L. T. FOSS.

MOTION REGISTERING APPARATUS.

APPLICATION FILED OCT. 1, 1919.

1,340,036.

Patented May 11, 1920.

Fig. 1.

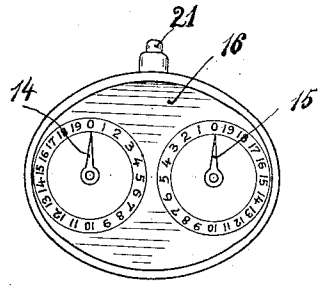


Fig. 3.

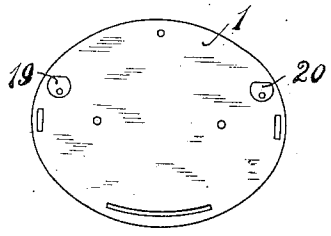


Fig. 2.

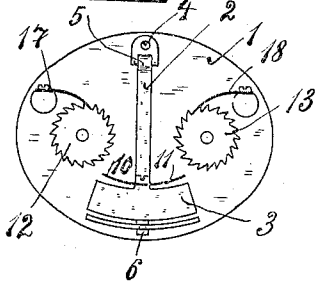
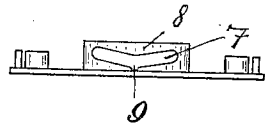


Fig. 4.



INVENTOR.

Ludvig Theodor Foss

By Laurence Langner

ATTORNEY.

UNITED STATES PATENT OFFICE.

LUDVIG THEODOR FOSS, OF SANDEFJORD, NORWAY.

MOTION-REGISTERING APPARATUS.

1,340,036. Specification of Letters Patent. Patented May 11, 1920.

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To all whom it may concern:

Be it known that I, LUDVIG THEODOR FOSS, a subject of the King of Norway, residing at Sandefjord, Norway, have invented certain new and useful Improvements in Motion-Registering Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 or figures of reference marked thereon, which form a part of this specification.

In certain classes of diseases as insomnia, nervous diseases, heart complaints and the like it is often of importance to be in a position to state, if the patient has a troubled sleep or not. The statements of the patients themselves are often liable to be exaggerated.

The object of the invention is to provide an apparatus registering the movements of the patient during the sleep or in bed in such a way that it does not only show how many movements the patient has made during the night, but also how many times the patient has turned over on the right and left side respectively, this latter circumstance being of importance especially in heart complaints.

In the accompanying drawing is shown an executional form of my apparatus.

Figure 1 is a front view of the apparatus.

Fig. 2 is a plan view of the back plate of the apparatus with the actuating part of the registering device mounted thereon.

Figs. 3 and 4 illustrate the back plate in plan view and side view respectively.

The apparatus works on a principle similar to the known pedometer.

To the back plate 1 of the apparatus the stem 2 of a weighted pendulum 3 is turnably fastened on the bolt 4, said pendulum stem having also a hinge 5 working at right angles to the movement about the bolt 4, so as to allow the pendulum to swing in any direction. The pendulum is guided by its end tap 6 traveling in a slot 7 in a plate 8 fastened to the back plate 1. As will be seen from Fig. 4 this slot has a small notch 9 in the middle, said notch corresponding to the inactive median position of the pendulum shown in Fig. 2.

The pendulum also carries spring teeth or projections 10, 11 coöperating with the ratchet wheels 12, 13 of the right hand and left hand registering mechanisms, respectively. These ratchet wheels 12, 13 are in direct connection with the dial hands 14, 15 traveling along number-scales on the front plate 16 of the apparatus. The movements of the ratchet wheels are in known way controlled by spring pawls 17, 18, respectively, fastened to projections 19, 20 on the back plate 1.

The apparatus is provided with a spring actuated stop knob 21 actuating the registering mechanism in a known way, so as to have the dials returned to zero when the knob 21 is pushed. This mechanism is not shown in the drawing, being of the usual type for such apparatuses.

The apparatus works in the following way:

It is fastened to the front of the patient's night dress.

When the patient is lying on his back the pendulum will be in its median inactive position, shown in Fig. 2, its end 6 reposing in the notch 9 of the slot 7. When the patient turns to one side the end 6 of the pendulum will slip out of the notch 9 and the pendulum will, owing to its weight, swing out to the end of the slot 7, whereby one of the projections or teeth 10, 11 will coöperate with the corresponding registering mechanism, thereby causing the corresponding dial to turn one step.

The apparatus illustrated is designed to register as maximum-number 20 turns to each side, but the apparatus may of course be adapted to register any desired number.

Through experiments I have found that besides being a useful instrument for the registering of motions, the apparatus has the unexpected effect of promoting the sleep if the patient is suffering from insomnia. This curious effect is a consequence of the patient concentrating his thoughts on the movements of the pendulum, thereby forgetting his other troubles.

Claims.

1. In motion registering apparatus the combination of a weight actuated member with two registering mechanisms opposed to each other in such way that on turning the apparatus in one direction the right hand registering mechanism is operated by said weight actuated member, and on turning the apparatus in the opposite direction the left hand registering mechanism is actuated correspondingly.

2. In motion registering apparatus the combination of a pendulum swinging in two planes at right angles to each other with two registering mechanisms opposed to each other in such way that on turning the apparatus in one direction the right hand registering mechanism is operated by said pendulum, and on turning the apparatus in the opposite direction the left hand registering mechanism is actuated correspondingly.

3. In motion registering apparatus the combination of a pendulum with two registering mechanisms opposed to each other in such way that on turning the apparatus in one direction the right hand registering mechanism is operated by said pendulum, and on turning the apparatus in the opposite direction the left hand registering mechanism is actuated correspondingly, the movement of said pendulum being limited by a part of it traveling along a guide slot, having its lowest point on a median line between the two registering mechanisms, so as to keep the pendulum in a median inactive position when the apparatus is kept in a horizontal or nearly horizontal position.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

LUDVIG THEODOR FOSS.

Witnesses:
FUOGUEST BRIGGE,
A. N. HEDENCHON.