

No. 606,862.

Patented July 5, 1898.

A. G. GRAY.
BURGLAR ALARM.

(Application filed July 6, 1897.)

(No Model.)

Fig. 1.

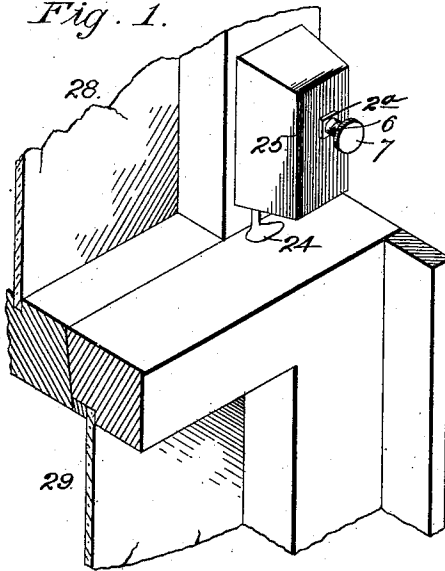
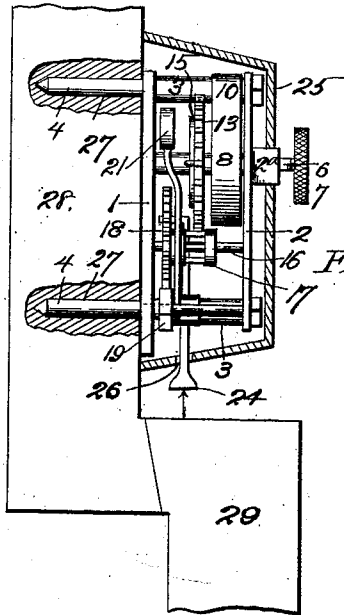


Fig. 2.

Fig. 3.

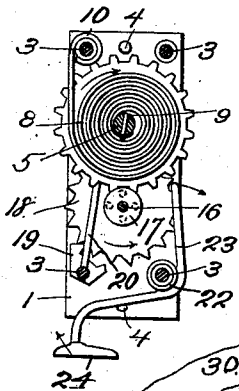


Fig. 4.

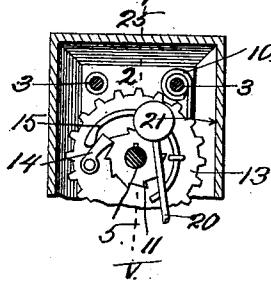


Fig. 5.

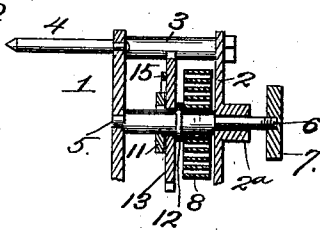


Fig. 6.

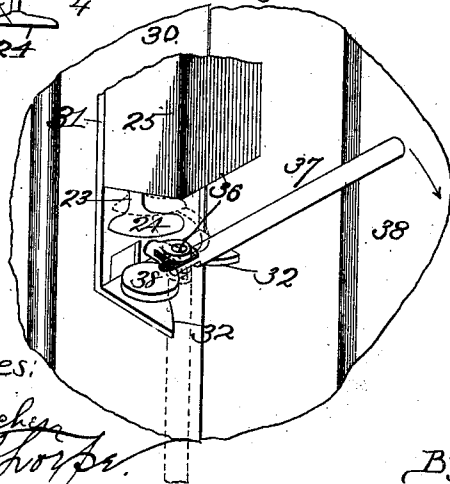
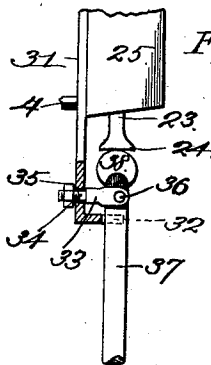


Fig. 7.



Witnesses:

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UNITED STATES PATENT OFFICE.

ASTOR G. GRAY, OF EMPORIA, KANSAS.

BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 606,862, dated July 5, 1898.

Application filed July 6, 1897. Serial No. 643,609. (No model.)

To all whom it may concern:

Be it known that I, ASTOR G. GRAY, of Emporia, Lyon county, Kansas, have invented certain new and useful Improvements in Burglar-Alarms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to burglar-alarms; and my object is to produce a device of this character which is positive and reliable in action and may be conveniently applied with slight modifications to a door or window in order that the raising of the lower sash or the opening of the door for only a slight distance may reliably operate the alarm.

To this end the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents in perspective portions of the upper and lower sashes of a window with a burglar-alarm embodying my invention operatively applied thereto. Fig. 2 represents a vertical longitudinal section of the burglar-alarm on an enlarged scale. Fig. 3 represents a cross-section of the same with the casing or bell omitted. Fig. 4 represents a cross-section with the casing or bell in position. Fig. 5 represents a central longitudinal section taken on the line V V of Fig. 4. Fig. 6 represents in perspective a burglar-alarm as arranged for use in connection with a door. Fig. 7 is a view of the same partly in section.

In the said drawings, 1 designates the back plate, 2 the front plate, and 3 the corner posts or bars securing said plates together, so as to constitute a skeleton frame, one of said posts 3 being journaled at its ends in said plate, so as to oscillate for a purpose which is hereinafter described.

4 designates a pair of pins which project from the back plate, and 5 a shaft which is journaled in the plates 1 and 2. Said shaft projects beyond the front plate and is preferably provided with an external screw-thread 6 at its front end, and screwed there-

on and having a head for manipulating said shaft is a disk 7.

8 designates a coil-spring which surrounds the shaft and is secured rigidly at its inner end, as at 9, to the same and at its outer end to one of the corner-posts 3, as at 10.

11 designates a ratchet-wheel mounted rigidly on a shaft 5, and 12 a collar or enlargement, and journaled upon said shaft between said collar and said ratchet is a cog-wheel 13, carrying a pivoted dog 14 and a spring 15, the latter being adapted to hold said dog yieldingly into engagement with said ratchet-wheel, so that the shaft may be turned in one direction without affecting the position of or rotating the gear-wheel 13 to wind the spring, but which when turning in the opposite direction will by reason of said spring-actuated pawl insure the rotatable operation of said cog-wheel.

16 designates a cylindrical rod which connects the plates 1 and 2, and 17 a pinion which meshes with the cog-wheel 13.

18 designates an escapement-wheel which is connected or formed integral with the pinion 17, and 19 an escapement which is mounted rigidly upon the oscillatory post 3, hereinbefore referred to, and which engages said escapement-wheel 18 and regulates its movement.

20 designates an arm projecting rigidly from said oscillatory corner-post, and 21 an enlargement or head for said arm, said arm and head constituting a bell-clapper.

22 designates a sleeve journaled loosely upon the stationary lower corner-post, and 23 an angle-arm secured thereto, said angle-arm at its upper end being adapted to engage and prevent rotatable movement of the escapement-wheel. At its lower end it is provided with a comparatively large and approximately horizontal foot-plate 24.

25 designates a hollow casing of rectangular and flaring form, said casing constituting the bell or sounder against which the clapper strikes in its vibrations. Said casing or bell incloses the entire mechanism described except the foot-plate 24 and is provided in its lower end with a slot 26, through which the angle-arm extends. It is also provided with a rectangular opening to fit snugly upon the rectangular boss 2^a, projecting forwardly from

the front plate 2, this construction forming a support for the casing or bell without necessitating its contact with the mechanism at any other point and therefore without impairing the quality or diminishing the volume of sound produced when struck by the clapper.

To secure this burglar-alarm in proper position upon a window, the upper sash a slight distance above the lower one is provided with two holes 27, within which the pins 4 may fit snugly, so that no jarring or shaking of the window will cause the dislocation of the alarm. When so arranged, the foot-plate 24 is just above the lower sash, and consequently if the latter is elevated or attempted to be elevated it will strike the said foot-plate and throw the said angle-arm from engagement with the escapement-wheel, as indicated by the arrow in Fig. 3. Immediately this takes place the spring previously wound by proper manipulation of the shaft 5 begins to unwind and, through the medium of the gearing described, causes the rapid vibratory movement of the clapper, and by reason of the fact that the latter contacts with the casing or bell at each stroke an alarm is sounded which is sufficient to awaken the heaviest sleeper and probably cause the person trying to enter to forego his visit.

The alarm is reset by simply winding up the spring again and of course permitting the angle-arm to swing back into engagement with the escapement-wheel, such movement taking place automatically when the pressure is removed from it, owing to the fact that its lower end is the heaviest.

When this alarm is to be used in connection with a door, I provide additional mechanism, as illustrated in Figs. 6 and 7. In this case I place vertically against the door-casing 30, adjacent to the free end of the door, the plate 31 and project the pins 4 of the frame described through openings in said plate and openings in the door-frame corresponding to the openings 27, so as to hold the entire device in position. The plate 31 is provided at its lower end at a suitable distance below the casing with a horizontal bifurcated arm, the bifurcation being V-shaped, so as to provide the diverging edges 32, and just above the central portion of said arm I mount rotatably in said plate the pin 33, said pin being provided, preferably, with a threaded stem 34 of reduced diameter engaged by a retaining-nut 35. The opposite end of the pin is bifurcated, and mounted in said bifurcation upon the pin 36, journaled in the arm, is a rod 37, provided with a head or enlargement 38. This rod when the device is arranged for operation extends approximately horizontal,

resting upon the angle-arm of the plate 31 and projecting into the path which the door must travel when opened. When so arranged, its head 38 is below and out of contact with the foot-plate of the angle-arm 23, which locks the escapement-wheel from movement. Now in case the door is opened it strikes the free end of said arm and moves it in the direction indicated by the arrow in Fig. 6. The first movement of the arm is around the pivot 36, and such movement continues until said rod clears the free end of the angle-arm of the plate 31, which movement is only slight. As it clears said arm the direction of movement is changed, its new movement being downward as well as lateral owing to the fact that said projecting end is the heavier. Such downward movement therefore causes the rotation of the pin 33, and consequently elevates the head 38 and causes it by striking against the under side of the foot-plate to raise the latter and thereby release the escapement-wheel, which permits the alarm to be sounded, as will be readily understood.

From the above description it will be apparent that I have produced a burglar-alarm which embodies the features of advantage enumerated in the statement of invention and which is simple, strong, durable, and inexpensive of manufacture.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A burglar-alarm, comprising a skeleton frame, to be attached to a door or window, a casing or bell, a vibratory clapper, an angle-arm to prevent the vibratory movement of said clapper, a pin rotatably mounted, and a rod pivoted to said pin and provided with a head for engagement at times with the angle-arm, substantially as and for the purpose described.

2. A burglar-alarm, comprising a skeleton frame, to be attached to a door or window, a casing or bell, a vibratory clapper, an angle-arm to prevent the vibratory movement of said clapper, a plate provided with a bifurcated angle-arm, a pin removably mounted in said plate above said bifurcated angle-arm, a rod pivoted in said plate and adapted to rest in substantially a horizontal position upon the bifurcated angle-arm and to swing downward to a vertical position through the bifurcation of said arm, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

ASTOR G. GRAY.

Witnesses:

W. L. HARRISON,
A. E. ELLSWORTH.