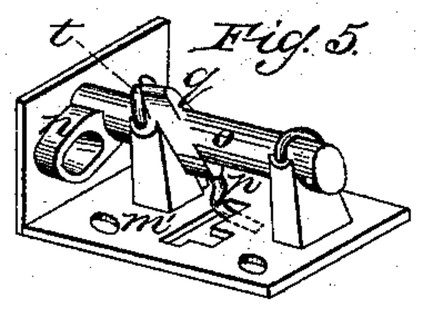


Fig. 8.

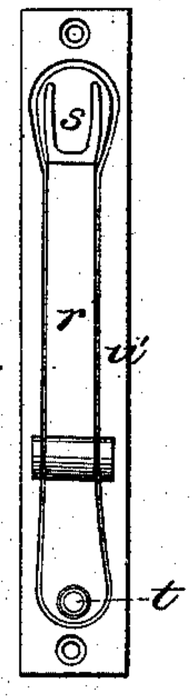
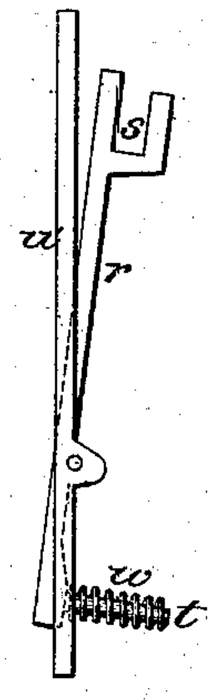


Fig. 9.



Witnesses:

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Lucas S. Van Allen.

Inventor:

Charles E. Pierce

United States Patent Office.

CHARLES E. PIERCE, OF NEW YORK, N. Y.

Letters Patent No. 66,040, *dated June* 25, 1867.

IMPROVED BURGLAR-ALARM.

The Schedule referred to in these Letters Patent and making part of the same.

KNOW ALL MEN BY THESE PRESENTS:

That I, CHARLES E. PIERCE, of the city, county, and State of New York, have invented certain new and useful improvements in Burglar-Alarm Apparatus, and which I design to be used in connection with doors, gates, or windows, and to be so placed and arranged that when a door, gate, or window with which it is connected is partially opened an alarm will be sounded. The following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of the same, in which—

Figure 1 represents a side view of the alarm mechanism placed upon a circular plate; and

Figure 1ª a top view of the same.

In said figures only one alarm movement with levers attached is represented; but in the construction and operation of my said alarm apparatus as many alarm movements with levers attached are to be used as desired, being careful to place them in suitable relation to and around the alarm-bell on said plate.

a, figs. 1 and 1ª, represents a plate over the alarm-bell *a'*, with proper supports to keep it in place, and to which the catch-lever or keeper *b* is attached and by which it is supported, and also the centre-wheel and pivot *c*, (said wheel turning on a pivot,) and having notches or cogs between which the end of the inner arm of the catch-lever is fitted, or they may be otherwise suitably connected. One catch-lever or keeper is to be applied and fitted to each alarm movement so that by slightly turning the centre-wheel the arms of the catch-levers will be moved a short distance to the right or left, as desired. *d* and *e*, fig. 1, are levers, to the outer arm of each of which the connecting wires or lines are to be attached, and which wires or lines are to be connected at their other ends with the window and door-guards hereinafter described. I prefer to arrange said levers by placing one above the other, the upper one being marked *d*, and the under one *e* on the drawings. The inner arm of said lever *d* has a short projection, *f*, extending down from it, and which is designed to hold the bell-hammer away from the bell by pressing against an arm, *g*, which I call a detent-arm, connected with the spindle *h*, to which spindle the hammer-arm *j* is attached. *k*, attached to the upper side of the inner arm *d*, is a small plate, which I denominate an indicator, and upon the upper surface of which the name of any apartment of the building to which the connecting wires or lines from that movement extends is marked. *l l* represent connecting wires or lines. As many alarm movements having levers *d* and *e* attached, and also the catch-lever or keeper *b*, and indicator *k*, above described, may be used as desired, it being my intention to apply one movement with the several parts last mentioned, including bell-hammer, bell-arm, detent-arm, and connecting wires or lines to each separate apartment of the building, as required. The remaining parts of said alarm movement need not be particularly described as they are arranged in the usual well-known manner.

Figure 2 represents a section of a top view of the outer case or cover, made of tin or other suitable material, which is to be placed over the parts above described, enclosing them in it, except the connecting wires are to extend out and be connected with guard-arms, as hereinafter described. The part marked 1 in said figure represents a hole or opening through the top of the cover, which coincides with the spindle of the centre-wheel. The top of this spindle should extend through the opening 1 in said cover, or so nearly through it that it can be easily reached and operated by the fingers. The parts marked 2 in said figure represent holes or openings through the top of said cover into which the indicators, with which they also must coincide, are raised when the opposite arm of the levers *d* or *e*, or both of them, is drawn down. It is intended that these indicators, when raised, should be moved out flush with the top surface of the outer cover, or so nearly so as to plainly show the name of the apartment marked thereon. The parts marked 3 in said figure represent small holes or openings through the top of said cover for inserting a key to wind up said alarm movements respectively.

Figures 3 and 4 represent parts of a window-guard to be applied to the frame of a window; and

Figure 5 represents parts of a guard to be applied to a gate or door. *q q* on said figures respectively represent the arms for the connecting wires or lines, and to the outer ends of which said wires or lines are to be attached; and said wires or lines may be attached to either end of said arms, depending upon the direction of turn given to the bolt with which they are respectively connected when pressure is made against the bolt-knob, the object being to cause a pull to be made on the connecting wire and operate the levers *d* and *e*, or one of them, on the alarm movement. *o o o* in said figures respectively represent the guard-bolt, and *n n n* the knob thereon. *m*, fig. 4, is a plate to which the bolt is attached, having a slot through it somewhat in the form of an L for the

knob of the window-bolt to work in; and *m'*, fig. 5, is a plate to which the bolt is attached, having a slot through it somewhat in the fo"m of a T for the arm *p* of the door or gate-bolt to be operated. The form of this slot enables said bolt, knob, and plate to be applied to a right or left-hand door or gate, as desired, by merely reversing the plate, and without removing said bolt and knob from said plate.

Figure 5ª is a metal plate to be placed in the edge of the door or gate, having an opening, *v*, in it for the knob *n* of the door-bolt to enter, and which opening is so formed that said knob may be partially turned in said recess, as said door or gate is being opened, turning with it the bolt and arm to which the connecting wire is attached, drawing on said wire and causing an alarm.

Figures 6 and 7 represent a small plate of metal with a pin projecting from its outer surface, which plate having the pin extending outwards, as seen in fig. 6, is to be fitted into a suitable recess or cavity made in the edge of a window-sash next the window-frame to which the bolt of the window-guard is attached, but sufficiently far to be out of the way of the free movement of the window-sash when opened or closed. I design said pin to be extended out about even with the edge of the sash into which it is inserted. The knob attached to the window-bolt has in it a longitudinal hole or opening in the end, which loosely encloses this pin and becomes engaged with it when the bolt-knob is moved into the cavity in the window-sash. If desired this plate and pin may be applied to the edge of a door or gate, and used in connection with the bolt and knob on said door or gate, herein described. When said guard is applied to a window, the plate *m* and bolt *o* suitably connected by means of staples or otherwise, are inserted into a frame of a window adjoining the small plate, (figs. 6 and 7,) in the window-sash, before described, in such manner that the projecting pin on the plate in the window-sash will fit into the longitudinal hole or opening in the knob on the guard-bolt, and become engaged with it, and when said guard is applied to a door or gate said plate *m'* and bolt *o*, (fig. 5,) suitably connected, as before described, are inserted into the frame thereof in the same way, and occupy the same relative positions to the cavity in the edge of the door or gate.

Figures 8 and 9 of the drawings represent a forked lever, *r*, having on the under side of one arm of it, as seen at *s*, a forked tongue, and on the under side of the other arm of it a short arm or projection, as seen at *t* in said fig. 9. This lever is to be included in a suitable frame, as seen at *u* in said figures. The outer projecting arm of said bolt attached to the window-frame is to be inserted in said forked tongue, or otherwise suitably connected with that arm of the forked lever, and the projecting arm *t* on the other arm of said lever is to be included within a spiral spring, as seen at *w*, fig. 9, so that the lower end of said spring will rest against a secure support when inserted in a cavity in the window-frame, and the upper end of it rest against the under side of said forked lever and press against it. This frame and lever, including the forked tongue, arm *t*, and spiral spring, are to be attached to the side of the window-frame so as to be convenient and accessible, and I prefer letting them into a cavity in the side of said frame about even with the surface of it, and so that the forked tongue on the lever shall coincide with the end of the outer projecting arm of the bolt to which it is to be attached, and the lower end of the spiral spring rest on the bottom of the cavity, and the upper end of it press against the under side of the forked lever, or any other suitable spring arrangement may be used. The continued and nearly or quite uniform pressure of said spring against the under side of that arm of the lever necessarily causes the other arm of it to press down against the outer end of the projecting arm of the window-bolt, and forces the knob of it into the recess or cavity of the window-sash, and keeps it there connected with said pin in the recess. When it is desired to move the window-sash without causing an alarm, the knob of the bolt is drawn back from its cavity in the sash by slightly pressing down the arm of the forked lever over the spiral spring, which, of course, allows the free movement of the sash; or, instead of said forked-lever mechanism, a knob or other convenient device may be affixed to the outer end of the bolt or bolt-arm to move said bolt and knob backwards and forwards, as desired; but I prefer the use of the forked-lever mechanism in connection with the window-bolt, as by means of that the bolt and knob are kept secured in place. Of course any number of recesses required may be made in the edge of the window-sash, and the bolt and knob applied at any point at which it is desired to set the sash.

I do not regard the use of said metal plate and pin represented in figs. 6 and 7, or said metal plate and cavity, fig. 5ª, and said knob *n*, having a longitudinal hole in it for the pin to enter, as indispensable to the successful working of my said alarm apparatus, as said alarm might be worked if only a cavity or cavities were made in the edge of the sash or door, and a short arm or other similar device suitably connected with the bolt made to enter it or them; but I consider each of them a more advantageous ways of using my said alarm apparatus.

In the use of said alarm apparatus it will be found more convenient and desirable to have the parts thereof which are enclosed in said case or cover, (fig. 2,) as before described, placed in some convenient locality of a sleeping-room, so that the indicators when raised may be readily seen, and the apartment of the building whence the alarm is caused be known at once. To effect this one end of the connecting wires or lines is attached to the outer arms of the levers *d* and *e*, or one of them on the alarm movement, as before described, and the other end thereof is attached to one end of the arms *q q* on the bolt *o* of the window or door-guard. When the knob of these bolts is placed in the recess or cavity of the door, gate, or window, as before described, any slight movement of the door, gate, or window-sash, (such as occasioned by opening them a short distance,) will cause the bolt to turn partially around, carrying with it the arms *q q* of said bolt to which the connecting wire is attached, and consequently causing said connecting wire to draw down that arm of the levers *d* and *e* of the alarm movement, or one of them, with which the other end of the bell-wire is connected, which, of course, raises the opposite arm of levers *d* and *e*, (or the opposite arm of lever *d* if the bell-wire is connected with lever *d* only,) which releases the projecting part *f* of lever *d* from arm *g*, and when the catch-lever or keeper *b* is moved out of the way, and the alarm movement wound up, the bell-arm and hammer being left free, an alarm is

sounded, and at the same time the indicator attached to lever *d* of that alarm movement is thrown up, as before described, from which it will be seen at once from what apartment of the building the alarm proceeds or is caused. The use of said catch-lever or keeper *b* is to hold back the bell-hammer from the bell, and prevent an alarm from being sounded when not desired, which is effected by causing the outer arm of said lever or keeper to press against the detent-arm *g*, connected with the spindle to which the hammer-arm is attached. It is generally desirable to have this keeper so adjusted as to prevent an alarm during the day-time in case an attempt should inadvertently be made by a domestic or some one else to open the window or door without first removing the bolt-knob from its recess or cavity in the window or door, otherwise an alarm would be sounded unnecessarily and the alarm movement run down. In the guard which I attach to a door or gate, the bolt-knob or other analogous device is removed from its cavity or recess in the door or gate by taking hold of the arm *p* attached to the bolt and extending through the slot in the plate, and drawing the bolt back, which will allow the door or gate to be opened or closed without disturbing the other parts of the alarm mechanism; and when the alarm mechanism is again required to be set for use, said bolt-knob is to be moved back into its recess or cavity by taking hold of the arm *p* and moving said knob into its place when said apparatus is ready to cause an alarm, as before described. Said catch-lever or keeper *b* is turned out of its connection with the detent-arm *g*, and again replaced, as desired, by turning the centre-wheel *c* on its pivot, with the inner arm of which lever said centre-wheel is connected, as before described. And in the use of my said apparatus I apply one catch-lever or keeper, and detent arm, and levers *d* and *e*, with projection *f* to each alarm movement, said alarm movements being placed equidistant from the bell, or nearly so, around it, and arranged in relation to each other and to said bell substantially as above specified. The inner arm of each of these catch-levers or keepers being connected with the centre-wheel *c*, as before specified, the outer arm of each of them is moved in and out of connection with said detent-arm *g* at the same time by one and the same turn of said centre-wheel, as desired.

Having thus described my said alarm apparatus, and the manner in which the same is operated, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The lever *d*, with projection *f*, and indicating plate attached, when arranged as and for the purpose set forth.
2. The guards made up of the parts *n o* and *q q*, or their equivalents, operating as described.
3. In combination with the guards, as described, the slotted plate *m'* and knob *p*, for the purpose set forth.
4. The forked lever *r*, in combination with the window-guards, as described.
5. In combination with the alarm movements, the case or cover with openings as described.
6. The catch-lever or keeper *b*, in combination with the centre-wheel *c*, and the detent-arm, as described.
7. I claim so arranging the guard-bolt that by means of cords or wires connected therewith an indicator plate is raised at the same time the alarm is given.

CHARLES E. PIERCE.

Witnesses:

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LUCAS L. VAN ALLEN.