Dec. 2, 1958 H. W. NORRIS 2,862,625

RACK FOR HOLDING FUEL GAS BOTTLES

Filed March 18, 1957

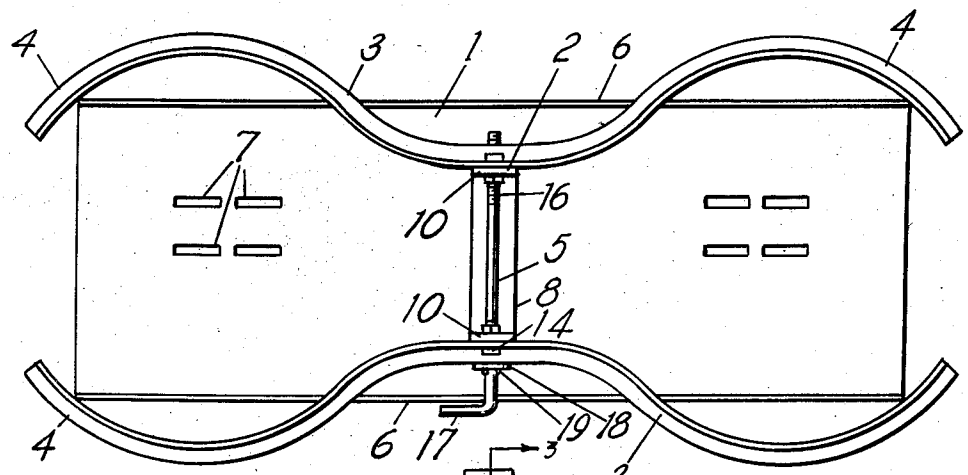


Fig. 1.

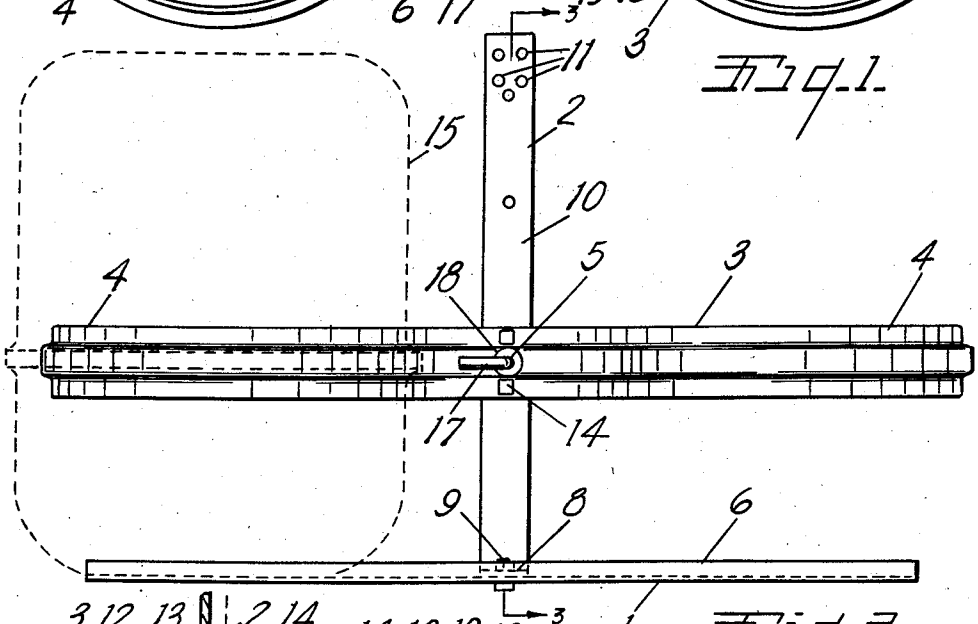


Fig. 2.

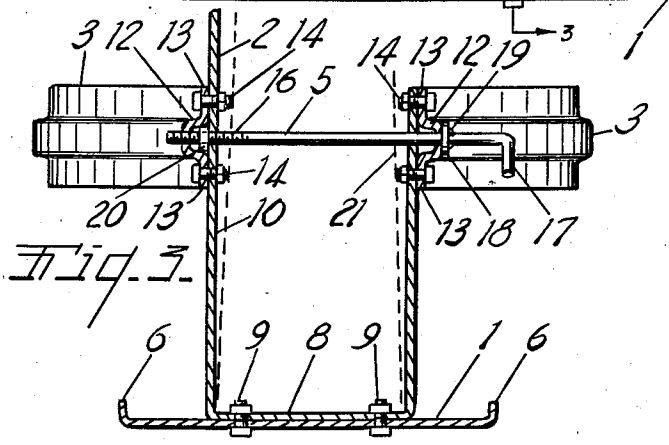


Fig. 3.

INVENTOR.
Harold W. Norris
BY
Otto & Earl
ATTORNEY.

United States Patent Office 2,862,625
Patented Dec. 2, 1958

2,862,625

RACK FOR HOLDING FUEL GAS BOTTLES

Harold W. Norris, Battle Creek, Mich.

Application March 18, 1957, Serial No. 646,789

4 Claims. (Cl. 211—74)

This invention relates to improvements in rack for holding fuel gas bottles. This invention consists of improvements in the gas bottle rack disclosed and claimed in my co-pending application, Serial No. 597,539, filed July 12, 1956.

The principal objects of this invention are:

First, to provide a gas bottle rack that is extremely simple and easily assembled yet which firmly anchors fuel gas bottles on trailer frames.

Second, to provide a gas bottle rack having rigid gripping members that engage the seams of gas bottles to prevent vertical or lateral displacement of the bottles but which can be easily opened to release the bottles when desired.

Third, to provide a gas bottle rack in which the parts can be inexpensively fabricated from stamped or folded metal without requiring welding or the formation of continuous loops.

Other objects and advantages of the invention will be apparent from a consideration of the following description and claims. The drawings, of which there is one sheet, illustrate a highly practical form of the invention.

Fig. 1 is a plan view of the assembled rack.

Fig. 2 is a front elevational view of the rack.

Fig. 3 is a vertical cross sectional view taken along the plane of the line 3—3 in Fig. 2.

The rack consists generally of a base plate **1** adapted to be secured to the tongue or framework of a mobile trailer home and an upwardly opening U-shaped clamp support **2** secured to the middle of the base plate. The upstanding arms of the support carry identical clamp bars **3** having concave jaw portions **4** on each end arranged in opposed relation to grip two metal bottles of fuel gas supported on the rack. A clamp screw **5** extends through the mid-sections of the clamp bars **3** and the upstanding arms of the support **2** to draw the clamp bars together.

More specifically the base plate **1** is a generally flat sheet of metal having upturned stiffening flanges **6** on its edges. Toward each end of the plate there are formed a series of slots **7** adapted to receive mounting bolts so that the base plate can be mounted in a variety of positions on different shapes and sizes of trailer frames. The U-shape clamp support consists of a strap of springable material having its base or cross piece **8** bolted to the base plate by the bolts **9**. The rear arm **10** of the clamp support is higher than the front arm and is pierced at the top with a plurality of holes **11** permitting different makes and types of gas pressure regulators to be mounted on the support.

The clamp bars **3** as appears most clearly in Fig. 3 are sheet metal stampings having opposed U-shaped cross section as at **12** with outwardly turned upper and lower flanges **13**. The U-shaped and flanged cross section is continued along the concavely curved end portions **4** of the bars. The upstanding arms of the support member **2** are pierced to receive bolts **14** clamping the clamp bars **3** to the outer sides of the support arms. As appears in

Fig. 2 the clamp bars are positioned in raised position above the base plate **1** so that the concave U-shaped cross section of the clamp bars partially surrounds the flange or bead commonly found on fuel gas bottles when a bottle is supported on the base plate as indicated by the dotted lines **15**. The clamp screw **5** extends through aligned holes provided therefor in the arms of the U-shaped support **2** and the clamp bars **3**. The rear end of the screw is threaded as at **16** and its forward end is turned laterally in an integral handle **17**. A thrust collar or washer **18** is positioned around the clamp screw on the front side of the front clamp bar and supported by one or more projections **19** swaged or struck from the shank of the screw. The rear end of the screw is threadedly engaged with a nut **20** positioned within the U-shaped cross section of the rear clamp bar and behind the rear arm **10** of the clamp support. It is pointed out that the nut **20** is a square nut having a larger diameter than the interior cross section of the clamp bar so that the U-section of the clamp bar functions as a holding member to prevent rotation of the nut when the screw **5** is rotated.

The springable character of the support member **2** permits the arms thereof to be drawn together as indicated by the dotted lines at **21** to draw the clamp bars into tight clamping engagement with gas bottles supported on the base plate **1**. The springable arms function to open the clamp bars when the screw **5** is released to permit easy removal and exchange of the gas bottles. The entire rack thus consists of five basic parts of which the clamp bars consist of two identical stampings and the clamp support and base plate are easily formed of stamped or folded metal. The connecting screws, bolts and nuts are easily assembled and the clamping screw and its thrust washer are inexpensively formed and assembled into the structure. The entire rack is collapsible for compact and economical shipment but functions when assembled to firmly and positively anchor gas bottle racks on a trailer frame.

Having thus described the invention, what is claimed as new and is desired to be secured by Letters Patent is:

1. A gas bottle holding rack comprising a flat base plate adapted to be clamped to a support and having stiffening flanges along its front and rear edges, a support member consisting of an upwardly opening U-shaped strap of springable metal bolted to the center of said base plate with a rear arm projecting above its front arm, front and rear clamp bars bolted to the front side of said front arm and the back side of said back arm respectively and projecting laterally to each side of said support member, said clamp bars having transverse cross sections of opposed U-shape with vertically turned flanges on each edge, the connecting bolts between clamp bars and the arms passing through the flanges on the clamp bars, said clamp bars being longitudinally curved to provide opposed concave bottle gripping arms on each side of said support member, a clamp screw rotatably mounted on and extending through said clamp bars and the adjacent portions of the arms of said support member, said clamp screw being threaded on its rear end and having a handle turned laterally from its front end, a thrust member mounted on said clamp screw forwardly of the front clamp bar and engageable therewith, and a nut freely located within the U-shaped section of the rear clamp bar and behind the rear arm of said support member and threadedly engaged with the threaded rear end of said clamp screw, said nut having a larger diagonal dimension than the width of the U-section of said clamp bar whereby the U-shaped wall of the rear clamp bar functions as a non-rotational stop for the nut, said clamp bars being supported above said base plate a distance equal to the height of the medial flanges on gas bottles

from the ends thereof whereby the flanges are received in the U-section of the clamp bars.

2. A gas bottle holding rack comprising a flat base plate adapted to be clamped to a support, a support member consisting of an upwardly opening U-shaped strap of springable metal bolted to the central portion of said base plate, front and rear clamp bars bolted to the front side of said front arm and the back side of said back arm respectively and projecting laterally to each side of said support member, said clamp bars having transverse cross sections of opposed U-shape with vertically turned flanges on each edge, the connecting bolts between clamp bars and the arms passing through the flanges on the clamp bars, said clamp bars being longitudinally curved to provide opposed concave bottle gripping arms on each side of said support member, a clamp screw rotatably mounted on and extending through said clamp bars and the adjacent portions of the arms of said support member, said clamp screw being threaded and having a handle on its front end, a thrust member mounted on said clamp screw and engageable with one of said clamp bars, and a nut freely located within the U-shaped section of the other clamp bar and behind the adjacent arm of said support member and threadedly engaged with the thread of said clamp screw, said nut having a larger diagonal dimension than the width of the U-section of said clamp bar whereby the U-shaped wall of the clamp bar functions as a non-rotational stop for the nut.

3. A gas bottle holding rack comprising a flat base adapted to be clamped to a support, a support member consisting of an upwardly opening U-shaped strap of springable material secured to the mid-section of said base and having front and rear arms, front and rear clamp bars secured to the front side of said front arm and the back side of said back arm respectively and projecting laterally to each side of said support member, said clamp bars having concavely opposed bottle gripping portions on each side of said support member, said clamp bars having transverse cross sections of opposed U-shape, a clamp screw rotatably mounted on and extending through said clamp bars and the adjacent portions of the arms of said support member, said clamp screw being threaded and having a handle on its front end, means forming a thrust engagement between said clamp screw and one of said clamp bars, and a nut freely located within the U-shaped section of the other clamp bar and threadedly engaged with the thread of said clamp screw, said nut having a larger diagonal dimension than the width of the U-section of said clamp bars whereby the U-shaped wall of said other clamp bar functions as a non-rotational stop for the nut, said clamp bars being supported far enough above said base to receive the medial flanges of gas bottles supported on the base within the U-section of the clamp bars.

4. A gas bottle holding rack comprising a flat base adapted to be clamped to a support, a support member consisting of an upwardly opening U-shaped strap of springable material secured to the mid-section of said base and having front and rear arms, front and rear clamp bars secured to said front arm and said back arm respectively and projecting laterally to each side of said support member, said clamp bars having concavely opposed bottle gripping portions on each side of said support member, said clamp bars having transverse cross sections of opposed U-shape, a clamp screw rotatably mounted on and extending through said clamp bars and the adjacent portions of the arms of said support member, said clamp screw being threaded and having a handle on its front end, means forming a thrust engagement between said clamp screw and one of said clamp bars, and a nut freely located within the U-shaped section of the other clamp bar and threadedly engaged with the thread of said clamp screw, said nut having a larger diagonal dimension than the width of the U-section of said clamp bars whereby the U-shaped wall of said other clamp bar functions as a non-rotational stop for the nut, said clamp bars being supported far enough above said base to receive the medial flanges of gas bottles supported on the based within the U-section of the clamp bars.

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