(No Model.) 2 Sheets—Sheet 1

J. B. CHASE.

BURGLAR ALARM.

No. 301,862. Patented July 15, 1884.

Fig. 1.

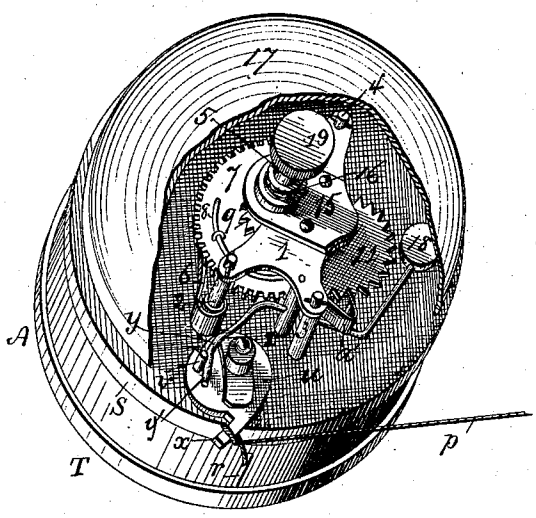


Fig. 2.

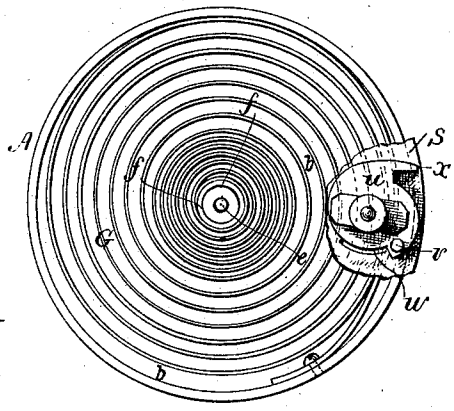
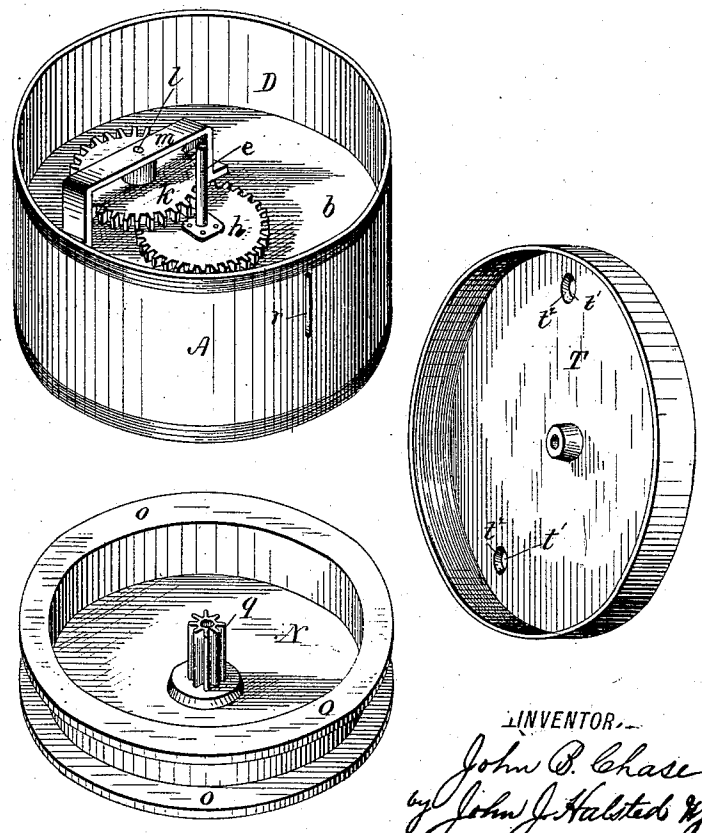


Fig. 3.



WITNESSES

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N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

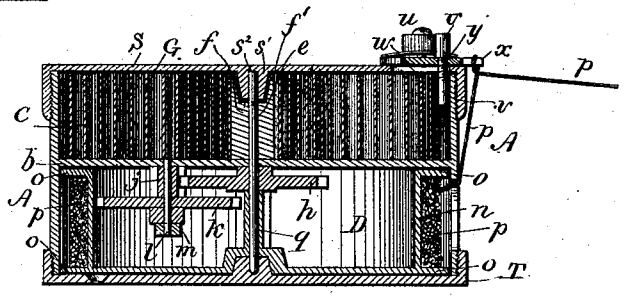
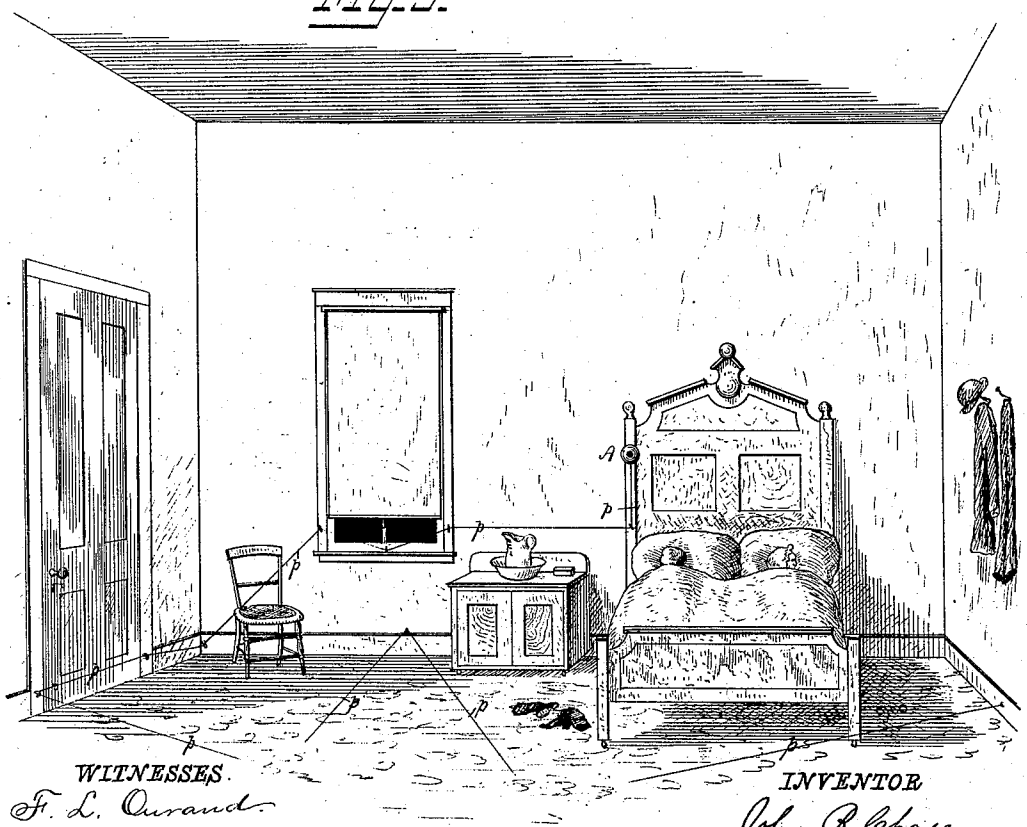


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN B. CHASE, OF AURORA, ILLINOIS.

BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 301,862, dated July 15, 1884.

Application filed January 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. CHASE, of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Burglar-Alarms; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of alarms in which the release of a previously-wound spring operates striking mechanism.

My improvements consist, mainly, in a hollow casing, preferably in the form of a cylinder, and which is divided transversely into two cylindrical compartments by a partition or diaphragm, one of which compartments contains a reel of cord and the other a coil-spring for winding up said reel; and it also consists in a let-off device for holding the arm of the striking-hammer, and which is adapted to be released by the cord of the reel or by the spring which winds up the reel; and in certain special devices, all as more particularly hereinafter described.

In the accompanying drawings, Figure 1 illustrates my invention in the proper position for use, with the mainspring of the striking mechanism and the coil-spring for winding up the reel both wound up, and before the let-off has released the arm of the striking-hammer, the bell being partly broken away to more clearly show the striking mechanism. Fig. 2 shows the position of the coil-spring when unwound and after the let-off has released the arm of the striking-hammer. Fig. 3 are details of the main casing and the winding-up mechanism, the reel and one of the covers being detached. Fig. 4 is a section through the axis of the casing, the striking mechanism not being shown. Fig. 5 illustrates a very desirable way of guiding the cord across windows, doorways, and floors, the dotted lines showing how the cord may be carried from one story to another.

Similar letters represent like parts in all the figures.

A is the main casing, which is preferably in the form of a cylinder. This casing is divided transversely by the partition or diaphragm *b* into two cylindrical compartments, C and D.

e is a shaft, which passes through the center of the diaphragm *b*. In the upper chamber, C, a small cylinder, *f*, is keyed or otherwise secured to this shaft, and upon the periphery of this cylinder *f* is attached the inner end of a coil-spring, G, its outer end being fastened to the casing A.

In the lower chamber, D, a gear-wheel, *h*, is secured upon the shaft *e*. Another small gear, *j*, engages with the gear *h*, and upon the shaft of the gear *j* is secured the gear *k*. Both of these gears *j* and *k* are held in place by the shaft *l* and yoke *m*.

N is a reel having the annular flanges *o o*, the outer perimeters of which extend almost to the inner periphery of the casing A, and upon which reel the cord *p* is wound, its inner end being fastened to the reel. The flanges *o o* are for the purpose of preventing the cord *p* from slipping off the reel.

q is a gear secured to the center of the reel N, preferably cone-shaped, and having a hole through its center for the admission of the shaft *e*.

r is a slot in the casing A, for the passage of the cord *p*.

S is a cover which is adapted to be screwed upon the casing A, covering the compartment C, and upon which is fastened the striking mechanism. This cover S, I prefer to make with a projecting nipple, *s'*, having a central opening, s^2. This nipple *s'* may enter a cup or socket, *f'*, in the end of the cylinder *f*, and the opening s^2 receives the inner end of the shaft *e*. The nipple thus serves as a journal or bearing for one end of the said shaft.

T is a cover adapted to be screwed upon the casing, covering the compartment D and retaining the reel in place.

Upon the outside of the cover S, and near its periphery, is pivoted a cam-shaped let-off, *u*, having a pin, *v*, which projects above said let-off and also below the same, passing through a curved slot, *w*, in the cover S into the chamber C. This let-off *u* also has a projection, *x*, which extends beyond the periphery of the

cover S, except when said let-off is moved to the extreme right, when the projection *x* becomes flush with the periphery of the cover.

y is the bent arm of the striking-hammer, pivoted upon the shaft *z*, upon which shaft is also the escapement *a'* of the striking mechanism, which is somewhat similar to the striking mechanism of a clock. The end *y'* of the arm *y*, which is nearest to the let-off *u*, is adapted to be caught and held by the pin *v* when said let-off is moved to the left, and released when the let-off is moved to the right.

The cover T is made with holes *t'*, having depressions *t²* upon the inside of the cover, so that said cover may be screwed or otherwise secured to the wood-work of an apartment, and then the rest of the alarm screwed onto said cover, covering up the ends of the screws.

Upon the outside of the cover S is attached the striking mechanism. This mechanism is all held in place by the top of the cover S, and by a plate, 1, parallel to said cover, supported by rods 2 3 4.

5 is the winding-up shaft, which is journaled at one end to the cover S, and at the other end to the plate 1, and upon which the inner end of the coil-spring 6 is attached, its other end being loosely attached to the rod 2.

Upon the shaft 5, above the spring 6, is attached a gear-wheel, 7, and upon this gear 7 and shaft 5 are secured, respectively, the pawl 8 and the ratchet 9. The gear 7 engages with a small gear, 10, which is secured to the escapement-wheel 11 or its shaft 12.

The escapement *a'* is secured upon a shaft, *z*, which is loosely journaled in the cover S and plate 1, and through which shaft passes the bent hammer-arm *y*.

15 is a plate which is screwed to the plate 1, and upon which is a screw-nipple, 16, to which the bell 17 is attached.

18 is the bell-hammer, and 19 a milled head secured to the outer end of the shaft 5, for winding up the spring 6.

It will be evident that, instead of a milled head, the outer end of the shaft 5 may be formed into a square post, and adapted to be wound up by a key.

The operation of the alarm is as follows: The cover S is screwed on so that the let-off *u* is almost above, but a little to the left of, the slot *r*, taking care that the let-off, when turned to the left, shall have the lower portion of the pin *v* just outside of one of the coils of the spring G. The cover T is then unscrewed and secured to the vertical wood-work of that part of the room where it is desired the alarm shall be placed, by screws or otherwise, from the inside of said cover, through the holes *t' t'*. The rest of the alarm is then screwed to this cover T, leaving the slot *r* and let-off *u* downward. The cord *p* is then pulled out, passed through eyebolts or staples secured in various parts of the room, and passing, for instance, across doorways, windows, &c., the end of the cord being fastened to the last bolt, as shown in Fig. 5. The portion of the cord near the alarm is then passed over the projection *x*, taking care not to move the let-off to the right. The striking mechanism is now wound up by the milled head 19, or by a key. The alarm is now set. If the cord *p* is now pulled ever so little by any one trying to pass it or otherwise, the let-off *u* will be pulled by said cord to the right, the hammer-arm *y* will be released, and the spring 6 of the striking mechanism being now at liberty to unwind, the alarm will be given by the hammer 18 striking against the bell 17. Even if the cord is cut, instead of being pulled, the effect will be the same, for in that case, the cord being released, the mainspring *g* will unwind, (thus winding up the cord,) the coil next inside the pin *v* will expand, thus striking against said pin and forcing it outward, and thus forcing the let-off to the right, the arm *y* of the hammer will be released, and the bell will be rung.

My alarm may be screwed to the wood-work in any part of a room, or to the head-board or foot-board of a bedstead. A very desirable way of using it is as follows. (See Fig. 5:) Fasten the alarm in the room to the vertical wood-work, as before described. Draw the cord downward to within about six inches of the floor, then pass it through eyebolts or staples across the doorway. The cord may be guided by eyebolts or staples across as many doorways as desirable, and also through eyebolts fastened on the window-sashes. If desired, the cord may be run zigzag across the room; but it should not be less than about six inches above the floor, so that it would be impossible for any one to walk across the floor without running against the cord, and thus setting off the alarm. The cord being sufficiently long, every door and window in the house may be crossed. It will then be evident that if a burglar opens a door or raises or lowers a sash crossed by the cord, or if these are partially or wholly open, he is not likely to get in or partly in without moving the cord and setting off the alarm; but suppose he does succeed in getting in, it is next to impossible for him to walk across the room, hall, or through a doorway without setting it off. Even if he should see the string and cut it, the cord being released, the coil-spring G would unwind, moving the let-off to the right, and thus relieve the hammer-arm *y*, and the alarm would be struck, as before described.

The most severe tests show that the cord cannot be cut or tampered with in any manner without setting off the alarm after it has been set.

This alarm affords a double protection— viz., after being placed in position for protecting the doors and windows, running the cord across the room from the top of the mop or wash board, even if a light of glass or door-panel be removed, the burglar cannot, even after entering, cross the room without coming in contact with the cord. During the exces-

sive heat of summer the windows or even the outside doors may be left open and the house still be protected by the cord running across the rooms. These are protections that the most expensive alarms now in use do not offer.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a burglar-alarm, the main casing or cylinder, divided into two compartments by a partition or diaphragm, one of said compartments containing a reel of cord and gears, and the other compartment containing a coil-spring, said spring and gears adapted for winding up the reel, substantially as described.

2. In a burglar-alarm, the mechanism for winding up the reel, consisting of the coil-spring G and cylinder *f* in the chamber C, the shaft *e*, passing through the diaphragm *b*, and the gears *h*, *j*, and *k* in the chamber D, all arranged and operating substantially as shown and described.

3. In a burglar-alarm, a pivoted let-off having a pin projecting above and below the same, the upper part of which serves to hold or release the hammer-arm of the striking mechanism, and the lower part of which passes into the chamber of the spring G, and which is adapted to be acted upon by said spring, substantially as shown and described.

4. In a burglar-alarm, the combination of the cord *p*, let-off *u*, having the projection *x* and pin *v*, and the hammer-arm of the striking mechanism, the pin *v* serving to hold said arm, and the cord *p* adapted to pass over the projection *x*, and to release the hammer-arm from said pin, all substantially as shown and described.

5. In combination with the casing A, the cover T, having the holes *t'*, adapted for the admission of screws or other fasteners, whereby the said cover may be secured from its inside to a portion of an apartment, and the casing A afterward screwed to said cover, covering up the ends of the screws, substantially as shown and described.

JOHN B. CHASE.

Witnesses:
P. H. BERNHARD,
A. W. KENNEY.