(No Model.)

T. J. BROUGH.

BURGLAR ALARM.

No. 386,236. Patented July 17, 1888.

Fig. 1.

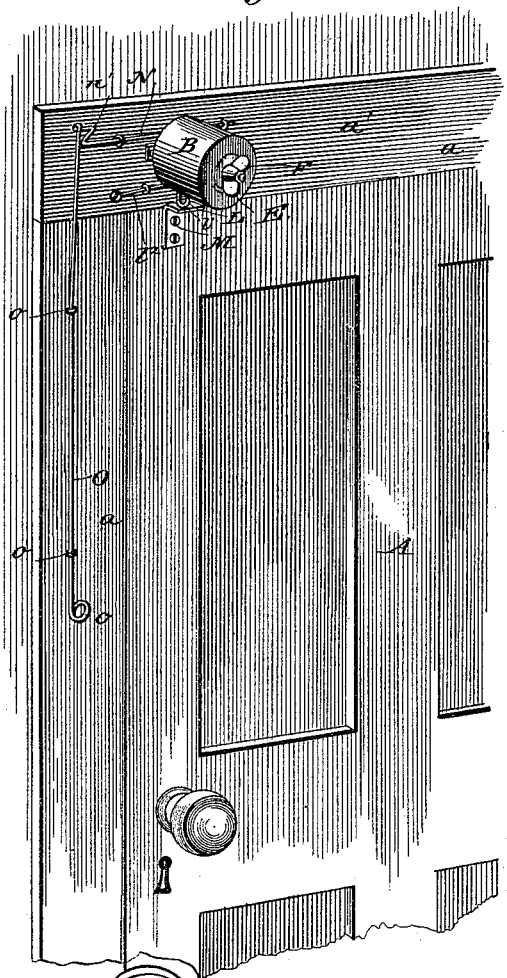


Fig. 2

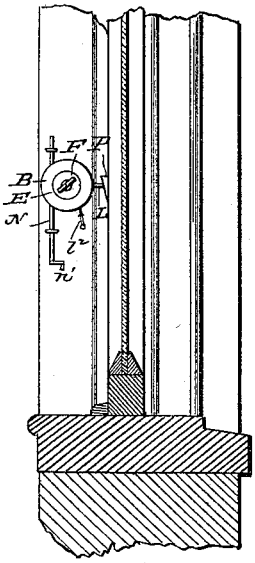


Fig. 6.

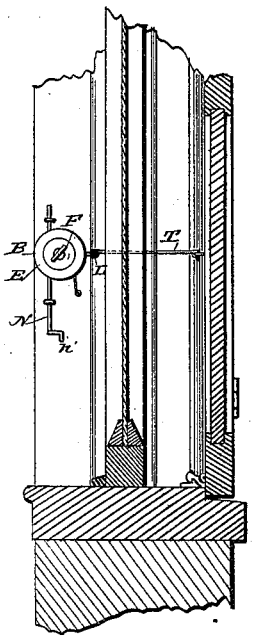


Fig. 4

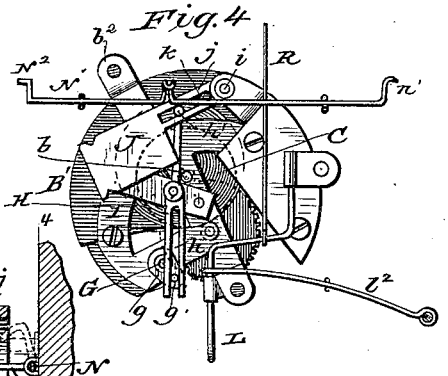


Fig. 5

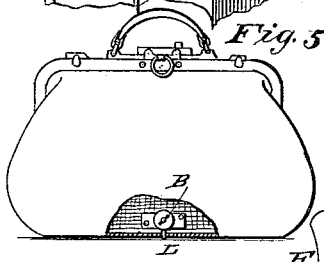
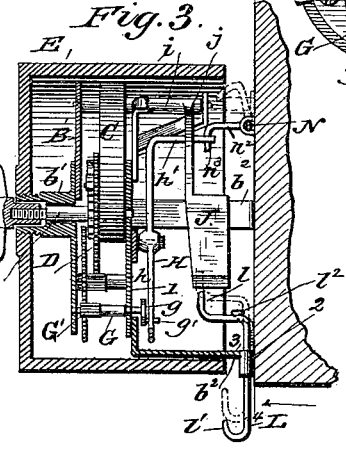


Fig. 3.



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BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 386,236, dated July 17, 1888.

Application filed April 10, 1888. Serial No. 270,206. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. BROUGH, of Baltimore city, in the State of Maryland, have invented a new and useful Improvement in Burglar-Alarms, of which the following is a specification.

The object of my invention is to produce a simple and efficient alarm which can be removably attached to doors, windows, money-drawers, and portable articles—such as satchels, trunks, &c.—and which will indicate the opening or removal of the same by releasing a spring-actuated train of gearing, which operates the hammer, and thus rings the bell.

My invention consists in the peculiar arrangement and combination of parts, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view showing my device applied in operation with a door. Fig. 2 is a view of the same as applied to a window. Fig. 3 is a side view, partly in section, of the device. Fig. 4 is a section on line 4 4, Fig. 3. Fig. 5 is a view of the alarm as applied to a satchel, and Fig. 6 is a detail view of device as applied to a shutter.

In the drawings, A represents the door, and *a* the door-frame. Suitably secured to the upper portion, *a'*, of the door-frame is the alarm B. The alarm B consists of a metal frame, B', carrying the spiral spring C, a train of gears, D, operated by said spring C, and the bell-ringing attachments. Upon the upper side of the frame B is formed a hollow hub, *b'*, into which extends the upper end of the shaft *b*, to which shaft one end of the spring C is secured, the other end of the spring being attached to one of the posts of the frame B'.

E is the bell, which consists of a circular inverted-cup-shaped body. This bell is screwed to the upper end of the hub *b'* and serves to form a casing or cover over the gears and bell-ringing parts. Passing centrally through the top of the bell and entered upon the upper screw-threaded end of the shaft *b* is the thumb-screw F, by means of which the spring C may be wound up when desired.

It will be understood that suitable ratchet-and-pawl mechanism is employed in connection with the spring C and the train of gears D.

G is a short shaft journaled in the frame B', the lower end of which passes through the base 1 of the frame B', and is provided with a crank-arm, *g*, having a downwardly-projecting lug, *g'*, as shown. Pivoted about centrally to the base 1 of the frame is a lever, H, (see Fig. 5,) one end formed into a forked arm, *h*, and its opposite end provided with a downwardly-projecting arm, *h'*. The forked arm *h* is arranged below the crank-arm *g*, and receives between its ends the stud *g'* of the crank-arm *g*.

J is the bell-hammer, which is provided with an extension, *j*, provided with a supporting-shaft, *i*, secured in the frame B'.

k is an elongated slot formed in the extension *j* of the bell-hammer, the purpose of which is to receive the downwardly-projecting arm *h'* of the lever H. Thus it will be seen that when the shaft G, through its pinion G', is operated by the spring-actuated chain of gearing D the same will be caused to revolve, which carries with it in the same motion the crank *g* and arm *g'*, and the said arm *g'*, operating in the forked end of the lever H, gives it a reciprocating motion, and the lever H, connected to the bell-hammer in the manner before described, will give the same a similar motion and cause the hammer to strike the bell alternately on opposite sides thereof. By this construction a direct connection is formed between the gears and the hammer, and the rotary motion of the shaft G changed to a reciprocating motion to the hammer. By thus arranging the connection between the gears and hammer the necessity of an escapement or regulator is dispensed with.

It is preferred to form the frame B' with feet b^2, extending a short distance below the base 1, between which feet b^2 the hammer operates.

L is a trigger, which is disposed near the bottom of and projecting slightly below the casing. This trigger rides in and is secured in a sleeve, 2, secured to one of the feet 3 of the frame B'. The upper end of the trigger is provided with an upwardly-projecting arm or stop, *l*, and at its lower end with an inturned or beveled foot, *l'*.

l^2 is a spring-rod secured to frame a' and adapted to bear upon the upper end of the trigger L, and thereby keep it normally in a downward position.

M is a projection secured to the door, the purpose of which is, when the door is closed, to operate upon and push the trigger upward. By this movement, it will readily be seen by reference to the drawings, the upper end, l, is pushed in the path of the bell-hammer, and thus holds same from motion. Now it will appear that when the door is opened the trigger will be forced downward by the spring and (the alarm being in operative condition) permit the hammer to ring the bell.

To allow the alarm to be easily thrown out or in operative condition, I journal a rock-shaft, N, above the alarm, as shown in Fig. 1, and to the crank-arm n' of one end of said shaft I connect a downwardly-projecting rod, O, supported in keeper o and provided with a convenient hand-hole, o'. To the inner end of the shaft N, I form an arm, n^2, having an angular projection, n^3. This rod is so arranged in relation with the alarm that when the rod O is pulled downwardly it will turn said shaft N and bring the angular projection in the path of the arm h', which passes through the hammer-arm j and extends a short distance below the same, as shown in Fig. 3. Thus it will be seen that when the shaft N is in this position the door may be opened and closed at pleasure, as in this position of the shaft the trigger L is out of operative contact with the hammer. By simply raising up the rod O and releasing the arm n^3 from the arm h after the door has been closed the alarm will be in operative condition.

In applying my device to windows, as shown in Fig. 2, the rod O is omitted and a flanged projection, P, is secured to the window, which in its movement will operate the trigger L. In applying it for use with shutters the trigger L is secured to the shutter, as shown at T, so the slightest open movement of said shutter will operate the alarm.

R, Fig. 3, is a rod which is connected to the trigger L, and which rod may be connected to any part of a building, and its disconnection would cause the operation of the alarm.

When it is desired to use the alarm in connection with locks, bolts, or knobs of doors, the shaft N is extended, as at N', Fig. 3, and provided with a bent arm, N^2, arranged to be operated by the movement of the knob, key, or bolt.

When it is desired to apply my alarm to portable articles—such as trunks or satchels—it is preferred to secure the device to a suitable base-frame and place same near the bottom of such satchel or trunk, and have the trigger L project through an aperture in said bottom, which trigger may be normally held up in the aperture from sight by a suitable slide covering the aperture. Now, when it is desired to set the satchel down, the trigger L is permitted to project through the aperture, the weight of the satchel, however, pressing the same up and holding the hammer from operating. By lifting the satchel the weight is released from the trigger, which will release the hammer, and thereby cause the alarm to ring. While I have shown the alarm attached to the framing of the door and operated by the same, it is manifest the alarm may be applied to the door and operated by a projection on the frame placed in operative position with the trigger L.

From the foregoing description, taken in connection with the drawings, the operation and advantages of my device will readily appear. By it I am enabled to produce an alarm which is simple in construction, efficient in operation, and one which may be applied in a various number of ways to various articles, and one which may be produced at a very reasonable cost.

Having thus described my invention, what I claim as new is—

1. In an alarm substantially as described, the combination, with the shaft G, the gears D, for operating said shaft, and the crank $g\,g'$, secured to the shaft G, of the lever H, centrally pivoted to the frame B', provided with a forked arm, h, adapted to receive the crank projection g', an arm, h', and the bell-hammer J, connected to the arm h', substantially as shown.

2. In an alarm substantially as described, the combination, with the shaft G, the gears D, for operating said shaft, the crank-arm $g\,g'$, and the lever H, centrally pivoted to the frame B', said lever connected to the shaft G, as shown, of the bell-hammer J, pivoted at its rear end to the frame and provided with an elongated slot, J^2, adapted to receive the downwardly-projecting arm h' of the lever H, as and for the purposes described.

3. In an alarm substantially as described, the combination, with the spring-operated gears, the lever H, connected to said gears, and the hammer J, connected to the lever H and operated as described, of the spring-actuated trigger L, said trigger adapted when forced inward in the path of the movement of said hammer to stop the motion of the hammer, and when released from pressure to spring back out of such path, substantially as described.

4. In an alarm substantially as described, the combination, with the spring-operated gears, the lever H, connected to and reciprocated by said gears, said lever provided with a downwardly-projecting arm, h', and the hammer J, pivoted to the frame B' at its rear end and operated by said arm h', of the rock-shaft N, provided with an arm, n^2, adapted to be turned in the path of the movement of said arm h', and means, substantially as shown, for operating said shaft, as and for the purpose described.

5. In an alarm substantially as described,

the combination, with the bell, the spring operated gears, the lever H, and the hammer J, said hammer and lever connected to and operated by said gears, the lever H having a downwardly-projecting arm, n', of the shaft N, having an arm, n^2, adapted to be turned in the path of said arm h', and provided with an extension, N′ and N^2, substantially as and for the purposes set forth.

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