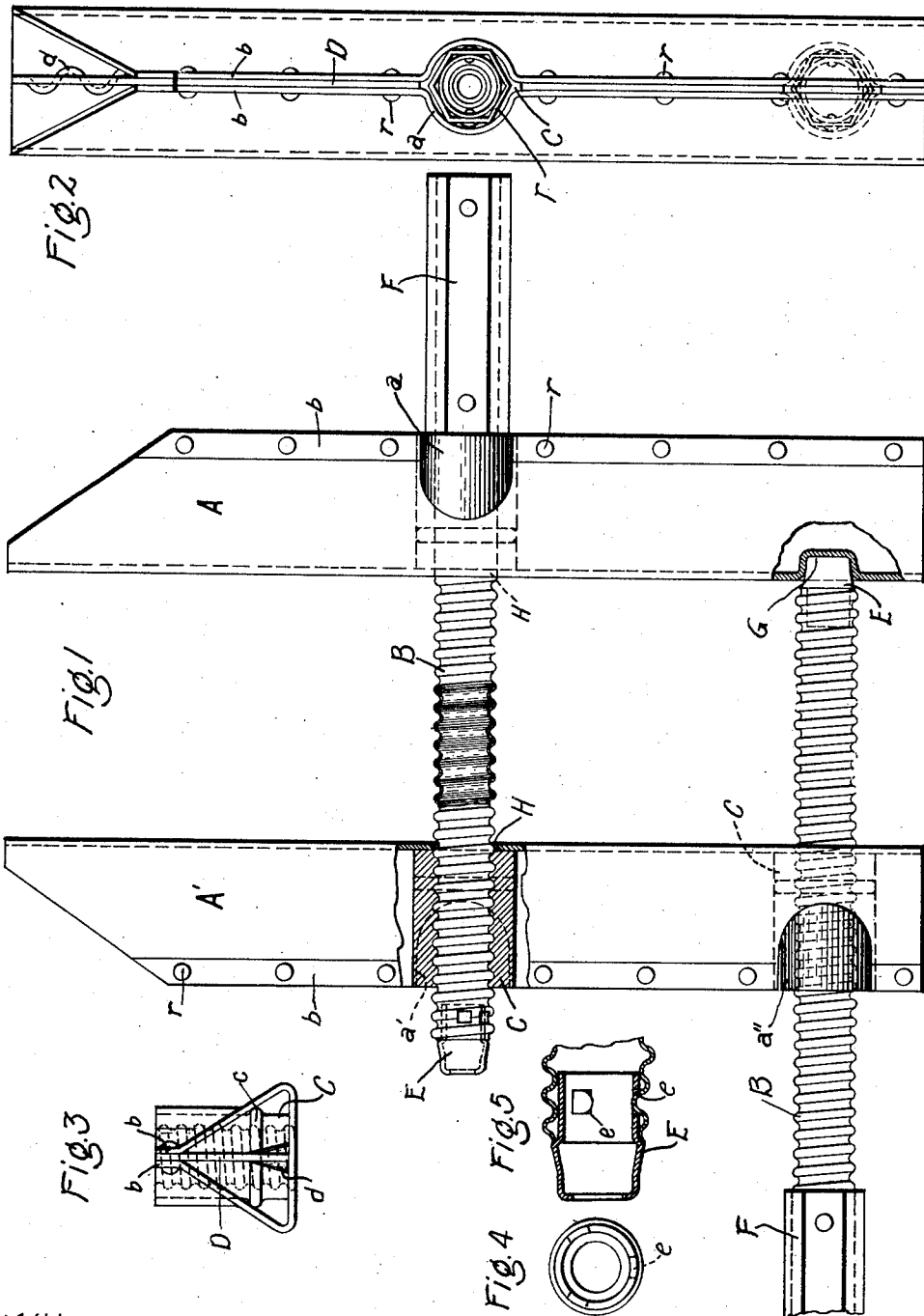


H. GEISENHÖNER.
HAND SCREW CLAMP.
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1,034,357.

Patented July 30, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

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HAND SCREW-CLAMP.

1,034,357.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed May 9, 1907. Serial No. 372,721.

To all whom it may concern:

Be it known that I, HENRY GEISENHÖNER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Hand Screw-Clamps, of which the following is a specification.

My invention relates to hand screw clamps so largely used in woodworking, and finds a ready application wherever such a device may be needed or desired; and the invention aims to provide a hand screw clamp which will be stronger, more durable and permit of wider use than the ordinary wooden clamp. In the use of these devices it is often necessary to subject the work being clamped to a flame or other source of high temperature, and when the clamp is constructed of wood this frequently results in great damage, or it may be that the clamp is entirely destroyed.

To overcome this defect and also to carry out the other features of my invention, I construct my clamp of sheet metal such as sheet iron which I will now proceed to describe in detail in connection with the accompanying drawings, in which—

Figure 1 is a side view of a complete clamp, with certain portions broken away; Fig. 2 is a top plan view of one of the jaws of the clamp; Fig. 3 is an end view of one of the jaws of the clamps; and Figs. 4 and 5 are views of the cap for the end of the hand screws.

In constructing the jaws A A' of my clamp, I prefer to employ punched sheet metal blanks of suitable size and shape, having openings H for the passage of the hand screws. These blanks are first placed in suitable dies and stamped to form the enlarged portions or openings *a*, *a'*, *a''*, the two vertical parallel sides *b b*, and in the case of the jaw A, the circular recess G, which latter forms a bearing surface for the end of one of the hand screws B. The blanks are then bent so as to bring the two vertical parallel sides together, or approximately so, for riveting or being otherwise securely united to form a back.

Before the two vertical sides are fastened together, I insert in the enlarged portions *a' a''* and in line with the openings H screw-threaded metal bushings C which are adapted to engage the threads of the hand screws

B B, and in the enlargement *a* is a like bushing, except that it has a smooth bore. These bushings may be made from any suitable material, such as Babbit metal, metal tubing, etc., and are of such diameter that when the two sides *b b* are riveted together the bushings are securely clamped and held by the enlarged portions *a*, *a' a''* of the jaw, one end of the bushings abutting against the front walls of the jaws. As a further means of securing them in place, each bushing is provided with a rib or collar *c* which engages the inner sides of the jaw and prevents the bushing from turning or working out when power is applied to the hand screws. After the bushings are inserted the two vertical sides *b b* are fastened together, preferably by rivets, as at *r*, *r*, etc., forming a hollow approximately triangular-shaped jaw which is entirely inclosed and possesses great strength with comparative lightness. This triangular jaw is made up of a flat front, integral inclined sides and a back *b—b*. To give the jaws additional strength, I may employ reinforcing strips of metal D. These strips are placed inside of the jaws and have one of their edges secured thereto by the rivets *r*, while the other edge bears against the inner side of the face of the jaws. This latter edge I prefer to corrugate, as shown at *d*, to give a wider bearing surface as well as additional strength.

The hand screws B B I prefer to make from metal tubing and roll rather than cut the threads thereon. Each screw has secured to it a handle F, and while I have shown these handles as made from metal and of hexagon shape, it will of course be understood that they may be made from any suitable material and shaped as desired. On the opposite ends of the screws are metal caps E, which are provided with slots or openings *e* and are secured to the screws by forcing into the openings *e* a portion of the thread of the hand screw. As the screws are interchangeable they are both provided with these metal caps which prevent the threads from being forced in contact with the edge of the recess G.

A hand screw clamp constructed as above described possesses all of the useful features of the wooden clamp and has the marked advantages of greater strength and durability, as well as being adapted for certain uses for which the wooden clamp is worthless;

for instance, when the work engaged by the clamp is material under high temperature. The hollow jaws give a large radiating surface and do not become overheated, make the structure light, while at the same time possessing sufficient strength for all practical purposes.

While I have described the form which I prefer for the jaws it is obvious that they may be differently formed without departing from the spirit of my invention.

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

1. As an article of manufacture, a hand screw clamp having jaws of sheet metal, each comprising a flat front wall, and integral side walls, closed at the back forming a complete inclosed hollow member, threaded bushings having their ends resting against the front walls of each jaw and engaging the side walls, and parallel screws passing through the bushings.

2. A hand screw clamp having hollow triangular sheet metal jaws provided with enlargements struck up from the side walls of said jaws, the front walls of said jaws having openings in line with said enlargements, screw-threaded metal bushings located in said enlargements and abutting against the front walls, and parallel screws of metal tubing engaging with said bushings.

3. In a hand screw clamp, hollow sheet metal jaws of approximately triangular shape, one or more openings in said jaws, metal bushings in said openings secured by the sides of the jaws, and one or more reinforcing strips secured in said jaws having their free ends corrugated and resting on the inner face of the jaws.

4. A hand screw clamp having sheet metal jaws of approximately triangular shape, enlarged portions in said jaws, metal bushings secured in said enlarged portions which engage the hand screws, a collar or projection on said bushings which engages the sides of the jaws, and hand screws of metal tubing having a handle at one end and a metal cap secured to the opposite end, substantially as described.

5. A hand screw clamp having sheet

metal jaws, each comprising two inclined side walls, said jaws having enlarged portions struck up from the side walls, a screw-threaded metal bushing secured in said enlargements and provided with a collar which engages the inner surface of the side walls, a reinforcing strip in said jaws having one edge corrugated and resting against the inner face of the front wall and its other edge secured to the sides of the jaw, and hand screws of metal tubing engaging said bushings.

6. A hand screw clamp having sheet metal jaws of approximately triangular shape, holes in the faces of the jaws and having a portion of their sides bent to form enlarged portions or openings in the tops of the jaws for the passage of the hand screws, metal bushings in said enlarged top portions having a collar which engages the inclined sides of the jaws, one or more strips of metal in said jaws having a corrugated edge resting on the inner face of the jaws, and the other edge secured to the two vertical sides of the jaws, and metal hand screws having a metal cap secured to the end passing through the jaws.

7. A hand screw clamp having sheet metal jaws, holes in the faces of the jaws, metal bushings in said jaws each having a collar which engages the sides of the jaws, one or more strips of metal in said jaws having a corrugated edge resting on the inner face of the jaw, and metal hand screws passing through the jaws.

8. A hand screw clamp having sheet metal jaws, each comprising two side walls, a screw-threaded metal bushing secured in said jaws and provided with a collar which engages the inner surfaces of the side walls, a reinforcing strip in said jaws having one edge corrugated and resting against the inner face of the front wall, and hand screws engaging said bushings.

In witness whereof, I have hereunto set my hand this 8th day of May, 1907.

HENRY GEISENHÖNER.

Witnesses:

MARGARET E. WOOLLEY,
BERTHA SECOR.