

Aug. 7, 1934.

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1,969,554

AUTOMATIC ALARM SWITCH

Filed March 30, 1933

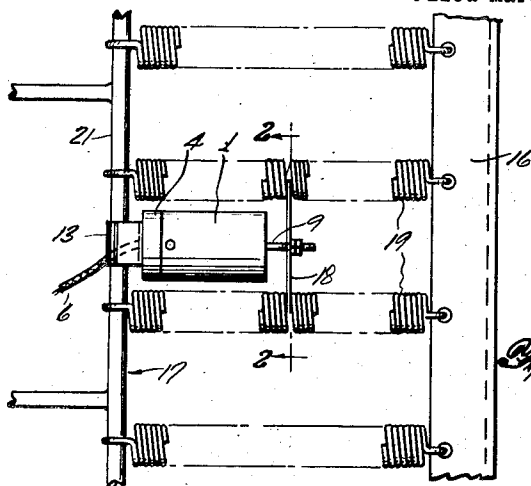


Fig. 1.

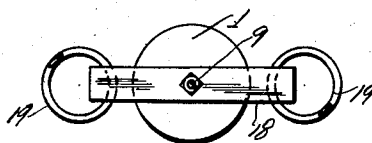


Fig. 2.

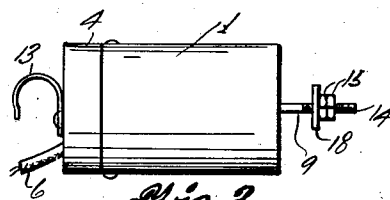


Fig. 3.

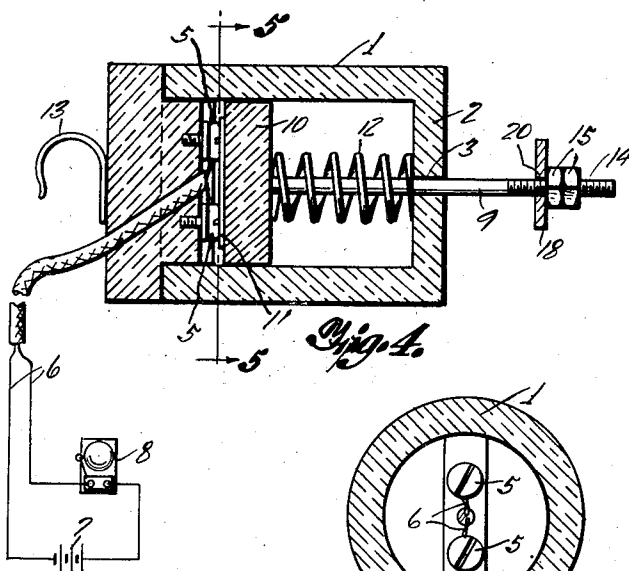


Fig. 4.

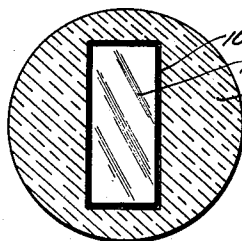


Fig. 5.

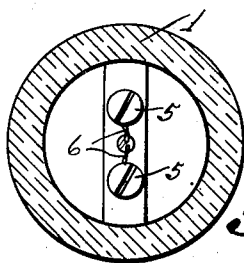
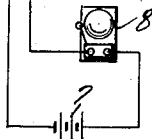


Fig. 6.



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1,969,554

AUTOMATIC ALARM SWITCH

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Application March 30, 1933, Serial No. 663,466

2 Claims. (Cl. 200-163)

This invention relates to automatic alarms, and more particularly to a kind of alarm designed for mounting within the springs of a bed or the like.

5 The prime object of the invention is to provide an automatic alarm for mounting within the springs of a bed, the same being so arranged as to automatically sound a bell or buzzer or turn on a light whenever the occupant of the bed
10 leaves or is removed from it.

Another object is to provide a device of the kind referred to for mounting in the springs of a bed or the like, and embodying a housing having a plunger or the like movably mounted therein and
15 carrying a bridge strip for spanning and bridging two electric terminals mounted in one end of the housing, there being an operating spring so mounted as to normally urge said bridge into contact with the terminals for operating an elec-
20 tric alarm signal when the bed is unoccupied, the weight of a person upon the springs of the bed sufficing to draw the bridge piece away from the terminals against the action of the operating spring, so that no alarm is sounded so long as the
25 bed is occupied.

With these and such other objects in view as may appear from the following specification, attention is directed to the accompanying drawing as embodying a practical form of the invention,
30 and wherein

Figure 1 is a plan view of the device as incorporated upon a set of bed springs as suspended within a bed or spring frame, a fragmental portion of such an assembly being shown.

35 Figure 2 is a section on the line 2-2 of Figure 1.

Figure 3 is a side elevation of the device removed from the bed springs.

Figure 4 is an enlarged longitudinal sectional view through the cylindrical housing and showing the arrangement of the interior elements, the lay-out of the electrical circuit being also shown in combination.
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Figure 5 is a section on the line 5-5 of Figure 4.

Figure 6 is a section similar to that of Figure 5, but looking in the reverse direction.
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The invention comprises a hollow, cylindrical housing 1 of porcelain, bakelite or any suitable non-conductive material, the same being closed at one end 2 and being pierced through at that
50 end by a central aperture 3. The opposite and otherwise open end is provided with a removable closure 4 of insulative material and having mounted upon the inner face thereof two spaced electrical contact terminals 5, from which leads
55 6 are extended out through the cover 4, and a

battery 7 and bell 8 are connected in series in said leads and circuit. An operating shaft 9 is slidably passed through the apertures 3 and a plunger 10 or the like, is rigidly mounted at the inner end of this shaft and arranged to move with the shaft in a reciprocating manner within the housing. A metallic bridge piece 11 is mounted at the forward end or face of the plunger and is adapted to contact with and bridge the terminals 5 as the plunger is moved towards the same, thus closing the circuit. A coil spring 12 mounted over the shaft 9 inside the housing and braced between the housing and plunger normally urges the bridge 11 into contact with the terminals 5 and thus closes the electrical circuit. A hook 13
60 is mounted upon the outer face of the cover 4, and the outer end of the shaft 9 is threaded as shown at 14 and two jam nuts 15 are mounted thereupon. This device may be mounted in an assembly of bed or spring frame 16 and springs
65 17 (only the frame of which is shown) by means of a flat cross piece 18, which is wedged at its end between the coils of the spaced springs 19, which extend from the frame 16 to the bed
70 springs 17 in a conventional manner. This cross piece has a central aperture 20 through which the outer threaded end of the shaft 9 is passed, and the nuts 15 being then screwed upon the outer end of the shaft, the assembly is effectively suspended at this end.
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The hook 13 of the opposite end of the device is then hooked over the adjacent cross bar 21 of the bed springs 17. The nuts 15 are then so adjusted upon the shaft 9 that the spring 12 will normally operate to urge the bridge piece 11 into contact with the terminals 5 and close the electrical circuit from the battery. When a person, as a child for example, occupies the bed, the weight thereof will, of course, stretch the springs 19 and the bridge piece 11 will be withdrawn from contact with the terminals 5, thus opening the electrical circuit and preventing the sounding of the bell 8. However, if the child leaves the bed, or is surreptitiously removed, as by kidnappers, the electrical circuit will be immediately closed and the bell or other alarm sounded. The alarm element such as bell, buzzer, or light, may be located wherever it may be desired, with leads extended therefrom the switch. Thus the device might be of use for a nurse in attendance upon an invalid or sleep-walker. Or, it could be adapted for the use for turning on a light for a child in getting up in the night. During the day, the device would be made inoperative by the use of an ordinary turn switch (not shown) incorporated in
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the system. It is thought from the foregoing explanation that the construction and use of the device will be fully understood.

While I have herein described a certain specific manner and method of constructing and assembling the elements of my invention, it is understood that I may vary from the same in minor details, not departing from the spirit of my invention, so as best to construct a practical device for the purpose intended, as defined in the appended claims.

I claim:

1. In a device of the kind described and in combination with two spaced members and parallel coil springs connecting the members, a switch comprising a housing, a hook on the housing engaging one of the members, a pair of contacts in the housing, a plunger slidably mounted in the

housing, a shaft extended from the plunger, a cross piece secured on the shaft and wedges at its ends between adjacent coils of the said coil springs, a bridge piece on the plunger, and the said plunger being spring set to normally move the said bridge piece into engagement with the switch contacts in the housing.

2. In a device of the kind described and in combination with a pair of spaced relatively movable supports and spaced parallel coil springs connecting the two, a switch including a housing and a plunger slidably mounted therein in parallelism with the axes of the coil springs, the said housing being hooked on one of the supports, and a cross piece associated with the plunger and wedged at its ends between adjacent convolutions of the coil springs.

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