

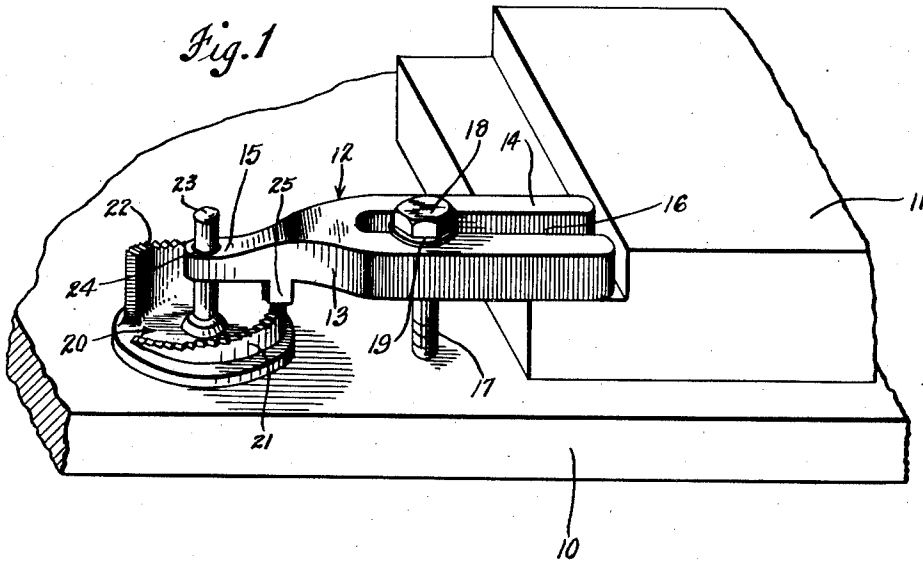
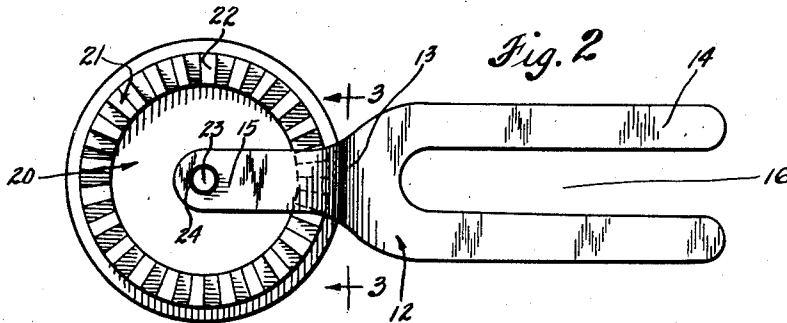
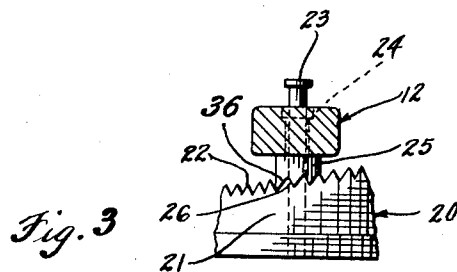
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J. N. CAYO

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CLAMP

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CLAMP

Application filed July 15, 1929. Serial No. 378,369.

This invention relates to certain novel improvements in clamps and especially to clamps particularly adapted for use in connection with machine tools and the like and has for its principal object the provision of an improved construction of this character which will be highly efficient in use and economical in manufacture.

It is among the objects of my invention to provide a clamp which may be used in connection with machine tools such as drill presses, shapers and the like and which will be constructed in a manner which will permit it to be used in connection with work of various shapes and sizes.

Another object of the invention is to provide a clamp which will be arranged so that it may be used in connection with work of varied thickness and to arrange the device so that it may be expeditiously positioned so as to permit such usage.

Another object of the invention is to provide a device of the above described character which will be so constructed that a bolt member may be arranged intermediate the work and the supporting portions of my device so as to bring about the clamping action.

A still further object of my invention is to provide a novel supporting member.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing, showing the preferred form of construction and in which:

Fig. 1 is a perspective view depicting a preferred form of construction for my invention in operative position;

Fig. 2 is a top plan view of my improved clamp; and

Fig. 3 is a sectional view taken substantially on the line 3—3 on Fig. 2.

In the accompanying drawing wherein I have illustrated a preferred form of construction for my invention 10 indicates a work supporting bed which may be the work receiving table of a drill press, shaper, milling machine or other analogous machine

tools. The work is indicated by 11 and is disposed on the bed 10 in a position which will permit the tool of the machine to operate thereon to perform the function desired. As is well understood it is necessary that the work 11 be securely clamped in position on the bed 10 in order that it may be held against movement when it is engaged by the tool. In order to accomplish this I provide the clamp construction which forms the feature of this invention. This clamp construction includes an arm generically indicated by 12 which includes an intermediate portion 13 that is disposed between a bifurcated portion 14 and the rear end portion 15. Through the slots 16 of the bifurcated end portion 14 a bolt 17 is extended, the head 18 of which rests on the washer 19 which is interposed between the upper sides of the arms of the portion 14 and the lower side of the head 18 of the bolt 17. An opening is provided in the table into which the bolt member 17 may be extended.

My improved clamp works on the principle of a third class lever the bolt 17 representing the force while the end portion 14 is intended to engage the work 11 which represents the work to be performed by the lever. It is, therefore, manifest that the end portion 15 will engage the fulcrum and in this present instance this construction includes the following mechanisms. I provide a supporting member generically indicated by 20 and which is preferably substantially circular in outline. This supporting member 20 includes an upstanding rib 21 which has the upper edge thereof formed on a spiral which gradually ascends around the periphery of the base of the member 20 and this gradually ascending spiral is carried out until the highest portion thereof is disposed at a point adjacent the lowest portion of the spiral. On this spiral formation I provide a plurality of serrations or teeth 22 for a purpose to be made apparent presently. A stud 23 extends upwardly from the midportion of the base of the member 20 and the end portion 15 is provided with an opening 24 through which the stud 23 is extended.

Intermediate the intermediate portion 13

and the end portion 15 a downwardly extending lug 25 is provided which has the lower edge thereof disposed on a contour congruent to the contour of the upper edge of the rib 21, and this lower edge is provided with a plurality of serrations or teeth 36 which are intended to interfit with the serrations on the upper edge 21.

In use the arms of the bifurcated end portion 14 are disposed in engagement with the work and the supporting member 20 is rotated until a portion of the upper edge of the rib 21 is disposed in alignment with the work and the bolt 17 so that when the teeth 26 are engaged with the teeth 22 the upper edge of the clamp 12 will be disposed in a substantially horizontal plane. The bolt 17 will then be run down to bring about a tight engagement of the head 18 with the washer 19 and it is, therefore, manifest that by reason of the resulting third class lever that the work 11 will be very effectively clamped by the clamp 12. It is manifest that by reason of the contour on the upper edge of the rib 21 that the clamp 12 may be disposed in a number of different horizontal planes in order that different thicknesses of work may be properly clamped. It is, therefore, manifest that a very universal clamp results.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to protect by Letters Patent is:

1. In a clamp of the character stated, a clamping arm having a bifurcated end portion at one end thereof and having an opening provided adjacent the other end thereof, a supporting member having a substantially circular rib extending upwardly therefrom, said rib having the upper edge thereof disposed in a spiral plane, a lug depending from said clamping arm disposed for engagement with the upper edge of said rib, a stud extending upwardly from said supporting member and extended through the opening in said clamping arm, and means for applying force to said clamping arm intermediate the end of said bifurcated end portion and the end provided with said opening.

2. In a clamp of the character stated, a clamping arm having a bifurcated end portion at one end thereof and having an opening provided adjacent the other end thereof, a supporting member having a substantially circular rib extending upwardly therefrom, said rib having the upper edge thereof dis-

posed in a spiral plane, said spiral edge having a plurality of serrations formed thereon, a lug depending from said clamping arm having serrations on the lower end thereof adapted for engagement with the serration on said rib, a stud extending upwardly from said supporting member through the opening in said supporting arm, and a bolt member extended through the opening in said bifurcated end portion of said clamping arm for applying a pressure on said clamping arm to bring about the engagement of said bifurcated end portion with an article to be clamped and to hold the serrations on said lug in engagement with serrations on said rib.

In testimony whereof I affix my signature.
JULIUS N. CAYO.