Jan. 1, 1963 E. B. HARDING 3,071,368

STEPLOCK ROCKER JAW PARALLEL CLAMP

Filed Aug. 8, 1960

FIG. 4

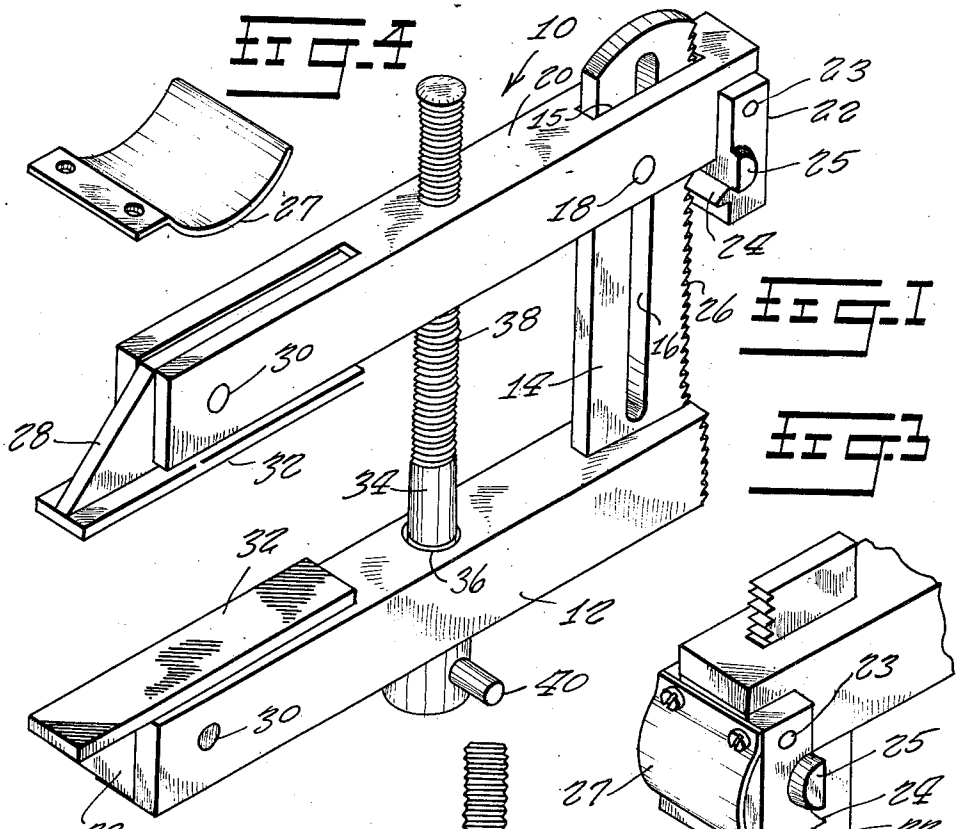


FIG. 1

FIG. 3

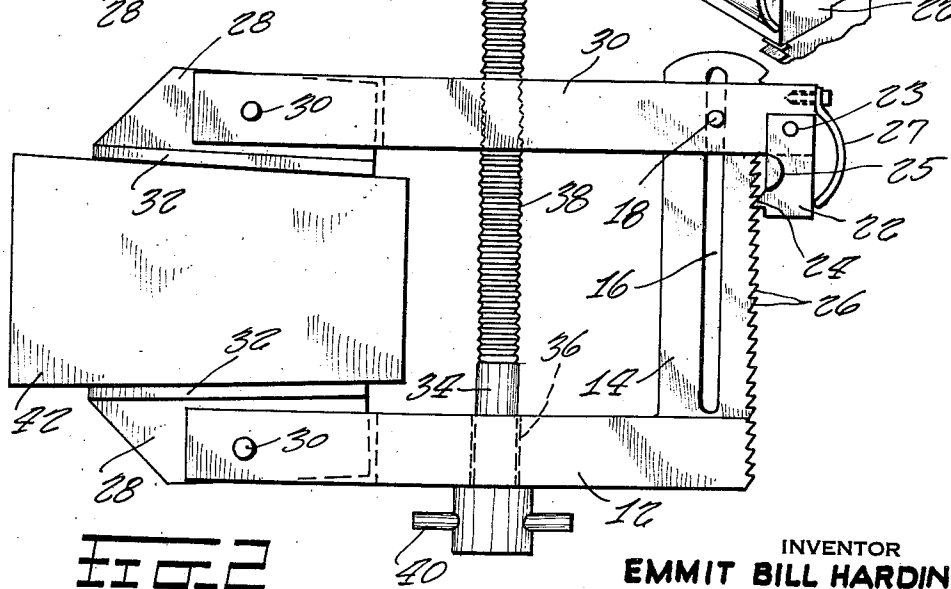


FIG. 2

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STEPLOCK ROCKER JAW PARALLEL CLAMP

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1 Claim. (Cl. 269—215)

This invention relates to clamping devices and, more particularly, to a screw threaded clamping device.

It is an object of the present invention to provide a screw threaded jaw type clamping device in which a pair of clamping pressure plates are movable in parallel relationship with each other into clamping engagement with a workpiece.

A further object of the present invention is to provide a parallel acting clamp device of the type described having ratchet type adjustment means for limiting the opening and closing of one end of the self aligning parallel jaw members.

All of the foregoing and still further objects and advantages of this invention will become apparent from a study of the following specification, taken in conjunction with the accompanying drawing, wherein:

FIGURE 1 is a perspective view of a rocker jaw parallel clamp assembly made in accordance with the present invention;

FIGURE 2 is a side elevational view of the device shown in FIGURE 1 in actual use;

FIGURE 3 is an enlarged fragmentary perspective view of the ratchet mechanism forming a part of the present invention; and

FIGURE 4 is a perspective view of a spring member forming a part of the ratchet assembly shown in FIGURE 3.

Referring now to the drawing, a steplock rocker jaw parallel clamp device 10 made in accordance with the present invention is shown to include a base bar 12 having an upstanding column 14 at one end with a longitudinal slot 16 that slidably receives a cross pin 18 of a reaction bar 20. The adjacent end of the reaction bar 20 is provided with a ratchet member 22 that pivotally is secured thereupon by means of a cross shaft 23. The opposite end of the ratchet bar 22 is provided with a pawl 24 which releasably engages with a plurality of ratchet teeth 26 extending along the outermost edge of the upstanding column 14. An outwardly projecting detent 25 on the ratchet lever 22 serves to provide means for selectively pivoting such ratchet lever 22 during the operation of the device. A leaf type spring plate 27 is secured at one end to the reaction bar 20 and acts at its opposite end against the ratchet lever 22 to yieldably maintain the pawl 24 in locking engagement with the teeth 26, such spring 27 being overcome by an outward pull upon the detent 25 during the operation of the device.

The opposite free end of each of the base and reaction bars 12, 20 is provided with a pressure plate 32 having a web 28 pivotally mounted upon such free end of each of the bars 12, 20 by means of cross pins 30. These plates 32 are thus mounted for limited pivotal movement upon the respective supporting bars, so as to conform generally to the surface contour of the object 42 being clamped.

An operating shaft 34 is rotatably supported within a bearing 36 on the base bar 12 and has a threaded section 38 that is threadedly engaged with a central portion of the reaction bar 20. The opposite end of the shaft 34 is provided with an operating handle 40 for effecting rotation thereof.

In actual use, the position of the ratchet end of the reaction bar 20 relative to the column end of the base bar 12 is initially adjusted by means of a ratchet lever 22 and cooperating pawl 24 and teeth 26 so as to conform generally to the thickness of an object to be clamped. With the column 14 thus maintaining the base and reaction bars 12, 20 in substantially a common plane, the object 42 may be placed between the pressure plates 32 and the handle 40 rotated to bring the pressure plates 32 into clamping engagement with the oppositely facing surfaces of the object 42. During such actuation of the handle 40, the clamping pressure is applied substantially uniformly to both sides of the object 42, thus effectively clamping it in place. For smaller objects, the detent 25 is urged outwardly to release the pawl 24 from the teeth 26 so as to lower the adjacent end of the reaction bar 20 relative to the base bar 12 to the desired extent.

While this invention has been described with particular reference to the construction shown in the drawing, it is to be understood that such is not to be construed as imparting limitations upon the invention, which is best defined by the claim appended hereto.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

A steplock rocker jaw parallel clamp assembly comprising, in combination, a base bar, a threaded shaft rotatably mounted on the base bar, a reaction bar threadedly carried by said shaft, a pressure pad pivotally connected to one end of each of said bars and corresponding to the one end of the other of said bars, a handle integral with the threaded shaft for rotating the shaft to adjust the distance between the said bars, said base bar having an upstanding column integral with its other end, said column having a longitudinal slot and a set of ratchet teeth in one edge thereof, the reaction bar having a slot at its other end through which the upstanding column passes, a pin in the reaction bar extending through the slot in the upstanding column, and a ratchet lever pivotally connected to the other end of the reaction bar having a pawl releasably engaging said ratchet teeth for limiting movement of the reaction bar toward said base bar in response to rotation of the threaded shaft.

References Cited in the file of this patent

UNITED STATES PATENTS

15,170	Chaffee	June 24, 1856
95,772	Cook et al.	Oct. 12, 1869
1,347,360	Anthony	July 20, 1920
1,839,951	Choinski	Jan. 5, 1932
2,395,607	Aalberg	Feb. 26, 1946
2,901,012	Crispin	Aug. 25, 1959