No. 724,091. PATENTED MAR. 31, 1903.

D. C. FISHER.

WORK CLAMP.

APPLICATION FILED JULY 28, 1902.

NO MODEL.

FIG. 1.

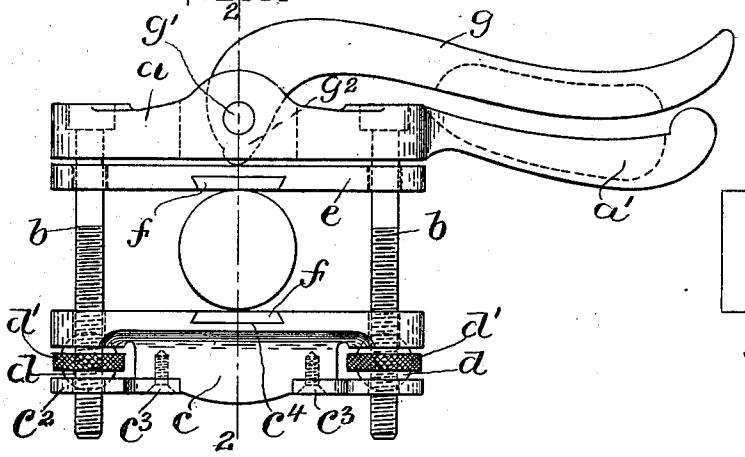


FIG. 2.

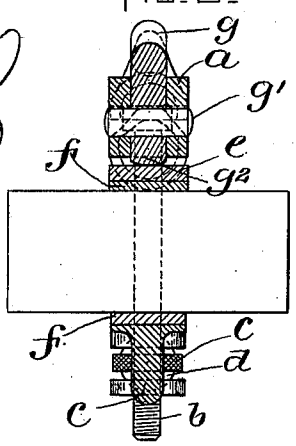


FIG. 3.

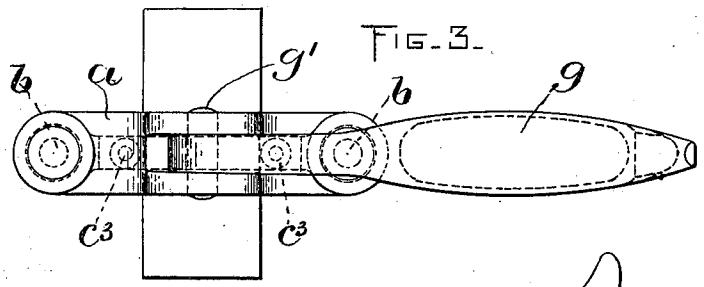


FIG. 4.

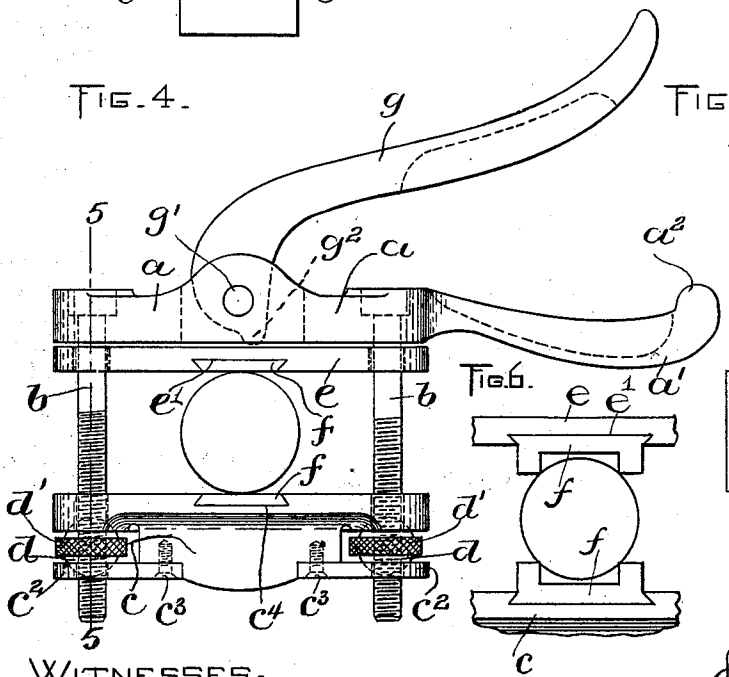
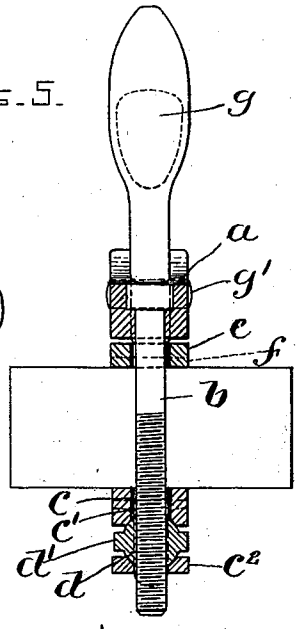


FIG. 6.

FIG. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DANIEL C. FISHER, OF DORCHESTER, MASSACHUSETTS.

WORK-CLAMP.

SPECIFICATION forming part of Letters Patent No. 724,091, dated March 31, 1903.

Application filed July 28, 1902. Serial No. 117,234. (No model.)

To all whom it may concern:

Be it known that I, DANIEL C. FISHER, of Dorchester, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Work-Clamps, of which the following is a specification.

This invention has for its object to provide a work holding or clamping tool by means of which the cost of labor and the expense of handling the work in a factory or machine-shop may be greatly reduced. Its object is likewise to provide for the facilitation and convenience in handling relatively small parts of various sizes and shapes during various operations to which they may be subjected in the process of manufacture.

To this end the invention consists of a tool having certain features of construction and relative arrangement of parts, all as illustrated upon the drawings now to be described in detail and to be pointed out with particularity in the claims hereto appended.

On the accompanying drawings, Figure 1 represents a front elevation of my improved tool and shows in end view a bar clamped thereby. Fig. 2 represents a section on the line 2 2 of Fig. 1. Fig. 3 represents a plan view of a tool. Fig. 4 illustrates the tool with the cam-lever raised to release the work. Fig. 5 represents a section on the line 5 5 of Fig. 4. Fig. 6 represents a jaw which may be employed in the intermediate member and follower or the two clamping members.

Referring to the drawings, it will be observed that the tool is provided with the main casting, body, or frame a, from the end of which projects a handle a', integral therewith. Secured to the ends of this casting or frame are two screws $b\,b$, which project therethrough and are substantially rigid therewith. The heads of these screws may be forced into countersinks in the main frame or body. These screws are held against rotation, and they adjustably support a clamping member or follower c, which has a limited rocking movement relatively of the said screws. The said clamping member or follower is provided with enlarged apertures c', through which the threaded portions of the screws loosely pass. Between the ends of the follower and flanges or lugs c^2, secured thereto by screws c^3, there are spherical nuts d, arranged in semispherical apertures, as shown in Fig. 5. Each nut has a circumferential milled flange d', whereby it may be rotated, and it is adapted, of course, to receive the screw. By this provision the follower may be rocked upon an axis transverse thereof or upon an axis longitudinal thereof.

Between the clamping member or follower c and the body a there is a loose intermediate or clamping member e, having enlarged apertures through which the unthreaded portions of the screws pass. It and the member c are formed with undercut grooves e' c^4, respectively, for the reception of movable jaws $f\,f$, by which the work may be engaged. These jaws are preferably hardened and may be flat on their operative surfaces, as illustrated in Figs. 1 and 4, or else they may be provided with rectangular grooves in their faces, as shown in Fig. 6, for clamping the work. The said jaws may be varied in many ways to accommodate various forms of work or for preventing injury to such finished work as may be held in the tool. The intermediate or clamping member e is adapted to be forced against the work in a direction toward the follower or member c by means of a cam-lever g. This lever is fulcrumed on a stud g' in the body a, and its cam portion g^2 passes through a slot in said body and bears against the outer face of the member e.

The handle portion of the lever g is conveniently located with respect to the handle a' so that the tool may be grasped in the hand of an operator or mechanic and forced together from the position shown in Fig. 4 to the position shown in Fig. 1. Both handles are in the form of an easy curve to enable them to be grasped conveniently and without undue exertion on the part of the operator. The handle a' is provided with a lug a^2, which operates to limit the extent of movement of the handle or lever g when it is being moved to operative position.

From the foregoing description it will be observed that in the tool thus disclosed there is a perfect adjustment of the member c, whereby there may be clamped in the tool both regular and irregular formations with equal facility.

Having thus explained the nature of the invention and described a way of construct-

ing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. A tool of the character described comprising a body having a handle, screws attached to said body, a follower through which said screws loosely pass, spherical nuts supported in complemental sockets in said follower, an intermediate or clamping member loosely supported by said screws, and an operating-lever for forcing said intermediate member toward said follower, said lever having a handle in convenient proximity to the handle of the body so that both may be grasped in the hand of an operator.

2. A tool of the character described comprising a body having a handle projecting from the end thereof, screws attached to the ends of said body, a clamp member or follower having nuts in threaded engagement with said screws, an intermediate clamping member having apertures through which said screws loosely pass, and a cam-lever pivoted to said body and having an operative portion passing through a slot in said body and bearing against said intermediate member at a point between the screws, said lever having a handle in convenient proximity to the handle of said body.

3. A tool of the character described comprising a body having a handle projecting from the end thereof, screws attached to the ends of said body, a clamp member or follower having nuts in threaded engagement with said screws, an intermediate clamping member having apertures through which said screws loosely pass, a cam-lever pivoted to said body and having an operative portion passing through a slot in said body and bearing against said intermediate member at a point between the screws, said lever having a handle in convenient proximity to the handle of said body, and removable coacting jaws carried by said follower and said intermediate member.

In testimony whereof I have affixed my signature in presence of two witnesses.

DANIEL C. FISHER.

Witnesses:

MARCUS B. MAY,

J. P. IDE.