(No Model.) 2 Sheets—Sheet 1.

S. C. SKANKS.

ELECTRIC REGISTER FOR SLEEPING CAR BERTHS.

No. 553,320. Patented Jan. 21, 1896.

Fig. 1.

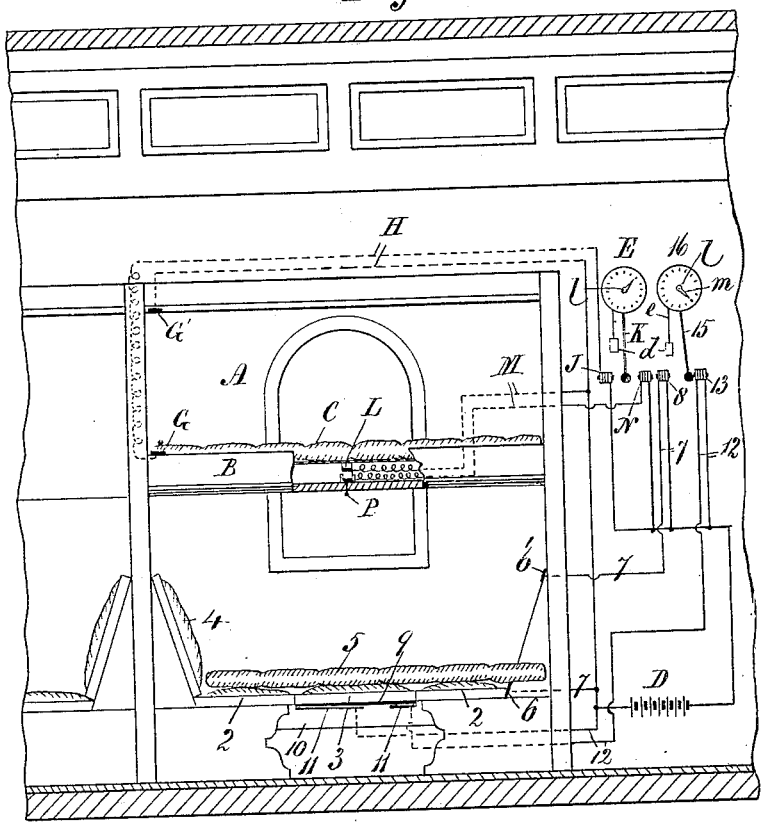


Fig. 4.

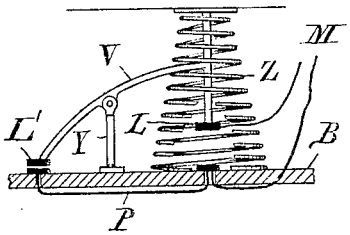
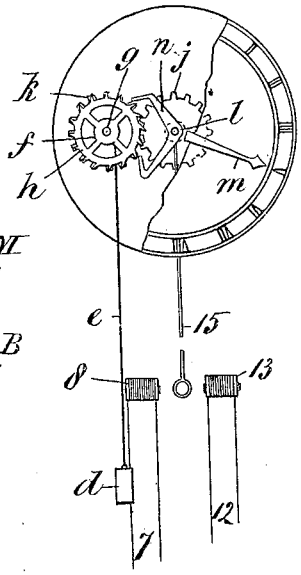


Fig. 3.



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H. H. Horsey.

Inventor:
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(No Model.) 2 Sheets—Sheet 2.

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ELECTRIC REGISTER FOR SLEEPING CAR BERTHS.

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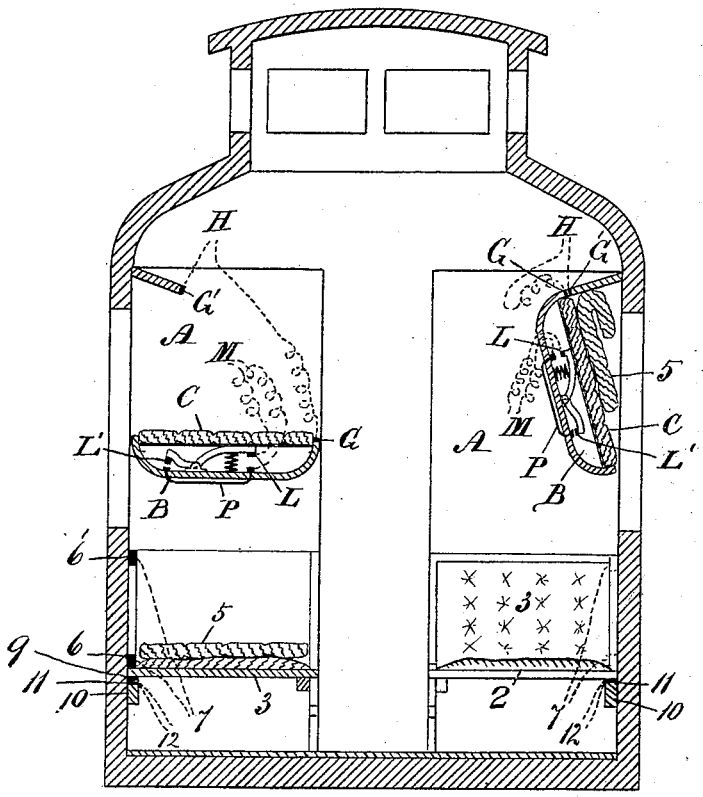

Fig. 2.

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UNITED STATES PATENT OFFICE.

STEPHEN C. SKANKS, OF TORONTO, CANADA, ASSIGNOR OF FIVE-SIXTHS TO WALTER W. PEAY, OF SAME PLACE, GEORGE FEE, SAMUEL L. BROWN, OSCAR LEGROS, AND JOHN J. MACKEY, OF NORTH BAY, CANADA.

ELECTRIC REGISTER FOR SLEEPING-CAR BERTHS.

SPECIFICATION forming part of Letters Patent No. 553,320, dated January 21, 1896.

Application filed June 1, 1895. Serial No. 551,356. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN C. SKANKS, of the city of Toronto, in the county of York, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Electrically Registering the Making-Up and Use of Sleeping-Car Berths; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a portion of a sleeping-car, showing the upper and lower berths of a section as for night use, and the electric circuits, magnets, registers, and battery applied thereto and embodying my invention. Fig. 2 is a cross-section of a car, showing on one side the sleeping-berths open as for night use and on the other side closed as for day seating, to show mode of wiring. Fig. 3 is an elevation of the registering device, a portion of the dial broken away to show the escapement; and Fig. 4 is an elevation of a modified form of make-and-break key or spring-lever for the mattress of the upper berth, a portion of the helical spring broken away to show the armature of said key or lever.

My invention has for its object to register the number of times a berth in a sleeping-car section has been made up or used.

My invention consists of two electric circuits, a battery or source of electric energy and two magnets, operating a registering device indicative of each berth, so that when either the upper or the lower berth is made up for night use one of the circuits will be broken and the other "made," the making and breaking of the circuits operating the registering device, comprising a dial and pointer, clock mechanism, comprising a winding cord and weight, and a pendulum-lever swung intermittently by the attraction of the magnets oppositely placed.

The making and breaking of one circuit of the upper berth is effected by closing and opening or letting down the flap from the ceiling, said flap forming the sleeper's mattress, and the making and breaking of the other circuit is effected by a spring-key in the mattress when the berth is occupied, or when emptied of the cushions to make up the lower berth when one passenger takes a whole section, and the making and breaking of the circuits of the lower berth is effected by removing the upholstered back of a day seat from one circuit and transferring it to the other circuit, as for night use, as hereinafter particularly set forth.

A is the upper berth of a sleeping-section of a car, and B the flap which is let down from the ceiling as usual and forms the spring-mattress.

C is the cushion of the upper berth.

D is the battery or source of electric energy, and E the registering device, which is located in a suitable lock-up.

G is a metallic plate secured to the edge of flap B and has contact with a plate G′ secured to the edge of the upper fixed part of the berth at the ceiling, so that when the flap is shut up, as in day-time, the two plates come in contact and complete an electric circuit by connection with the circuit-wires H through the magnet J and battery D. The magnet J thus energized attracts the pendulum-lever K of the registering device E.

L is a make-and-break spring-pressed key bearing on the bottom of the mattress, and said key is electrically connected by the wire circuit M to a magnet N and circuit H, whereby one battery will energize the magnets of both circuits. In a normal condition the key is open; but when the traveler occupies the berth he, by his weight, closes the key, and the magnet N attracts the pendulum-lever, thereby completing one full swing of two vibrations of the pendulum-lever, and the registering-pointer moves one point for the count or enumeration of fares. Afterward the occupant may get out of his berth as many times as he pleases without effecting registration, as he then only makes and breaks the circuit M without "making" the circuit H; but when the flap B is again closed and the two plates G G′ brought into contact the pendulum-lever will be moved to the magnet J, and when the berth is again occupied the circuit H will be made and the pointer will move one point to make one count or enumeration, and thereby

registration will be made every time the flap has been let down and the berth occupied during a journey of several thousand miles or less.

Each berth in a car or section is independently wired to a separate registering device. an upper berth to a register, as E, and a lower berth to a register, as 16.

When the whole sleeping-section containing the upper and lower berths is taken by one passenger both cushions are taken from the upper berth and placed in the lower berth, according to custom, and to cause the removal of said cushions to effect registration without occupation of the upper berth, as before described, one end L′ of key, by a wire P, connects with the make-and-break termination of the circuit M when the key is open, so that when the mattress is relieved of the cushions the end L of the spring-key in contact therewith will be forced upward and the opposite end L′ of the key makes the circuit connection through the wire P, thereby energizing the magnet in the same way, as before described, by the traveler occupying the upper berth.

2 2 are the day seats of said section containing the upper berth aforesaid, and 3 is the removable upholstered back of the seat corresponding to the fixed back 4 of the opposite seat.

5 is the night cushion of the lower berth, which in day-time is stored in the upper closed berth.

The seat-frame having the removable back 3 has metallic bearings 6 6′, which are connected by a metallic strip 9 on the back of the removable seat-back 3, and said bearings are connected by a wire circuit 7, which includes a battery or source of electric energy and a magnet 8, so that when the seat-back 3 is in the day position the circuit is complete, and the magnet draws pendulum-lever 15 of the berth-registering device 16 to it, the said magnet.

The ledge 10 or bearing along the side of the car, and which is observable between two seats by day and which at night supports one end of the seat-back 3 when making up the lower berth, has a divided or broken metallic strip 11, which forms portions of a wire circuit 12, which includes a magnet 13 and the battery or source of electric energy. The metalic strip 9 on the seat-back connects the ends of the broken metallic strip 11 when said seat-back 3 is placed to make up the berth in the usual manner and circuit 12 is made. The making of said circuit 12 energizes magnet 13 and attracts pendulum-lever 15, whereby the pointer *m* of the registering device 16 will register one fare by the movement of the escapement thereby released. When circuit 7 is again made by replacing the seat-back 3 to its day position magnet 8 will be energized and pendulum-lever 15 drawn to it. When circuit 7 is again broken and circuit 12 made by placing the seat-back 3 in the night position, magnet 13 will be energized and the pendulum-lever drawn to it. The registering device will, by the pendulum-lever completing a full swing of two vibrations, register another fare, as before described, and so on consecutively during the journey.

The registering device shown comprises a gravitating weight *d* hung by a cord *e* winding on a drum *f* keyed on a shaft *g* carrying a scape-wheel *h*, and said shaft is geared by wheels *j k* to the shaft *l* carrying a pointer *m* moving over a clock-dial, and an escapement *n* pivoted to engage said scape-wheel *h* and a pendulum-lever 15, Fig. 3, secured to the escapement, whereby the pointer is moved one fare only at each return swing or to-and-fro movement of the pendulum-lever, as in a clock-movement.

In Fig. 4 is shown a modified form of spring connector or key for the mattress of the upper berth, and it consists of a helical spring Z and a post Y fixed to a base, the post having a pivoted cross-arm V, carrying at one end an armature L, engaged by the spring, and the opposite end of arm V carries an armature L′ to complete a circuit by contact with the terminal of wire P, so that when the spring is fully depressed by occupancy of the berth the circuit is made through armature L, and when relieved of the cushions the circuit will be through wire P and armature L′.

I claim as my invention—

1. The combination in a sleeping-car having a let-down flap forming the mattress of an upper berth, of two make-and-break electric metallic circuits, a magnet in each circuit, and a registering clock mechanism having a pendulum lever moved in one direction by the magnet of one circuit, and in the other direction by the magnet of the other circuit, one circuit including a plate secured to a fixed portion of the berth and another plate secured to the edge of the let-down flap, both plates when in contact connecting the circuit when the berth is shut up and the other circuit connected through a make-and-break key in the mattress, as set forth.

2. In a sleeping-car in which a removable seat-back of a day seat connects two seats to make the bottom of the lower berth, of two electric or metallic circuits having a magnet included in each, and a registering device having a pendulum lever moved in one direction by the magnet of one circuit and in the opposite direction by the magnet of the other circuit, one magnet energized by placing the removable seat-back in position for day use, and the other magnet energized when the seat-back is placed for night service, said seat-back having metallic strips to connect the terminals of each circuit when in the day and night position, respectively, as set forth.

3. In a sleeping-car, in which the lower berth is made up of two seats and an interveningly placed section, which in day service, makes a removable back to one of the seats, the combination of two metallic circuits severally broken and completed by the seat-back

when removed and replaced, said seat-back having metallic strips to connect the ruptured ends of the respective circuits when placed in either position, and a registering device having a clock escapement and a pendulum lever influenced in one direction by a magnet in said circuit energized when the other circuit is broken, and when said broken circuit is remade and the former circuit broken the pendulum lever is influenced by the magnet of the remade circuit, to effect registration, as set forth.

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