Oct. 17, 1944. R. S. WALDRUP 2,360,601

PLATE CLAMP

Filed Nov. 15, 1943

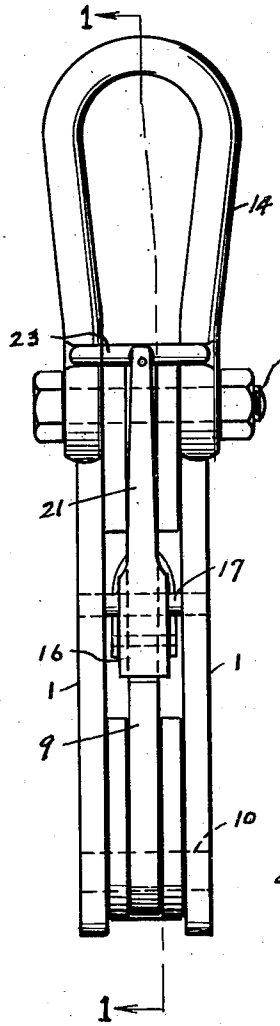

Fig. 2.

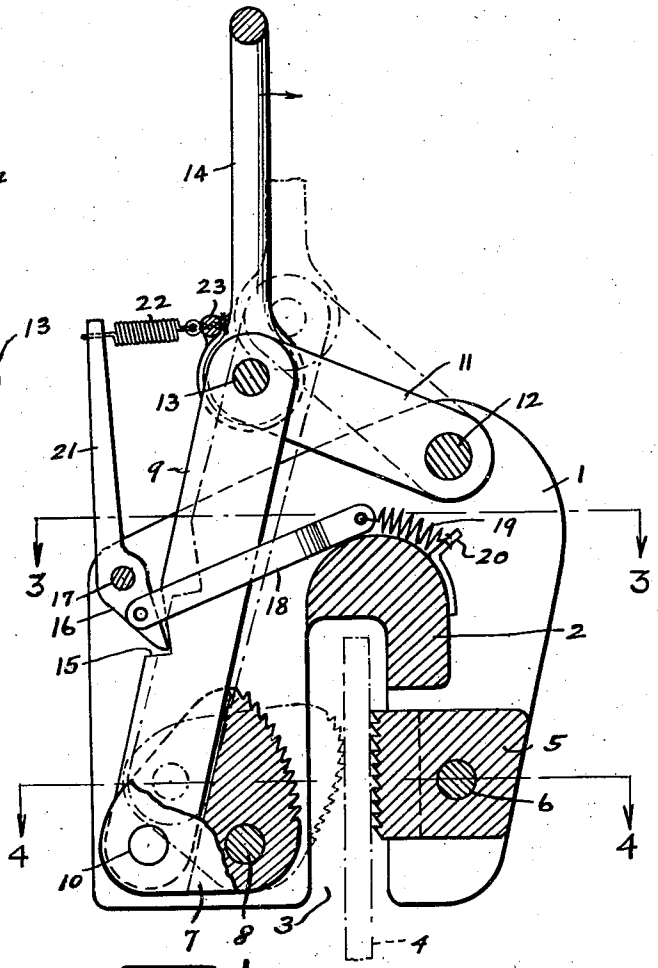

Fig. 1.

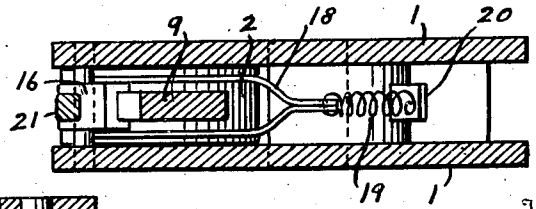

Fig. 3.

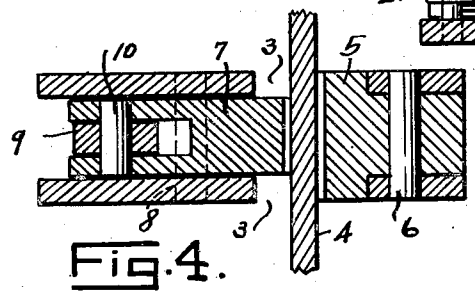

Fig. 4.

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PLATE CLAMP

Rodney S. Waldrup, Houston, Tex.

Application November 15, 1943, Serial No. 510,414

2 Claims. (Cl. 294—104)

This invention relates to a clamp and has particular relation to that type of clamp which is specially designed for handling heavy metal plates or similar heavy objects.

An object of the invention is to provide a clamp composed of a frame having a fixed jaw and a pivotally mounted jaw for gripping the plate to be lifted with means for latching the pivoted jay in inactive position.

The invention also embodies means for conveniently releasing the latch when it is desired to release the pivoted jaw for action.

With the above and other objects in view the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawing wherein:

Figure 1 shows a sectional view of the clamp taken on the line 1—1 of Figure 2.

Figure 2 shows an edge view.

Figure 3 shows a cross sectional view taken on the line 3—3 of Figure 1.

Figure 4 shows a cross sectional view taken on the line 4—4 of Figure 1.

Referring now more particularly to the drawing wherein like numerals of references designate the same parts in each of the figures, the numerals 1, 1 designate the side plates of the frame which may be integrally connected together by the cross bridge 2, which spaces the side plates apart.

The lower ends of the plates have the deep slots 3, 3 to receive the edge of the plate, as 4, to be lifted. On one side of the slot there is the fixed jaw 5, which is secured between the plates by the pin 6 and whose inner face projects into the slot and is serrated.

On the other side of the slot there is a movable jaw 7. This jaw is pivoted on the eccentric pin 8 and its operative face is arcuate and serrated and may be swung into the slot to grip the plate as shown in dotted lines in Figure 1 or may be retracted to inactive position as shown in full lines in said figure.

There is a central link 9 between the plates. Outwardly of the pivot 8 the jaw 7 is slotted and one end of the link 9 is pivoted in this slot on the pin 10 which extends through said jaw and link. At the opposite side of the frame there is a toggle lever 11 one end of which is pivoted on the pin 12 between the side plates and the other end of which is slotted and embraces the corresponding end of the link 9 and pivoted thereto by means of a cross bolt 13.

A clevis 14 has its ends pivoted on said bolt 13 on opposite sides of the lever 11.

The outer margin of the link 9 has a notch 15 therein and there is a latch 16 pivoted between said plates on the cross pin 17. The inner end of the latch is normally held inwardly in position to engage in said notch by means of a yoke 18, one end of which is pivoted to the latch and whose other end is connected to one end of the pull spring 19. The other end of this pull spring is attached to a lug 20 on the bridge 2.

The other end of the latch is formed with an extended arm 21. A pull spring 22 is connected, at one end, to the free end of this arm and at its other end to the cross bar 23 on the clevis.

In operation the jaw 7 is normally latched inactive. A lifting cable is connected to the clevis 14. The clamp may be applied to the plate 4 which is usually, but not always, in horizontal position and an upward pull on the cable will swing the clevis 14 in the direction indicated by the arrow in Figure 1 exerting a pull through the spring 22 on the latch arm 21 thus releasing the latch and as the cable is pulled upwardly the link 9 and lever 11 will be moved to the position indicated in dotted lines in Figure 1, thus swinging the jaw 7 into the position indicated by dotted lines in Figure 1 into engagement with the plate 4, thus clamping it between the jaws. The load may then be swung to the desired location and when it is lowered until the load is supported underneath and the cable is slacked off the link 9 and lever 11 will move back to position shown in full lines in Figure 1 and the spring 19 will re-engage the latch in the notch 15, thus holding the clamp released from the plate and the clamp may then be swung upwardly with the jaw 7 in retracted position so that it will not re-engage the plate.

If the plate to be gripped and elevated is standing vertically in position when the clamp is applied thereto the clevis 14 may be swung over in the direction indicated by the arrow in Figure 1 as it is moved upward and this will release the latch 16 and permit the jaw 7 to swing into active position in engagement with the plate.

What I claim is:

1. A plate clamp comprising a frame, a fixed jaw on the frame having a plate-gripping surface, a jaw pivotally mounted on the frame opposite the fixed jaw and having a plate-gripping surface, lifting means for the clamp including a link connected to the pivoted jaw and effective to actuate the pivoted jaw into gripping relation with an object between the jaws upon elevation

of the clamp by said lifting means and a latch normally engaged with the link to hold the pivoted jaw inactive.

2. A plate clamp comprising a frame having confronting, plate-gripping jaws, one of said jaws being pivoted to move into and out of gripping relation with an object between the jaws, a link pivoted at one end to said pivoted jaw, a toggle lever pivoted at one end to the frame, a cable attaching means, the other ends of said link and lever and the cable attaching means being pivotally connected together, said link being connected to the pivoted jaw at a point such that upon elevation of the clamp by the cable the pivoted jaw will be actuated in gripping relation with the object between the jaws, a latch engageable with said jaw actuating means and latching the same against movement and means connecting the latch with the cable attaching means, whereby the latch may be released by an appropriate movement of said attaching means.

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