

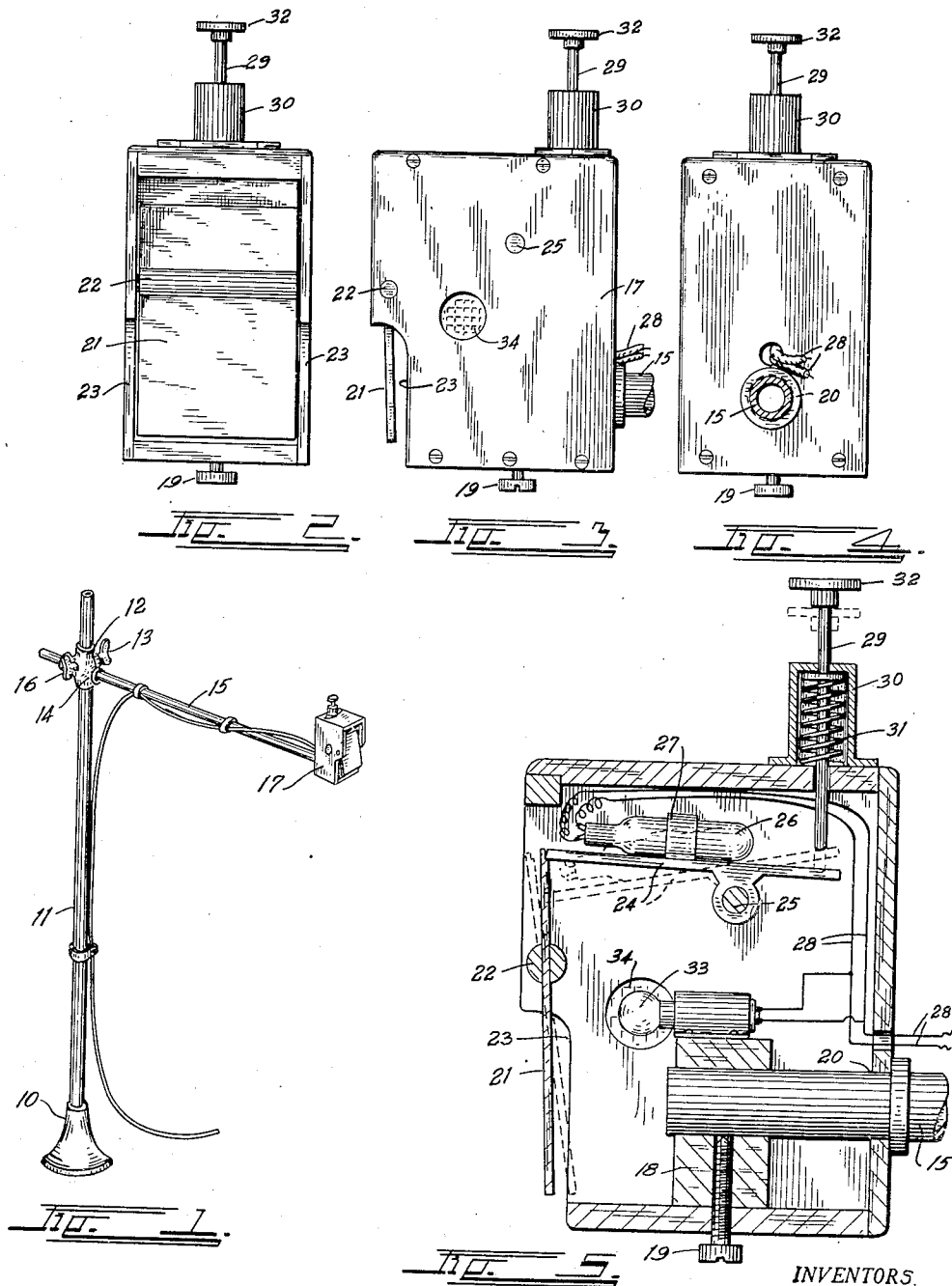
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HOSPITAL BED SIGNAL

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HOSPITAL BED SIGNAL

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1 Claim. (Cl. 200—52)

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This invention relates to a hospital bed signal and has for its principal object the provision of a signal device which can be operated by an almost completely paralyzed bed-ridden patient.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a perspective view illustrating the complete improved signal installation;

Fig. 2 is an enlarged front view of the signal box employed on the improved signal;

Figs. 3 and 4 are side and rear views, respectively, of the box; and

Fig. 5 is a still further enlarged vertical longitudinal section through the signal box.

The improved patient's bed signal employs a floor stand 10 of any desired design, supporting a vertical post 11. A vertical sleeve 12 is slidably mounted on the pedestal 11 and may be set at any desired vertical position thereon by means of a suitable thumb screw 13. The sleeve 12 is provided with a horizontal tubular portion 14 in which a horizontal tubular arm 15 is slidably mounted. The arm 15 may be located in any desired horizontal position in the portion 14 by means of a second thumb screw 16.

The arm 15 supports a signal box 17, preferably formed of non-metallic material such as Bakelite, plastic, or fiber. The box is formed with an internal clamping block 18 through which the extremity of the arm 15 passes, and in which the arm may be clamped by means of a suitable set screw 19. The sides, top, bottom, and back of the box are closed, the back having an opening 20 for the passage of the arm 15.

The front of the box 17 is closed by means of a swinging panel 21 which is pivoted on a cross-shaft 22. The cross-shaft is placed nearer the top of the panel 21 than the bottom thereof so that the bottom will have the greatest arc of swing. The sides of the box are cut away opposite the lower portion of the panel 21, as shown at 23, to allow free access thereto.

A tilting platform 24, which is mounted on a second cross-shaft 25, normally rests upon the upper extremity of the panel 21. The cross-shaft 25 is placed nearer the rear of the platform

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24 than the front thereof so that the latter will naturally tilt downward by gravity when released from the panel 21.

A mercuroid switch 26 is mounted in a clip 27 on the upper surface of the platform 24 so that it will tilt therewith. The mercuroid switch is in circuit with electrical conductors 28 leading to the standard signal system of the installation. An electric lamp 33 is placed within the box 17, the light from which is visible through jeweled windows 34 in the two sides of the box. The lamp 33 is also connected in series with the regular signal system of the hospital or other installation of the improved signal.

A re-setting plunger 29 extends vertically through a spring housing 30 on the top of the box 17 to a position over the rear extremity of the platform 24. The plunger 29 is constantly urged upwardly by means of a compression spring 31, and may be manually forced downward by means of a finger button 32 positioned on the top thereof.

Let us assume that a patient is physically incapable of any movement except a waver of the hands or arms while lying prone, or a slight movement of the entire body caused by his swinging the bed or mattress. The pedestal 11 and the arm 15 are adjusted so as to place the lower portion of the panel 21 just above the bed opposite that portion of the patient's body which can be moved. A slight movement on the part of the patient will force the lower part of the panel 21 inwardly. This will remove the support from the forward portion of the platform 24, allowing it to tilt downwardly, as shown in broken line in Fig. 5. This causes the mercury in the mercuroid switch to complete a circuit through the electrical conductors 28 and through the lamp 33 to the signal system of the hospital or institution.

When the signal is answered by the nurse or other attendant, the button 32 is depressed, which lifts the forward extremity of the platform 24 above the upper extremity of the panel 21. The latter then swings by gravity into place beneath the platform 24 to support the latter until the next signal is given.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claim, without departing from the spirit of the invention.

Having thus described the invention, what is

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claimed and desired to be secured by Letters Patent is:

A bed patient's signal operating device comprising: a supporting device; a signal box supported by said device alongside of the patient, said box being closed on its sides, top, bottom and back and having an open front; a horizontal pivot shaft extending across said open front above the middle thereof; a swinging panel mounted on said pivot shaft and extending vertically above and below the latter to form a front in said box; a cross-shaft extending across the upper portion of said box parallel to said pivot shaft; a tilting platform hinged on said cross-shaft and extending forwardly to rest on and be supported by the upper edge of said panel when the latter is in a vertical position and to be released by said panel when the bottom of the latter is swung inwardly; and a circuit closing device operable in consequence of the tilting of said platform when released by said panel, the sides of said box being cut back opposite the lower portion of said panel to allow the latter

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to be contacted by the patient's body when the latter is placed across the front of said box.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
433,560	Detwiller	Aug. 5, 1890
1,021,436	Thompson	Mar. 26, 1912
1,376,712	Liebold	May 3, 1921
1,416,263	Campbell	May 16, 1922
1,572,695	Van Amburg et al.	Feb. 9, 1926
1,606,678	Von Marsovszky	Nov. 9, 1926
1,915,985	Edwards	June 27, 1933
2,103,744	Dumble	Dec. 28, 1937
2,162,709	Gill, Sr.	June 20, 1939
2,196,501	Kehm	Apr. 9, 1940
2,214,317	Bash et al.	Sept. 10, 1940