Aug. 30, 1938. E. E. HILLS 2,128,415

CONVERTIBLE BED STRUCTURE FOR TRAILERS

Filed Nov. 9, 1937

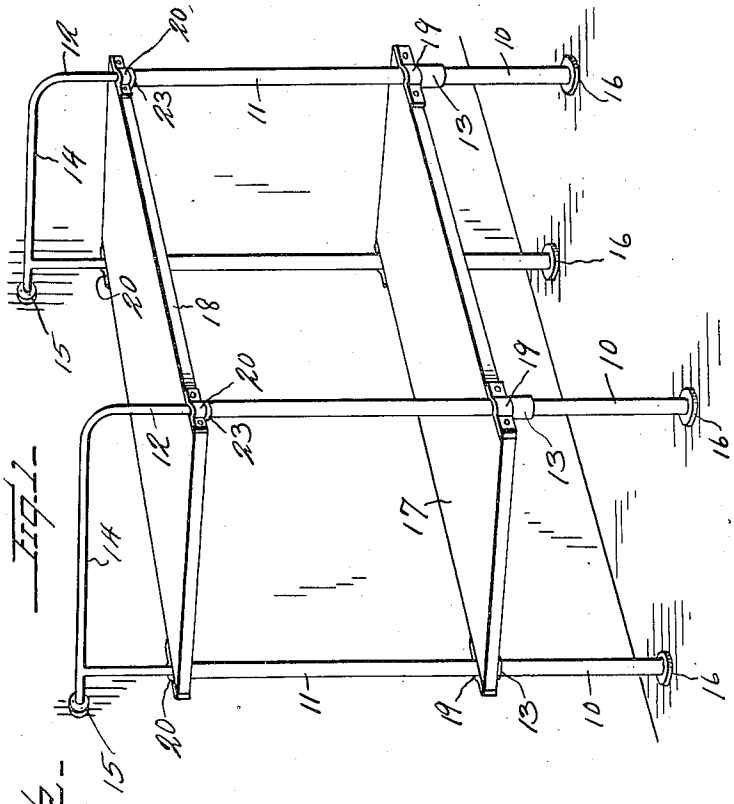


Fig. 1.

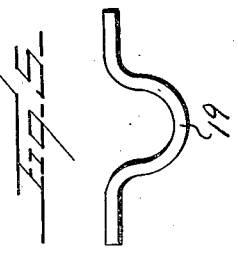


Fig. 4.

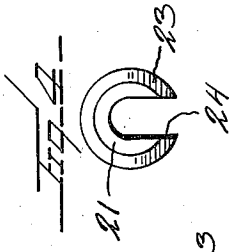


Fig. 3.

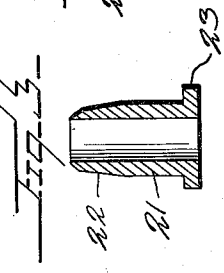


Fig. 4.

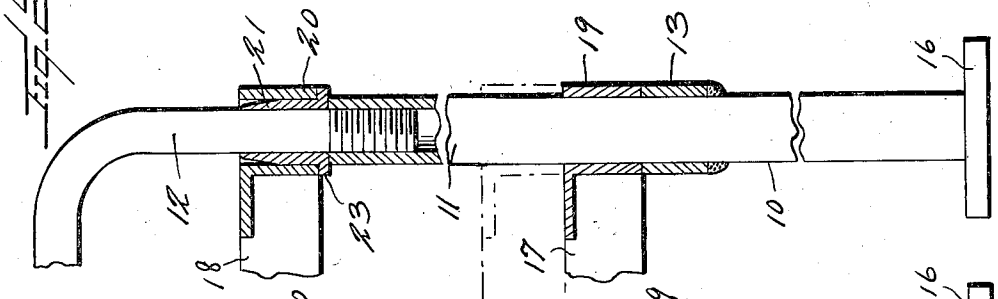


Fig. 2.

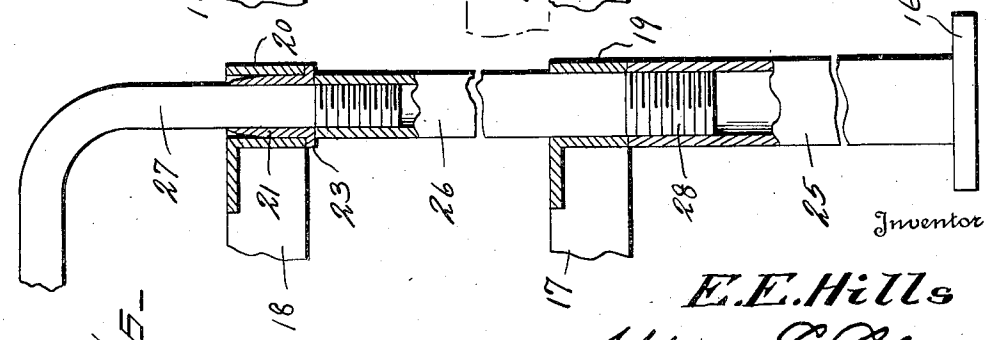


Fig. 5.

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2,128,415

CONVERTIBLE BED STRUCTURE FOR TRAILERS

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Application November 9, 1937, Serial No. 173,678

3 Claims. (Cl. 5—9)

This invention relates to automobile trailers or the like structures and particularly to certain improvements which I have made in the means for supporting beds within the trailer, which means is disclosed and claimed in my prior application for patent, Ser. No. 57,594, filed on January 4, 1936, and upon which Patent No. 2,098,825 was granted. In this prior patent I showed a bed supporting structure including supports which were made in three tubular sections, the sections successively decreasing in diameter from the bottom to the top and each section being screw-threaded into the section below, the upper end of the section below being of larger diameter than the next succeeding section constituting a shoulder. The bed frames in this prior application were shown as having eyes or equivalent members embracing these sections. The eyes of the uppermost bed frame fitted the uppermost supporting sections while the eyes of the lower bed frame had an internal diameter equal to the diameter of the intermediate sections, thus both bed frames could be raised to the roof of the trailer and when these sections were lowered, the eyes of the lower bed frame would rest upon the upper section of each support while the eyes of the upper bed frame would rest upon the upper end of the intermediate section of the support.

The object of the present invention is to improve upon the construction illustrated in this prior application by the provision of means whereby an upper bed frame may be, if desired, lowered onto the lower bed frame so that during the day, this upper bed frame, when lowered onto the lower bed frame, might constitute a sofa or seat and do away with the unsightliness of an upper bed frame being supported adjacent the roof of the trailer.

A further object in this connection is to provide slotted collars adapted to be disposed within the eyes of the upper bed frame which, when in place, will act as reducers and which will cause the upper bed frame to be supported upon the intermediate sections of the supporting posts.

A still further object is to improve upon the supporting members and provide means whereby the upper ends of these supporting members may be connected to the side wall of the trailer.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawing wherein:

Fig. 1 is a perspective view diagrammatic in character, showing my improved bed structure.

Fig. 2 is a vertical elevation of one of the standards, the bed frames being shown in section and the standard being partly broken away.

Fig. 3 is a sectional view of the bushing.

Fig. 4 is a top plan view thereof.

Fig. 5 is a top plan view of one of the clips or eyes.

Fig. 6 is a like view to Fig. 2, showing a modified form of standard.

Referring to the drawing, it will be seen that I have illustrated in Figs. 1 to 5, four posts or standards, one for each corner of the bed frames, these standards each consisting of a lower portion or section 10, a successive tubular section or portion 11, and an upper portion or section 12, which in turn has an exterior diameter equal to the interior diameter of the section or portion 11. Preferably the section 12 at the front of the bed structure is angularly bent toward the wall A of the trailer, as at 14, and integrally or otherwise engaged with the upper section 12 of the corresponding rear post or outer post. Then the portion 14 is extended horizontally beyond the adjacent section 12, and is provided with a plate 15 whereby it may be attached to the wall of the trailer. It is to be understood that the lower end of each lower section or portion 10 is provided with a base 16 whereby it may be attached to the floor.

The lower bed frame is designated 17 and the upper bed frame 18. These frames may be of any suitable construction and are provided with the usual springs, not shown, for the support of suitable mattresses, not shown. Each frame at its ends is formed with a clip or eye, which is approximately U-shaped in cross-section and is riveted, bolted or otherwise attached to the corresponding bed frame. The eyes for the lower frame 17 are designated 19 while the eyes for the upper bed frame are designated 20.

The eyes 19 for the lower bed frame 17 have an internal diameter such that these eyes or clips 19 will fit loosely around the middle section or portion 11, but will rest upon a collar 13 sweated or brazed or otherwise attached to the upper end of the lower section 10, as clearly shown in Fig. 2. The eyes 20 of the bed frame 18 have an internal diameter such that they are slightly larger than the diameter of the intermediate sections 11 and, of course, are larger in diameter than the external diameter of the sections or portions 12. Inasmuch as the eyes 20 are larger in diameter than the sections or portions 11 of the post, it is obvious that the bed frame 18 may be low-

ered upon the sections or portions 11 until the bed frame 18 rests upon the bed frame 17.

For the purpose of holding the bed frames 18 in a raised position at night, or whenever it is desired to utilize the upper bed frame separate from the lower bed frame, I provide the split or slotted bushings or clips 21. Each of these clips is cylindrical exteriorly and beveled at its upper end, as at 22, while the lower end of each clip is formed with the outwardly extending flange 23. Each clip is radially slotted, as at 24, this slot being wide enough to permit the clip to be slipped over the upper section 12. The flange 23, however, of this clip has an exterior diameter greater than the exterior diameter of the section or portion 11 of the corresponding standard. Therefore, it will be seen that when the bushings or clips 21 are in place within the eyes 20, the bed frame 18 cannot be lowered, but that it is supported by the flanges 23 of the several clips or bushings which in turn are supported upon the upper ends of the intermediate sections or portions 11.

When it is desired to lower the bed frame 18 into place to rest upon the bed frame 17, the bed frame 18 is raised by any suitable means until it is free from the upper ends of the clips or bushings 21 and then these clips or bushings are pulled out whereupon the bed frame 18 may be lowered upon the intermediate sections 11 until it rests upon the bed frame 17. Vice versa, when it is desired to support the bed frame 18 in its uppermost position, it is lifted to a point above the upper ends of the intermediate sections 11 and the clips or bushings 20 are disposed over the sections 12 and rest upon the upper ends of the sections 11 and then the bed frame 18 is lowered, the beveled upper ends of the bushings 21 guiding the eyes of the bed frame 18 into proper position without difficulty.

I have illustrated the section or portion 10 and the section or portion 11 as having the same size from top to bottom, and the upper portion of this lower section as being provided with a band or collar 13, as previously described, sweated or brazed onto the post or standard to thereby increase the diameter of the lower portion 10 at its upper or bed supporting end. I have illustrated the uppermost section or portion 12, however, as having screw-threaded engagement at 26, with the upper end of the intermediate section or portion 11. The base 16 which will have ordinarily a diameter of approximately 3½" is brazed, welded or otherwise attached to the lower end of each section or portion 10. The attaching plates 15 will also be brazed or welded to the extremities of the sections or portions 14.

It is to be understood that the well A in the drawing may indicate either an end wall of the trailer or a side wall of the trailer.

In Fig. 6, I have illustrated a construction which is similar as regards the standards, to the construction illustrated in my prior application. In this case, the standards are formed in three separate sections 25, 26 and 27. The section 27 is constructed in the same manner as the section 12 but the sections 26 and 25, instead of being formed in one piece, as shown in Fig. 2, are formed as two pieces or sections, the section 26 having a smaller diameter than the section 25 and being screw-threaded to the section 25, as at 28. The clips 19 of the lower bed frame rest upon the upper end of the section 25 in exactly the same manner that they rest in Fig. 2, upon the collar 13 which is welded or otherwise attached to the upper end of the portion 10. It will be seen that the only difference in construction is that in Fig. 6, I form the standard of three pieces whereas in Fig. 2, I form the standard of two pieces but provide the collar 13 as the support for the eye or clip for the lower bed frame.

It will be noted that with either of these constructions, the lower bed frame might be lifted up against the upper bed frame and the upper bed frame lifted up to the upper ends of the standards by the means shown in my prior application. Preferably, however, I will keep the bed frame 17 at all times resting upon its supports and lower the upper bed frame upon the lower bed frame to constitute a seat or couch or settee for use during the day.

While I have illustrated the clips 19 and 20 as being applied to the side edges of the bed frames, it will be understood that they might be applied to the corners of each bed frame or to the ends of the bed frame.

Under ordinary circumstances, the lower bed frame 17 will be supported at approximately 14" from the floor while in use the upper bed frame 18 will be disposed approximately two feet above the lower bed. The whole structure will be approximately four feet in height. A number of these bed supporting structures may be disposed within the trailer as, for instance, one on each side of a middle aisle or only one of these structures need be used disposed against the forward end wall of the trailer.

In using this structure during the day, the mattress of the lower bed frame may be removed temporarily and the upper bed frame with its mattress lowered upon the lower bed frame and then the mattress of the lower bed frame may be stood up against the wall to form a cushioned back for the sofa or couch so formed.

Of course, I do not wish to be limited to any particular width for the bed frames, as these may be made single or double.

While I have described my structure as being particularly adapted for trailers, it is obvious that it may be used on yachts, houseboats or in cottages.

I do not wish to be limited to the details of the construction as these might be varied in many ways without departing from the spirit of the invention as defined in the appended claims.

Thus while I have illustrated the sections 12 and 27 as having screw-threaded engagement with the sections 11 and 26, respectively, it is to be understood that the section 12 or the section 27 may be brazed into the upper end of the section 11 or 26, if desired, the upper section 12 or 27 extending into the section 11 or 26 approximately 3" or any other desired or necessary distance. It is also to be understood that while I have shown the section 26 as being screw-threaded in the upper end of section 25 in Fig. 6, yet the pipe section 26 might be brazed within the upper end of the section 25.

What is claimed is:—

1. In a structure of the character described, a standard having an upper portion and a relatively lower portion, the diameter of the upper portion being less than the diameter of the relatively lower portion to provide a shoulder at the junction of the two portions, an element having an aperture through which the standard passes, the aperture having an internal diameter not less than the external diameter of the relatively lower portion of the standard, and a bushing for the aperture having an internal diameter approximately equal to the external diameter of the

upper portion of the standard and having a flange greater in external diameter than the internal diameter of the aperture, the bushing having a radial slot having a width equal to the external diameter of the upper portion of the standard whereby the bushing may be inserted to engage the shoulder formed at the upper end of the relatively lower portion of the standard and support the element thereon.

2. A convertible bed supporting structure of the character described, including a supporting standard, a lower element, an upper element, the standard having an upper portion, a lower portion and an intermediate portion, the lower portion of the standard at a distance from its lower end having an external diameter larger than the diameter of the intermediate portion and the upper portion of the standard having a diameter less than the external diameter of the intermediate portion, eyes attached to each of the elements and adapted to embrace the standard, each eye having an internal diameter less than the external diameter of the upper end of the lower portions of the standard, and a bushing having an internal diameter equal to the external diameter of the upper portion of the standard but less than the external diameter of the intermediate portion of the standard, the bushing being flanged at its lower end to engage the corresponding eye and having a radial slot equal in width to the diameter of the upper portion of the standard.

3. A bed supporting structure of the character described, including a supporting standard, a lower element and an upper element, the standard above its lower end being formed with a collar, the upper end of the standard being formed by a section having a less diameter than the portion of the standard immediately below, eyes attached to both elements and adapted to embrace said standard, each eye having an internal diameter less than the exterior diameter of the collar but approximately equal to the exterior diameter of the standard above said collar, and a bushing for the eye of the upper element, and having an internal diameter equal to the external diameter of the upper portion of the standard but less than the external diameter of the portion of the standard below the upper section, the bushing being flanged at its lower end and tapered at its upper end, the bushing being adapted to be inserted within the eye of said element with its flange supporting said eye and the bushing having a radial slot equal in width to the diameter of the upper section of the standard.

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