Nov. 11, 1924. 1,514,983

H. MONNICH

HOISTING CLAMP

Filed June 30, 1921

Fig. 1.

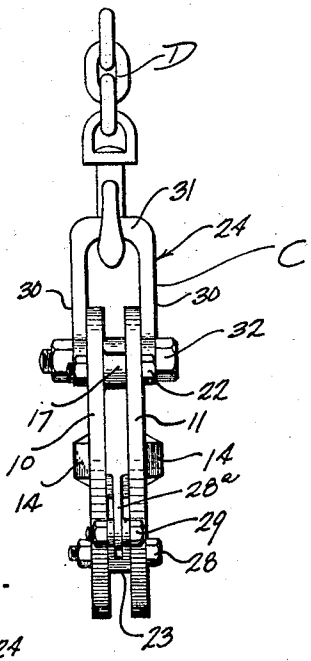


Fig. 2.

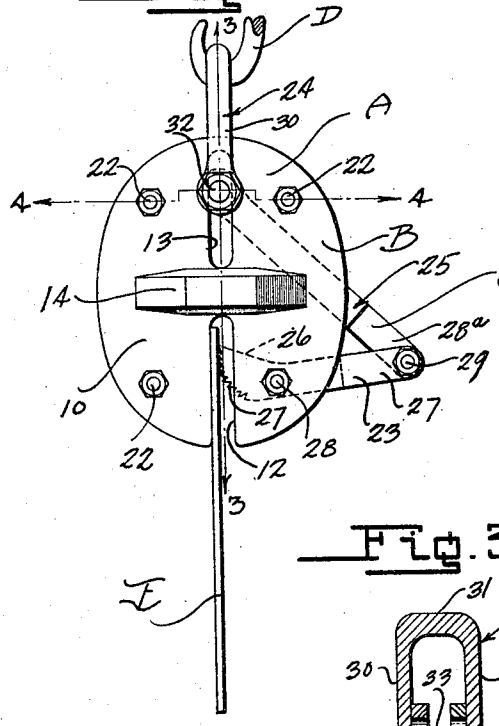


Fig. 3.

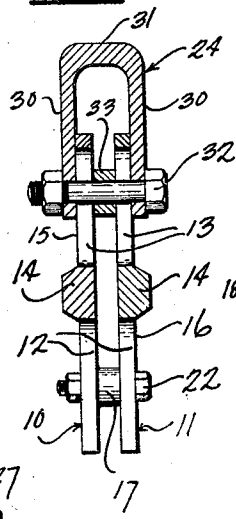


Fig. 4.

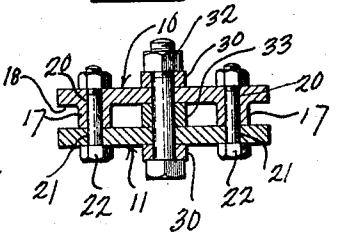
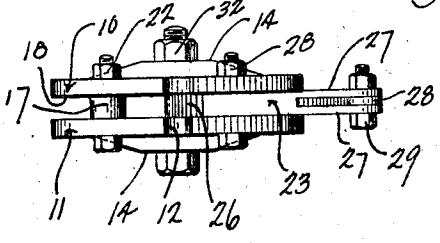


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY MONNICH, OF DETROIT, MICHIGAN.

HOISTING CLAMP.

Application filed June 30, 1921. Serial No. 481,731.

To all whom it may concern:

Be it known that I, HENRY MONNICH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Hoisting Clamps, of which the following is a specification.

This invention relates to an improved hoisting clamp to facilitate transportation of heavy steel plates, and the like.

The primary object of the invention is the provision of a hoisting clamp, which is positive in clamping action to quickly engage a metallic plate or the like; and of such novel construction, as to utilize the entire weight of the hoisting device and the lifted plate, to actuate a clamping jaw for maintaining said plate in secure position for lifting purposes.

Other objects and advantages will be apparent during the course of the following detailed description.

In the accompanying drawing, and in which similar reference characters designate corresponding parts throughout the several views,

Figure 1 is an end elevation of the clamping or hoisting device in suspended position.

Fig. 2 is a side elevation of the improved hoisting clamp, showing the same engaging a plate.

Fig. 3 is a cross sectional view taken on the line 3—3 of Figure 2.

Fig. 4 is a cross sectional view taken on the line 4—4 of Figure 2.

Fig. 5 is a bottom plan view of the improved hoisting clamp, showing the relation of various details thereof.

In the drawing, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the letter A designates the improved hoisting clamp, including supporting body B, and a dog mechanism C.

The supporting body B, preferably comprises side plates 10 and 11, each substantially oval in formation, and of substantially the same dimensions. The plates 10 and 11, are rather elliptical in formation, and provided with non-communicating and oppositely extending and aligning slots 12 and 13 therein; said slots lying on the major axes of said plates. The slot 12 opens upon the periphery of each plate; the slot 13, terminating just short of the periphery, to provide proper reinforcement. In suspending the plates 10 and 11, the major axis of the plates will be suspended in substantially vertical position, as will be more fully described, and therefore, the slots 12 and 13 may be said to be in vertical alignment upon each of the plates 10 and 11. A transverse rib 14, extends across each of the plates 10 and 11, parallel with the minor axis thereof, and projecting outwardly from the outer faces 15 and 16 of the plates 10 and 11 respectively. The ribs 14 are provided intermediate adjacent ends of the slots 12 and 13, for reinforcing purposes.

A plurality of spacing lugs 17, are provided upon the interior surface 18 of the plate 10, said lugs 17 being all of the same height. The plate 10, is provided with apertures 20 extending transversely therethrough, centrally of the various lugs 17, and adapted to align with apertures 21 extending transversely through the plate 11; said apertures 20 and 21, being provided to receive detachable bolts 22, for the purpose of assembling the plates 10 and 11 in their proper spaced-apart relation, as determined by the lugs 17.

The dog mechanism C, preferably comprises the clamping jaw 23; clevis 24, and a connecting lever 25. The clamping jaw 23, may be of any formation, the same including a head 26, provided with teeth 27 thereon in arcuate formation on said head 26. The jaw 23, is pivotally mounted in the space between plates 10 and 11, as by a bolt 28 detachably positioned transversely through the plates 10 and 11, and in such position as to have the teeth 27 in their arcuate formation upon the head 26, eccentrically mounted to project at various distances into the plane between the slots 12. The end of the jaw element 23, opposite head 26, is bifurcated to provide the forked arms 27, for the reception of an extending end 28^1 of the lever 25; the detachable bolt 29, pivotally connecting the end 28^1 between the arms 27.

The clevis 24, is substantially U-shaped in formation, including depending legs 30, connected by a bight portion 31. A bolt or other detachable element 32 is provided upon the free ends of the legs 30, and for disposition transversely of the plates 10 and 11, for sliding within the slots 13. The element 32, thus projecting transversely through the space between the plates 10 and

11, pivotally receives an end 33 of the lever 25; said end 33 being opposite the end 28¹.

In operation, the supporting cable D, which may be suspended from a crane, or other transporting element, is hooked onto the bight portion 31 of the clevis arrangement 24. As the chain D is lifted, to support the hoisting clamp A, the clevis will be moved relative within the slots 13. The dog mechanism C, will be actuated by means of the lever 25, to rock the jaw 23 upon its pivot bolt 28, and increasing the projection of the head 26 into the transverse plane of the slots 12. Thus when it is desired to lift a plate E, it is merely necessary to lower the clamp A over an edge of the plate E, until said plate E projects into the slots 12. As the slack in the cable D is taken up, the dog mechanism C will be actuated in the above described manner, whereby the teeth 27 upon head 26 will move eccentric upon the bolt 28 to firmly engage a side of the plate E, and force the opposite side into engagement with the plates 10 and 11, as is clearly shown in Figure 2 of the drawing.

A very great advantage effected by the above construction, is the improved manner, whereby the slots are placed in vertical alignment. By this arrangement, the element 32 is moved vertical to the line of clamping action, without spending any of the force to secure the clamping action. In other words, the entire weight of the clamp, and plates 10 and 11, is utilized to force the jaw 23 into gripping engagement with the article E to be transported.

Various changes in the shape, size, and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. As an article of manufacture, a supporting body for hoisting clamps comprising a pair of plates each having non-communicating and aligning slots therein, one of said slots of each plate opening upon the periphery thereof and the other slot being enclosed, a plurality of bolts transversely connecting said plates so that similar slots thereof are in transversely aligning relation, and spacing collars about said bolts intermediate said plates to maintain said plates in predetermined spaced relation.

2. A hoisting device comprising spaced plates provided with aligned upper and lower slots, lugs extending from one plate and engaging the other plate to hold the plates in spaced relation, fasteners passing through the plates and lugs, a shackle straddling the upper portion of said plates, a link extending between said plates, a pivot bolt passing through the upper slots and pivotally connecting the upper end of the link with said shackle, and a lever pivotally mounted between the lower portions of the plates and having an inner end portion provided with a gripping head movable across the lower slots, the other end of the lever being pivotally connected with the lower end of said link to cause movement of the gripping head across the lower slots when the shackle moves vertically relative to the plates.

HENRY MONNICH.