L. G. FRANZ.

MOTORMAN'S STOOL.

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1,377,332.

Patented May 10, 1921.

Fig. 1.

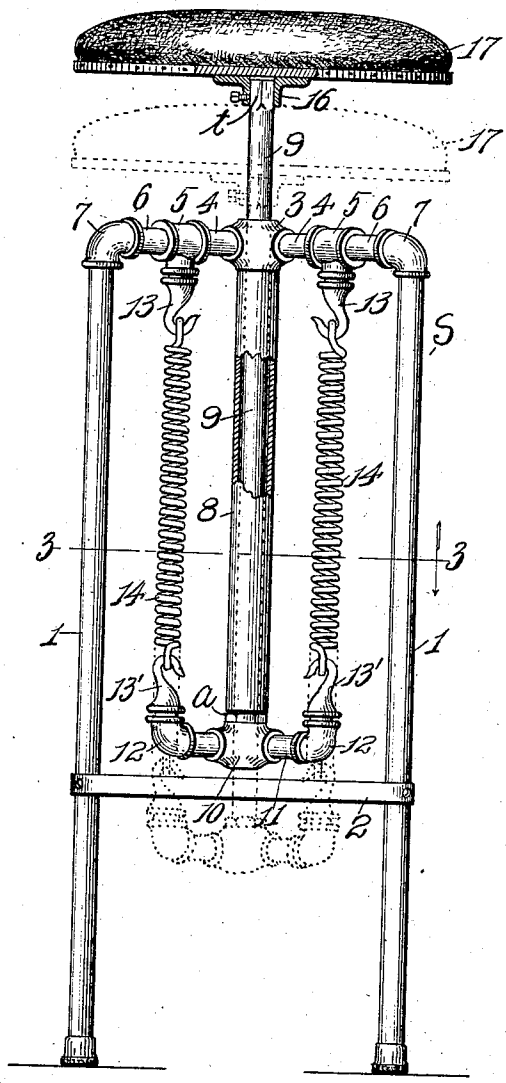


Fig. 2.

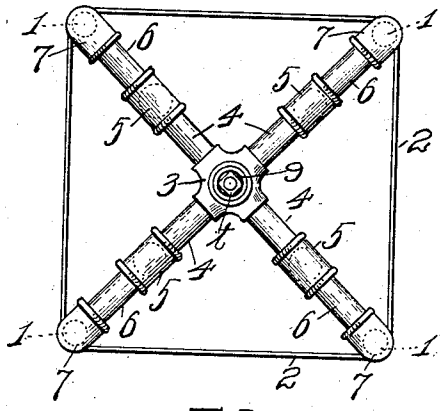


Fig. 3.

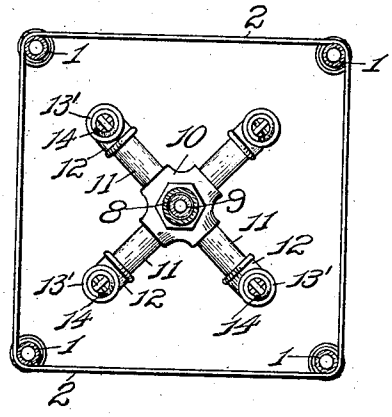
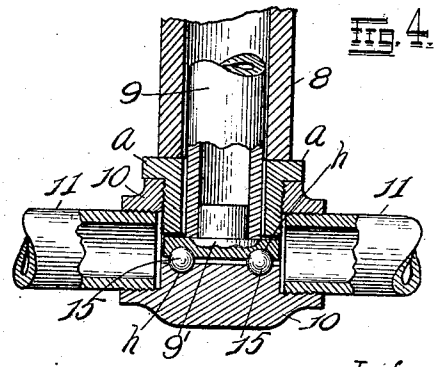


Fig. 4.



Inventor

Louis G. Franz

by Emil Starck Atty.

UNITED STATES PATENT OFFICE.

LOUIS G. FRANZ, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO JOHN W. FRANZ, OF ST. LOUIS, MISSOURI.

MOTORMAN'S STOOL.

1,377,332. Specification of Letters Patent. Patented May 10, 1921.

Application filed October 13, 1920. Serial No. 416,628.

To all whom it may concern:

Be it known that I, LOUIS G. FRANZ, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Motormen's Stools, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

The present invention is directed to improvements in motormen's stools, and has for its object to provide a stool from which the jars incident to the travel of the car, especially when running over rough places such as rail intersections, frogs, and the like, will be entirely eliminated, said jars being absorbed by means of suitable springs coupled to the seat occupied by the motorman, the springs supporting the full weight of the motorman's body. In the present embodiment of the invention the cushioning springs are preferably coiled suspension springs, the same expanding under the weight supported thereby, and quickly recovering from the sudden stresses imposed thereon when the vehicle encounters rough spots in the road as indicated above. I do not of course wish to be restricted to any specific construction of spring or resilient shock-absorbing member, the basic idea involved being to interpose between the motorman's seat and the body of the stool (or equivalent support) a suitable cushioning spring or resilient member to absorb all shocks and eliminate all jars from whatever source derived. The advantages of the improvement will be fully apparent from the following detailed description in connection with the accompanying drawings in which—

Figure 1 represents an elevation of the improved stool; Fig. 2 is a top plan with the seat removed; Fig. 3 is a horizontal section on the line 3—3 of Fig. 1; and Fig. 4 is an enlarged vertical sectional detail showing the bottom fitting and the ball bearings for the stem or staff supporting the seat.

Referring to the drawings, S, represents the body portion of the stool preferably composed of piping as shown. The body proper may be said to comprise the legs 1, four in number in the present example, disposed in pairs and in planes intersecting one another at right angles, adjacent legs being tied together at a suitable distance from the bottom by means of a flat strip or band 2 disposed horizontally and serving as a rest for the motorman's feet as well understood in the art. The upper ends of the legs are connected to a center hollow fitting or cross 3, from which lead the nipples 4, the outer ends whereof are in turn coupled to the inner horizontal arms of the T's 5, the outer arms of said T's having secured thereto the nipples 6 which are connected to the legs by the elbows 7. The parts above described may be considered as constituting the body proper of the stool. Coupled to the bottom of the fitting 3 is a vertical pipe or sleeve 8, the same extending to a point substantially opposite or slightly above the brace or band 2. Loosely traversing the fitting 3 and the sleeve 8, and projecting a suitable distance above the fitting 3 is a tubular stem or hollow cylindrical staff or rod 9, the lower end of the stem being received by a hollow fitting or cross 10 closed at the bottom, said fitting being provided with radiating nipples 11 to which are secured the elbows 12. In assembling the parts the fitting 10 is turned or adjusted so as to bring the several pairs of members 11, 12, in vertical alinement with the corresponding pairs of members 4, 5, the vertical legs of the T's 5 being directly over the upturned ends of the elbows 12. To the T's 5 and elbows 12 are secured the hooks 13, 13′, respectively, each pair of hooks (13, 13′,) being connected by a coiled expansion spring 14 as shown, the several springs being disposed parallel to one another and to the sleeve or pipe 8. The stem 9 traversing the fitting 3 and sleeve 8 passes loosely through a bushing *a* into the fitting 10, the lower end of the stem terminating and being closed by a flanged plug or head 9′ resting on the ball bearings 15 deposited in suitable annular race-ways *h* formed in the fitting and on the bottom face of the flange of the plug (Fig. 4). The upper end of the stem terminates in a square (or polygonal) head *t* to be received by a socket 16 on the bottom of the seat 17, the socket being set-screwed to the head to prevent withdrawal of the seat when the stool is picked up or being moved. The seat coupled to the stem 9 is thus free to revolve about the axis of the stem as clearly obvious from the drawings.

It will be seen from the foregoing that the weight of the driver or motorman seated on the seat 17 is communicated through the

stem 9 to the fitting 10, and from said fitting to the springs 14 suspended from the hooks 13, the lower ends of the springs, as previously described, being coupled to the hooks 13' secured to the elbows 12 leading from the fitting 10. It follows therefore that the springs 14 sustain the entire weight of the person on the seat, and any jars or shocks which the driver or motorman would otherwise be subjected to with the passage of the car over rough places are absorbed by the springs, the same being free to yield and expand in the direction in which the stresses are imposed thereon, and hence permitting the driver to make his trip in comfort. With any yielding and recovery of the springs, the stem 9 and the seat 17 carried thereby will simply reciprocate or play up and down, the body of the driver being thus cushioned as it were and suffering no discomfort. In its reciprocations the stem 9 is guided by the sleeve 8, the lower free end of the latter bearing against the top of the fitting 10 for a normal or contracted position of the springs 14, and hence operating as a stop in the upward movement of the fitting whenever the springs recover from any sudden stress, the springs being normally under sufficient tension to hold the fitting against the sleeve. A material shortening of the sleeve 8 would probably be open to the objection that it would allow too much latitude for expansion and contraction of the springs, and hence too much play up and down to the stem 9 and seat 17 carried thereby. In the present embodiment of the invention, each pair of oppositely disposed legs with its corresponding pair of springs is disposed in a common vertical plane intersecting the vertical plane of disposition of the other pair of legs and springs, this arrangement leaving the arms of the spider formed by the fitting 10, and the nipples 11 and elbows 12 radiating therefrom, disposed along the diagonals of the square joining the legs 1, or the square formed by the band 2, thereby leaving sufficient room for the motorman to rest his feet on the band without fouling the aforesaid spider. This feature is a decided advantage in the construction of the stool. The invention is obviously not to be limited to drivers' or motormen's stools, but is applicable to other pieces of furniture such as book-keepers' stools, music stools, and chairs generally, or other supports and seats not necessary to here enumerate. The details of construction of the stool may of course be changed in many particulars without involving a departure from the spirit of the invention.

Having described my invention, what I claim is:

1. In a stool of the character described, a body portion, a central tube or sleeve depending therefrom, a stem reciprocable in said sleeve and projecting upwardly above the body of the stool, a seat secured to the upper projecting end of the stem, a series of springs depending from the body and disposed around the sleeve, a central fitting coupled to the springs and forming a support or bearing for the lower end of the stem and ball-bearings disposed within said fitting, said stem being rotatable on the ball-bearings.

2. A stool of the character described comprising a body portion composed of two pairs of legs disposed in intersecting vertical planes, a center hollow fitting, connecting members coupling said fitting to the upper terminals of the legs, and a band connecting adjacent legs at suitable distances above the bottoms thereof, in combination with a pipe or sleeve extending downward from the fitting aforesaid, coiled expansion springs suspended from the connecting members aforesaid, a bottom spider having arms radiating toward and coupled to the lower ends of the springs, a stem loosely traversing the center hollow fitting and sleeve and extending a suitable distance above the fitting, a seat carried by the upper end of the stem, the lower end of the stem being rotatably supported at the center of the bottom spider below the lower end of the sleeve, whereby the weight carried by the seat is communicated to the springs.

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

LOUIS G. FRANZ.

Witnesses:
EMIL STAREK,
C. H. CALLON.