3,190,693
SWIVEL ROCKER SPRING UNIT

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Filed Nov. 29, 1962, Ser. No. 240,894
6 Claims. (Cl. 297—263)

This invention relates generally to spring means for articulating platform rocker chairs and the like, and more particularly to spring means of this sort that is arranged for swiveling as well.

Briefly described, the device of the present invention comprises a swivel rocker spring unit in which a basic member is arranged for swivel mounting, a bracket structure is arranged for attachment to a superstructure to be carried for rocking, and a pair of rocker springs serve not only to associate the bracket structure rockably with the basic member, but also to integrate these elements as a unit having its own mode of operating and simply needing to be attached in place for use.

These and other features of the present invention are described at further length below in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a swivel rocker spring unit embodying the invention; and

FIG. 2 is a vertical section taken substantially at the line 2—2 in FIG. 1.

As shown in the drawings, the previously mentioned base member component of the illustrated embodiment is designated generally by the reference numeral 10, and the upper bracket structure component by the reference numeral 12.

The base member 10 is arranged for swivel mounting about a central pivot stud means 14, by which it is assembled with a bottom plate 16 having suitable apertures at 18 to receive fastening elements for fixing to any desired structure on which the swivel is to stand (not shown).

Complementary raceway grooves 10' and 16' are concentrically formed in the base member 10 and bottom plate 16 to contain bearing balls 20 for assisting the swiveling action in the usual manner.

Additionally, the base member 10 is formed in particular with upwardly extending opposite side portions 22 that extend outwardly along their upper edges to present elongated rocker supporting areas 24. Preferably, these rocker supporting areas 24 are formed with a curvature facing convexly upward for balancing the desired rocking motion to better advantage, as will be noted further presently.

The upper bracket structure component 12 is of complementary form in that it has corresponding downwardly extending opposite side portions 26 that turn outwardly at their lower edges to present curved rocker surfaces 28 for riding the base member support areas 24. Otherwise, the bracket structure 12 is provided with secured ear portions 30 at which it may be attached readily to the superstructure that is to be carried for rocking (not shown); and is recessed and cut away at 32 adjacent each of its side portions 26 to receive and hold rocker springs 34 in pairs extending transversely in relation to the rocker surfaces 28.

The rocker springs 34 are of the same sort that have previously been used in separate units as disclosed, for example, in U.S. Patent No. 2,772,723, issued December 4, 1956; and the lower ends of these rocker springs 34 are carried by bracket members of the same type shown in the foregoing prior patent, which are fixed at the inner faces of the base member side portions 22 to assemble and maintain the base and bracket components 10 and 12 as an integrated operating unit, with the rocker surfaces 28 riding on the support areas 24.

In balancing the rocking motion characteristics of the operating unit thus provided, the previously mentioned function of the rocker support areas 24 with a curvature facing convexly upward can be employed advantageously, in relation to the opposite curvature of the rocker surfaces 28, to allow a smooth and easy rocking action to either side of the spring equalization point, while causing the springs to exert a more pronounced limiting influence against undue rocking action. That is, a curvature of the support areas 24 act to maintain the fulcrum point, about which rocking takes place, closer to the springs 34 as rocking begins, so that whatever force causes the rocking is applied to better mechanical advantage; while a given extent of rocking will cause more rapid elongation of the opposing spring 34 and thereby apply its limiting influence sooner. Additionally, a more positive limiting action on the rocking motion can be provided by forming the rocker surfaces 28 with straight end portions, as at 38, aligned with a chord of the rocker surface curve so that an abrupt change in the rocking fulcrum is obtained to overcome the rocking force sooner.

The present invention has been described in detail above for purposes of illustration only and is not intended to be limited by this description or otherwise except as defined in the appended claims.

I claim:

1. A swivel rocker spring unit comprising a base member having opposite sides thereof formed to present upwardly facing rocker supports extending lengthwise of said sides, a composite complementary bracket structure having corresponding opposite side portions extending from an integral attaching portion formed therebetween, said corresponding opposite side portions being formed to present downwardly facing rocker portions spaced to ride said rocker supports, and a pair of rocker springs attached to said attaching portion of the composite bracket structure and to said base member adjacent each of said opposite sides for holding said unit in assembled relation.

2. A swivel rocker spring unit comprising a base member formed for swivel mounting and having upwardly formed opposite side portions presenting elongated rocker supporting areas at their upper edges, a composite complementary bracket structure having corresponding opposite side portions extending downwardly from an integral attaching portion formed therebetween for attachment to a superstructure to be carried for rocking, said corresponding opposite side portions presenting curved rocker surfaces at their lower edges for riding said rocker supporting areas, a pair of rocker springs carried by said attaching portion of the composite bracket structure adjacent each of said side portions to extend transversely with respect to said rocker surfaces, and means attaching said rocker spring pairs respectively adjacent the opposite side portions of said base member for rockably assembling said unit with said rocker surfaces riding said supporting areas.

3. A swivel rocker spring unit as defined in claim 2 and further characterized in that said rocker supporting areas have a lengthwise curvature formed oppositely with respect to said curved rocker surfaces.

4. A swivel rocker spring unit as defined in claim 2 and further characterized in that said curved rocker surfaces each have at least one end portion extending in alignment with a chord to the curve thereof for limiting the rocking motion of said unit.

5. A swivel rocker spring unit as defined in claim 2 and further characterized in that said last mentioned attaching means comprises a bracket member fixed at the inner face of each base member side portion and carrying the adjacent ends of the rocker spring pairs.

6. A swivel rocker spring unit as defined in claim 2 and further characterized in that the respective upper and
lower side portion edges of said base member and said bracket structure extend outwardly to form said supporting areas and rocker surfaces.

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