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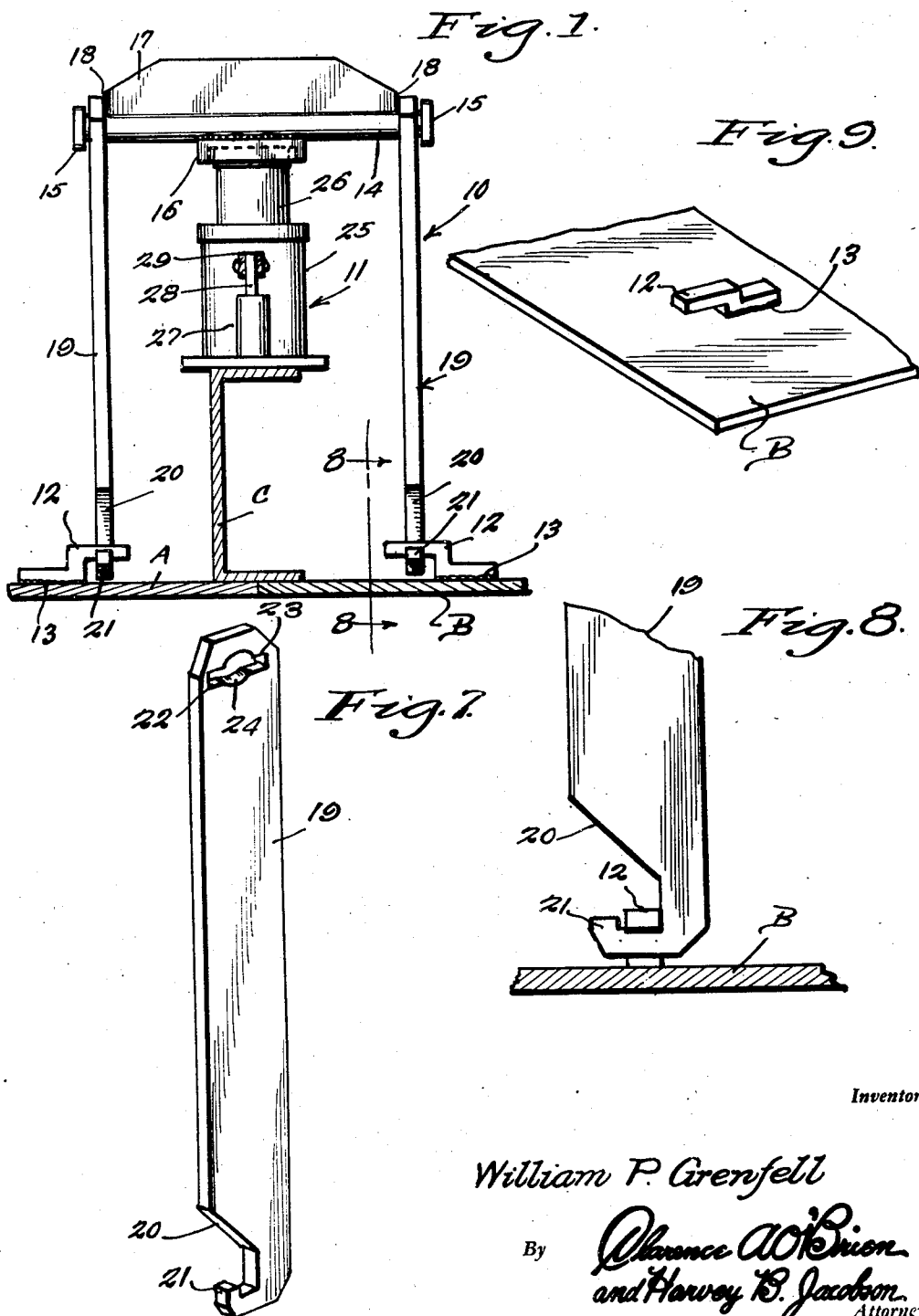
W. P. GRENFELL

2,360,417

WORK ASSEMBLING, HOLDING AND BINDING SADDLE

Filed June 8, 1943

2 Sheets-Sheet 1



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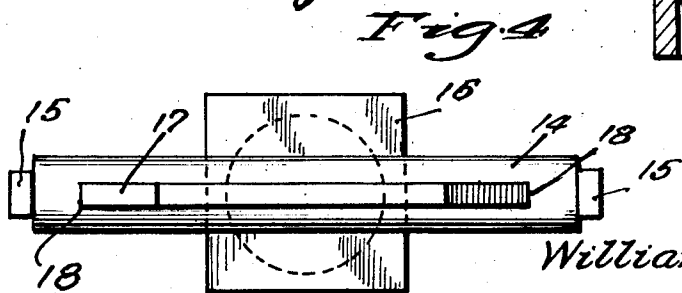
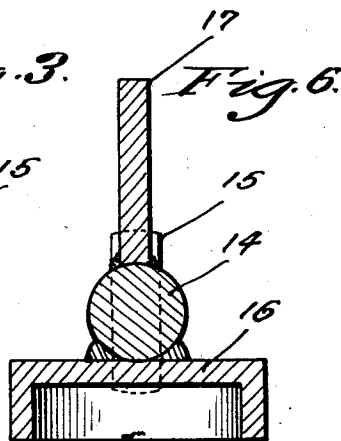
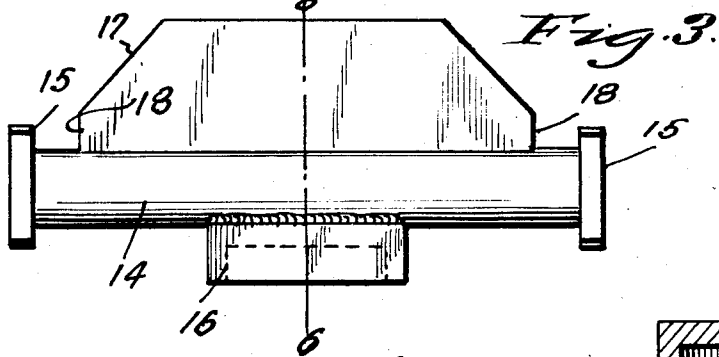
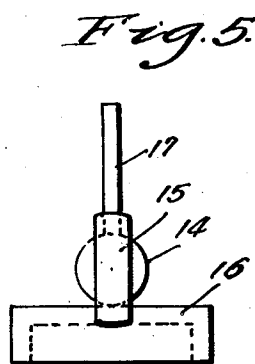
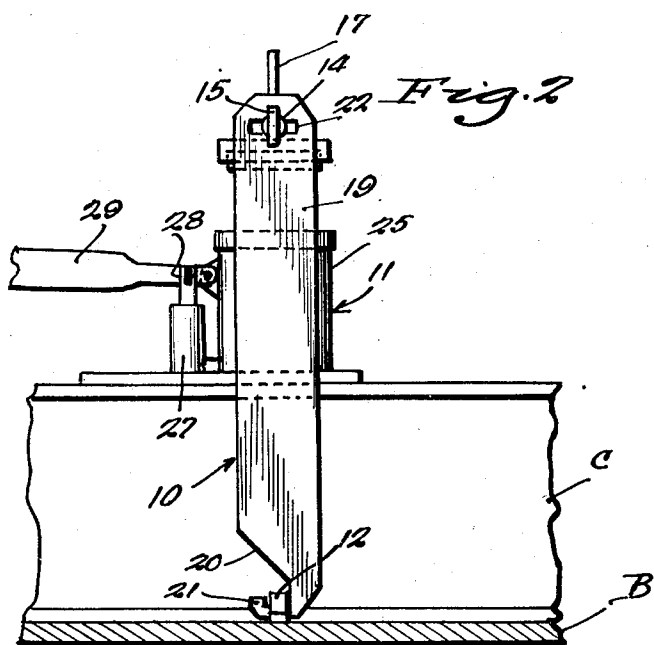
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WORK ASSEMBLING, HOLDING AND BINDING SADDLE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,360,417

WORK ASSEMBLING, HOLDING, AND
BINDING SADDLE

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3 Claims. (Cl. 29—89)

This invention relates to work assembling and binding clamps in general, the same having more specific reference to a so-called knock-down sectional saddle of a type usable in shipbuilding plants and yards, and the principal object is to provide a simple and reliable structure such as may be appropriately and effectively utilized for pulling shapes to plates whereby to expedite fastening of the plates to channel irons or the like either by riveting or welding, as the case may be.

In the shipbuilding industry where heavy plates must be pulled to shape and anchored by welding, it is somewhat common practice to tack-weld clip-like dogs on the plates and to attach to said dogs a U-shaped or similar saddle, and to employ a wedge or equivalent thrust device between the bight portion of the saddle and the adjacent anchoring and shaping iron. Recently, other types of saddles and "play" take-up expedients have been employed. However, and to the best of my knowledge, saddle and dog assemblies are lacking desired utility to an appreciable degree. In such circumstances, and with a view toward promoting time-saving results, I have found it both desirable and advisable to adopt a sectional or knock-down type saddle possessed of features and advantages hereinafter to be revealed and concisely set forth.

More specifically, I have evolved and brought into use a three-part saddle construction having certain standardized features such as render it more aptly useful due to adaptability, adjustability and expediency of handling during either application or removal stages.

Other objects and advantages will become more easily discernible when reference is had to the accompanying drawings and detailed description thereof.

In the drawings, wherein like numerals are employed to a designate like parts throughout the views:

Figure 1 is a view, in elevation, of a work clamp or sectional saddle constructed in accordance with the principles of the present invention, the same being shown applied to abutting ship plates and there being a jack disclosed in combination therewith.

Figure 2 is a view at right angles to Figure 1.

Figure 3 is an enlarged elevational view of the major unit or part of the triple-part assemblage, that is, the part to accommodate the detachable legs as well as the hydraulic or equivalent jack.

Figure 4 is a top plan view of the unit depicted in Figure 3.

Figure 5 is an end elevation of Figure 3 observ-

ing it in a direction, for example, from right to left.

Figure 6 is a central vertical sectional view taken on the plane of the line 6—6 of Figure 3.

Figure 7 is a perspective view of one of the detachable legs.

Figure 8 is a section on the line 8—8 of Figure 1.

Figure 9 is a perspective view of one of the plates having a dog tack-welded thereto.

Referring now to the drawings by distinguishing reference numerals, the saddle or clamp as a whole is denoted by the numeral 10. The jack is differentiated by the numeral 11. The plates are indicated by the reference characters A and B and the channel irons by the character C.

For purposes of accommodating the assembling and plate retaining saddle 10 the plates here shown are provided with clips, or dogs, one end of each being offset as at 12 and the other end being temporarily tack-welded to the plate as denoted at 13.

Referring to Figures 3 to 6, inclusive, it will be observed that the aforementioned main unit or part of the saddle comprises a cylindrical rod member of appropriate material and proportion, this being indicated by the numeral 14. It is provided at its ends with rectangular keepers or keys 15. On the underside and intermediate its ends the rod is provided with a cup or socket 16. At a diametrically opposite point I provide a reinforcing flange 17. This extends longitudinally of the rod and is formed integral therewith. It has flattened ends forming shoulders or stops at points 18 and these are spaced inwardly from the keys 15. The end portions of the rod between the parts 15 and 18 serve as hangers for the detachable legs 19. In practice, it is my intention to use legs of different lengths, this depending on the particular job in hand. However, the legs will be standardized insofar as certain features are concerned. That is to say, the plate engaging ends are cut away to form notches as at 20 and terminate in hooks 21 to detachably engage the clips 12. At their upper or inner ends the legs are provided with horizontal slots 22 and upper and lower semi-circular seats or notches 23 and 24. These notches 23 and 24 combine to accommodate the cylindrical end portions of the aforementioned rod 14 when in use, in Figures 1 and 2.

It is necessary to align the transverse slots 22 with the correspondingly shaped keys 15 and to then slip the legs over the keys and allow the same to drop back to the depending position for

use shown in Figures 1 and 2. The aforementioned flange 17 can be used as a handle to hold the rod unit while placing the legs in position or removing the same. It can also be used as sort of a signal or flag to show that the legs are properly hung or coupled on the rod with the keys 15 disposed horizontally for locking said legs in position.

As the jack 11 is no part of the invention except in the sense that it is an extensible and retractible thrust device, it is not explicitly detailed. In the drawings I have merely shown what may be designated as a hydraulic jack comprising a cylinder 25 and a projectible and retractible plunger 26, the upper end of the latter fitting removably into the socket or seat 16. The small auxiliary cylinder 27 in conjunction with the piston 28 and operating lever 29 form a pump for raising and lowering the stem or plunger 26.

As stated, no particular stress is accorded the particular type of jack employed. In practice it is placed on the angle iron C as shown in Figure 1 and the pump handle or lever 29 is operated to force the plunger 26 upwardly into the cup or socket 16 and to thus exert the desired stress and strain on the legs 19. Assuming that the legs have been hooked into the dogs 12 on the plates A and B, said plates are drawn up into position, that is, in a plane with one another and with the edges abutting whereby to retain said plates until either riveted or welded to the channel iron C.

As will be seen from the subjoined claims, the novelty in the clamp or saddle under consideration is first in the three part arrangement, the main or central adapter part being constructed with standardized features to accommodate legs 13 of different lengths, said legs having standardized hooks 21 and standardized slots 22 to accommodate the ends of the rod 14 and the adjacent retention and assembling buttons or keys 15. More specifically, novelty resides in the individual parts shown in Figures 3 to 6, this characterized by a body or rod 14 having end retention keys 15 with portions inward of said keys to accommodate the slotted legs, there being also a cup or socket 16 for a suitable jack and a reinforcing flange 17. Further, novelty resides in the specific construction of the legs per se as shown with particularity in Figure 7.

As set forth in the introductory portion and objects this saddle is to be used with a hydraulic jack for the purpose of pulling shapes to plates in ship constructions and other steel plate structural work. The length of the legs is determined by the depth of the shape being pulled down or up. The overall construction of the saddle as a unit will vary depending on the heavy duty job confronting the user.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in shape, size, and arrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

Having described the invention, what is claimed as new is:

1. A device of the character described comprising a cross bar circular in cross section and having flat keys at its ends of less thickness than the diameter of the cross bar, said keys extending diametrically of the cross bar and projecting from opposite side portions thereof, detachable legs for said cross bar formed near their upper ends with transversely extending leg slots formed with transversely extending openings having a large intermediate portion to accommodate end portions of the cross bar and reduced extensions disposed opposite each other and forming transverse slots through which said keys are adapted to pass, whereby these legs may be applied to the cross bar and disposed in depending relation thereto with the keys extending vertically at right angles to the slots and in overlapping engagement with other side bases of the legs, said legs having lower ends formed with hooks for engaging articles to be drawn into place, and a jack to rest upon an article to which the said first-named articles are to be secured and to exert a thrust upon the cross bar and thereby exert a pull against the articles engaged by the hooks of the legs.

2. A device of the character described comprising a cross bar, legs detachably carried by said cross bar and having upper ends formed with transversely extending slots and opposed upper and lower notches midway the length of the slots, and through which end portions of the cross bar pass, keys extending diametrically of end portions of the cross bar and pass through said slots and disposed transversely of the slots to hold the legs in place, a socket member carried by said cross bar and extending downwardly therefrom for engaging about a jack, and means at lower ends of said legs for anchoring the legs to articles to be drawn into place when the cross bar and the legs are forced upwardly to apply pulling force to the said article.

3. A device of the character described comprising a cross bar, legs having openings receiving end portions of the cross bar and mounting the legs upon the cross bar in a suspended position, keys carried by said cross bar at its ends for retaining the legs in engagement with the cross bar, a reinforcing flange extending upwardly from said cross bar in the plane of said keys and constituting a handle for holding the cross bar while applying the legs thereto, said reinforcing flange also constituting a signal for indicating the position of the keys relative to the legs, and said cross bar being provided with a socket for receiving the upper end of a jack and maintaining the cross bar in position upon the jack.

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