July 22, 1952 J. CELIZIC 2,604,144

DETACHABLE SEAT BACK FOR USE ON BOARD SEATS

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Fig. 1.

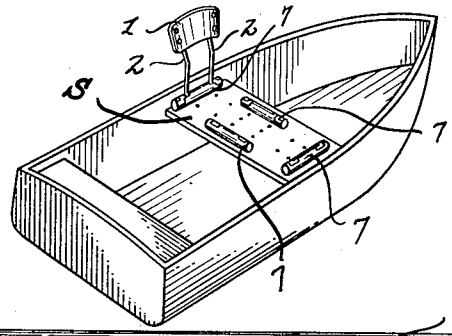


Fig. 2.

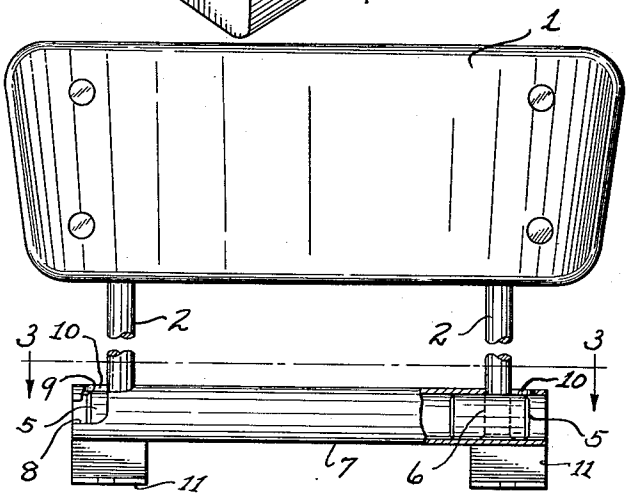


Fig. 3.

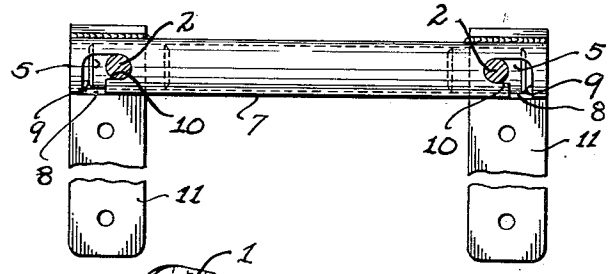


Fig. 4.

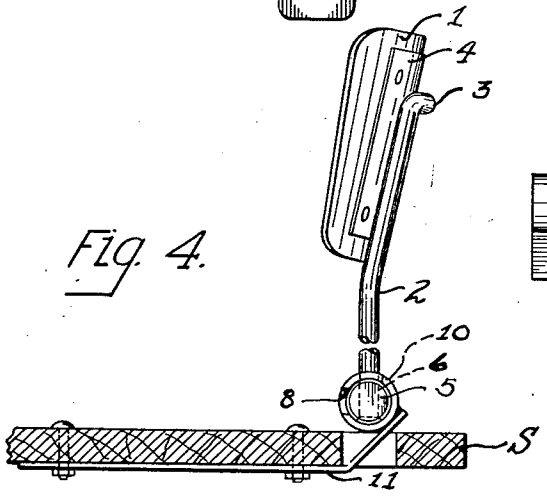
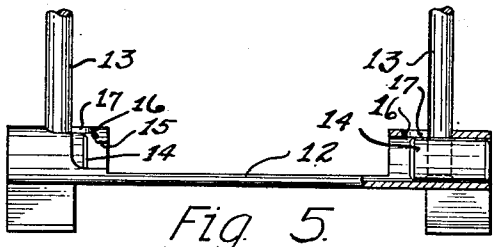


Fig. 5.



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DETACHABLE SEAT BACK FOR USE ON BOARD SEATS

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7 Claims. (Cl. 155—133)

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This invention relates to a detachable seat back for use on board seats of row boats and the like.

The invention comprises essentially a back rest with a pair of supporting rods of spring metal attached thereto and extending therefrom in spaced relation to each other a distance required by the elevation of the back rest above the seat level, the free ends of the rods being resiliently flexible toward and away from each other and carrying, at their terminals, cylindrical bearing lugs which are adapted to be inserted endwise into the open ends, respectively, of a horizontal cylindrical bearing member connected to the seat, by flexing the rods out of their normal position during initial insertion and allowing the rods to restore themselves to their normal condition to complete the insertion, the bearing member being provided at its ends with open end longitudinal slots through which the rods may pass endwise of the bearing member during such restoration of the rods while the rods lie substantially on the plane of the seat, and also being provided with generally circumferentially extending slots connecting with the inner ends of the longitudinal slots and through which the rods may swing to substantially upright position, and further being provided with angularly disposed latching slots connected to the upper ends of the circumferential slots and into which the rods are moved transversely of their axes by their normal restoring flexure so as to be constrained from swinging about the axis of the bearing member and from movement endwise of the bearing member when the rods are in upright position.

Heretofore detachable seat backs have been provided for row boat seats and other seats, these in general being arranged to be clamped onto the seat with thumb screws and the like, and being generally constructed of light wire or light wood stock. However, an occupant of a row boat, particularly a fisherman, wishes to change his seated position at intervals so as to face forwardly, rearwardly, or toward one side or the other of the boat. The detachment of prior back rests and reattachment thereof for changing from one position to another is inconvenient. Furthermore seats of the clamp type are relatively unsafe not only because of the maneuvering necessary for detachment and reattachment but also because of their light structure and the fact that they may not be clamped securely in place.

Under the stress of the excitement of fishing, the fisherman is quite apt to lean or drop back rather forcibly in the seat without thought of

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the possible insecurity of the seat back attachment or the sturdiness of the seat back structure. Should either fail in such instances, he is apt to become overbalanced with resultant well known dangers to himself and other occupants of the boat. The same hazards exist in rough waters when the occupant may rely on the seat back to maintain or restore his balance. All such occurrences, while relatively safe on land, can lead to serious consequences in small boats.

An object of the present invention is to provide a seat back and a bearing combination which is very rugged and secure, by which the seat back may be attached to the boat seat easily and securely with a minimum of inconvenience and in a minimum of time, and which may be detached readily and reattached in different positions so that the occupant of the boat can be seated and rest against the back so as to be facing toward either side, toward the bow, or toward the stern of the boat.

Other objects and advantages will become apparent from the following description, wherein reference is made to the drawings, in which:

Fig. 1 is a perspective view of a row boat with the seat back and bearing combination of the present invention installed therein;

Fig. 2 is a front elevation of the seat back and bearing combination illustrating the relative positions thereof when the seat back is in upright position, parts thereof being shown in section for clearness in illustration;

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a right end elevation of the seat back and bearing combination, illustrated in Figs. 2 and 3, connected to the boat seat which is shown in section for clearness in illustration; and

Fig. 5 is a fragmentary front elevation of a modified form of the invention.

The seat back comprises essentially a rigid back rest 1, preferably of formica or other waterproof material such as thermoplastic or thermosetting synthetic resins or laminated impregnated cloth compacted and hardened under pressure. The back rest 1 is preferably concave forwardly. Secured fixedly to the back rest is a pair of metal supporting rods 2. The rods 2 preferably are formed of a single U-shaped length of spring rod stock. For securing the rods 2 to the back rest 1, the base 3 of the U-shaped length is welded or otherwise secured to a suitable metal plate 4 which, in turn, is secured by rivets or the like to the back of the back rest 1. The rods 2 extend from the back rest generally parallel to

each other. Their length is determined by the desired elevation of the back rest above the level of the seat.

It is to be noted that rods of spring steel have many advantages over the ordinary soft steel rod stock. However, the latter may be used if it is of a quality that has and retains a good spring action for the purposes herein described. It must be borne in mind, however, that there is always the danger that soft rod stock may permanently bend under stresses normally occurring, may lose its springiness after a period of use, and may crystallize and break. To assure complete safety, spring steel should be used.

On the free ends of the rods 2 are cylindrical bearing lugs 5, respectively, which are adapted to be received endwise in a suitable bearing affixed to the seat. The bearing lugs 5 preferably are made from cylindrical rod stock, drilled with transverse bores 6 in which the free end portions of the rods 2 are secured for rotation relative thereto. The rods preferably extend entirely through the bores of bearing lugs 5, their terminals being peened into suitable countersunk bores to prevent removal from the lugs. If desired, the lugs 5 may be formed integral with the rods 2 by bending and upsetting the ends of the rods but such is not as desirable, particularly because of the danger of introducing points of weakness in the rods when heating and cooling or tempering the steel. Furthermore, it is desirable that the lugs be of much greater diameter than the rods and be swivelled, as described, for convenience in attachment.

In order to mount the back rest on the seat suitable tubular bearing members 7 are provided, one for each different position at which the back rest is to be attached to the seat. In the form illustrated, each of the tubular bearing members 7 comprises a length of tube, which is open at its ends and has an inside diameter such that the bearing lugs 5 fit therein in coaxial relation therewith with operating clearance or a loose fit. Each tubular member 7 is provided at its opposite ends with suitable slots, each of which comprises an open end entry portion 8 which opens through the end of the tubular member and which is of a width slightly greater than the diameter of the rod 2 so that the rod 2 may project radially of the tubular member 7 therethrough. At its inner end, each entry portion 8 is connected with a generally circumferentially extending portion 9 of the same width as the slot 8. At its upper end, which is the end remote from the entry portion 8, the portion 9 is connected with a latching portion 10 which extends generally longitudinally of the tubular member and, in the form illustrated in Figs. 1 through 4, inwardly from the upper end of the circumferential slot portion 9.

The tubular member 7 is provided with suitable brackets 11 arranged one at or near each end, the brackets 11 sloping generally tangentially of the tubular member 7 part way of their length and then at an angle thereto so that, when the bottom wall surface of the bore of the tubular member is substantially at the level of the top of a seat S of a boat, the bracket may be firmly engaged with the bottom face of the seat.

The entry portions 8 of the slots preferably are positioned circumferentially of the members 7 so that, when the bearing lugs 5 are coaxial with the tubular bearing member 7 and the back rest is lying flat on the seat of the boat, the rods 2 can enter the slot portions 8 and extend therethrough radially of the bearing member 7. Due to the tangential arrangement of the brackets, the undersurface of the members 7 are additionally supported and braced against movement upwardly and downwardly by the portion of the seat extending between the tubular members and their brackets.

The brackets are securely bolted to the seat. Preferably a number are provided for each seat back and are installed in the positions desired and left in place.

In order to install the seat back, the seat back is laid front face downwardly on the boat seat, one of the lugs 5 is disposed in axial alignment with the respective end of the bearing member 7 and initially inserted, the rod of the inserted lug then being moved through the entry portion 8 of the slot to the inner end thereof. The free end of the outer rod is then pulled toward and beyond the other end of the member 7, thus flexing the rods apart, until its lug 5 is aligned with the bearing and initially inserted. The latter rod is then released and is moved through the entry portion 8 of the slot to the inner end of the portion. When both rods are in their innermost position, the seat back may be lifted and swung to upright position. This movement causes the rods 2 to move upwardly in the circumferential slot portions 9 and into the latching portions 10. When the arms reach the portions 10 they flex further toward their normal restored condition and pass endwise of the bearing member 7 into the inner ends of the respective portions 10. In this position they are latched against swinging movement about the axis of the lugs 5 and movement endwise of the bearing member 7. The inner ends of the portions 10 preferably are spaced apart a distance slightly greater than the normal spacing of the free ends of the rods so that the rods are not fully self-restored to their normal position while so installed but press firmly against the inner ends of the portions 10 due to their own self-restoring force.

To remove the seat back, the steps above described are reversed, the free ends of the arms being flexed apart to dispose the arms in the circumferential portions 9. The seat back is then swung downwardly onto the seat S, and the lugs then withdrawn in succession from the bearing member 7.

While the lugs 5 may be inserted and withdrawn concurrently it is preferable to make the rods very sturdy and they are difficult to flex. Furthermore, the occupant of a boat, while installing the back, should have one hand free for gripping the boat to maintain his balance and assure his safety.

Referring next to Fig. 5, essentially the same arrangement is shown except that the bearing member, indicated at 12, has spaced end portions which receive rods 13 and lugs 14 of the modified seat back through their inner ends, the slot portions 15, 16 and 17 being arranged to function in the same manner as the slot portions 8, 9 and 10 of the member 7. Installation of the modified seat back is the same except that the rods 13 are flexed relatively toward each other for initiating installation and for removal.

It is apparent from the foregoing description that the seat back is extremely rigid and safe and cannot become accidentally detached from the seat or unintentionally shifted from its installed position.

Having thus described my invention, I claim:

1. A detachable seat back and bearing combination for board seats comprising a bearing member having axially aligned open end bearing portions and adapted to be secured to a board seat with the axis of the portions horizontal, a back rest, self-restoring resilient supporting rods connected to the back rest and having free ends spaced therefrom and from each other and which are resiliently movable toward and away from each other by flexure of the rods, bearing lugs on said free ends, respectively, and selectively insertable into, and removable from, said bearing portions, respectively, endwise through the open ends of said portions, respectively, and accommodated in said portions, respectively, for rotation about the common axis of said bearing portions, said bearing lugs normally being spaced apart endwise a distance different from that required for endwise insertion, said bearing portions having entrance slot portions extending generally endwise thereof and open at said open ends and affording passage of said rods, transversely of the rods, therethrough during insertion of the lugs through said open ends of said bearing portions while the rods are in a rotated position about said axis forwardly of an upright position, and having slot portions spaced from the said open ends and connecting at their ends with, and angularly disposed relative to, the first slot portions, respectively, and affording passage of said rods, transversely of the rods, therethrough upon swinging movement of the rods about said axis with the lugs inserted, and said last mentioned slot portions terminating at their other ends in positions such that wall portions thereof engage the rods and arrest further swinging movement of the rods in the same direction beyond a predetermined position.

2. The combination according to claim 1 characterized in that the open ends of the entrance slot portions are positioned circumferentially of the bearing members so that the rods can enter them when the rods are substantially horizontally disposed forwardly of the upright position of the seat back.

3. The combination according to claim 1 characterized in that said lugs are of larger diameter than said rods.

4. The combination according to claim 3 further characterized in that said lugs are mounted on the rods for rotation relative thereto about the axes of the rods, respectively.

5. The combination according to claim 1 further characterized in that the rods are of spring steel.

6. A detachable seat back and bearing combination for board seats comprising a bearing member having axially aligned open end bearing portions and adapted to be secured to a board seat with the axis of the portions horizontal, a back rest, self-restoring resilient supporting rods connected to the back rest and having free ends spaced therefrom and from each other and which are resiliently movable toward and away from each other by flexure of the rods, bearing lugs on said free ends, respectively, and selectively insertable into, and removable from, said bearing portions, respectively, endwise through the open ends of said portions, respectively, and accommodated in said bearing portions, respectively, for rotation about the common axis of said bearing portions, said bearing lugs normally being spaced apart endwise a distance different from that required for endwise insertion, each of said bearing portions having an entrance slot portion opening through its open end and lying generally in a horizontal plane through said axis forwardly of an upright plane through said axis and having a generally circumferentially extending slot portion connecting at one end with and extending from the inner end of the entrance slot portion in a position to afford swinging movement of a rod about said axis upwardly and rearwardly from the entrance position and having a latching slot portion connecting at one end with and extending from the other end of the circumferential slot portion and angularly disposed relative thereto, all of said slot portions affording passage of said rods transversely of the rods, and the latching slot portions having wall portions in a position such as to engage the rods and arrest further swinging movement of the rods in the same direction in a substantially upright position of the seat back.

7. The combination according to claim 4 characterized in that said bearing portions have latching slot portions connected with, and angularly disposed relative to, the last mentioned slot portions and affording passage of the rods transversely of the length of the rods when the rods are in said predetermined position, and said latching slot portions have wall portions which engage the rods and prevent swinging movement of the rods in the opposite direction out of said predetermined position when the rods are accommodated in said latching slot portions.

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