Aug. 25, 1953 K. BERGER 2,650,294

LAMP HARP

Filed July 25, 1951 2 Sheets-Sheet 1

Fig. 1.

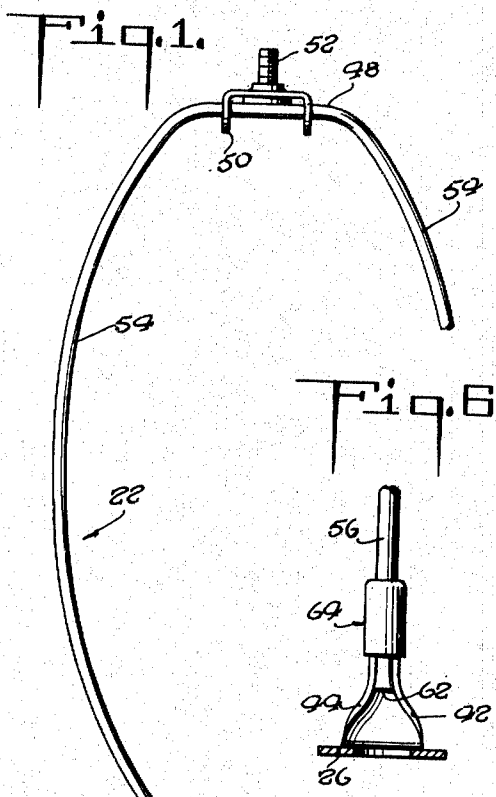


Fig. 2.

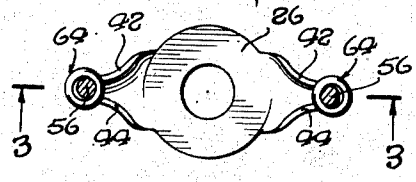
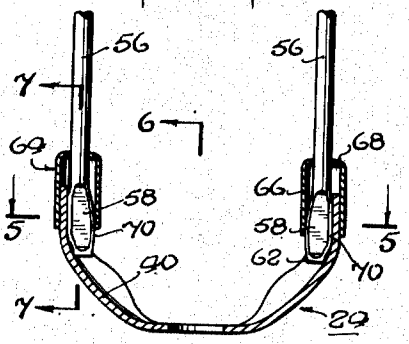


Fig. 6.

Fig. 3.



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Fig. 4.

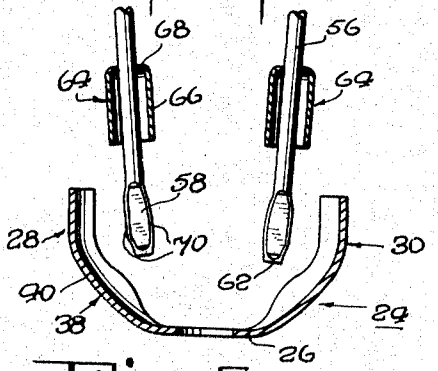


Fig. 5.

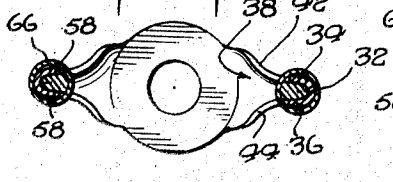
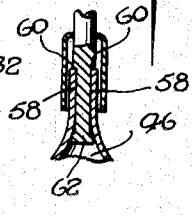


Fig. 7.



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Fig. 8.

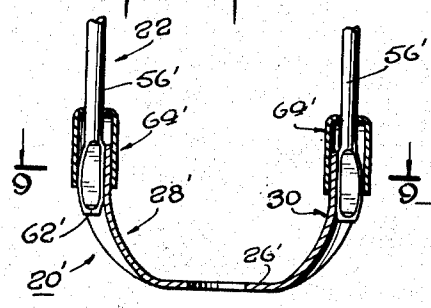


Fig. 9.

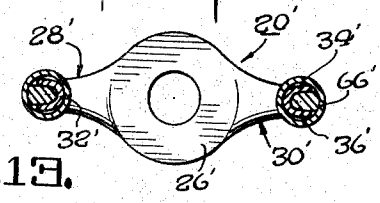


Fig. 13.

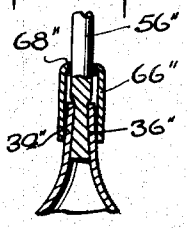
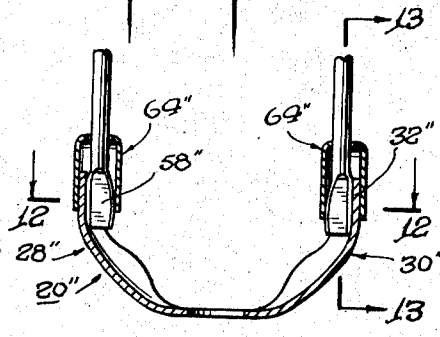


Fig. 11.



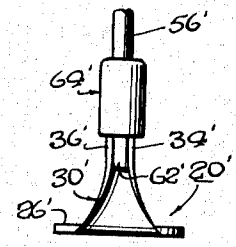


Fig. 10.

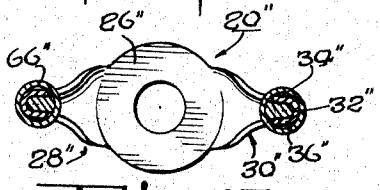


Fig. 12.

Fig. 14.

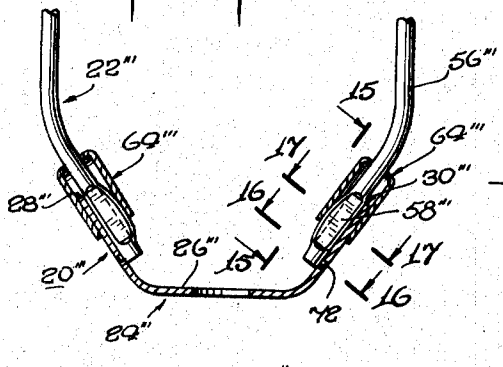
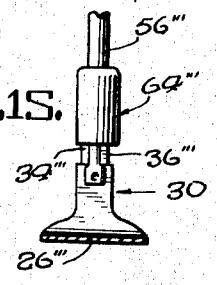


Fig. 15.



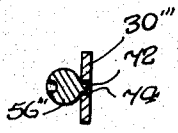


Fig. 16.

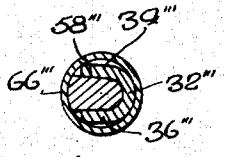


Fig. 17.

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LAMP HARP

Kornel Berger, Kew Gardens, N. Y.

Application July 25, 1951, Serial No. 238,509

9 Claims. (Cl. 240—148)

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This invention relates to lamp harps.

More particularly my invention pertains to a take-apart lamp harp constituting a disengageably coupled bail and bracket.

It is the principal object of my invention to provide an improved mechanism for detachably coupling the bail and bracket of a lamp harp.

In a conventional one-piece lamp harp the bracket is blanked from flat sheet metal stock and is formed with upwardly extending U-shaped arms. The bail is fabricated from wire and its terminal portions are received in said arms. The terminal portions are permanently attached to the arms, as by welding, riveting, clinching, etc., so that no relative movement between the bail and bracket can be experienced.

However, in take-apart lamp harps, due to the detachable connection between the bail and bracket, the mounting of the bail has not been secure. The bail of present-day take-apart lamp harps, depending upon its construction, either is able to oscillate relative to the bracket about a horizontal axis extending from the base of one bracket arm to that of the other, or it can be twisted about a vertical axis extending through the center of the bracket due to the ability of the bail terminal portions to rotate within the bracket arms.

It is an object of my invention to provide a take-apart lamp harp which is not subject to any of the foregoing drawbacks.

More specifically, it is an object of my invention to provide a take-apart lamp harp in which the bail is rigidly secured to the bracket.

It is another object of my invention to provide a take-apart lamp harp whose bail and bracket can be coupled or uncoupled easily and quickly.

It is another object of my invention to provide a take-apart lamp harp which comprises but few and simple parts and can be made inexpensively.

It is another object of my invention to provide a take-apart lamp harp of rugged construction.

It is another object of my invention to provide a take-apart lamp harp whose operation for coupling is manifest to even mechanically unskilled persons.

Other objects of my invention will in part be obvious and in part will be pointed out hereinafter.

My invention accordingly consists in the features of construction, combinations of elements and arrangements of parts which will be exemplified in the devices hereinafter described and

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of which the scope of application will be indicated in the appended claims.

In the accompanying drawings in which are shown various possible embodiments of my invention,

Fig. 1 is a front view of a take-apart lamp harp constructed in accordance with the present invention, the bail being shown coupled to the bracket;

Fig. 2 is a sectional view taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken substantially along the line 3—3 of Fig. 2;

Fig. 4 is a view similar to Fig. 3, but showing the bail as it is being coupled to or uncoupled from the bracket;

Figs. 5, 6 and 7 are sectional views taken substantially along the lines 5—5, 6—6 and 7—7, respectively, of Fig. 3;

Fig. 8 is a view similar to Fig. 3 of a lamp harp embodying a modified form of my invention;

Fig. 9 is a sectional view taken substantially along the line 9—9 of Fig. 8;

Fig. 10 is a fragmentary side view of the lamp harp shown in Fig. 8;

Fig. 11 is a view similar to Fig. 3 of a lamp harp embodying another modified form of my invention;

Figs. 12 and 13 are sectional views taken substantially along the lines 12—12 and 13—13, respectively, of Fig. 11;

Fig. 14 is a view similar to Fig. 3 of a lamp harp embodying still another modified form of my invention;

Figs. 15 and 16 are sectional views taken substantially along the lines 15—15 and 16—16, respectively, of Fig. 14; and

Fig. 17 is an enlarged sectional view taken substantially along the line 17—17 of Fig. 14.

In general I carry out my invention by providing a take-apart lamp harp comprising a bail and a bracket which are of generally conventional shape except for the detachably inter-engaging portions thereof; i. e. the bail terminal portions and the bracket arms. These portions differ from the corresponding portions of a present-day take-apart lamp harp in that the bail terminal portions instead of being round are flat on the surfaces thereof which engage the inner surfaces of the bracket arms. Moreover the mating flat surfaces of the bail terminal portions and of the bracket arms preferably are shaped to secure a wedging inter-engagement.

In addition, the lamp harp includes means to

selectively lock the bail terminal portions against axial movement, relative to the bracket arms and means to selectively lock the bail terminal portions against transverse movement relative to the bracket arms. The terms "axial" and "transverse" are used herein in reference to the longitudinal axes of the bail terminal portions. Thus "axial" denotes parallel to the axis of one or the other bail terminal portions and "transverse" denotes at an angle to the longitudinal axis of one or the other of said terminal portions.

Referring now in detail to the drawings, and more particularly to Figs. 1–7, the reference numeral **20** denotes a take-apart lamp harp embodying my invention and consisting of a bail **22** and a bracket **24**.

The bracket is fabricated from a single piece of sheet metal by suitable punching, swedging and bending operations and includes the usual annular base portion **26**. Located at diametrically opposite sides of said base portion are two upwardly extending arms **28, 30**. Said arms are of U-shaped configuration (see Fig. 5); that is to say, the transverse cross-sectional configuration of the arms includes a base **32**, which may be curved for convenience of manufacture, and a pair of approximately parallel flanges **34, 36**. These flanges extend in a direction inwardly toward the center of the bracket, i. e. the open sides of the U-shaped arms face one another. In the preferred form of my invention the flanges are not absolutely parallel but flare away from one another slightly as viewed in transverse section, a satisfactory angle of divergence being about 3°. Since this angle is so slight as to be almost imperceptible, it has been exaggerated in the drawings for the purpose of illustration. The bracket arms have a uniform transverse section.

The lower end of each arm **28, 30** is integrally connected to the rim of the annular base portion **26** by an upwardly and outwardly sloping portion **38**, constituting a bottom wall **40** and side walls **42, 44**. The walls **42, 44** flare away from one another in a direction from the arms to the base portion thereby providing an enlarged space **46** immediately beneath the lower end of each pair of flanges **34, 36**. The upwardly converging walls of said space serve as part of a means for locking an associated bail terminal portion against axial movement.

The bail **22** is fabricated from wire stock. The upper part of the bail is conventional, for example comprising a straight horizontal top **48** which receives a fitting **50** having a stud **52** on which a finial can be engaged. Outwardly bowed legs **54** depend from opposite ends of the top, the bottoms of the legs being integral with terminal portions **56** whose lower ends are especially constructed in accordance with the present invention. The bail **22** is formed to such a shape that when relaxed (unstressed) the lower ends of the terminal portions are spaced apart a distance substantially in excess of the distance between the bracket arms **28, 30**.

The lower end of each terminal portion **56** is processed, as by stamping, to provide flats **58** on diametrically opposite sides thereof. One flat **58** on each terminal portion is at the front, as viewed in Fig. 1, and the other flat at the rear. Said flats are aparallel and converge in a sidewise direction toward the base **32** of the associated U-shaped bracket arm. The angle of convergence is equal to or slightly in excess of the angle of divergence of the flanges of said arm.

It may be pointed out that the purpose of employing flat surfaces at the front and back of the bail terminal portions and at the front and back of the inner sides of the bracket arms is to secure a wedging inter-engagement between said portions and arms; and to this end it will suffice simply to have the front and back flats converge as described and to employ parallel flanges on the bracket arms, since when a bail terminal portion is inserted in a bracket arm, the flanges can spread apart slightly to accommodate the wedge shaped part of the terminal portion. The axial length of each wedge shaped part of a terminal portion formed by the flats **58** is equal to or slightly in excess of the axial length of the associated bracket arm.

Immediately above each wedge shaped part the terminal portion juts out forwardly and rearwardly to form outwardly extending shoulders **60**. Immediately below each wedge shaped part the terminal portion juts out forwardly and rearwardly to provide a foot **62**. Thus when a wedge shaped part of a bail terminal portion is inserted in its associated bracket arm the shoulders **60** abut the upper ends of the flanges **34, 36** and the foot **62** engages the upwardly converging walls of the space **46** whereby to lock the bail in the bracket arms against axial movement.

The means to lock each terminal portion in its associated bracket arm against transverse displacement inwardly of the bracket comprises a sleeve **64** having a tubular side wall **66** and a centrally apertured top wall **68**. Said sleeve is positioned on the bail prior to formation of the flats **58** by stamping, and thereafter is captively retained on the bail by lateral bulges **70** raised at the sides of the wedge shaped part as a consequence of the stamping. The side-to-side width of a wedge shaped part exceeds the depth of the flanges so that when a terminal portion of the bail is received in a bracket arm the inner bulge **70** will protrude from said arm. The inner diameter of the sleeve **64** is slightly less than the distance from an inner bulge **70** to the outer surface of the base **32** of a bracket arm in which a wedge shaped part is located.

To couple the bail **22** and bracket **24** the sleeves **64** are pushed up the terminal portions to expose the wedge shaped parts. The terminal portions are squeezed together to a distance less than that between the bracket arms (see Fig. 4). The bail then is introduced between the bracket arms with the wedge shaped parts approximately in line with said arms and the terminal portions are released and allowed to spring into the bracket arms.

If at this time the wedge shaped parts are not in exact register with the bracket arms the bail is shifted up or down slightly and when registry is reached the wedge shaped parts will seat fully in said arms. The friction between the flats **58** and the inner flat surfaces of the flanges **34, 36** is sufficient to prevent either terminal portion from rotating in a bracket arm and also suffices to substantially inhibit axial translatory movement of either terminal portion should the space between the shoulders **60** and foot **62** somewhat exceed the height of the bracket arm.

Lastly, the sleeve **64** is released and permitted to drop over the bracket arms and wedge shaped portions.

It will be observed that the inner bulges **70** are outwardly convex, the radius of curvature thereof being several times the diameter of the wire from which the bail is formed so that although the internal diameter of the sleeve is not suffi-

ciently great to permit the sleeve to fully cover the wedge shaped part of the bracket arm, the sleeve can drop down almost to the widest part of the inner bulge. Thus the bail is locked against transverse displacement.

If it is desired to more firmly interengage the wedge shaped part and bracket arm, the sleeves 64 are pushed down further. Their lower edges will ride toward the wide points of the inner bulges 70 and tend to force the wedge shaped parts further into the bracket arms. Said sleeves are made from metal thin enough to permit the sleeves to be somewhat resilient so that as they are forced down in the foregoing manner they will be deformed slightly out of round thereby to maintain a resilient pressure urging the wedge shaped parts into the bracket arms.

Although I prefer to have the open sides of the U-shaped bracket arms face inwardly as such arrangement forms a particularly attractive connection between the bail and bracket, it is within the scope of my invention to have the bracket arms face outwardly and a modified form of lamp harp 20' illustrating such an alternative construction is shown in Figs. 8, 9 and 10 wherein all parts similar to parts of the harp 20 are denoted by the same reference numerals with a prime affixed.

It should be observed that, in addition to having the bracket arms 28', 30' facing outwardly, the harp 20' further differs from the harp 20 in that the terminal portions 56' of the bail 22' when relaxed are spaced apart a distance less than that between the bracket arms so that said terminal portions must be spread prior to coupling of the bail and bracket rather than squeezed together.

A lamp harp 20'' embodying another modified form of my invention is illustrated in Figs. 11–13 wherein all parts similar to parts of the harp 20 are denoted by the same reference numerals double primed.

In the harp 20'' the flats 58'' in addition to converging toward the base 32'' of the bracket arms as shown in Fig. 12, converge upwardly as seen in Fig. 13. Likewise the flanges 34'', 36'' of the bracket arms 28'', 30'' converge upwardly at the same angle as the upwardly converging flats. This arrangement prevents axial upward movement of the bail after it has been coupled with the bracket without the necessity for employing the foot 62 as shown in connection with the lamp harp 20.

Still another modified form of lamp harp 20''' embodying my invention is illustrated in Figs. 14–17 wherein parts similar to the parts of the lamp harp 20 are denoted by the same reference numerals triple primed.

The lamp harp 20''' includes a bail 22''' and a bracket 24'''. Said bracket comprises an annular base portion 26''' and a pair of upwardly extending arms 28''', 30'''. These arms are of U-shaped transverse cross-sectional configuration, the open sides thereof facing inwardly. The flanges 34''', 36''' of the arms converge slightly toward one another in a lateral direction (see Fig. 17). Said arms 28''', 30''' are inclined outwardly away from the base of the bracket at an angle to the horizontal ranging from about 30° to 75°, best results being secured when the angle to the horizontal is about 55°. The use of such inclined arms in a take-apart lamp harp prevents the bail from rotating about a horizontal axis extending from one bracket arm to the other and also prevents the bail from twisting about a vertical axis passing through the center of the

base portion 26'''. This effect is independent of and cumulative to the effect secured by the wedging inter-engagement between the flat surfaces 58''' and the flanges 34''', 36'''. As in all previously described forms of the invention, sleeves 64''' shiftable along the legs of the bail lock the terminal portions 56''' against transverse movement when the bail is coupled to the bracket. The terminal portions are locked against axial movement by a protuberance 72 which is received in a matching opening 74 in the base of the bracket arms. It is pointed out that said protuberance and opening are in lieu of the foot 62 and the mating upwardly converging walls of the space 46 described with respect to the harp 20.

Although in all forms of the harp hereinabove described the means for preventing the transverse movement of the terminal portions constitutes a sleeve in which a bracket arm and wedge shaped part of a terminal portion are telescopically received upon coupling, it will be understood that in its broader aspect my invention is not limited to this specific means. For example, a satisfactory form of means for locking the bail against transverse movement that can be employed in lieu of an external sleeve 64 is a sleeve which is slidable along the terminal portion above the wedge shaped part and is received in a socket formed in the upper end of a bracket arm, the same being shown, described and claimed in my co-pending application for Lamp Harp, Serial No. 121,191, filed October 13, 1949.

It thus will be seen that I have provided devices which achieve all the objects of my invention and are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein described, or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A take-apart lamp harp comprising a resilient bail and a bracket, the bracket including two arms of U-shaped transverse cross-section, the bail having terminal portions each of which is of wedge-shaped transverse cross-section tapering sidewise to wedgingly interengage an associated bracket arm, means to selectively lock the terminal portions against axial movement relative to the bracket arms, and a sleeve slidable on each bracket arm for forcing the wedge-shaped terminal portion into the associated bracket arm and for locking the terminal portion against transverse movement relative to said bracket arm when the sleeve is telescoped over the arm and terminal portion.

2. A take-apart lamp harp as set forth in claim 1 wherein the sleeve is resilient.

3. A take-apart lamp harp comprising a resilient bail and a resilient bracket, the bracket including two upwardly extending arms of U-shaped transverse cross-section, the bail having terminal portions each of which is of wedge-shaped transverse cross section tapering sidewise to wedgingly interengage an associated bracket arm, the angle of convergence of the sides of the wedge-shaped transverse cross section being slight, means to selectively lock the terminal portions against axial movement relative to the bracket arms, and means to selec-

tively lock the terminal portions against transverse movement relative to the bracket arms.

4. A take-apart lamp harp as set forth in claim 3 wherein the locking means comprises a sleeve slidable on each bracket arm for forcing the wedge-shaped terminal portion into the associated bracket arm when the sleeve is telescoped over the arm and terminal portion, said sleeve in such position locking the terminal portion against transverse movement.

5. A take-apart lamp harp as set forth in claim 3 wherein each terminal portion of wedge-shaped transverse cross section also is of wedge-shaped vertical section in a front-to-back plane, said vertical section tapering upwardly.

6. A take-apart lamp harp as set forth in claim 3 wherein the arms of the bracket diverge sidewise from one another at an angle substantially equal to the angle of the wedge-shaped transverse cross section of the terminal portions.

7. A take-apart lamp harp as set forth in claim 3 wherein the flanges of the U-shaped arms of the bracket face inwardly toward one another.

8. A take-apart lamp harp as set forth in claim 3 wherein the flanges of the U-shaped arms of the bracket face outwardly away from one another.

9. A take-apart lamp harp comprising a resilient bail and a bracket, the bracket including a base portion, two upwardly extending oppositely facing arms of U-shaped transverse cross-section and sloping portions inter-connecting the lower ends of said arms to said base portion,

said sloping portions having side walls which run into the lower ends of the flanges of the U-shaped bracket arms, said side walls converging upwardly towards said arms, said arms being of uniform transverse cross-section, the bail having terminal portions each of which has a part of wedge-shaped transverse cross section which tapers sidewise for matingly interengaging an associated bracket arm, said terminal portions having outwardly extending abutments above and below the wedge-shaped parts, the abutments above the wedge-shaped parts limiting downward axial movement of the bail by engagement with the upper ends of the bracket arms and the abutment below the wedge-shaped parts preventing upward axial movement of the bail by engagement with the converging side walls of the sloping portion of the bracket when the wedge-shaped parts interengage the bracket arms, and means to selectively lock the terminal portions against transverse movement relative to the bracket arms.

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