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J. T. STURGISS ET AL.

2,258,822

RIVETING CLAMP

Filed Nov. 28, 1939

Fig. 1.

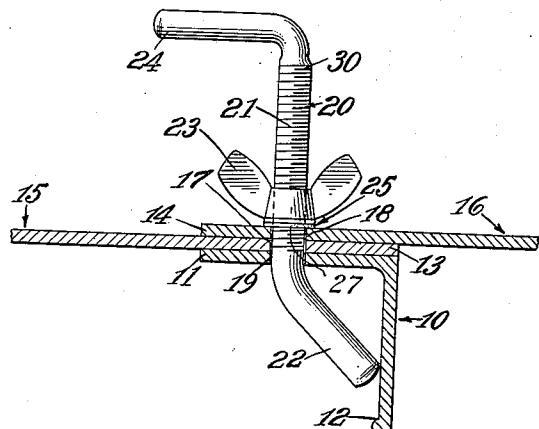


Fig. 2.

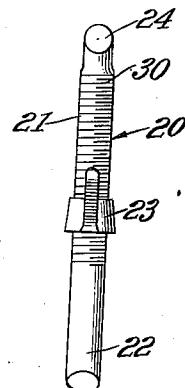


Fig. 3.

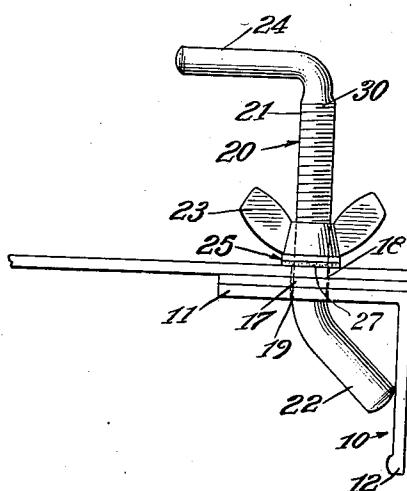
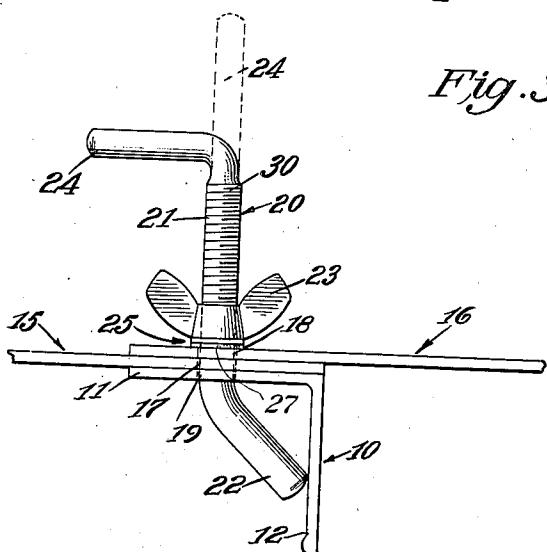
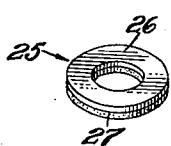


Fig. 4.



Joseph T. Sturgiss
& Henry Singer

INVENTOR

INVENTOR
BY *Victor J. Evans & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE

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RIVETING CLAMP

Joseph Thomas Sturgiss and Henry Singer,
Honolulu, Territory of Hawaii

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8 Claims. (Cl. 85—1)

Our invention relates to new and useful improvements in clamps.

An important object of our invention is the provision of a clamp to be used in the assembling of sheet metal structures wherein the clamp is adapted to hold the metal sheets and angles in correct alignment preparatory to the riveting operation.

Still another object of our invention is the provision of a clamp of the above-mentioned character that may be easily and expeditiously applied to the said construction.

Yet another object of our invention is the provision of a clamp of the above-mentioned character wherein the clamp, in its entirety, may be applied from one side of the plate, thus greatly expediting the assembling of the structure.

A further object of our invention is the provision of a clamp that is efficient in operation, simple in construction, and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the drawing, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of a device embodying our invention, and showing the same associated with a sheet metal structure.

Figure 2 is an end elevation of the same.

Figure 3 is a side elevation of our device, and illustrating the manner in which the plates are associated with the angle-iron framework preparatory to riveting the same thereto, and

Figure 4 is a perspective view of a washer forming a part of our invention.

In the accompanying drawing, wherein for the purpose of illustration, is shown a preferred embodiment of our invention, the numeral 10 designates an angle-iron having a flange 11 and a flange 12. The overlapping marginal edges 13 and 14 of the metal plates 15 and 16 are provided with registering openings 17 and 18, respectively, which align with the opening 19 in the flange 11 of the angle-iron. The flange 12 of the angle-iron extends in a direction away from the plates 15 and 16. The above assembly is common in sheet metal construction and is here described, by way of example, for the purpose of illustrating the manner in which our clamp 20 is associated therewith.

The clamp comprises a bolt element 20 the middle portion of which is screw-threaded as at 21. The bolt is preferably of slightly lesser diameter than the openings 17, 18 and 19 in the plates

and angle-iron and the end 22 thereof is angularly offset to form an abutment adapted to engage the inner face of the flange 12 of the angle-iron when the screw-threaded portion 21 of the bolt is disposed vertically relative to the plates 15 and 16. The manually operable wing nut 23 is screw-threadedly associated with the portion 21 of the bolt and the end 24 thereof is then bent angularly at right angles thereto to form a handle, as illustrated in Figure 3.

The washer 25 comprises superposed metallic and felt disk elements 26 and 27. The washer is received by the bolt 30 and with the metal disk 26 normally positioned in appressed relation with the bottom face of the wing nut. When associated in this manner the felt disk element 27 will contact the outer face of the plate when the wing nut 23 is rotated into appressed relation therewith.

In sheet metal construction the plates and angles are usually drilled or punched separately and the entire structure is then erected. The plates being associated with the angle framework, as illustrated in Figure 3, and maintained in this relation by a riveting operation. When the holes in the plates are properly aligned with the holes in the angle-iron framework, the end 22 of the clamp 20 is inserted therethrough and, because of the fact that it is angularly offset or warped, it will prevent outward longitudinal displacement of the bolt 30 relative to the structure. The wing nut 23 is then rotated into tight pressed engagement with the outer plate, as illustrated in Figure 3. The right angularly disposed end 24

30 of the bolt element 30 provides a finger grip or handle which the operator may hold to effect insertion of the end 22 into the openings in the plates and angle iron and to prevent rotation of the bolt when the wing nut is being threaded into engagement with the plate 16. Attention is directed to the fact that the handle is arranged above and to one side of the threaded portion 21 whereby to permit the operator to grasp the handle with one hand and to have ample room between the handle and the nut in which to insert his other hand to effect rotation of the nut. Also, by providing ample room between the handle and nut, the operation of threading the nut into pressed engagement with the outer plate is greatly expedited and the operator may readily obtain a firm grip on the nut to easily effect the above operation.

A plurality of the clamps are associated with the structure in the manner hereinabove described at spaced intervals therealong, leaving,

for example, four or five holes open between each clamp for the insertion of rivets. The clamps should be sufficiently closely spaced, however, to prevent the plates and angles from separating inasmuch as it is very important that these members be maintained in a mutually tight pressed relation for the riveting operation.

If the holes in the angle are punched close enough to the flange 12 thereof, the end of the offset portion 22 of the bolt 30 will engage the same to prevent rotation of the bolt when the wing nut 23 is being rotated into engagement with the outer plate.

It may thus be seen that the clamps may be applied from a position exteriorly of the structure, and that but one man can easily and expeditiously perform this operation. After rivets have been inserted in the open holes of the structure, the clamps are removed and rivets may then be inserted in the holes thus provided to complete the operation of riveting the plates to the angle framework.

It is to be understood that the form of our invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the size, shape and arrangement of parts, may be resorted to without departing from the spirit of our invention, or scope of the appended claims.

Having thus described our invention, we claim:

1. A riveting clamp comprising abutment means adaptable to be inserted through an opening, a threaded portion above said abutment portion, a manually operable nut engaging said threaded portion, and a finger piece above and offset from said threaded portion.

2. A riveting clamp comprising a threaded portion, abutment means adaptable to be inserted through an opening, said abutment being an oblique extension of said threaded portion, a manually operable nut engaging said threaded portion, and a finger piece above and offset from said threaded portion.

3. A riveting clamp comprising abutment means adaptable to be inserted through an opening, a threaded portion above said abutment portion, a manually operable nut engaging said

threaded portion, said nut being a wing nut, and a finger piece above and offset from said threaded portion.

4. A riveting clamp comprising a threaded portion, abutment means adaptable to be inserted through an opening, said abutment being an oblique extension of said threaded portion, a manually operable nut engaging said threaded portion, said nut being a wing nut, and a finger piece above and offset from said threaded portion.

5. A riveting clamp comprising abutment means adaptable to be inserted through an opening, a threaded portion above said abutment portion, a manually operable nut engaging said threaded portion, and a finger piece above and offset from said threaded portion, said finger piece being an angularly projecting upper extension of said threaded portion.

6. A riveting clamp comprising a threaded portion, abutment means adaptable to be inserted through an opening, said abutment being an oblique extension of said threaded portion, a manually operable nut engaging said threaded portion, and a finger piece above and offset from said threaded portion, said finger piece being an angularly projecting upper extension of said threaded portion.

7. A riveting clamp comprising abutment means adaptable to be inserted through an opening, a threaded portion above said abutment portion, a manually operable nut engaging said threaded portion, said nut being a wing nut, and a finger piece above and offset from said threaded portion, said finger piece being an angularly projecting upper extension of said threaded portion.

8. A riveting clamp comprising a threaded portion, abutment means adaptable to be inserted through an opening, said abutment being an oblique extension of said threaded portion, a manually operable nut engaging said threaded portion, said nut being a wing nut, and a finger piece above and offset from said threaded portion, said finger piece being an angularly projecting upper extension of said threaded portion.

JOSEPH THOMAS STURGISS.
HENRY SINGER.