No. 630,272. Patented Aug. 1, 1899.

A. SWENSON.

PASSENGER RECORDER.

(Application filed July 20, 1898.)

(No Model.) 2 Sheets—Sheet 1.

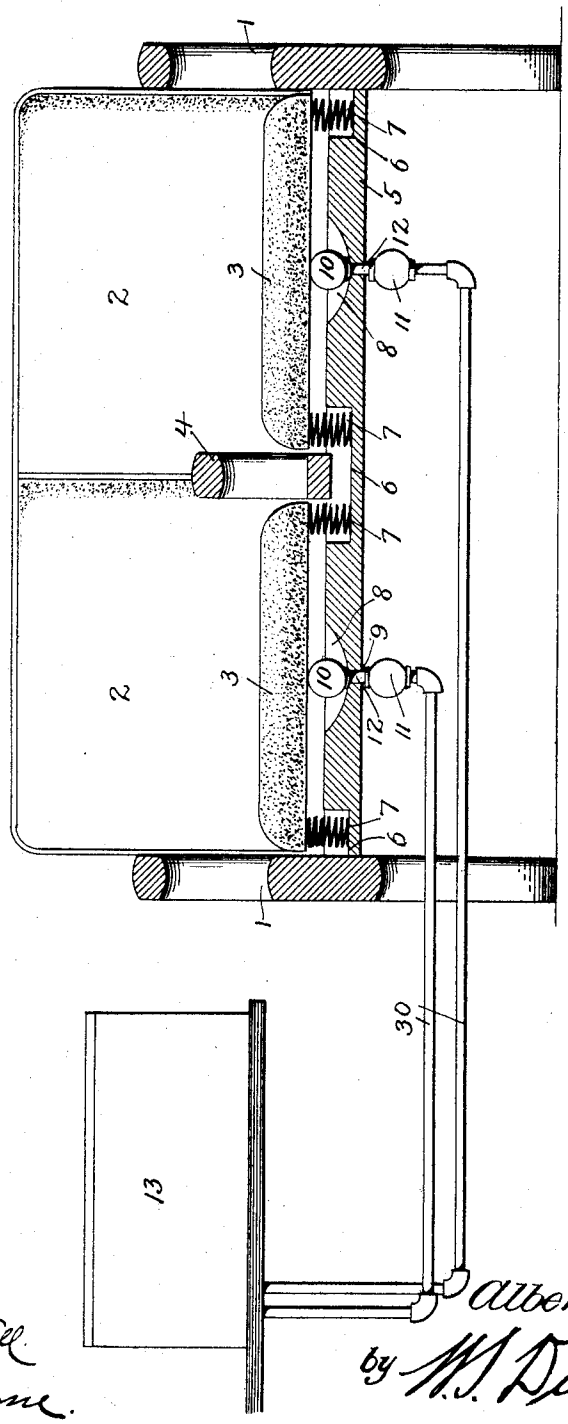


Fig. 1.

Witnesses
C. F. Duvall.
H. B. Byrne.

Inventor:
Albert Swenson,
by W. F. Duvall Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 630,272. Patented Aug. 1, 1899.

A. SWENSON.

PASSENGER RECORDER.

(Application filed July 20, 1898.)

(No Model.) 2 Sheets—Sheet 2.

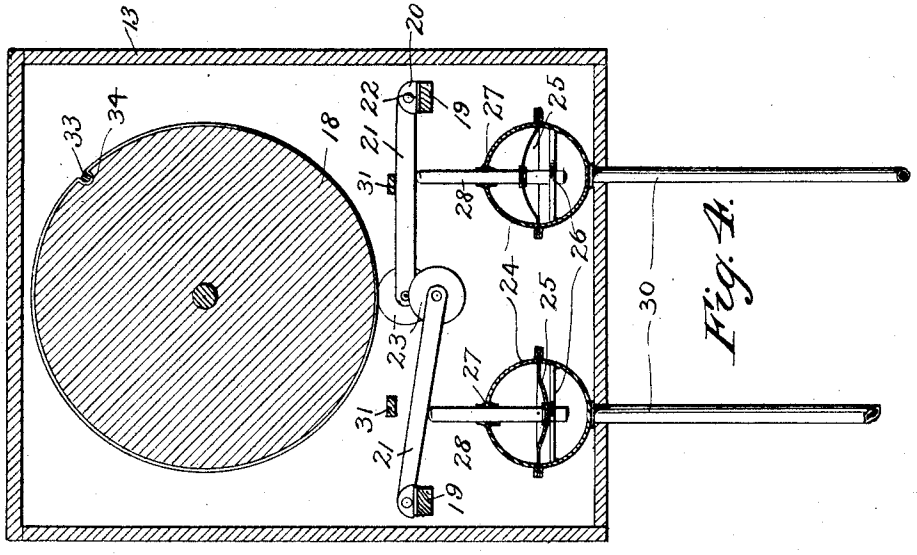


Fig. 4.

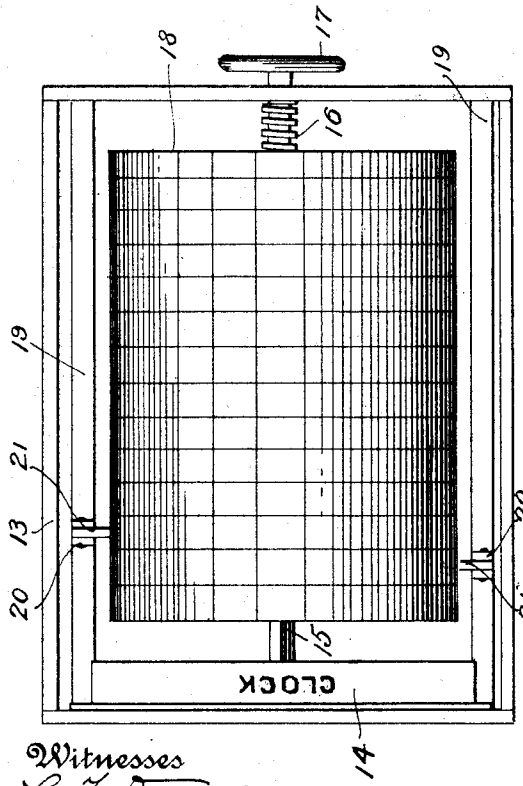


Fig. 2.

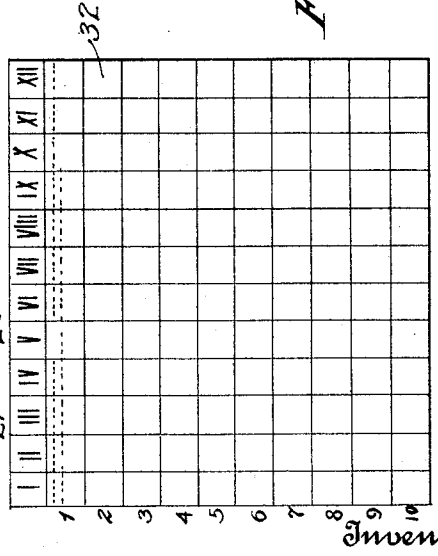


Fig. 3.

Witnesses
C. F. Durell
H. B. Byrne

Inventor.
Albert Swenson,
by W. S. Durell
Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT SWENSON, OF DULUTH, MINNESOTA, ASSIGNOR OF FIVE-TWELFTHS TO OLAF PEARSON, OF SAME PLACE.

PASSENGER-RECORDER.

SPECIFICATION forming part of Letters Patent No. 630,272, dated August 1, 1899.

Application filed July 20, 1898. Serial No. 686,461. (No model.)

To all whom it may concern:

Be it known that I, ALBERT SWENSON, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Passenger-Recorders; 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.

My invention relates to improvements in passenger-recorders for use in passenger-coaches on railroads, the objects in view being to produce a cheap and simple mechanism for accurately recording the number and length of time each seat was occupied in each trip of the coach, whereby dishonesty upon the part of the conductors so disposed is positively prevented.

Other though minor objects of the invention will hereinafter appear, and the novel features of the invention will be particularly described and pointed out in the description and the appended claims.

Referring to the drawings, Figure 1 is a longitudinal sectional view of a coach-seat, the same being shown as connected with my improved recorder, all of which is in conformity with my invention. Fig. 2 is a plan view of the recorder-case, the lid of which is removed to expose the interior mechanism and some of the recording-levers being also removed. Fig. 3 is a plan view of the recording-sheet preferably employed. Fig. 4 is a transverse vertical sectional view of the recorder-case, one of the recording or marking wheels being shown in position of recording, as when a seat connected therewith is occupied, and the other marking-wheel being shown in its normal position, or as when the seat connected therewith is not occupied.

Similar numerals of reference indicate similar parts in all the figures of the drawings.

1 1 represent the supporting or side frames of a passenger-coach; 2 2, the backs of the two seats; 3 3, the two seat sections or cushions, and 4 the central or dividing arm.

Below the seats 3 3 is located a stationary base 5, the same in this instance having formed below the sides of the seats 3 3 the cavities or depressions 6, in each of which is located a coiled spring 7, the upper ends of which support the seat-sections 3 3. Below the center of each seat-section 3 the stationary base 5 is provided upon its upper side with a cavity 8, at the center of which is a hole 9. Each cavity is occupied by a rubber or other flexible or collapsible bulb 10, that projects above the surface of the stationary base 5 and contacts with the under side of the seat-section thereabove, so that when the seat is not occupied the bulb is distended, but when occupied and the seat depressed upon its springs the bulb is collapsed within the cavity 8, in which it is seated. Immediately below each of the openings 9 in the stationary base I may locate an air-chamber 11, connecting the upper side of the same with the bulb 10 thereabove by means of a short tube or pipe 12, passed through the opening 9 mentioned. It will of course be understood that although I have herein shown a single coach-seat thus constructed this style of seat is to be duplicated throughout the coach.

At any suitable point in the coach is located a casing 13, in which the recording mechanism hereinafter described is located and may be maintained safely against tampering by a suitably-secured lid, the key of which is retained by the company's agent at the end of the line.

At one end of and within the casing 13 is located an ordinary clock mechanism 14, from which projects the squared hour shaft or arbor 15. The opposite end of the casing is provided with an opening alining with the shaft 15 and occupied by a screw-shaft 16, the thread of which is left-handed. The outer end of this shaft 16 may be provided with a removable hand-wheel 17.

18 designates the recording-cylinder, which is located in the casing 13. One end of the cylinder is provided with a threaded opening to receive the threaded shaft 16 and the other end with a square opening or socket to receive the squared shaft 15 of the clock mechanism. A longitudinally-disposed horizontal bar 19 is located at each side of the cylinder and below the same, the ends of the bar being suitably secured to the end walls of the recording-case. These bars are provided with

pairs of lugs 20, the lugs on one bar alternating with those on the companion bar. Between the lugs of each pair is pivoted the rear or outer end of a recording-lever 21 by means of transverse pivots 22, the inner free ends of the two sets of levers being in the same axial line immediately under the recording-cylinder, at which point each lever is provided with a suitable marking-wheel 23 or other device capable of making the record, as hereinafter explained.

Immediately below each lever is arranged within the casing 13 an air-chamber 24, of spherical or other shape, within which is arranged a flexible transverse diaphragm 25, preferably formed of sheet rubber. Each diaphragm is centrally perforated and vertically alines with a suitable guide 26, located immediately therebelow. The guide-eye in each chamber and the opening in the diaphragm aline with a suitable opening in the upper end of the chamber, the same being suitably packed and indicated as 27. A plunger 29 is mounted for reciprocation in each of the air-chambers 24, the upper end of each rod projecting above that chamber in which it is located and serving to support the recording-lever immediately thereabove. The lower end of each rod 29 is guided by an eye 26, and between its ends it is secured firmly to the diaphragm 25, through which it passes.

It will be understood that there is a recording-lever and its actuating mechanism for each seat in the coach and that each collapsible bulb 10 under the seats is connected by a pipe or tube 30 with the lower side of an air-chamber 24. In order to limit the upward movements of the recording-levers 21, I may locate thereover stop-bars 31 or employ any other desired means for accomplishing this end.

In Fig. 3 I have illustrated a form of recording-sheet, the same being designated as 32. This sheet is preferably divided into squares by means of intersecting lines, those squares at one edge being marked or indicated according to the face of a clock from "I" to "XII" and those at the side being numbered to agree with the seats of the coach. The sheet is applied about the cylinder with the figures indicating the hours at one end, the sheet being held in position by any well-known means—as, for instance, by a binding-rod 33, let into a groove 34, formed in the face of the cylinder. It will be understood that the cylinder with the recording-sheet revolves, through the medium of the clock mechanism, once every twelve hours, and hence will be fed by the threaded shaft 16 the distance of one thread, so that the marking-wheels will begin to mark at a new point every twelve hours. Assuming for the purpose of illustration that seat No. 1 is occupied at the beginning of the trip for four hours, the record-sheet would show a mark or record from the space at the left of the sheet across the same to the space below the numeral "IV." If the seat were then vacated for an hour and then reoccupied, the line would then begin again at the space below "VI" and continue onto the space below "XII," and if continued to be occupied the mark would again begin at the left below the first mark, the cylinder having moved toward the clock mechanism the distance of one thread on the screw-shaft 16, all as indicated in Fig. 3.

In actual practice when the seats are vacant the bulbs 10 are distended; but when a weight—say equaling fifty pounds—is placed on the seat it becomes depressed and the bulb thereby collapsed, which forces the air through the pipe 30 to the air-chamber 24, forcing up the diaphragm and plunger 27 and raising the recording-lever and its marking-wheel, the parts returning automatically to their normal position as soon as the seat is vacated.

Of course it will be understood that any kind of a marking device can be substituted for the wheel and lever, and in fact such details of construction are subject to change without sacrificing the advantages of the invention in the least degree.

Having described my invention, what I claim is—

1. The combination with a yieldingly-supported seat capable of being depressed, and a recording mechanism, of a collapsible air-bulb located below the seat and adapted to be operated by each depression thereof, a metallic rigid air-chamber located relative to the recording mechanism, a plunger located therein, a flexible diaphragm connected to the plunger and provided at its upper end with a recording device, and a pipe connection between the air-bulb and the metallic air-chamber at one side of the diaphragm.

2. The combination with a depressible yieldingly-supported seat, and a collapsible air-bulb located thereunder and adapted to be compressed at each depression of the seat, of a cylinder and its support, means for rotating said cylinder, a lever supported adjacent to the cylinder and carrying a marking device, a metallic rigid air-chamber adjacent to the lever, a flexible diaphragm within the chamber, a plunger carried by the diaphragm and connected to and adapted to operate the lever to bring its marking device in contact with the cylinder, and an air-pipe leading from said air-chamber at the rear of its diaphragm to the collapsible bulb.

In testimony whereof I affix my signature in the presence of two witnesses.

ALBERT SWENSON.

Witnesses:
DAVID M. DEVORE,
HANS JUVELARD.