(No Model.)

H. W. KNAPP.

ENGINEER'S SEAT.

No. 417,192. Patented Dec. 10, 1889.

Fig. 1.

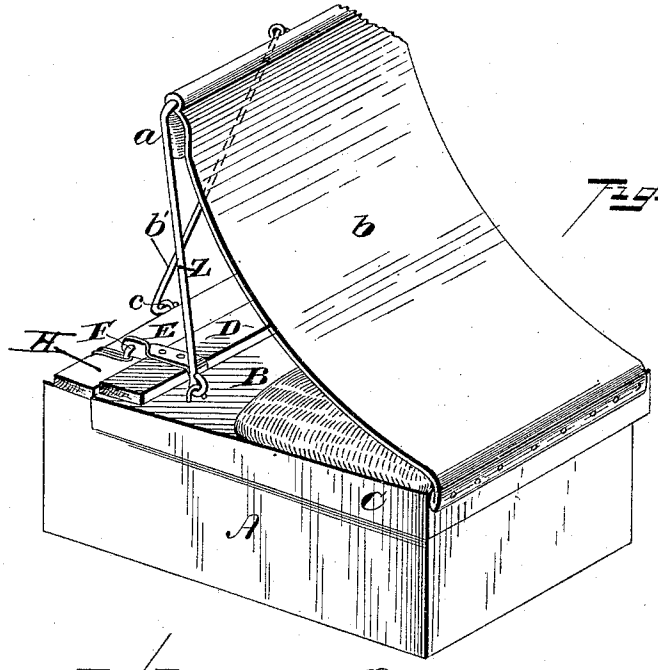


Fig. 2.

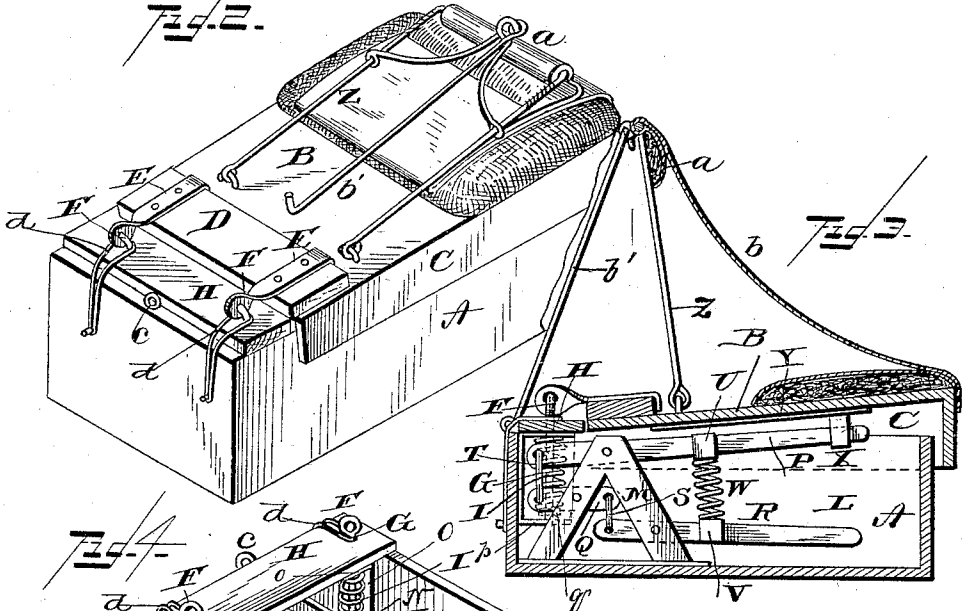
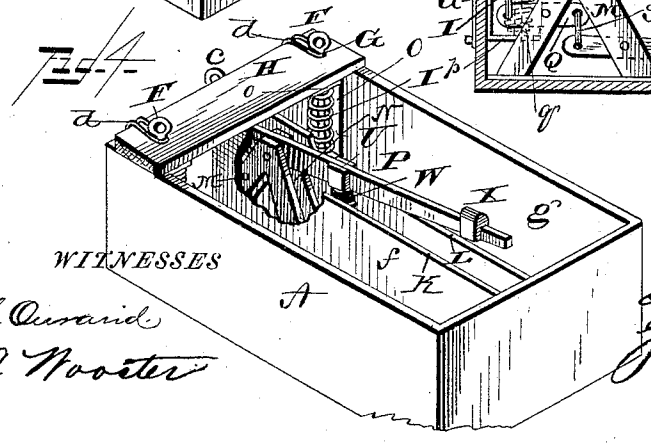


Fig. 3.

Fig. 4.



WITNESSES

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ENGINEER'S SEAT.

SPECIFICATION forming part of Letters Patent No. 417,192, dated December 10, 1889.

Application filed June 15, 1889. Serial No. 314,382. (No model.)

To all whom it may concern:

Be it known that I, HIRAM WALLACE KNAPP, a citizen of the United States, and a resident of Estelline, in the county of Hamlin and Territory of Dakota, have invented certain new and useful Improvements in Engineers' Seats; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to engineers' seats designed for use on locomotive-engines; and it consists in the construction and novel combination of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, in which like letters of reference indicate corresponding parts, Figure 1 is a view in perspective of an engineer's seat embodying the improvements of my invention, showing the same in the unfolded or extended position. Fig. 2 is a view in perspective of the invention, showing the seat folded when not in use. Fig. 3 is a vertical longtiudinal sectional view showing the interior construction, one of the longitudinal partitions being removed; and Fig. 4 is a view of the interior of the box, showing a portion of the spring-actuated mechanism and the compartments for the reception of the engineer's clothing and the like.

Referring by letter to the accompanying drawings, A designates the box or inclosure containing the spring-actuating levers for imparting the necessary resiliency to the seat or cover B proper, which latter is upholstered on top at its front end to render it comfortable and easy to the engineer when seated thereon, and is provided with depending flanges C along its sides and its front end, which flanges close down around the upper edges of the box A and serve as guides for the seat or cover and also add neatness to the appearance of the structure.

At the rear end of the seat or cover B is a transverse strengthening-cleat D, to which the half-hinges E of the cover are secured and from which they project over to and engage the eyes F at the upper ends of the bolt-rods G. The rods G are supported and stayed by the clips *d*, which are placed around said rods just below the eyes F, and, extending over the edge, are fastened to the end piece of the box A. The rods G pass down through a transverse cleat or strip H upon the rear end of the box A and are incased by spiral springs I I. Below the strip H the rear corners of the box are incased a portion of the way down by a rectangularly-bent piece of metal O. The piece O forms in effect four sides of a parallelopiped and furnishes a partial casing for the spring I, and the rods G find suitable ways in holes through the ends *o* and *p* of the said casing O. The top of the springs I rests against the top end *o* of the casing O, and the bottom of the spring is supported by a nut *q* on the rod G. Thus when a heavy weight is on the seat these springs will permit the bolt-rods to yield sufficiently to take the deadness out of the hinges.

Between the partitions K L within the box, and secured to the bottom of the same, are two triangular-shaped metal uprights or castings M N, which form the bearings for the fulcrums of the upper lever P, the intermediate shortest lever Q, and the lower shorter lever R. The lower lever R has its rear end connected to the front end of the intermediate shortest lever Q by a link-rod S, and the rear ends of the upper longer lever P and the intermediate lever Q are also connected by a link-connection T in rear of the triangular-shaped supports M N.

In front of the supports M N the upper and lower levers P R are provided with movable or sliding clamps U V, which are connected by a spiral spring W. These clamps permit the spring W to be moved forward or backward to suit the seat to the weight of the occupant. The upper lever P is provided in front of the spring W with a sliding bearing X, which may be moved back and forth in front of the spring to engage the wear-plate Y on the under face of the cover B at the proper point to suit the weight of the engineer who is to run the locomotive.

The cover or lid is further provided with a hinged wire back frame Z, which is provided with a head-rest *a*, which is connected when the back is in the unfolded position by a

hook-rod b' with an eye c at the rear end of the box.

The wire back frame Z has connected to the head-rest a the upper end of a seat-back b, of textile fabric or leather, the front end of which is secured to the front end of the hinged cover or seat, so that the back of the seat may be opened out or folded down upon the seat out of the way when desired.

The operating-levers and their connecting-springs and fulcrum-supports are located between or protected by vertical parallel partitions K L, and the compartments f g, formed on opposite sides of said levers, are designed for receiving and protecting the wearing-apparel and other necessary articles belonging to the engineer.

The operation and advantages of my invention are, briefly stated, as follows: The engineer adjusts the sliding clamps U V and the spring connecting them and the bearing X in accordance with his weight, the amount of vertical movement he wishes the seat to have, and the ease with which he wishes the seat to yield to the jarring movement. It will be seen that the long arm of the lever P, which receives the direct pressure by means of the bearing X, can be varied by sliding said bearing, while the length of the short arm remains constant, and thus the effect of the weight applied is varied. When the long arm of the lever P is depressed, the rear end of the lever Q is raised, its forward end moves downward, and consequently the short arm of the lever R. Hence the long arm of the lever R rises with the same pressure which lowers the long arm of the lever P, and the spring W is compressed. It is evident from the arrangement of the levers and spring W that the farther back the spring is placed the more easily will it be compressed, and consequently the more easily will the cover and seat yield.

By the arrangement of the hinges, rods G, and springs on said rods any sudden jar or heavy weight is prevented from bending the hinges or causing any breakage of parts.

From the foregoing description, when taken in connection with the accompanying drawings, the construction and operation of the engineer's seat will be readily understood by persons skilled in the art to which the invention appertains.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the inclosing-box having the hinged cover, of the triangular supports secured therein, the upper longer lever, the intermediate shortest lever, and the lower lever fulcrumed on the supports and connected by link-rods, the spiral spring movably connected to the upper and lower levers in front of their fulcrum, and the movable bearing on the upper lever, substantially as specified.

2. The combination, with the inclosing-box and the internal levers and springs and the hinged cover adapted to rest on the movable bearing of the upper lever, of the hinged back, the hook-rod adapted to engage a retaining-eye on the end of the box, and the flexible fabric connected to the hinged back and to the front of the hinged cover, substantially as specified.

3. The combination of the inclosed box provided with the connecting-levers and the movable bearing on the upper lever, the hinged cover, the bolt-rods having nuts near their lower ends, the rectangularly-bent plates forming bearings for said rods, and spiral springs encircling said rods, all constructed and arranged substantially as described.

4. The combination, with the inclosing-box provided with the hinged cover and the spring-actuated connected levers, of the vertical longitudinal partitions protecting the levers and springs and forming receptacles on opposite sides thereof, substantially as specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

HIRAM WALLACE KNAPP.

Witnesses:
H. H. REEVES,
GEO. C. LOHR.