G. SHERMAN.

CLAMP FOR SHEETS.

APPLICATION FILED AUG. 13, 1918.

1,312,926.

Patented Aug. 12, 1919.

Fig. 1.

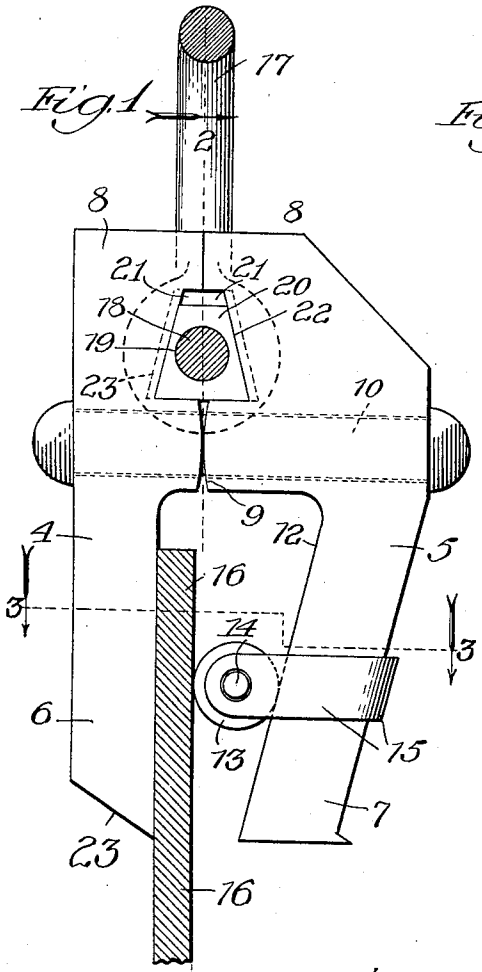


Fig. 2.

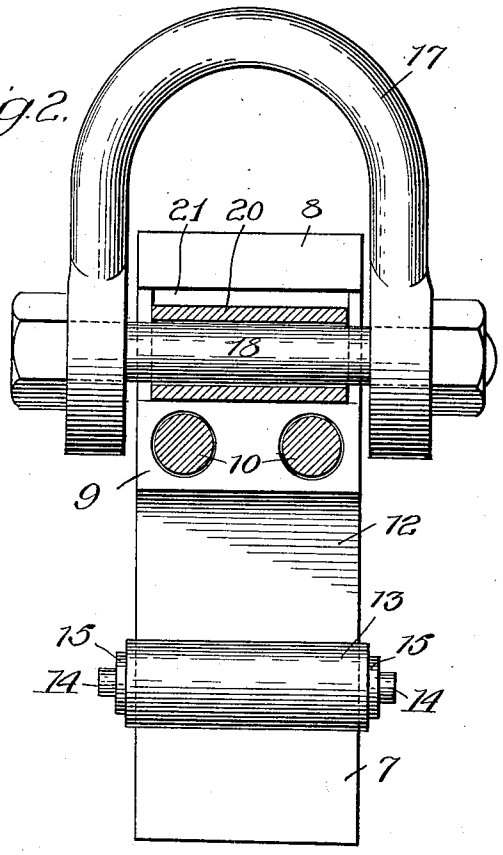
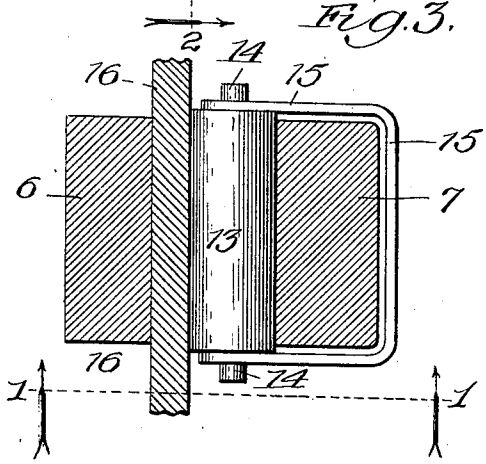


Fig. 3.



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UNITED STATES PATENT OFFICE.

GUY SHERMAN, OF BREMERTON, WASHINGTON.

CLAMP FOR SHEETS.

1,312,926. Specification of Letters Patent. Patented Aug. 12, 1919.

Application filed August 13, 1918. Serial No. 249,670.

To all whom it may concern:

Be it known that I, GUY SHERMAN, a citizen of the United States, residing at Bremerton, in the county of Kitsap and State of Washington, have invented a new and useful Improvement in Clamps for Sheets, of which the following is a specification.

My invention relates more particularly to clamps used for lifting and carrying sheets of steel from one location to another; and my object, generally stated, is to provide improvements in clamps of this character as hitherto provided, to the end that that they will operate more positively and satisfactorily.

Referring to the accompanying drawing—

Figure 1 is a view in side elevation of a sheet-clamp embodying my invention. Fig. 2 is a section taken at the line 2 on Fig. 1 and viewed in the direction of the arrow; and Fig. 3, a section taken at the line 3 on Fig. 1 and viewed in the direction of the arrow.

The particular construction of sheet-clamp shown and which is the form in which I prefer to embody my invention, comprises a pair of members 4 and 5, which together form at one end (the lower end) of the structure, the jaws 6 and 7, and at their upper ends together form the head 8 of the clamp, the jaw 6 being parallel and the jaw 7 downwardly inclined relative to the jaw 6. The opposed portions of the members 4 and 5, immediately above the jaws 6 and 7, are rounded as illustrated at 9, and extending through this part of the structure and connecting together the members 4 and 5, are bolts 10, which loosely extend through apertures 11 in the members 4 and 5, these bolts loosely fitting the last-referred-to members and, while forming a very strong connection between the movable members 4 and 5, permitting of the slight rocking of these members for moving the jaws 6 and 7 relatively toward each other when the clamp is lifted as hereinafter described.

The jaw 7 presents the inclined inner face 12, with which coöperates a roller 13 journaled on a shaft 14, fixed in the inner ends of a strap member 15 encircling the jaw 7 and slidable up and down thereon, the plate to be lifted and carried, as for example, that illustrated at 16, being clamped between the jaw 6 and the roller 13 when the clamp is lifted.

The clevis usually employed in clamps, is represented at 17, the lower ends of this clevis being connected with the shaft 18, which extends through an opening 19 in a keystone, or wedge-shaped block 20, located in a similarly shaped recess 21, provided in the head 8 of the device at the joint between the members 4 and 5, the walls of the recess 21 and the adjacent walls of the block 20 converging upwardly, as represented in Fig. 1, the members 4 and 5 at opposite ends of the block 20 partially overlapping the latter, as represented at 22 and 23, to prevent the block from sliding longitudinally therefrom.

In the operation of the device the clamp is applied to the sheet 16 to be lifted and carried, by causing the jaw 6 and the roller 13 to extend at opposite sides of the plate, the plate extending into the space between the jaws. In the upright position of the clamp, as shown in Fig. 1, the roller 13, together with the strap 15, gravitates along the jaw 7 and the sheet 16 is gripped between the jaw 6 and the roller 13 when, in the operation of the hoisting mechanism connected with the clamp in practice, the weight of the clamp is carried by the block 20, the latter in this movement wedging the members 4 and 5 apart at their upper ends, which throws the lower, clamping, portions of the clamp into firm engagement with the sheet 16.

The provision of the relatively movable jaws and wedge block as described, is for the primary purpose of facilitating the disengagement of the clamp from the sheet in the sheet-delivering operation. When the clamp is raised, the lower ends of the jaws are thrown inwardly by the action of the wedge-block and the roller exerts the wedging action in such position of the jaws. Thus in the releasing operation when pull on the wedge-block is released as by lowering the sheet upon a support, the slight spreading movement of the jaws thus permitted by the release of the wedge-block, permits of the ready disengagement of the roller from the sheet and consequently the ready release of the plate from the clamp.

Another feature of my construction presenting a practical advantage is that of

beveling the lower edge of the jaw 6 as represented at 23, this feature permitting of the delivery of the sheets on plates alongside of others previously placed without danger of the clamp catching on the upper edge of an adjacent sheet.

It will be understood from the foregoing that the clamp is not only adapted to firmly grip sheets of different thicknesses, but the grip thereon is positive, insures the desired effect of the clamp upon the sheet and may be readily released to discharge.

While I have shown my invention embodied in a structure wherein the jaws are movable relative to each other, certain features of the invention are not limited to use in such a structure and I do not wish, therefore, to be understood as intending to limit it thereto. Furthermore, various modifications and alterations may be made without departing from the spirit of my invention.

What I regard as new and desire to secure by Letters Patent is:

1. In a plate-clamp, the combination of a pair of jaws, means connecting said jaws together and affording relative movement of said jaws, one of said jaws having a surface inclined relative to the plate-engaging surface of the other of said jaws, a member movable along said inclined surface and adapted to engage the plate, and means engaging the clamp above the said means connecting the jaws together, for lifting the clamp and operating to move said jaws relatively toward each other.

2. In a plate-clamp, the combination of a pair of jaws, means connecting said jaws together and affording relative movement of said jaws, one of said jaws having a surface inclined relative to the plate-engaging surface of the other of said jaws, a roller on the one of said jaws having said inclined surface and movable along the said surface and adapted to engage the plate, and means engaging the clamp above the said means connecting the jaws together, for lifting the clamp and operating to move said jaws relatively toward each other.

3. In a plate-clamp, the combination of a pair of jaws, means connecting said jaws together and affording relative movement of said jaws, one of said jaws having a surface inclined relative to the plate-engaging surface of the other of said jaws, a member movable along said inclined surface and adapted to engage the plate, and wedging means engaging the clamp above the said means connecting the jaws together, for lifting the clamp and operating to move said jaws relatively toward each other.

4. In a plate-clamp, the combination of a pair of jaws, means connecting said jaws together and affording relative movement of said jaws, one of said jaws having a surface inclined relative to the plate-engaging surface of the other of said jaws, a member movable along said inclined surface and adapted to engage the plate, the portion of said clamp above the means connecting the jaws together being recessed at the joint thereof, and wedging means engaging the walls of said recess and through the medium of which the clamp is lifted, said wedging means operating to move said jaws relatively toward each other in the lifting operation.

5. In a plate-clamp, the combination of a pair of members, one end of each member presenting a jaw, a member loosely extending through said first-named members and crossing the joint between the latter and connecting said first-named members together to permit relative movement thereof, one of said jaws having a surface inclined relative to the plate-engaging surface of the other of said jaws, a member movable along said inclined surface and adapted to engage the plate, and means engaging the said first-named members above the said connecting member for lifting the clamp and operating to move said jaws relatively toward each other.

6. In a plate-clamp, the combination of a pair of jaws, one of said jaws being inclined relative to the other thereof, and wedging means mounted to move along said inclined jaw for clamping a sheet between said wedging means and the opposed jaw.

GUY SHERMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."