

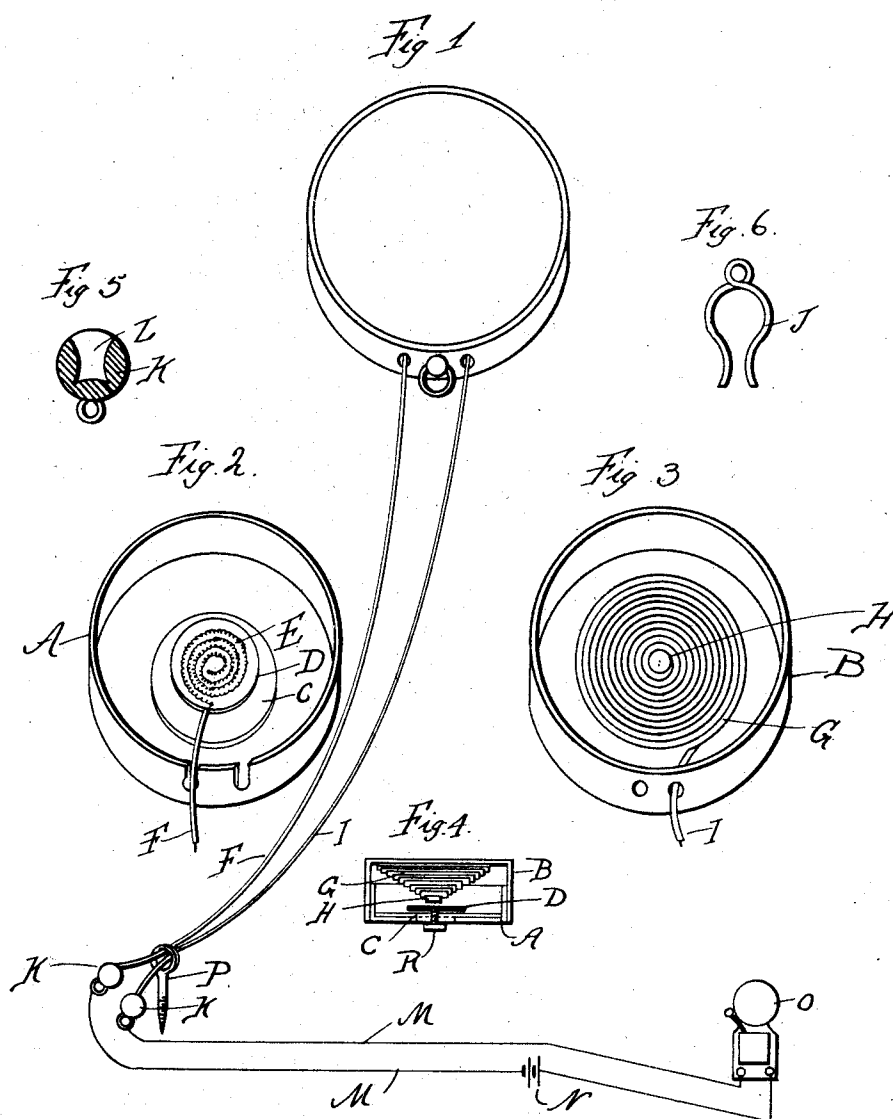
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F. APOLD.

AUTOMATIC ELECTRIC ALARM FOR BEDS TO BE OCCUPIED BY PATIENTS,
SUCH AS HOSPITAL BEDS.

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AUTOMATIC ELECTRIC ALARM FOR BEDS TO BE OCCUPIED BY PATIENTS, SUCH AS HOSPITAL-BEDS.

No. 884,121.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed August 4, 1906. Serial No. 329,167.

To all whom it may concern:

Be it known that I, FRANK APOLD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Automatic Electric Alarms for Beds to be Occupied by Patients, Such as Hospital-Beds, of which the following is a specification.

My invention relates to a new and useful improvement in automatic electric alarms for beds, to be occupied by patients, such as hospital beds, and has for its object to provide an exceedingly simple and effective system by which the movements of the patient when in bed will be indicated by an attendant at a distance, thus rendering it possible to at all times determine the condition of the patient without being in the same room, thereby avoiding the necessity of constant personal attention upon each patient.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by letter to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a view showing the vibrator of the alarm system and the electric and mechanical connection between said vibrator and the bell system. Fig. 2, a perspective of the lower portion of the vibrator, the top being removed to show the interior arrangement thereof. Fig. 3, a similar view of the top showing the vibrating spring therein. Fig. 4, a section of the vibrator showing the relation of the spring to the stationary contact. Fig. 5, a detail section of one of the knobs by means of which the bell system is connected with the vibrator wires. Fig. 6, a detail view of one of the spring terminals carried at the ends of the vibrator wires for attachment to the knobs.

In carrying out my invention as here embodied, A represents a box here shown as circular, which forms the bottom portion of the vibrator, and B is the top portion of the vibrator made in the form of a cover, adapted to be secured upon the box A.

Secured upon the bottom of the box A is an insulating disk C, upon which is secured

the metallic disk D, the latter having a fine wire E coiled thereon, as clearly shown in Fig. 2. From this wire E leads an insulated wire F.

The top B has secured therein the vibrating spring G, which is coiled to the form of a spiral, the end thereof which terminates at the end of the spiral being provided with a small weight H depresses the spiral to a certain extent but not sufficient to normally bring the weight in contact with the coils of the wire E.

I is an insulated wire leading from the stationary end of the vibrating coil G, and K represents two knobs each having an undercut socket L formed therein for the reception of the spring ends of each of the terminals J. These knobs are attached to the ends of the wires F and I, the spring terminals J being attached to the end of the circuit wires M in which is included a battery N and a bell or other alarm O. For very fine adjustment a screw R is threaded through the disk D in such manner that the distance between the end of this screw and the contact weight H may be varied.

In practice, the vibrator is placed within the mattress of the bed or upon the surface thereof beneath suitable coverings or bed clothes, and the wires F and I are led to a suitable point where they pass through a stationary ring or eye P, and are then connected by the terminals J to the circuit wires. Should a patient lying in the bed make the slightest movement it will cause the weight H suspended from the spiral spring G to make and break contact with the coil wire E and thus open and close the circuit causing the bell O to ring, and it is obvious that with an exceedingly sensitive vibrator the slightest nervousness of the patient will cause the circuit to be opened and closed, and by experience the attendant will be able to determine the condition of the patient by the way in which the bell will be caused to ring.

Should the patient become violent as often happens in an insane asylum, with this class of patients, and undertake to cut off the action of the bell by pulling on the wires F and I, these wires will be drawn through the stationary eye P until the knobs K come in contact with this eye when they will also come in contact with each other, which will close the circuit and cause the ringing of the bell,

the bell continuing to ring until the knobs have been separated by the attendant.

When the vibrator has been properly set for the purpose, any extraordinary or irregular breathing of the patient will cause the bell to be sounded, and on account of the wire E being coiled upon the disk D sidewise movements of the contact weight will give a peculiar sounding of the bell.

Of course I do not wish to be limited to the exact details of construction here shown as these may be varied within certain limits without departing from the spirit of my invention, the gist of which rests in the broad idea of providing a sensitive vibrating circuit maker and breaker to be located in the bed with the patient by which an alarm will be automatically sounded by the movement of the patient.

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

A vibrator consisting of a casing and a cover therefor, an insulating disk secured to the bottom of the casing, a coiled wire supported by said insulating disk, an insulated wire leading from said coiled wire for attachment to one side of an electric circuit, a spiral spring the outer end thereof being attached to the cover, a weight carried by the inner end of said spiral spring an adjustable contact screw an insulated wire leading from said spiral and an alarm included in the circuit with the vibrator, as and for the purpose set forth.

In testimony whereof, I have hereunto affixed my signature in the presence of two subscribing witnesses.

FRANK APOLD.

Witnesses:

S. M. GALLAGHER,
FRANCIS A. POCOCK.