

UNITED STATES PATENT OFFICE

2,641,308

TRACTOR SEAT MOUNTING

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Application November 20, 1951, Serial No. 257,334

3 Claims. (Cl. 155—51)

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This invention relates to tractor seat mountings, and more particularly to a tractor seat mounting in which a tractor seat is pivotally mounted on a hydraulically snubbed spring support for swinging movements between a forwardly disposed operative position and a rearwardly disposed position in which it is out of the way of an operator driving the tractor from a standing position.

It is among the objects of the present invention to provide an attachment which is interposed between the seat pan and seat support of an existing tractor seat assembly to provide freedom of swinging movements of the seat pan about a generally horizontal axis between a forward operative position and a rearward inoperative position; which requires only minor modifications of the existing seat support for its installation; which resiliently retains the seat pan in both its operative and inoperative positions; which does not interfere in any way with the operation of the tractor or cause any looseness of the seat when in operative position; and which is simple and durable in construction, economical to manufacture, easy to install, and positive and effective in use.

Other objects and advantages will become apparent from a consideration of the following description and the appended claims in conjunction with the accompanying drawing, wherein:

Figure 1 is a side elevational view of a spring-supported, hydraulically snubbed seat assembly with means illustrative of the invention pivotally connecting the seat to the seat support;

Figure 2 is a cross-sectional view on the line 2—2 of Figure 1; and

Figure 3 is a fragmentary cross-sectional view on the line 3—3 of Figure 2.

With continued reference to the drawing, the seat support comprises a pedestal 10 mounted on the tractor platform 11 and including an upwardly and forwardly inclined portion 12 bifurcated to receive the lower front end of a tubular seat post 13 and apertured to receive a pivot pin 14 which extends through the bifurcated upper front portion of the pedestal and through the seat post adjacent the lower forward end of the latter to pivotally connect the seat post to the pedestal for swinging movement about an axis substantially perpendicular to a vertical plane including the longitudinal center line of the associated tractor.

The seat post 13 has a bend, as indicated at 15, intermediate the length thereof, and the portion of the seat post between the bend 15 and the

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pivot pin 14 is rearwardly and upwardly inclined, while the portion of the seat post at the side of the bend 15 remote from the pivot pin 14 is substantially horizontally disposed. The longitudinal center line of the seat post is substantially in or parallel to the above-mentioned vertical plane which includes the longitudinal center line of the associated tractor.

An arm 16 is bifurcated at one end to provide spaced apart legs 16a and 16b secured at their distal ends to the pedestal 10 and this arm extends upwardly and rearwardly from the rear side of the pedestal 10 and is provided at its rear end with a substantially horizontally disposed spring support 17. A clamp bracket 18 is secured on the rearward portion of the seat post 13 and comprises a pair of members 19 and 20 of channel-shaped cross-section disposed at respectively opposite sides of the seat post and each having a web or bight portion transversely curved so that the opposed members provide a substantially tubular structure receiving the adjacent end portion of the seat post, and each member has a pair of spaced apart and substantially parallel legs or flange portions extending from the same side of the web portion. The opposite sides of the seat post 13 are received in the concavities of the web portions of the corresponding bracket members 19 and 20, and the bracket members are rigidly secured to the seat post by suitable means, such as welding, or by bolts extending through the bracket members and holding them firmly against the corresponding side surfaces of the post. The bracket members have their upper flanges disposed substantially in a common plane and their lower flanges also disposed substantially in a common plane which is placed below and substantially parallel to the plane of the upper flanges, both of these planes being substantially horizontally disposed and parallel to the longitudinal center line of the rearward portion of the seat post.

A spring abutment plate 21 of circular shape is disposed below the lower flanges of the bracket 18 and secured to these flanges by suitable means, such as the bolts 22, and a helically wound spring 24 of partly conical shape is disposed between the spring support 17 and the abutment plate 21 with its smaller end resting on the spring support and its larger end engaging the under side of the abutment plate.

A hydraulic snubber 25 of well known construction is connected at one end to the pedestal 10 at the rear upper corner of the pedestal by a pivotal connection 26 and is connected at its

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upper end to a lug structure 27 projecting downwardly and rearwardly from the seat post 13 adjacent the bend 15 therein by a pivotal connection 28.

A seat pan 30 of well known construction is disposed above the upper flanges of the bracket members 19 and 20, and is provided on its bottom with a lug or socket structure 31 of rectangular shape having apertures disposed one adjacent each corner thereof for receiving bolts for connecting the seat to the upper flanges of the clamp bracket members. Normally, the seat pan is secured directly to the upper flanges of the clamp bracket members, and the seat is thus rigidly connected to the seat post 13 and cannot be swung or tilted relative to the seat post.

The arrangement so far described is already in existence, and constitutes no part of the present invention, except in the combination thereof with the hinge means provided by this invention for giving to the seat pan a freedom of swinging movement between a forward operative position and a rearward inoperative position.

It is at times necessary for the operator to drive the tractor from a standing position so that he can more closely observe the operation of tractor-drawn machinery or the distance of the tractor from crop plants, obstacles, ditches, et cetera. When the operator is standing on the tractor platform 11, the seat pan 30 in its normal, forward position interferes with the necessary movements of the operator in handling the tractor, and becomes a source of major inconvenience. The hinge means of the present invention permits swinging the seat pan to a rearward position where it is out of the way of an operator standing on the tractor platform and driving the tractor, and comprises a hinge bracket 34 secured to the spring abutment plate 21 and having hinge sleeves at the rear end of the seat post 13, a hinge plate 35 of rectangular shape rigidly secured to the seat pan 30 by the lug structure 31, and bolts 32, the bolts normally used to secure the seat pan to the clamp bracket being omitted, and having a hinge sleeve disposed between the hinge sleeves on the bracket 34, a hinge pin 36 extending through the hinge sleeves and pivotally connecting the hinge plate to the hinge bracket, a substantially horizontally disposed rod 37 positioned below and somewhat rearwardly of the hinge pin 36 and secured to the hinge bracket by struts 38 and 39, arms 40 and 41 projecting outwardly one from each side of the hinge plate 35 at the forward end of the hinge plate and tension springs 42 and 43 connected between the rod 37 at the respectively opposite ends thereof and the outer ends of the corresponding arms 40 and 41 to resiliently hold the seat pan in either its forward operative position or its rearward inoperative position.

The hinge bracket 34 comprises a pair of flat bars 45 and 46 disposed in spaced apart and substantially parallel relationship to each other, and secured on the upper surface of the spring abutment plate 21 in position such that they are substantially equally spaced from and parallel to a vertical plane including the longitudinal center line of the seat post 13. Hinge sleeves 47 and 48 are provided on the bars 45 and 46, respectively, at the rear ends of the bars, and above the upper surface of the spring abutment plate 21. The bars are provided with longitudinally spaced apertures through which the bolts 22 extend, the bolts also extending through corresponding apertures in the abutment plate 21.

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There are four of the bolts 22 disposed one near each end of each of the bars 45 and 46.

As explained above, the rod 37 is substantially horizontally disposed, and this rod is substantially perpendicular to the vertical plane including the longitudinal center line of the post 13 and extends substantially equal distances to opposite sides of such plane with its ends extending outwardly beyond the corresponding bars 45 and 46, as is clearly illustrated in Figure 2, and the struts 38 and 39 are convergently inclined upwardly and forwardly from locations adjacent the respectively opposite ends of the rod 37 to the rear ends of the corresponding bars 45 and 46.

The hinge plate 35 is provided near its rear end with a hinge sleeve 49 on its under surface, which hinge sleeve is disposed between the hinge sleeves 47 and 48 on the hinge bracket 34, the sleeves 47 and 48 being in longitudinal alignment with each other.

As stated above, the hinge pin 36 extends through the hinge sleeves 47, 48 and 49, and hingedly connects the seat-carrying plate 35 to the hinge bracket 34 secured to the spring abutment plate 21, which is in turn rigidly secured to the seat post 13 by the clamp bracket 18.

The tension springs 42 and 43 are inclined upwardly and forwardly, when the seat is in its forward operative position, as illustrated in Figure 1, from the corresponding ends of the rod 37 to the outer ends of the corresponding arms 40 and 41 on the hinge plate 35, and are so related to the hinge pin 36 that when the seat is moved from its forward to its rearward position, these springs pass over the ends of the hinge pin and constitute toggle springs which resiliently hold the seat pan in either of its two positions.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes coming within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. In a tractor seat assembly including a tractor-mounted pedestal, a seat post pivotally connected at one end to said pedestal and extending upwardly and rearwardly of the associated tractor from said one end, clamp brackets secured on said post adjacent the other end thereof, a spring abutment plate carried by said brackets below said post, a spring support carried by said pedestal below said spring abutment plate, a compression spring disposed between said abutment plate and said spring support resiliently supporting the rear end of said post, a hydraulic snubber connected between said pedestal and said post controlling the action of said compression spring, and a seat pan disposed above said clamp brackets at the upper side of the latter, a hinge mounting for said seat pan comprising bars secured to said clamp brackets in spaced apart and substantially parallel relationship to each other and said seat post, hinge sleeves disposed one on each of said bars at the rear ends thereof, a rod disposed below the rear ends of said bars and extending transversely thereof with its ends projecting outwardly of the corresponding bars, struts connecting said rod to said bars, a plate disposed between said

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brackets and said seat pan and secured to the latter, a hinge sleeve on said plate at the rear end of the latter and disposed between the hinge sleeves on said bars, a hinge pin extending through said hinge sleeves and having its axis substantially at right angles to the longitudinal center line of said post, arms projecting one from each side of said plate at the front end thereof, and tension springs connected one between each end of said rod and each of said arms at the outer ends of said arms.

2. In a tractor seat assembly including a seat post, clamp brackets secured to said seat post adjacent one end thereof, a spring abutment plate secured to said clamp brackets at one side of said seat post and a seat pan disposed adjacent the side of said clamp brackets remote from said abutment plate, means pivotally connecting said seat pan to said clamp brackets comprising hinge brackets secured to said clamp brackets and each having a hinge sleeve at one end thereof, a hinge plate secured to said seat pan above said hinge brackets and having a hinge sleeve at one end thereof disposed in transverse alignment with the hinge sleeves on said hinge brackets, a hinge pin extending through said hinge sleeves and pivotally connecting said hinge plate to said hinge brackets, means supported on said hinge brackets providing spring anchors disposed respectively at the outer sides of said hinge brackets and spaced from the sides of the latter remote from said hinge plate, tension springs connected at corresponding ends thereof one to each of said spring anchors, and means connecting said tension springs at their other ends to said hinge plate at the end of the latter remote from said hinge pin.

3. In a tractor seat assembly including a seat post, clamp brackets secured to said seat post ad-

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jacent one end of the latter, a spring abutment plate secured to said clamp brackets at one side of said seat post and a seat pan disposed adjacent the side of said clamp brackets opposite said abutment plate, means pivotally connecting said seat pan to said clamp brackets comprising hinge brackets secured to said clamp brackets and each having a hinge sleeve at one end thereof, a hinge plate secured to said seat pan above said hinge brackets and having a hinge sleeve at one end thereof disposed in transverse alignment with the hinge sleeves on said hinge brackets, a hinge pin extending through said hinge sleeves and pivotally connecting said hinge plates to said hinge brackets, means supported on said hinge brackets providing spring anchors disposed respectively at the outer sides of said hinge brackets and spaced from the sides of the latter remote from said hinge plate, tension springs connected at corresponding ends thereof one to each of said spring anchors, and means connecting said tension springs at their other ends to said hinge plate at the end of the latter remote from said hinge pin, said spring anchors having a common center line and said hinge pin having an axis substantially perpendicular to a plane which includes the longitudinal center line of said seat post and is disposed perpendicular to the plane of said spring abutment plate.

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