

Feb. 17, 1948.

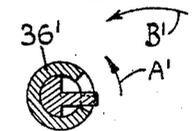
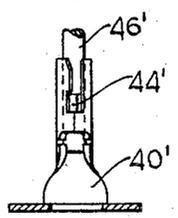
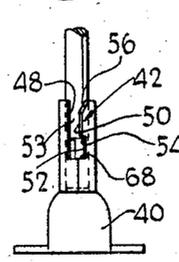
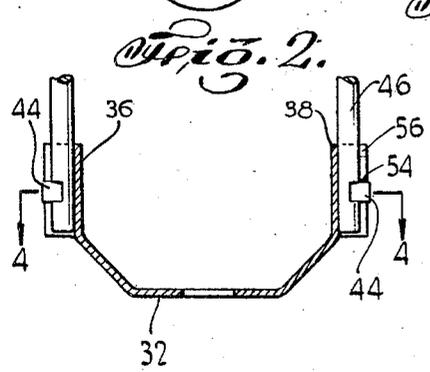
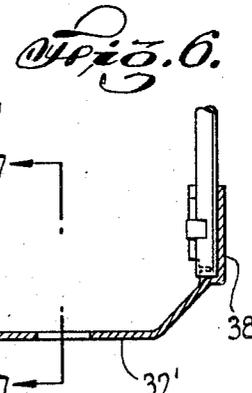
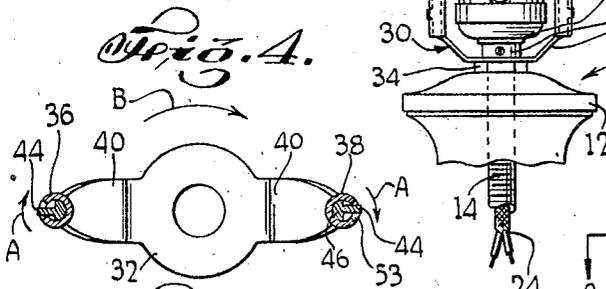
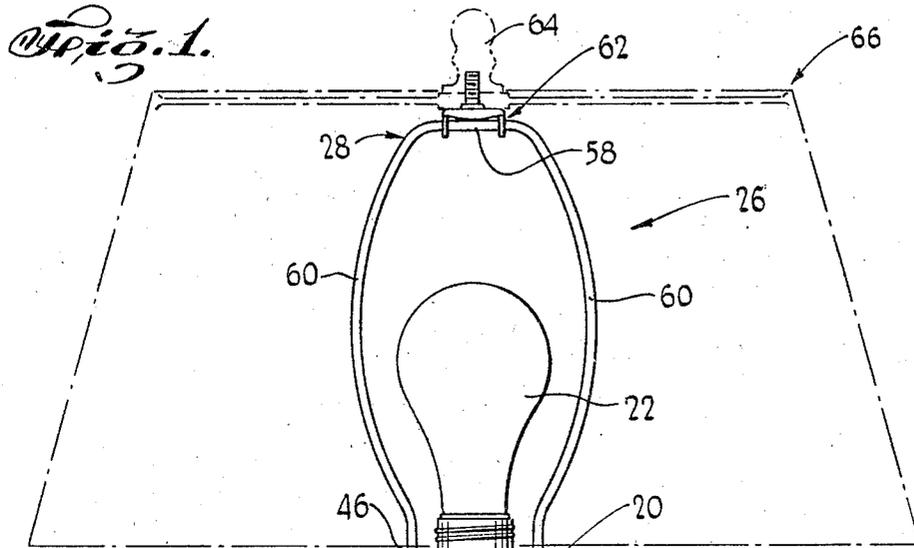
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2,435,954

LAMP HARP

Filed July 17, 1946

2 Sheets-Sheet 1



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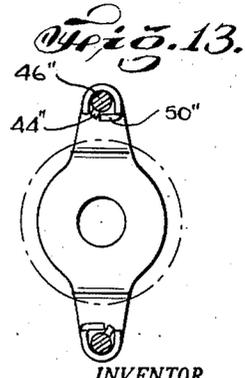
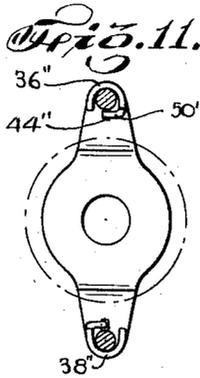
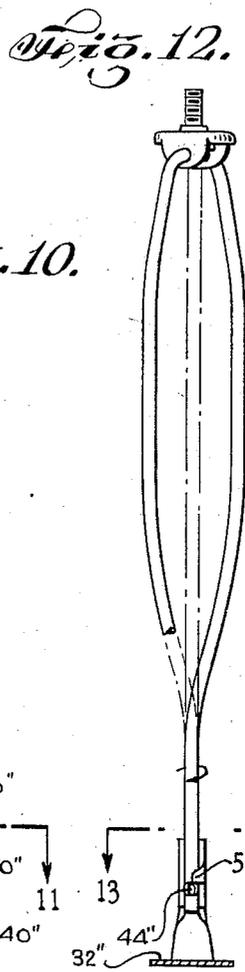
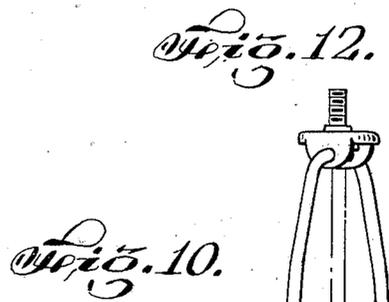
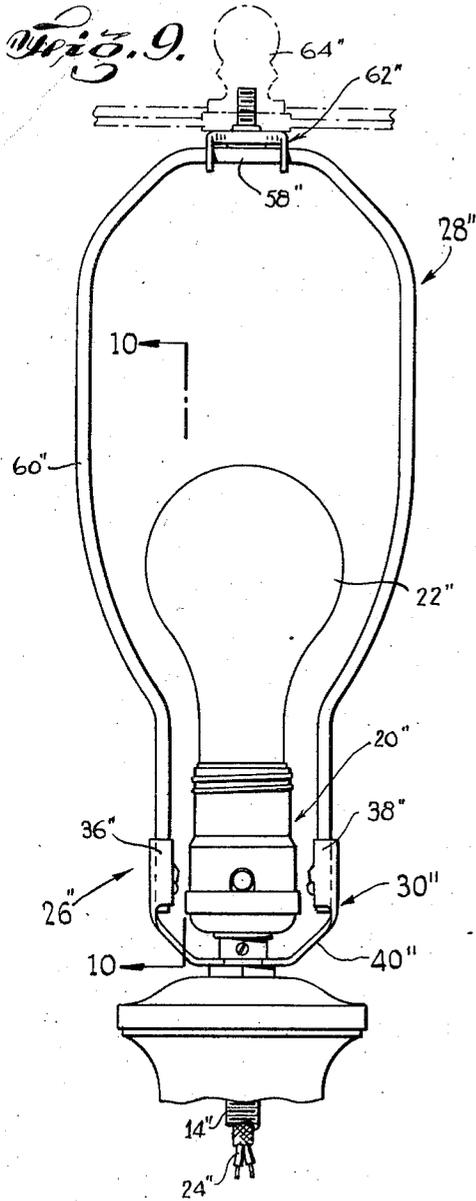
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2,435,954

LAMP HARP

Filed July 17, 1946

2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE

2,435,954

## LAMP HARP

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Application July 17, 1946, Serial No. 684,229

12 Claims. (Cl. 240-148)

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This invention relates to lamp harps.

It is an object of the invention to provide a lamp harp in which the harp frame is firmly but detachably secured to the bracket so as to expedite packing of a lamp fixture, and yet in which the detachable securing means is so constructed that the harp frame cannot be accidentally removed.

It is another object of my invention to provide a lamp harp of the character described in which the harp frame and bracket are detachably secured to each other in a novel and simple manner, whereby the cost of production is not materially increased over that of a conventional lamp harp construction wherein the ends of the harp frame are permanently secured in a pair of spaced sockets forming part of the bracket.

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

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the constructions hereinafter described and of which the scope of application will be indicated in the claims.

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

Fig. 1 is a fragmentary front view of a lamp fixture including the new lamp harp;

Fig. 2 is a detail elevational section of the harp, showing the harp frame ends detachably secured in the bracket sockets;

Fig. 3 is a side view of the harp parts shown in Fig. 2;

Figs. 4 and 5 are sectional views taken substantially along the line 4-4 of Fig. 2 and showing, respectively, the locked and unlocked positions of said harp parts;

Fig. 6 is a view similar to Fig. 2 of a lamp harp embodying a modified form of my invention;

Figs. 7 and 8 are sectional views taken substantially along the lines 7-7 and 8-8 respectively of Fig. 6;

Fig. 9 is a view substantially similar to Fig. 1 of another modified form of my invention;

Fig. 10 is a sectional view taken substantially along the line 10-10 of Fig. 9;

Fig. 11 is a sectional view taken substantially along the line 11-11 of Fig. 10;

Fig. 12 is a view substantially similar to Fig. 10 but showing the harp frame twisted preparatory to disengagement from the bracket; and

Fig. 13 is a sectional view taken substantially along the line 13-13 of Fig. 12.

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In general I carry out my invention by having the harp frame ends torsionally resilient and slidably and rotatably received in the elongated spaced sockets of the bracket. At least one of these ends is provided with a protuberance. The associated socket has an elongated opening in a side wall thereof running longitudinally of the socket, through which opening the protuberance can be slid. The socket also includes a projection or tooth preferably formed in one piece with the socket and extending part way across the elongated opening from side to side thereof, thus providing what in effect constitutes an offset portion beneath the projection where the protuberance is located when the two parts of the harp frame are coupled. With such a construction the frame end having the protuberance must be rotated in the socket in order to clear the tooth. However, since the two sockets are spaced, the desired rotation of said end can only be accomplished by twisting the entire harp frame about the axis of symmetry of the electric light bulb and at the same time pulling the harp frame away from the bracket along such axis. Since it is highly improbable that the lamp harp would ever be subjected to such combination of forces by accident, there is little danger that the harp will come apart accidentally.

Referring now in detail to the drawings, and more particularly to Figs. 1-5, I have there shown a lamp fixture 10 of conventional construction, comprising a suitable ornamental support 12 having an opening at its upper end in which there is received a nipple 14. The top of the nipple is screwed into a tapped collar 16 in the bottom part 18 of a lamp socket 20. The power supply to an electric light bulb 22 in the socket 20 is furnished by an electric cable 24 running through the nipple 14.

Firmly secured to the lamp fixture 10 is a take-apart lamp harp 26 whose construction is the subject of this invention. Said harp includes a frame 28 and a bracket 30.

The construction of the bracket is largely conventional, the same comprising a flat annular portion 32 received on the nipple 14 and clamped between the collar 16 and a lock nut 34 resting on the support 12. The bracket thus is firmly secured to the fixture. The bracket also includes two upstanding elongated tubular sockets 36, 38 integrally connected to the annular portion 32 by angularly extending arms 40.

Pursuant to my invention each socket has an elongated opening 42 in its side walls running longitudinally of the socket and extending down-

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wardly from the upper edge of rim thereof. This opening is designed to permit the passage there through of a protuberance 44 on an end 46 of the frame 26 at such time as said frame end is itself slidably received in the socket. One side wall 48 of the elongated opening is straight, but the other wall has a tooth or projection 50 integrally extending therefrom part way across the opening to provide an offset portion 52 in which the protuberance 44 is received when the frame and bracket are coupled. The upper end of said offset portion is defined by the lower edge 54 of the tooth 50, this edge serving to provide an abutment or shoulder which prevents accidental retraction of the frame from the bracket. The upper edge 56 of the tooth 50 is flared outwardly to form a camming surface which serves to guide the protuberance into the opening.

The harp frame 28 comprises a piece of metal wire or like resilient material bent into the shape of a bail, as shown in Fig. 1, so as to include a flat top portion 58, outwardly bowed segments 60, and straight ends 46. Except for the protuberances 44 on its ends, the frame is of a conventional construction and has on its top portion a swivel fixture 62, or other suitable means, to receive a finial 64 by means of which a shade 66 is held in place.

The protuberances 44 may be raised in any suitable manner as, for example, by swedging, and each protuberance is located in such position on a frame end 46 that when the two ends are aligned with the sockets 36, 38 said protuberance will be slightly out of line with that portion 53 of the opening which lies between the straight side wall 48 and the tip of the tooth 50. Moreover, at such time the protuberance will be on the same side of the opening as the offset portion 52, although, of course, on the upper rather than lower side of the tooth 50.

By way of illustration, it may be mentioned that I obtain highly satisfactory results where the tooth 50 is about one thirty-second of an inch high so that the offset portion is one thirty-second of an inch deep.

To detachably couple the frame 28 and the bracket 30, the frame ends 46 simply are aligned with and then thrust into the sockets 36, 38. As a protuberance 44 moves down it engages and rides on the camming portion 56 of the opening causing the end 46 to be torsionally flexed. The protuberance then traverses the portion 53 of the openings over the tip of the tooth 50 with the frame end at such time under a torsional stress, which causes said protuberance to bear against the tip of the tooth. When the protuberance reaches the lower edge 54 of the tooth, it will spring into the offset portion 52 securely locking the frame in the bracket.

Means also is provided to limit the depth of insertion of the frame ends. In the form of the invention now being described, such means comprises a shoulder 68 closing off the lower end of the opening 42 and against which shoulder or closure the protuberance 44 will abut after clearing a tooth.

To uncouple the frame and bracket, the frame is twisted about a line parallel to and between the two sockets 36, 38. This will cause the ends 46 to be torsionally flexed and shift the protuberance 44 out from beneath the lower edges 54 of the teeth. The protuberances then can be slid out to the upper ends of the openings. The direction of the twisting during uncoupling should be such as to cause the protuberances to

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rotate out from beneath said lower edges whereby to clear the teeth 50.

In the embodiment of the invention just described with reference to Figs. 1-5, I have shown a protuberance 44 on the outer side of each of the ends 46. With such arrangement, it will be appreciated that, when the frame is twisted, although both ends are rotated in the same angular direction, the protuberances will actually move in opposite directions and, for this reason the teeth 50 extend in opposite directions across the openings in the two sockets. This is clearly shown by a comparative examination of Figs. 4 and 5. In Fig. 4 the positions of the protuberances and teeth are shown when the same are in interlocked relationship. The arrows A indicate the direction of torsional flexure for the frame ends when the frame is twisted in the direction indicated by the arrow B. In Fig. 5 I have shown the positions of the same elements when the frame has been twisted far enough in the direction of the arrow B for the protuberances to clear the teeth. It should be observed that the teeth and the degree of torsional flexure of the ends 46 are exaggerated in Figs. 4 and 5 to better illustrate the way in which a lamp harp embodying my invention is manipulated.

The protuberances and elongated openings also may be disposed on the inside of the harp frame, as shown in Figs. 6 through 8, wherein all the harp parts are otherwise like the parts in Figs. 1-5, and are denoted by the same numerals primed.

It also will be appreciated that if desired one of the protuberances 44 and its associated elongated opening 42 may be located on the outer side of the harp and the other of the protuberances 44' and its associated elongated opening 42' may be disposed on the inner side of the harp.

In Figs. 9-13 I have shown a lamp harp embodying another modified form of my invention. This harp is much like the harp shown in Figs. 6-8 and all similar parts are denoted by the same numerals double primed.

The harp 26'' has a frame 28'' identical with the frame 28'. However, the bracket 30'' differs slightly from the bracket 30'. Basically this difference resides in the provision of a much narrower tooth 50''. It will be noted that the tooth 50'' (see Fig. 7) is quite wide at both its tip and base, and as a matter of fact extends all the way from the offset portion 52' to the upper edge of the socket. However, the teeth 50'' terminate a substantial distance short of the upper edges of the sockets so that, when the two parts of the harp 26'' are put together, the frame ends are not torsionally flexed until they have descended a substantial distance into the sockets.

The sockets 35'', 38'' also have much wider elongated openings than the openings 42'. Indeed, said sockets are of a substantially U-shaped cross-section above and below the teeth 50'', whereas the sockets 36', 38' are of substantially circular cross-section with not much more than a quadrant cut away to provide the openings 42'.

It will also be noted that the elongated openings 42'' have no closure or bottom shoulder to limit the downward travel of the harp ends, a different means for this purpose being provided in the harp 26''. Such means comprises the angularly extending bracket arms 40'' against which the lower ends of the harp frame abut as soon as the protuberances 44'' have cleared the teeth 50''.

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It should be noted that coupling of the frame 28" and bracket 30" may be facilitated by so fashioning the frame that its ends when uncoupled are spread apart further than the sockets, thus causing said ends to maintain themselves in the sockets during coupling before the protuberances have reached the teeth.

It will thus be seen that I have provided lamp harps which achieve the several 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 possible changes might be made in the embodiments 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.

This application is a continuation in part of my application Serial No. 610,237, filed August 11, 1945, now abandoned.

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

1. A take apart lamp harp comprising a bracket having two spaced elongated socket members, a harp frame having two torsionally resilient end members each associated with and adapted to be slidably and rotatably received in one of said socket members, and means to detachably secure said frame to said bracket, said means including a protuberance on at least one of said members and a longitudinal opening extending from an edge of the member associated therewith, said opening having a tooth extending from one edge thereof part way across toward the outer edge and being spaced from said other edge a distance sufficient to pass said protuberance, said protuberance being slightly out of line with the portion of the opening between the tip of the tooth and the opposite edge of the opening when said end members are aligned with said socket members, said protuberance at such time being disposed on the same side of the opening as the base of the tooth, whereby said harp frame can be coupled or uncoupled by torsionally twisting the harp frame about an axis between the two end members so as to torsionally flex the end members in their associated sockets to an extent sufficient to enable the protuberance to clear the tip of the tooth.

2. A take-apart lamp harp as set forth in claim 1, wherein means is provided to limit the movement of the end members into the socket members.

3. A take-apart lamp harp as set forth in claim 1, wherein means is provided to torsionally flex the end members with which the protuberance is associated as the end members are thrust into the socket members, in a direction and to an extent sufficient to cause the protuberance to clear the tip of the tooth.

4. A take-apart lamp harp as set forth in claim 1, wherein each set of associated members has a protuberance, a longitudinal opening and a tooth, both protuberances being on the outside of the lamp harp, and the teeth extending in opposite directions across the elongated openings.

5. A take-apart lamp harp as set forth in claim 1, wherein each set of associated members has a protuberance, a longitudinal opening and a tooth, both protuberances being on the inside of the harp frame, and the teeth extending in opposite directions across the elongated openings.

6. A take-apart lamp harp as set forth in claim 1, wherein the tooth extends across the opening

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in the same direction that the end member is rotated when the harp frame is torsionally twisted for uncoupling.

7. A take-apart lamp harp as set forth in claim 1, wherein each set of associated members has a protuberance, a longitudinal opening and a tooth, and wherein the teeth extend across the openings in the same directions that the end members are rotated when the harp frame is torsionally twisted for uncoupling.

8. A take-apart lamp harp comprising a bracket having two spaced elongated sockets, a harp frame having two torsionally resilient ends each associated with and adapted to be slidably and rotatably received in one of said sockets, and means to detachably secure said frame to said bracket, said means including a protuberance on at least one of said ends and a longitudinal opening extending from the upper edge of the socket associated therewith, said opening having a tooth extending from one edge thereof part way across toward the other edge and being spaced from said other edge a distance sufficient to pass said protuberance, said protuberance being slightly out of line with the portion of the opening between the tip of the tooth and the opposite edge of the opening when said ends are aligned with said sockets, said protuberance at such time being disposed on the same side of the opening at the base of the tooth, whereby said harp frame can be coupled or uncoupled by torsionally twisting the harp frame about an axis between the two ends so as to torsionally flex the ends in their associated sockets to an extent sufficient to enable the protuberance to clear the tip of the tooth when said ends are aligned with said sockets.

9. A take-apart lamp harp as set forth in claim 8, wherein means is provided to limit the insertion of said frame ends into said sockets after said protuberance passes said tooth.

10. A take-apart lamp harp as set forth in claim 8, wherein the upper edge of the tooth is sloped to engage the protuberance as the frame and bracket are coupled, whereby to torsionally flex the end member having the protuberance in a direction to cause said protuberance to clear said tooth.

11. A take-apart lamp harp comprising a bracket having two spaced elongated sockets, each of said sockets being a U-shaped cross-section with the open sides thereof defining a longitudinal opening extending toward the center of the lamp harp, a harp frame having two torsionally resilient end members each associated with and adapted to be slidably received in one of said sockets, and means to detachably secure said frame to said bracket, said means including a protuberance on the inner side of each of said frame ends and a tooth extending from an edge of each of said longitudinal openings part way across to the opposite edge of said opening and being spaced from said other edge a distance sufficient to pass said protuberance, said protuberance being slightly out of line with the portion of the opening between the tip of the tooth and the opposite edge of the opening when said ends are aligned with said sockets, said protuberance at such time being disposed on the same side of the opening as the base of the tooth, whereby said harp frame can be coupled or uncoupled by torsionally twisting the harp frame about an axis between the two ends so as to torsionally flex the end members in their associated sockets to an extent sufficient to enable

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the protuberances to clear the tips of the teeth, the upper edges of the teeth being sloped to cam the protuberance and torsionally flex the frame ends, during insertion of the ends into the sockets, a distance sufficient to enable the protuberances to clear the teeth.

12. A take-apart lamp harp as set forth in claim 11, wherein the upper edges of the teeth are spaced below the upper edges of the sockets.

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