Feb. 15, 1955 A. I. APPLETON 2,701,908

BAR HANGER INSTALLATION JIG

Filed Nov. 24, 1950

Fig. 1

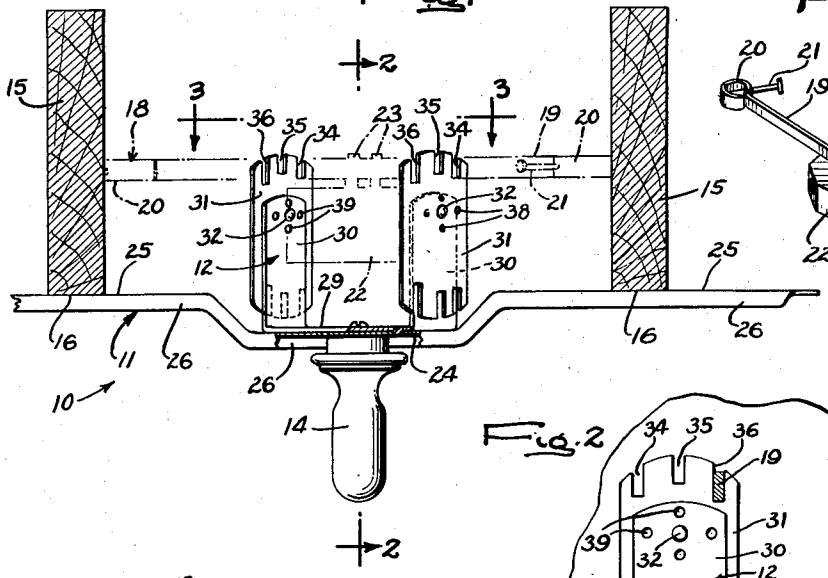


Fig. 1A

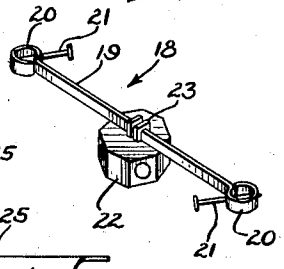


Fig. 2

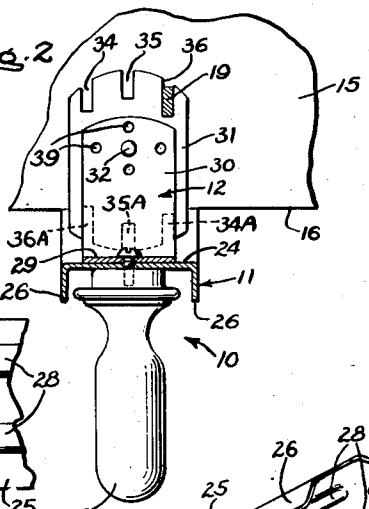


Fig. 3

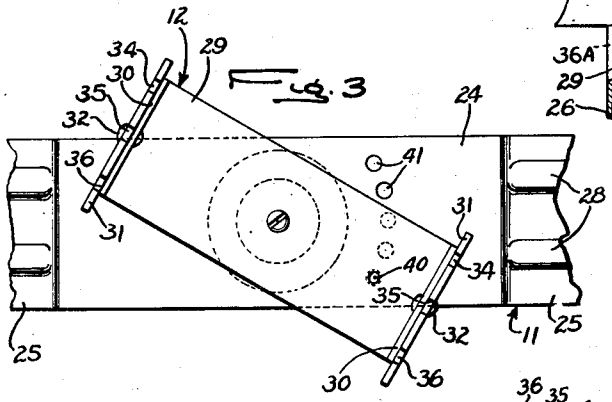
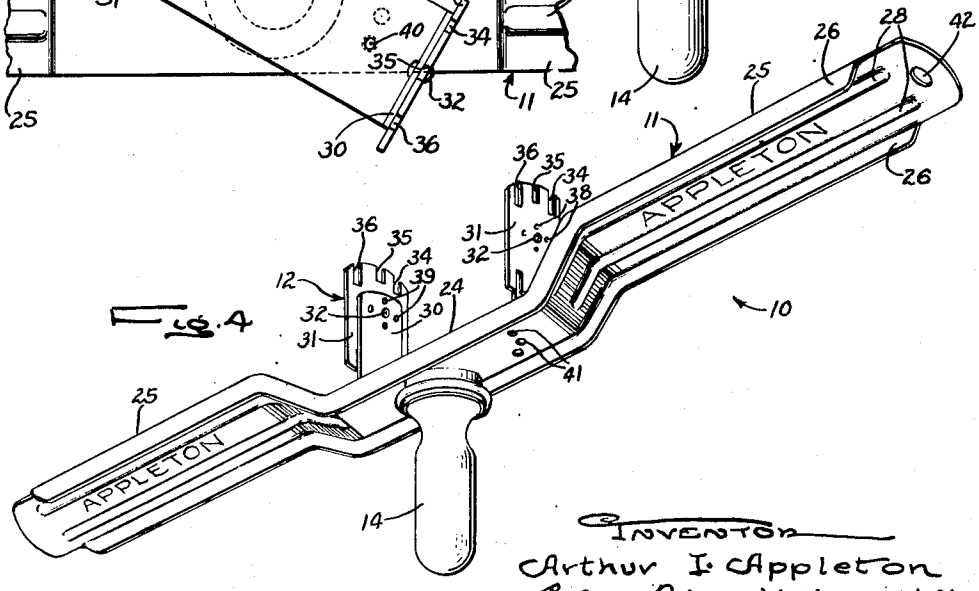


Fig. 4



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BAR HANGER INSTALLATION JIG

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Application November 24, 1950, Serial No. 197,293

4 Claims. (Cl. 29—284)

The present invention relates generally to the field of jigs and fixtures for installing electrical equipment in buildings and other structures but more specifically to a novel jig or fixture for facilitating the installation of a bar hanger assembly between an adjacent pair of laterally spaced floor joists or other appropriate supports. The invention finds particular, but by no means exclusive, utility when used in the installation of bar hanger assemblies of the type disclosed and claimed in my copending application, Serial No. 197,292, filed November 24, 1950.

Certain bar hanger assemblies are adapted for mounting between the opposed side faces of a pair of spaced apart, adjacent floor joists or other suitable supports. Others are adapted for attachment to the bottom edges of the joists and usually require that such edges be notched out to make the underlying portions of the bar hanger flush with the bottom edges of the joists. It is with the installation of bar hanger assemblies of the kind first mentioned, rather than the latter kind, that the present invention is primarily concerned.

One object of the invention is to provide an installation jig for use in mounting a bar hanger assembly and which will permit the installer to support such assembly with one hand and at the same time precisely position the assembly relative to the bottom edges of the joists as an incident to such support.

Another object is to provide a jig of the character set forth and which will be susceptible of positioning or gauging a bar hanger assembly selectively at various predetermined distances relative to the plane of the lower edges of the joists.

A further object is to provide a bar hanger installation jig of the type set forth which can be readily adapted for use with various joist spacings.

Still another object is to provide a bar hanger installation jig which will be exceptionally light in weight yet sufficiently rugged to withstand rough usage.

Other objects and advantages will become apparent as the following description proceeds, taken in connection with the accompanying drawing, wherein:

Figure 1 is an elevation of an illustrative bar hanger installation jig embodying the present invention, such jig being illustrated in operative position against the lower edges of a pair of spaced apart floor joists.

Fig. 1A is a perspective view of a type of bar hanger assembly for use with which the illustrative jig is particularly well suited.

Fig. 2 is an enlarged vertical sectional view taken in the plane of the line 2—2 in Fig. 1 but with the cradle portion of the jig in alinement with its bridge portion.

Fig. 3 is an enlarged fragmentary plan view of the central portion of the jig shown in Fig. 1, as viewed from the plane designated 3—3.

Fig. 4 is a perspective view of the illustrative jig per se.

While the invention is susceptible of various modifications and alternative constructions, a preferred embodiment has been shown in the drawing and will be described below in considerable detail. It should be understood, however, that there is no intention to limit the invention to the specific form disclosed, but on the contrary, the intention is to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

Referring more specifically to the drawing, the invention is there shown embodied in an illustrative jig or fixture **10** comprising a bridge **11**, a cradle **12** and a handle **14**. In Fig. 1, the jig **10** is illustrated in operative position wherein the bridge **11** spans a pair of laterally spaced, adjacent floor joists **15**, being disposed in abutting relation with their bottom edges **16**. In such position, the jig **10** is adapted to support a bar hanger assembly **18**, indicated in dot-dash outline, supporting and positioning the same at a predetermined distance above the plane of the lower edges **16** of the joists.

In the present instance, the bar hanger assembly **18** happens to be similar to the one disclosed and claimed in my copending application, mentioned earlier herein, to which reference may be made for a detailed description of such assembly. For present purposes, it might be noted that the hanger assembly **18** comprises a bar **19** having loop-shaped ends **20** through which nails **21** or other fastening elements are passed for attaching the assembly **18** to the opposed side faces of the joists. At an intermediate point along its length, the bar **19** supports an outlet box **22** or the like which is secured thereto by means of a clamp **23**. The hanger assembly **18** is susceptible of use with a series of different joist spacings and is made of greater overall length than the maximum spacing in such series. Thus by angling the bar hanger assembly **18** to a greater or lesser extent in a horizontal plane, variation in joist spacings can readily be allowed for.

Provision is made in the jig **10** for supporting the bar hanger assembly **18**, including the outlet box **22**, during installation and for precisely gauging the position of such assembly with respect to the plane of the lower edges **16** of the joists as an incident to such support. In furtherance of this objective, the bridge **11** is fashioned with a shallow U-shape, comprising a central offset **24** terminating in a pair of out-turned wings **25** spaced above the plane of the offset (as viewed in Fig. 1) and adapted to abut against the bottom edges **16** of the joists. The bridge **11** is preferably cast or stamped from relatively light metal, being reinforced against bending by means of a pair of longitudinal edge flanges **26** and stiffening ribs **28** running longitudinally of the wing portions **25**. The cradle **12** is mounted on the offset **24** and is also substantially U-shaped, comprising a flat base **29** and a pair of spaced apart, upstanding legs **30**. The latter are adapted to straddle the outlet box **22** and have means at their projecting ends for supporting the hanger assembly **18**, including the outlet box **22**, at a predetermined distance with respect to the plane of the lower edges **16** of the joists.

Means is provided for selectively gauging the position of the assembly **18**, including the outlet box **22**, relative to the plane of the lower edges **16** of the joists to allow for various ceiling thicknesses and also to allow for the use of so-called shallow or deep outlet boxes. This is accomplished in the present instance by mounting on the free or upper ends of the cradle legs **30** a pair of alternatively positionable brackets **31**. Each of the brackets **31** is eccentrically pivoted as at **32** to a corresponding one of the legs **30**, thereby defining a so-called long end or short end in each bracket. In this case, the short end of each of the brackets **31** is provided with a series of slots **34**, **35**, **36** of various depths for receiving the bar **19** of the hanger assembly **18**. In like manner, the long end of each bracket **31** has a similar series of slots **34A**, **35A** and **36A** therein. By the use of a suitable detent means, such as embossments **38** in the brackets and holes **39** in the legs **30**, each of the brackets **31** can be alternatively disposed with either its long end or its short end uppermost. By properly calibrating the slots in either end of each bracket for the various ceiling thicknesses commonly used in building construction, it will be perceived that a hanger assembly with a so-called shallow box can readily be positioned by having the shorter ends of the brackets uppermost and selectively utilizing any alined pair of the slots **34**, **35**, **36** to receive the bar **19**. On the other hand, a bar hanger assembly having a so-called deep box can be positioned by having the longer ends of the brackets uppermost and utilizing any alined pair of the slots **34A**, **35A** or **36A** to receive the bar **19**.

For the purpose of keeping the bridge **11** well clear of the path of the hammer used for installing the bar hanger assembly **18**, and thereby effecting ready accommodation of the jig **10** to various joist spacings, provision is made

for adjustably securing the cradle **12** in various angular positions about a substantially upright axis. This is accomplished in the present instance by securing the base **29** of the cradle to the offset **24** through the use of appropriate screw means interposed between the base **29** and the handle **14**, such means passing through the offset **24**. An ordinary screw, having its head rigidly secured to the cradle base **29** as by means of soldering or brazing, meets this purpose quite satisfactorily. Accordingly, when it is desired to shift the cradle **12** from a position of alinement with the bridge **11** to an angular position such as that indicated in Fig. 3, it is only necessary to loosen the handle **14** slightly, move the cradle to the desired angular position, and then tighten the handle **14** by hand. In some instances, it is desirable to define various angular positions for the cradle by the use of a detent means. The latter in this case merely comprises an embossment **40** in the cradle base projecting toward the offset **24**, together with a series of circumferentially spaced holes **41** in the offset **24**, the latter being located on an arc having its center at the pivotal axis of the cradle **12**.

In order to permit the jig **10** to be hung up when not in use and also to facilitate handling during manufacture of the jig, the bridge **11** may be provided at one end with a circular hole **42** (see Fig. 4).

Upon reflection, it will be apparent that there has been provided a novel and advantageous bar hanger installation jig which adequately fulfills the objectives set forth earlier herein and greatly facilitates low cost installation of such equipment on a mass productive basis.

I claim as my invention:

1. An installation jig for mounting a bar hanger assembly including a bar and outlet box between a pair of laterally spaced and generally upright supports such as floor joists, said jig comprising, in combination, a bridge having outwardly extending wings disposable in abutting relation with the lower edges of the joists, a central offset in said bridge spaced from the plane of said wings in a direction remote from their joist abutting surfaces, a cradle mounted on said central offset and having a base terminating in a pair of laterally spaced upstanding legs adapted to straddle the outlet box, means interposed between said offset and said cradle base for defining various angular positions of the same relative to said offset, each of said legs extending toward said joist abutting surfaces and projecting substantially beyond the same, each said leg also being slotted for selectively supporting and gauging the position of the bar hanger assembly and outlet box relative to the plane of the lower edges of the joists.

2. An installation jig for mounting a bar hanger assembly between a pair of laterally spaced floor joists or the like, said jig comprising the combination of a bridge having out-turned wings disposable in abutting relation with the lower edges of the pair of joists, a central offset in said bridge spaced from the plane of said wings, a cradle mounted on said central offset and having a pair of laterally spaced upstanding legs adapted to project beyond the plane of said wings and between the joists, said legs terminating in means for selectively positioning the bar hanger assembly at various predetermined distances from the plane of the lower edges of the joists.

3. A jig for use in installing a bar hanger assembly between a pair of laterally spaced adjacent floor joists or the like, said jig comprising, in combination, a bridge having wings disposable into abutting relation with the lower edges of the joists, a handle depending below said bridge, an upstanding cradle mounted on said bridge and projecting substantially beyond said wings, means on said cradle for selectively supporting and gauging the position of the bar hanger assembly with respect to the lower edges of the joists, and means for selectively locating said cradle in various angular positions relative to said bridge.

4. A jig for mounting a bar hanger assembly between a pair of laterally spaced floor joists or the like, said jig comprising the combination of a bridge having coplanar faces disposable into abutting relation with the lower edges of the joists, a cradle mounted on said bridge and having laterally spaced upstanding legs projecting beyond said bridge faces, and alternatively positionable brackets adjustably fixed to said legs at their end portions, each said bracket having means for selectively supporting and positioning the bar hanger assembly at various predetermined distances from the plane of said coplanar faces and hence from the lower edges of the joists.

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