J. H. SCHMIDT AND L. AHLERS.

UNIVERSAL RIVET HOLDER-ON JAM.

APPLICATION FILED JULY 20, 1920.

1,400,571.

Patented Dec. 20, 1921.

2 SHEETS—SHEET 1.

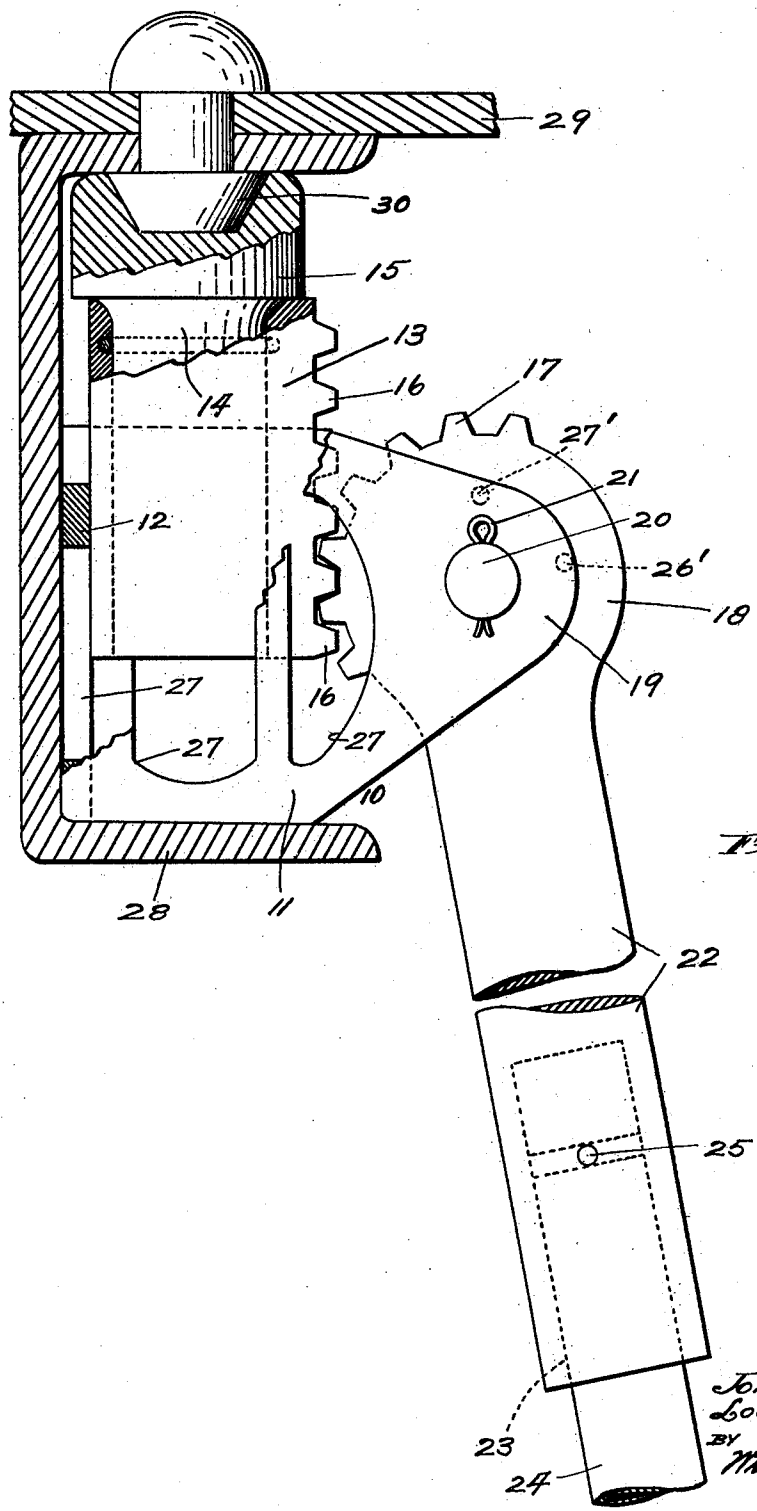

Fig. 1

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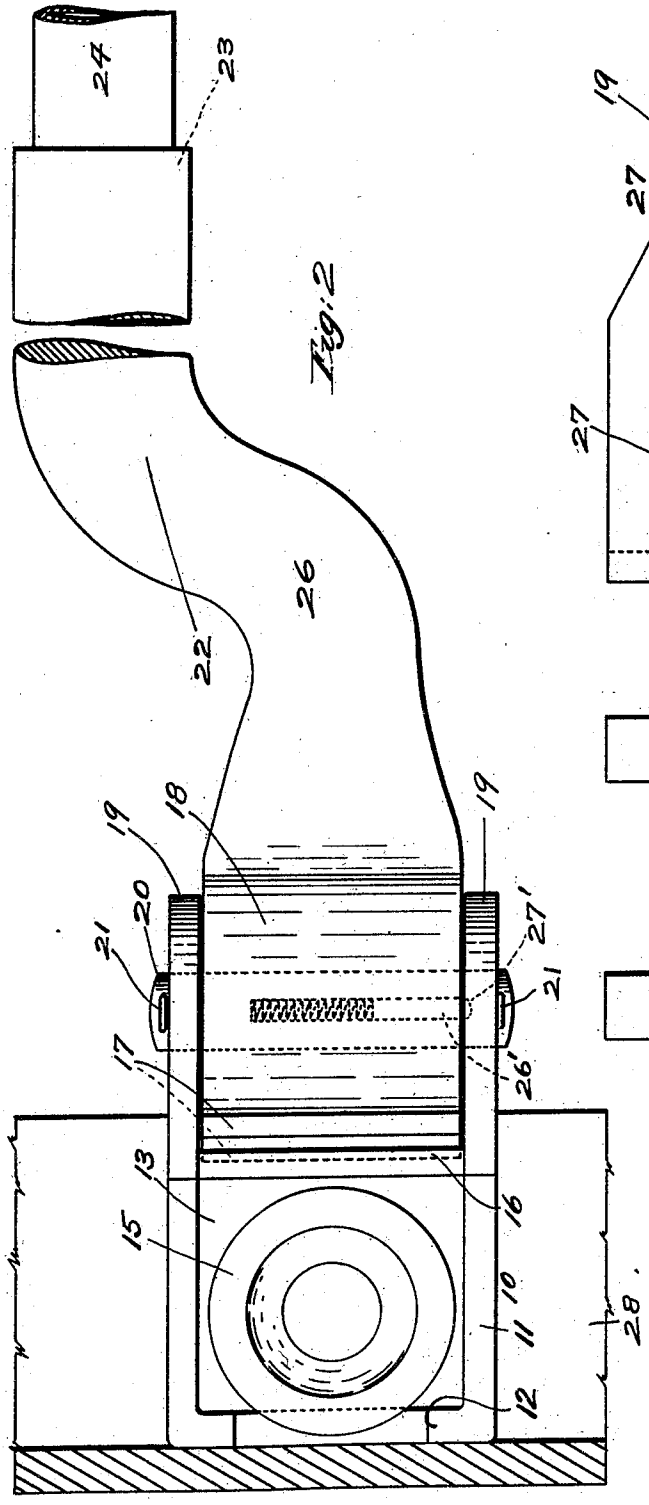

Fig. 2

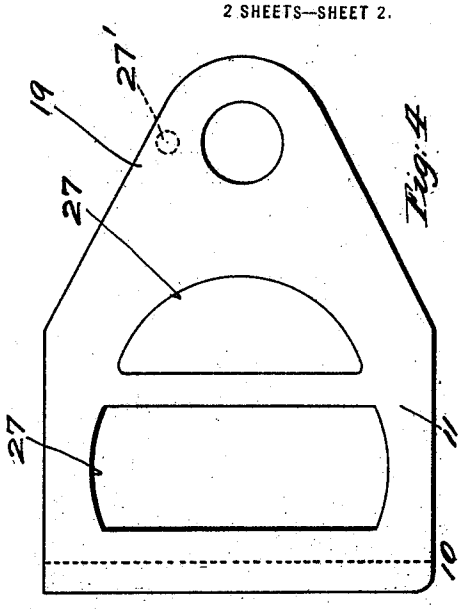

Fig. 4

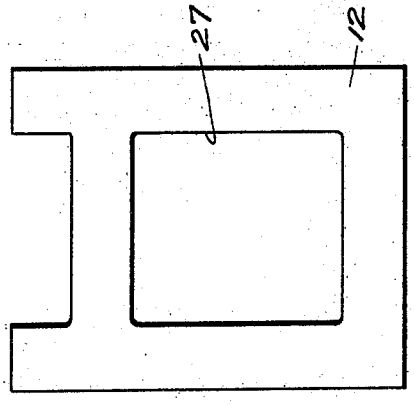

Fig. 3

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UNITED STATES PATENT OFFICE.

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UNIVERSAL RIVET HOLDER-ON JAM.

1,400,571. Specification of Letters Patent. Patented Dec. 20, 1921.

Application filed July 20, 1920. Serial No. 397,708.

To all whom it may concern:

Be it known that we, JOHN H. SCHMIDT and LOUIS AHLERS, citizens of the United States, residing at Harriman, county of Bucks, and State of Pennsylvania, have invented certain new and useful Improved Universal Rivet Holder-On Jams, of which the following is a specification.

While the present invention is applicable to rivet work in general it is especially adaptable to rivet work in connection with ship building and for illustrative purposes the following description will be restricted thereto. As now practised in ship building, especially when working upon channel irons an operator is provided with a goose-neck holder-on die which is connected with a source of compressed air. The operator usually stands upon a scaffold beneath an operator provided with a riveting gun and presses the holder-on die against the underside of a rivet during the heading process. Practice dictates that because of the incessant vibration referred to the holder-on die, many imperfect and non-water-tight joints result. Stated otherwise concussion of the riveting gun forces the holder-on die away from the rivet being headed. Practice also dictates that standing upon a scaffold beneath a rivet being headed is a more or less dangerous position for the operator. Also the employment of compressed air in connection with the holder-on die increases cost of production.

The leading object of the present invention may be said to reside in the overcoming of the above described disadvantageous features and provide a new and novel type of device designed to replace a holder-on die whereby a better grade of riveting may be effected with less labor and at lower cost than practised under the old method. Another object is to attain increased production and provide for the safety of operators employing the device. A further object is to provide a holder-on jam which is fixed with respect to the riveting gun or otherwise stated provide an anvil and hammer relation of parts thus eliminating concussion of the riveting gun tending to force the holder-on jam away from the rivet being headed.

With these and other objects in view, as will subsequently appear, the invention consists of the improvements hereinafter described and finally claimed,

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which:

Figure 1, is a view in side elevation, partly sectioned of a holder-on jam in operative position beneath a rivet the heading of which has been completed.

Fig. 2, is a view in cross-section illustrating the position of parts when the operating lever has been returned to inoperative position and

Figs. 3 and 4 are detached views of certain of the parts shown in the foregoing figures.

For the purpose of illustrating our invention, we have shown in the accompanying drawings one form thereof which is at present preferred by us, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which our invention consists can be variously arranged and organized and that our invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

In the drawings 10 designates a supporting frame which, considered in plan, is substantially U-shaped, and comprises side plates 11 and an end plate 12. Mounted within said frame for slidable movement in a direction parallel with said side and end plates is a rectangular head 13 having a socket therein to receive the shank 14 of a removable die 15, hereinafter referred to. The outer face of said head 13 is provided with a rack-bar 16 adapted to mesh with which are teeth 17 arranged segmental fashion upon a pivotally mounted member 18. In practice the side plates 11 terminate in ears 19 which are apertured to receive a pin 20 upon which is mounted the member 18. Cotter-pins 21 are employed to retain the pin 20 in place. The member 18 terminates in an extension 22 provided at its end with a socket 23 to receive an operating handle 24 which may be retained in any desired manner. In practice the handle, which may be piping or other suitable material is apertured as is the wall of the socket 23 and a pin 25 is caused to engage said apertured parts for interlocking the handle with respect to the socket. The extension 22 is of irregular or goose-neck configura-

tion as at 26 so that the device may be readily operated regardless of the position in which said device is placed. In order to maintain the operating handle from responding to the force of gravity, before and after a rivet-head has been formed, the member 18 is provided with a spring pressed detent 26′ adapted to co-act with a depression 27′ in one of the side-plates 11. This position is shown in Fig. 2. In order to lighten construction the side and end plates are cut away as at 27.

The above described device comprises a rivet-holder-on jam particularly adapted for work in conjunction with channel irons although it is capable of universal use. For illustrative purposes its use in conjunction with a channel iron will now be described. 28 designates a channel iron and 29 a piece to be riveted thereto. The device of the invention, with a die fitted thereto, is placed in proper position, for instance as shown in Fig. 1, beneath the parts to be riveted. The frame 10 is thus supported within the channel iron 28, the operating handle being held against gravitation by reason of detent 26′. A rivet then being properly positioned as usual the holder-on jam operator causes the detent 26′ to release the operating handle so that by reason of the segmental rack and rack bar he can raise the die 15 to engage the part 30 of the rivet and securely hold said die in that position while another operator provided with a riveting gun fashions a rivet head as usual. The frame 10, member 13 and die being firmly positioned function much as does an anvil against the hammer blows of the riveter with the result that perfect, water tight rivet joints are effected. The operating handle may be of any desired length so that scaffolds may be dispensed with thus removing the holder-on jam operator from danger zones and further relieving him of shock and concussion as experienced when holding the conventional goose-neck die against the force of a riveting gun. In case the device is not used in conjunction with channel iron work a temporary structure of any desired construction may be made to support the holder-on jam in position with respect to work to be riveted. It frequently happens that the shanks of the dies used in riveting-guns become broken off so that they are useless for that purpose. By re-cupping such dies to fit the part 30 of a rivet said dies may be readily employed in connection with a head 13 of the holder-on jam of the present invention.

It will now be apparent that we have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while we have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

What we claim is:

1. A holder-on jam comprising a supporting frame, a head movable through said frame, said head being shaped and proportioned to receive a die, a rack-bar for said head, a member provided with a segmental toothed portion member for coöperatively engaging said rack-bar pivoted to said frame, means arranged between said frame and member for supporting said member in inoperative position and an operating handle connected to said member.

2. A holder-on jam comprising a supporting frame, a head provided with an opening to receive the shank of a die movable through said frame, a rack-bar for said head, a member provided with a segmental toothed portion for coöperatively engaging said rack-bar pivoted within said frame, said member terminating in a goose-neck provided with a socket, an operating handle fitted to said socket and a spring pressed detent carried by said member for coöperatively engaging with said frame to support said member and handle in inoperative position.

3. A holder-on jam comprising a supporting frame, a head movable through said frame, said head being shaped and proportioned to receive a die, a rack-bar for said head, a member provided with a toothed portion for coöperatively engaging said rack-bar movably connected with respect to said frame and a spring pressed detent carried by said member for coöperatively engaging with said frame to support said member in inoperative position.

In testimony whereof, we have hereunto signed our names.

JOHN H. SCHMIDT.
LOUIS AHLERS.