

Sept. 26, 1950

G. P. HAYNER
CLAMPING DEVICE

2,523,760

Filed Aug. 6, 1946

Fig. 1.

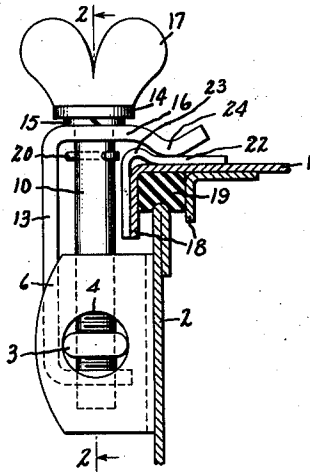


Fig. 2.

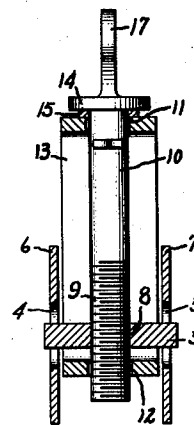
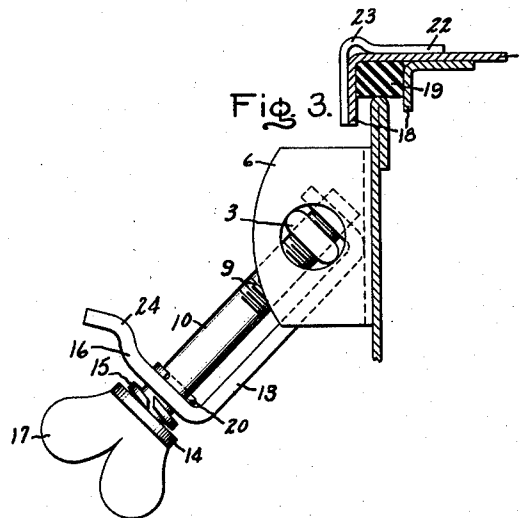


Fig. 3.



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UNITED STATES PATENT OFFICE

2,523,760

CLAMPING DEVICE

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Application August 6, 1946, Serial No. 688,730

1 Claim. (Cl. 292—256)

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My invention relates to clamping devices, more particularly to a quickly releasable clamping device for securing the cover on an enclosure member, such as an enclosing casing for electric apparatus, and has for its object a simple and reliable clamping device of this type.

In carrying out my invention in one form I provide a substantially U-shaped clamping member provided with an aperture in each side, together with a bolt extending through the apertures and having a threaded portion cooperating with a threaded aperture in a pivot member which is pivotally secured to one of the parts to be clamped together. The bolt may be turned to move the clamping member with relation to the pivot member whereby one side of the clamping member is forced against the other part so as to secure the two parts together, and the bolt may be turned to release the clamping member which thereafter can be swung on the pivot member to a released position.

For a more complete understanding of my invention, reference should be had to the accompanying drawing, Fig. 1 of which is a side elevation view of a clamping device embodying my invention; Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1 looking in the direction of the arrows, while Fig. 3 is a side elevation view similar to Fig. 1 but showing the clamping member swung to a released position.

Referring to the drawing, I have shown my invention in one form as applied to the securing of a metal cover wall 1 to the side wall 2 of a metal enclosure, the two walls extending substantially at right angles with each other. It will be understood that a clamping device constructed in accordance with my invention may be provided at suitable intervals as desired around the opening of the enclosure 2 so as to clamp the cover 1 thereto.

The clamping device comprises a pivot member 3 extending through apertures 4 and 5 in brackets 6 and 7 which are in turn secured in spaced parallel relation to the wall 2. As shown, the pivot member 3 has an oblong or elongated cross-section with rounded or reduced ends which bear on the walls of the apertures 4 and 5.

At its center the pivot member 3 is provided with a transversely extending threaded opening 8 cooperating with the threads of which is a threaded portion 9 on a bolt 10 extending through the pivot member. The bolt 10 also extends loosely through apertures 11 and 12, neither of which is threaded, in the upper and lower arms respectively of a substantially U-shaped clamping member 13, which arms are positioned on opposite

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sides of the pivot member, whereby the clamping member is secured to the pivot member and may be swung in the pivot member between the clamping position shown in Figs. 1 and 2 and the released position shown in Fig. 3. It will be observed that the flange means or head 14 of the bolt engages through a lock washer 15 the upper outer side of the upper arm 16 of the U-shaped clamping member so that by turning the bolt downward through the pivot member 3, as by grasping the wing 17 on its upper end, the elongated upper clamping arm 16 is forced downward against the cover 1 thereby to clamp the cover against the upper edge of the wall 2. If desired, as shown, the cover 1 may be provided with flanges 18 between which is secured a suitable sealing gasket 19 which is pressed against the edge of the wall 2 to form a sealed joint. Also, the head 14 may be shaped to require a tool to turn the bolt.

The clamping device can be operated to release the cover 1 by turning the screw 10 in a direction to feed it upward through the pivot member 3 whereby the clamping arm 16 is released from the cover 1. Suitable additional flange or other stop means, such as a cotter pin 20, is provided on the bolt 10 adjacent the inner or lower side of the arm 16 to secure the clamping member 13 in a predetermined position relative to the bolt to any considerable extent when the clamping member is swung outward on the pivot member 3 to its released position as shown in Fig. 3.

Preferably, as shown, the pivot member 3 is secured by the walls of the apertures 4 and 5 in the brackets 6 and 7 in position so that its pivot axis is substantially parallel with the cover 1. Also, the clamping member 13, which is formed from strap material, fits loosely between the brackets 6 and 7.

For the purpose of preventing the slipping of the clamping device from the cover, a plate member 22 is secured to the cover and provided with a bead or rolled edge 23 over which extends a downwardly bent curved portion 24 on the arm 16 of the clamping member.

It will be observed that the pivot member 3 turns in the apertures 4 and 5 about an axis which is substantially coincident with the center line of the apertures, while the threaded aperture 8 in the pivot member extends crosswise of the pivot member substantially at right angles with the pivot axis of the pivot member.

While I have shown a particular embodiment of my invention it will be understood of course that I do not wish to be limited thereto since

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many modifications may be made and therefore contemplate by the appended claim to cover any such modifications as fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

In a releasable clamping device for an enclosure having a side wall and a cover engaging an edge of said side wall, a pair of mounting brackets mounted in parallel spaced relation upon and extending outwardly from said side wall, a pivot member rotatably mounted between said brackets for pivotal movement about an axis extending between said brackets and parallel to said edge of said side wall, said pivot member having a threaded aperture extending perpendicular to said pivotal axis, an elongated bolt having a threaded portion cooperating with the threaded aperture in said pivot member and having a head portion swingable toward and away from said cover as said pivot member is swung about said pivotal axis, a U-shaped clamping member having an elongated bight portion and aligned apertures in its side arms, said clamping member being loosely positioned on said bolt with said side arms on opposite sides of said pivot member and said bolt passing through the apertures in said side arms, the side arm of said clamping member

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adjacent said head portion of said bolt being elongated to extend over and clamp said cover and the other side arm of said clamping member being positioned between said brackets and having a width nearly equal to the spacing between said brackets, and stop means on said bolt for limiting movement of said clamping member longitudinally of said bolt whereby said brackets prevent rotation of said clamping member about said bolt and retain said elongated side arm in position to engage said cover when said head portion of said bolt is swung toward said cover.

GEORGE P. HAYNER.

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