Feb. 8, 1949. A. J. PLANTE 2,461,394

HOIST CLAMP

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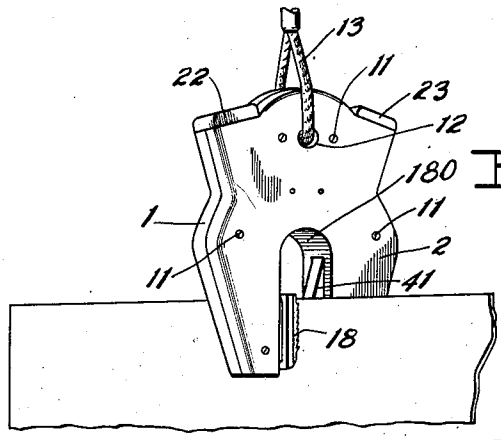


FIG 1

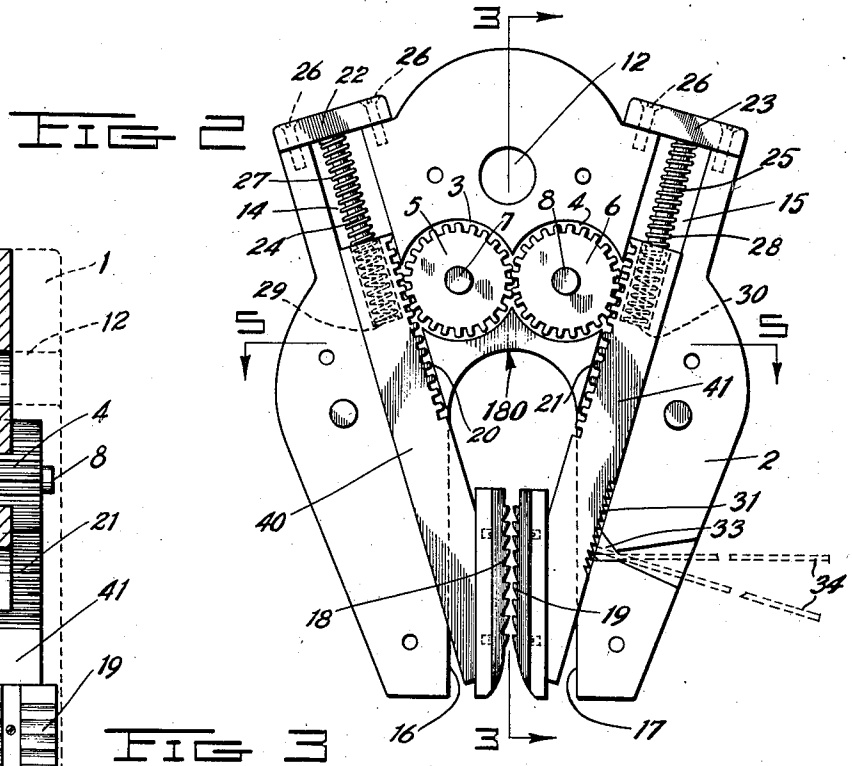


FIG 2

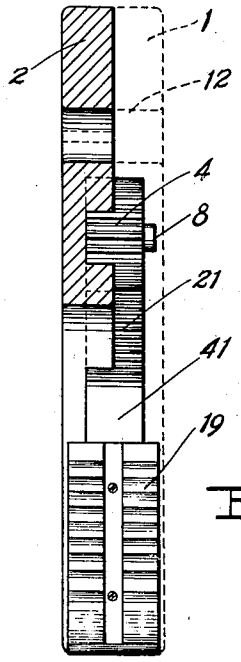


FIG 3

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FIG 4

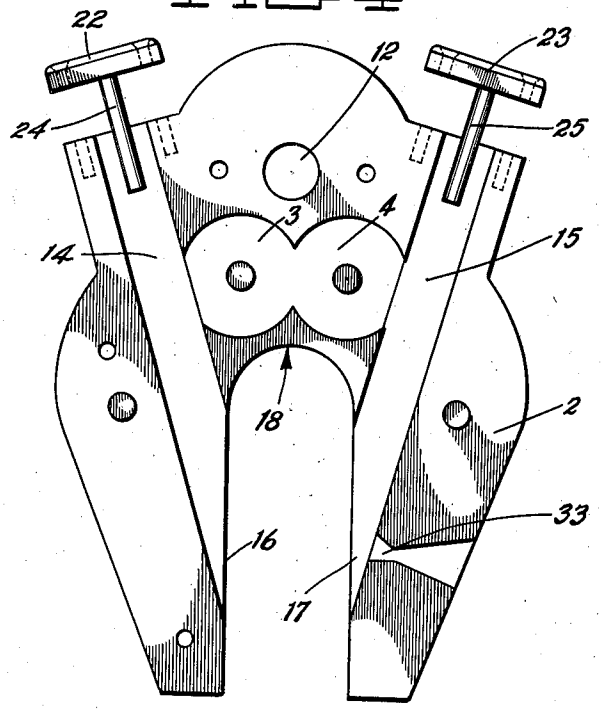


FIG 5

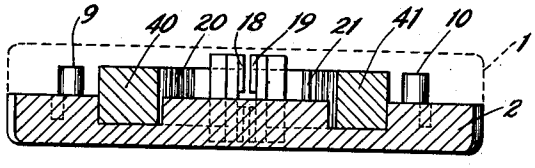
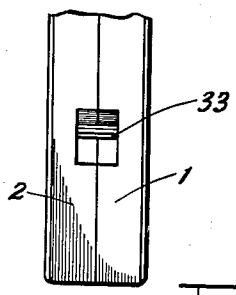


FIG 6



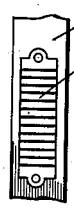


FIG 9

FIG 7

FIG 8



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UNITED STATES PATENT OFFICE

2,461,394

HOIST CLAMP

Alfred J. Plante, Augusta, Maine, assignor of one-half to Davila Cloutier, Augusta, Maine

Application January 3, 1946, Serial No. 638,821

3 Claims. (Cl. 294—86)

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This invention relates to improvements in hoist clamps, and more particularly to an automatically engaging and locking clamp for lifting steel plates and the like.

An object of the invention is to provide an improved hoist clamp with means for grasping an object to be lifted and means for automatically locking the clamping jaws in their locked position.

A further object of the invention is to provide an improved hoist or plate lifting clamp which will have interconnected spring projected jaws for positively engaging a plate or other object to be lifted.

A still further object of the invention is to provide an improved hoist or plate lifting clamp which will be highly efficient in use and relatively inexpensive to manufacture and produce.

Other objects will appear as the description proceeds.

In the accompanying drawings which form a part of this application,

Figure 1 is a perspective view of the improved hoist clamp in position upon a steel plate;

Figure 2 is a vertical sectional view through the improved hoist clamp;

Figure 3 is a sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a side elevation of one section of the hoist clamp body;

Figure 5 is a sectional view taken on the line line 5—5 of Figure 2;

Figure 6 is an edge view of the lower portion of the hoist clamp body showing the clamp releasing opening;

Figure 7 is a side view of the clamp releasing bar;

Figure 8 is a plan view of the clamp releasing bar, and

Figure 9 is a modified showing of a replaceable rack on the backbone of the sliding jaw supporting members.

Like characters of reference are used throughout the following specification and the accompanying drawings to designate corresponding parts.

In carrying out the invention, there is provided a two-piece hoist clamp body comprising parts 1 and 2, in which are formed the recesses 3 and 4 for the intermeshing gears 5 and 6, which are mounted for rotation on the stub shafts 7 and 8 carried by body part 2. Openings 9 and 10 will be formed in body part 1 to receive the stub shafts 7 and 8 which will extend flush with the surface of the part 1 when

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the two sections or body parts are placed together and secured together by the bolts on screws 11.

An opening 12 is formed through the hoist clamp body and is adapted to receive a hook or cable 13 at the end of a hoist line.

Converging guide ways 14 and 15 are formed in the clamp body and extend from the upper and outer sides of the body to the opposite inner walls 16 and 17 of the slot 180 formed in the lower surface of the clamp body.

Slidably received in the guide ways 14 and 15 are the rack carrying jaw supporting members 40 and 41, which extend through the lower ends of the guideways 14 and 15 and support the interchangeable toothed jaws 18 and 19 on their lower extremities. The racks 20 and 21 are formed on the inner surfaces of the jaw supporting members 40 and 41 adjacent their upper ends.

Cap members 22 and 23 provided with the depending rods 24 and 25 are secured to the top of the clamp body to seal the upper ends of the guideways 14 and 15. Screws or bolts 26 extend through the cap members 22 and 23 and into the clamp body.

Coil springs 27 and 28 are positioned about the depending rods 24 and 25 and extend into the spring receiving recesses 29 and 30 in the upper ends of the jaw supporting members 40 and 41 to urge or force the members downwardly until the jaws 18 and 19 contact each other.

A rack 31 is formed on the outer surface of the jaw supporting member 41, or a replaceable rack 32 may be screwed to the member 41 if desired when the rack 31 is not cut in the said member. A clamp releasing slot 33 is formed in the body and extends from the edge of the body to the rack 31, so that a pointed clamp releasing bar 34 may be inserted through the slot 33, and by moving it up and down, the jaw supporting member 41 will be raised to release the object being lifted. The gears 5 and 6 are adapted to engage the racks 20 and 21 on the jaw supporting members 40 and 41 respectively, so that movement of one jaw will impart movement to the other jaw.

As before mentioned, the coil springs 27 and 28 will exert a pressure on the jaw supporting members, so that once a plate or object is engaged between the jaws, it will be firmly held until released by the releasing bar 34.

While the preferred form of the invention has been illustrated and described, it will be understood that it is not intended to limit the inven-

tion to this disclosure, as many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

Having thus described the invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A hoist clamp including a body being slotted at its lower edge, converging jaw supporting members extending through the body into the slot, detachable jaws on said members, resilient means for projecting said members and jaws, racks formed on said members, and gears interposed between said racks.

2. A hoist clamp including a body having an inwardly directed slot in its lower edge, said body being formed with converging oppositely disposed inwardly and downwardly directed slots extending completely through it and terminating at the sides of said first-mentioned slot, jaw-supporting members slidably received in said converging slots, detachable jaws on said members, racks formed on said members, and interconnected gears engageable with said racks for simultaneously operating said jaw-supporting members.

3. A hoist clamp including a body having an inwardly directed slot in its lower edge, said body

being formed with converging oppositely disposed inwardly and downwardly directed slots extending completely through it and terminating at the sides of said first-mentioned slot, jaw-supporting members slidably received in said converging slots, detachable jaws on said members, racks formed on said members, said jaw-supporting members having spring-received recesses in their upper ends, resilient means disposed in said recesses for projecting said members and jaws through said slots, and interconnected gears engageable with said racks for simultaneously operating said jaw-supporting members when projected by said resilient means.

ALFRED J. PLANTE.

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