

F. H. KELLEY.
HAND CLAMP OR VISE.
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947,915.

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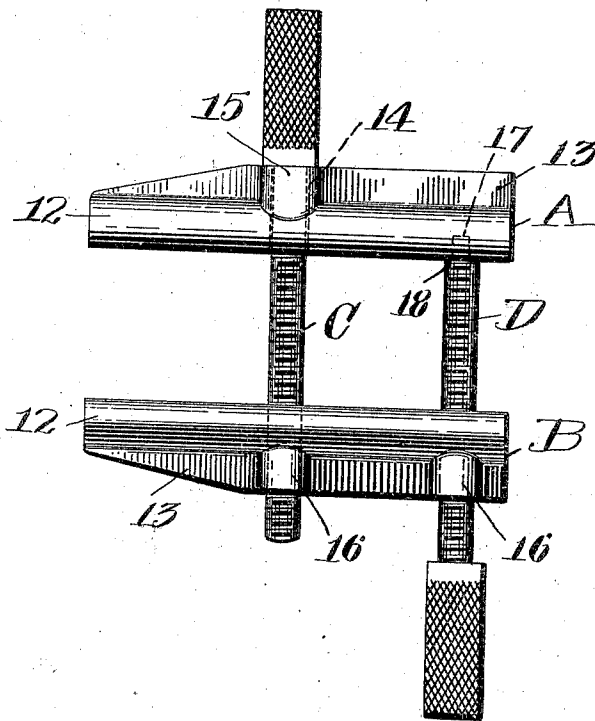


Fig. 1.

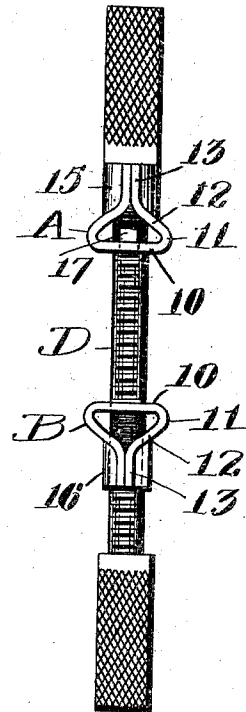


Fig. 2.

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UNITED STATES PATENT OFFICE.

FREDERICK H. KELLEY, OF NORTHBORO, MASSACHUSETTS.

HAND-CLAMP OR VISE.

947,915.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK H. KELLEY, a citizen of the United States, residing at Northboro, in the county of Worcester and State of Massachusetts, have invented a new and useful Hand-Clamp or Vise, of which the following is a specification.

This invention relates to vises and clamps and particularly to that class thereof which is ordinarily called a hand clamp.

The principal object of the invention is to provide a new, improved, and strengthened form of jaw for vises, clamps and the like which can be made in a simple and inexpensive manner from a single piece of sheet metal and which will have means within it for giving it great strength against the ordinary resistance to which said articles are subjected in practice.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing in which,

Figure 1 is a side view of a hand clamp or vise made in accordance with this invention, and Fig. 2 is an end elevation thereof.

This invention is shown as applied to a form of clamp or vise having two jaws A and B and two screws C and D, which is a well known type of hand clamp. Both of the jaws are made in substantially the same manner from a single integral piece of sheet metal. Each jaw comprises a working or bearing face 10 which preferably is flat and which is bent up at the edges 11 to form two angular or slanting sides 12 that come together back of the middle of the side 10 to form a structure of a triangular cross section. The edges 13 of the sides 10 are brought close together and given a set against each other in dies or the like so that the edges will be held in their bent up position by the natural set of the metal and will not ordinarily require additional clamping means, although the edges 13, being flat and in contact with each other for a considerable distance, would afford a convenient location for rivets or other fastening devices if desired. It will be seen that these edges 13 extend backwardly from the working face of the jaw so as to form an integral rib at right-angles to the direction of the pressure which greatly strengthens the jaw in use without materially adding to the cost of manufacture or material. The jaw A is also

provided with a passage 14 therethrough for the screw C. This passage is made partly in each of a pair of semi-cylindrical enlargements 15 on the rib 13. These enlargements are stamped out in the process of manufacture in a very simple manner and the face 10 is perforated opposite the passage 14 so as to permit the screw to pass through. The jaw B is provided with two enlargements 16 which are screw-threaded inside so that the screws may be adjusted in a well known manner. These enlargements preferably are made like the one described above. The end of the screw D is reduced at 17 so as to form a shoulder 18 and this reduced portion is adapted to enter a perforation in the rear of the face 10 of the jaw A, the shoulder abutting against the face of said jaw.

From the above description it will be seen that jaws for vises or clamps either of the kind illustrated or practically any other kind can be made in a very simple and cheap manner and be given great strength, although of exceedingly light weight. As such devices have to be carried around in practice the lightness thereof is an important feature.

While I have illustrated and described a preferred form of the invention and shown it as applied to a particular type of clamp, I am aware that the invention may be carried out in many other ways with many modifications and that it can be applied to various other jaws and similar articles which are used in a somewhat similar way without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited in all respects to the particular form or application illustrated, but—

What I do claim is:—

1. A hand clamp or vise having a jaw of a general triangular shape in cross section formed from a single piece of sheet metal.
2. A hand clamp or vise having a jaw of a general triangular shape in cross section formed from sheet metal and having a strengthening rib on the back formed by the two opposite edge portions of the sheet metal.
3. A hand clamp or vise having a jaw constructed from a single piece of sheet metal, and having a general triangular shape in cross section, the opposite edge portions of

said sheet metal piece meeting opposite the center of one side and forming a rib perpendicular to that side.

4. A hand clamp or vise having a jaw
5 formed from sheet metal and having a flat operating side and bent up along longitudinal substantially parallel lines to form slanting strengthening sides behind it and meeting at the center, said sides being
10 pressed together and held rigidly in position by the set of the metal.

5. A hand clamp or vise having a jaw provided with a flat side and two inclined sides connected with the edges of the flat side and
15 meeting at a distance behind it so as to leave a space between said sides of substantially triangular cross section.

6. A hand clamp or vise having a jaw provided with a working or bearing side and
20 two inclined sides connected with the edges of the flat side and meeting at a distance behind it so as to leave a space between said sides of substantially triangular cross section and having a rib projecting from the
25 meeting edges of said inclined sides and perpendicular to the first named side.

7. A hand clamp or vise having a jaw provided with a flat side and two inclined sides connected with the edges of the flat side and
30 meeting at a distance behind it so as to leave a space between said sides of substantially triangular cross section and having a rib projecting from the meeting surfaces of said inclined sides and perpendicular to the first
35 named side, said rib being provided with an integral screw-threaded enlargement.

8. A hand clamp or vise having a jaw of a general triangular shape in cross section formed from a single piece of sheet metal

and having a strengthening rib on the back 40 formed by the two opposite edges of the piece of sheet metal, said edges being provided with an integral screw-threaded enlargement located between them and partly in each edge for receiving a clamping screw. 45

9. In a hand clamp or vise, the combination of a pair of sheet metal triangular jaws, one of said jaws having an enlargement on the back thereof provided with a passage therethrough, and the other having two 50 screw-threaded enlargements on the back thereof, and a pair of clamping screws, one extending through said passage and one of the screw-threaded enlargements, and the other extending in the opposite direction 55 from the other screw-threaded enlargement and having a shoulder thereon engaging the face of the other jaw.

10. A clamp or vise having a jaw provided with an operating or bearing face, and side 60 walls integral with said face and extending inwardly from the sides thereof, to form inclined pressure transmitting walls.

11. A clamp or vise having a jaw provided with an operating or bearing face, and side 65 walls integral with said face and extending inwardly from the sides thereof, to form inclined pressure transmitting walls in contact with each other and clamping means bearing on the edges of said flanges. 70

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

FREDERICK H. KELLEY.

Witnesses:

ALBERT E. FAY,
C. FORREST WESSON.