

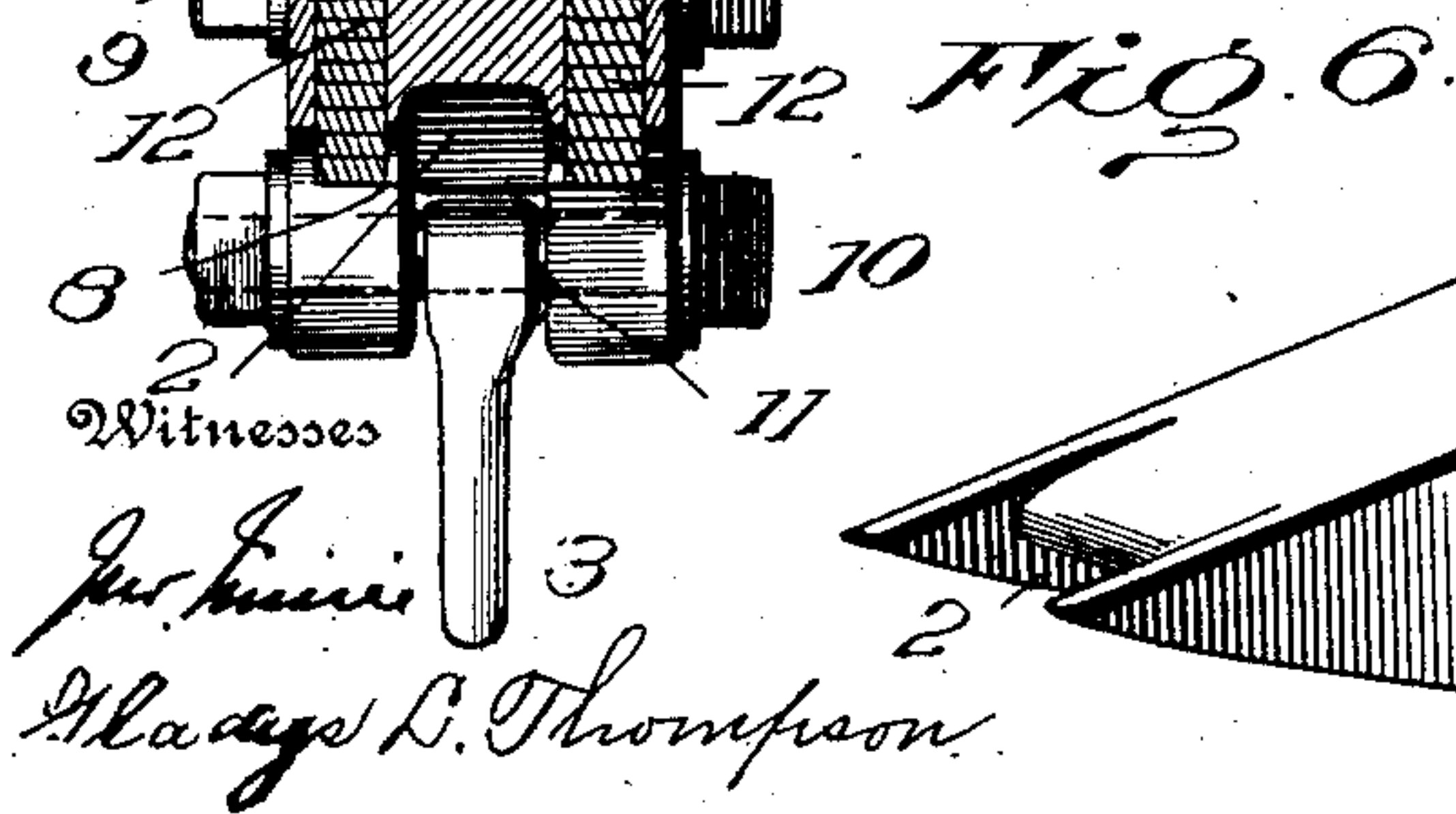
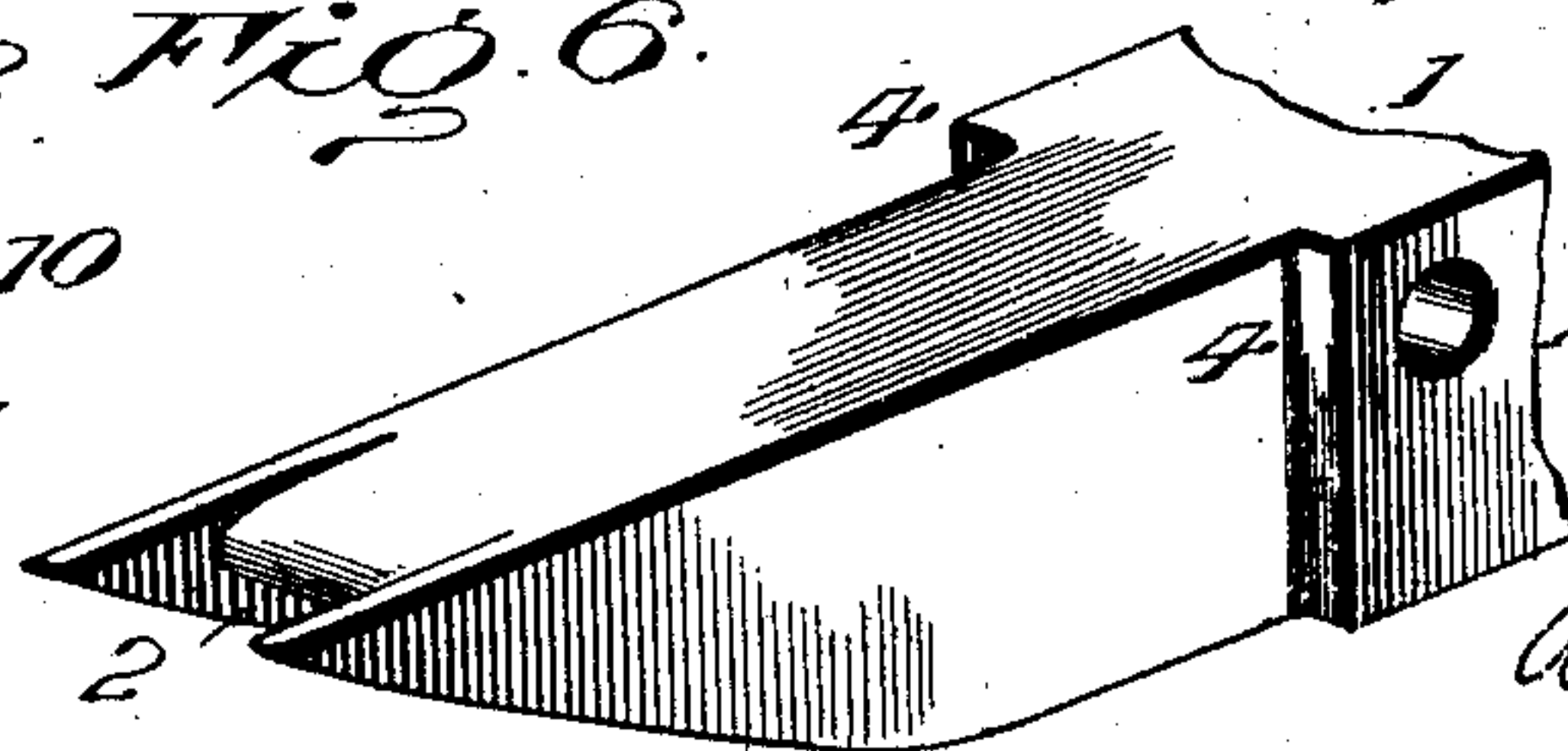
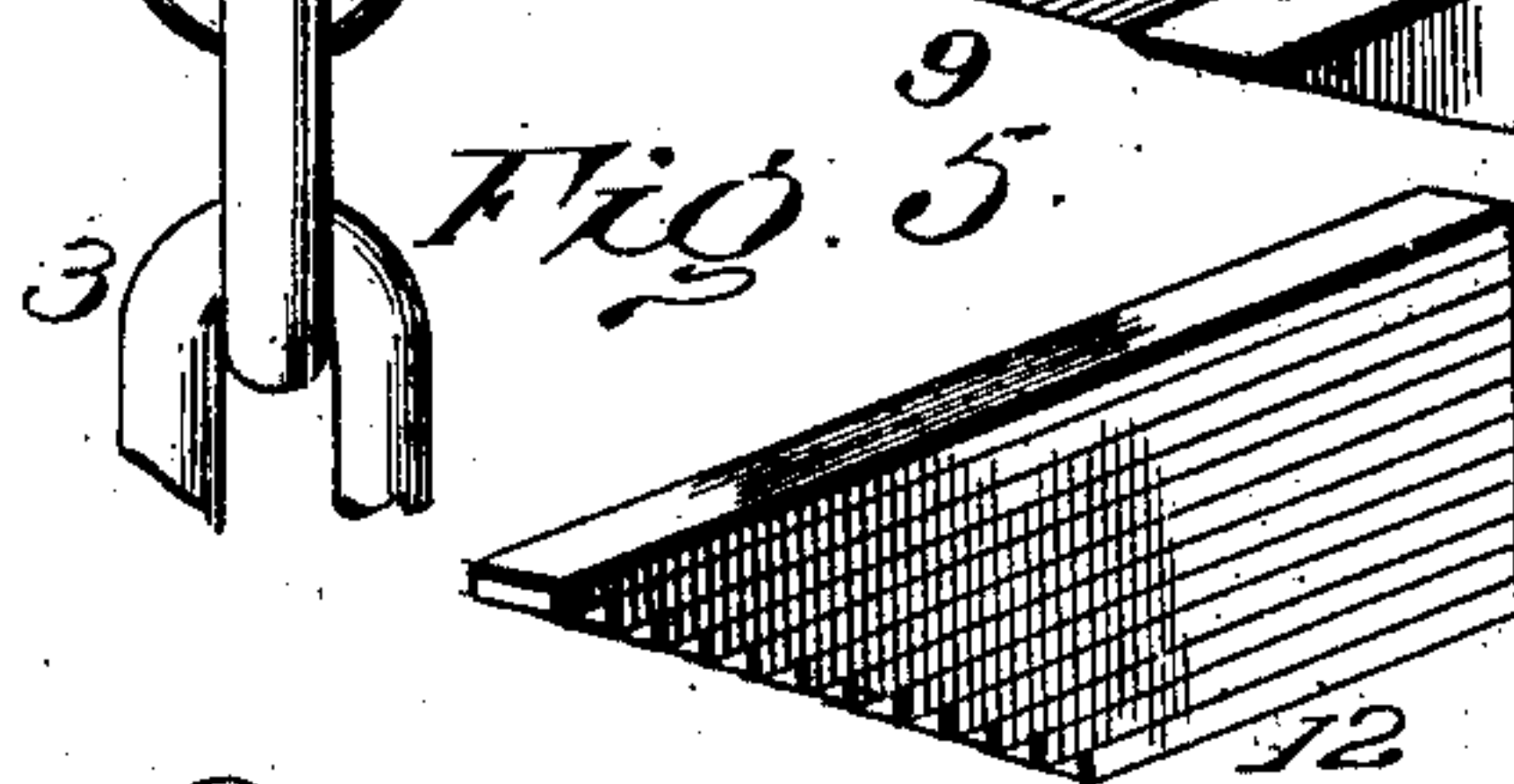
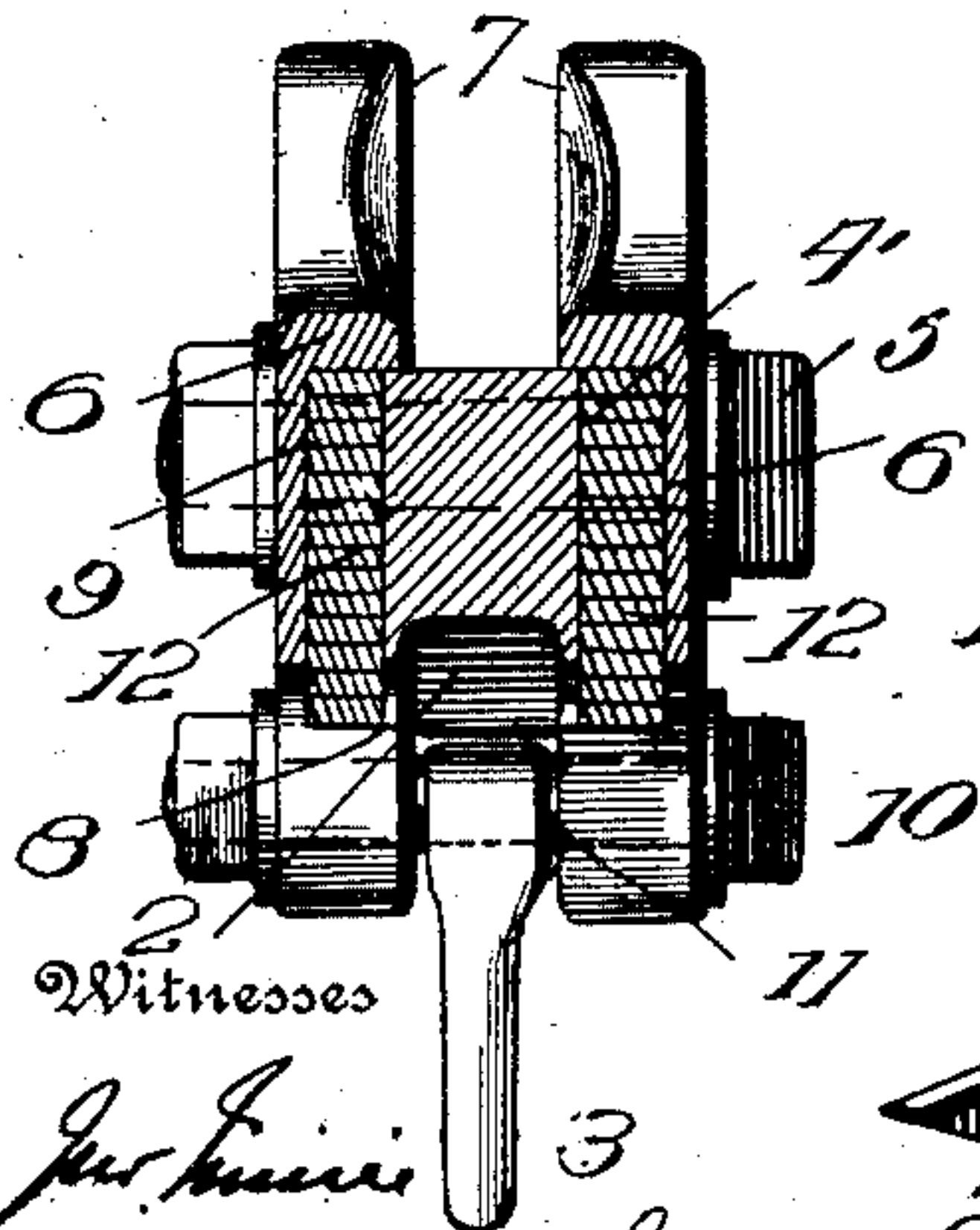
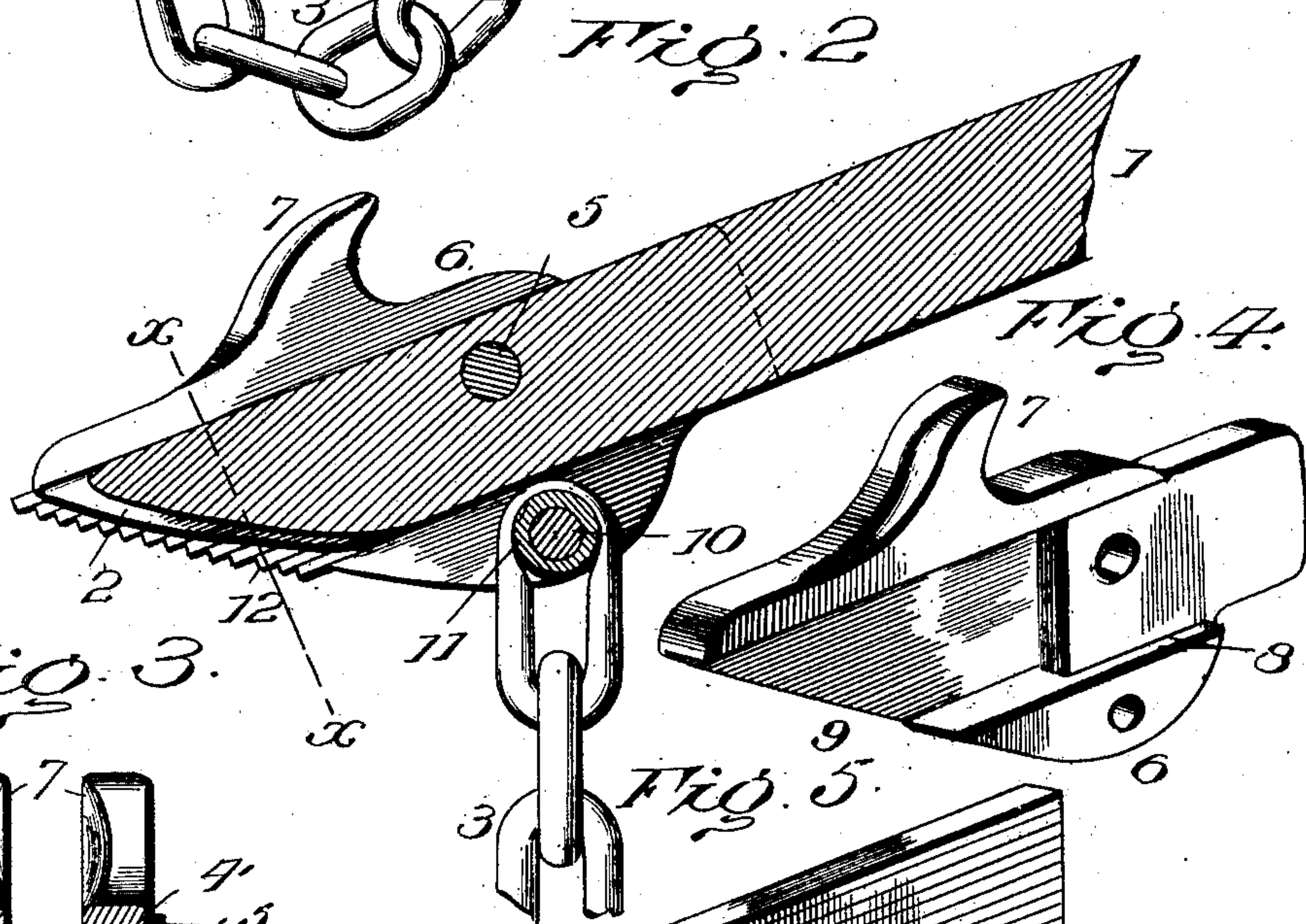
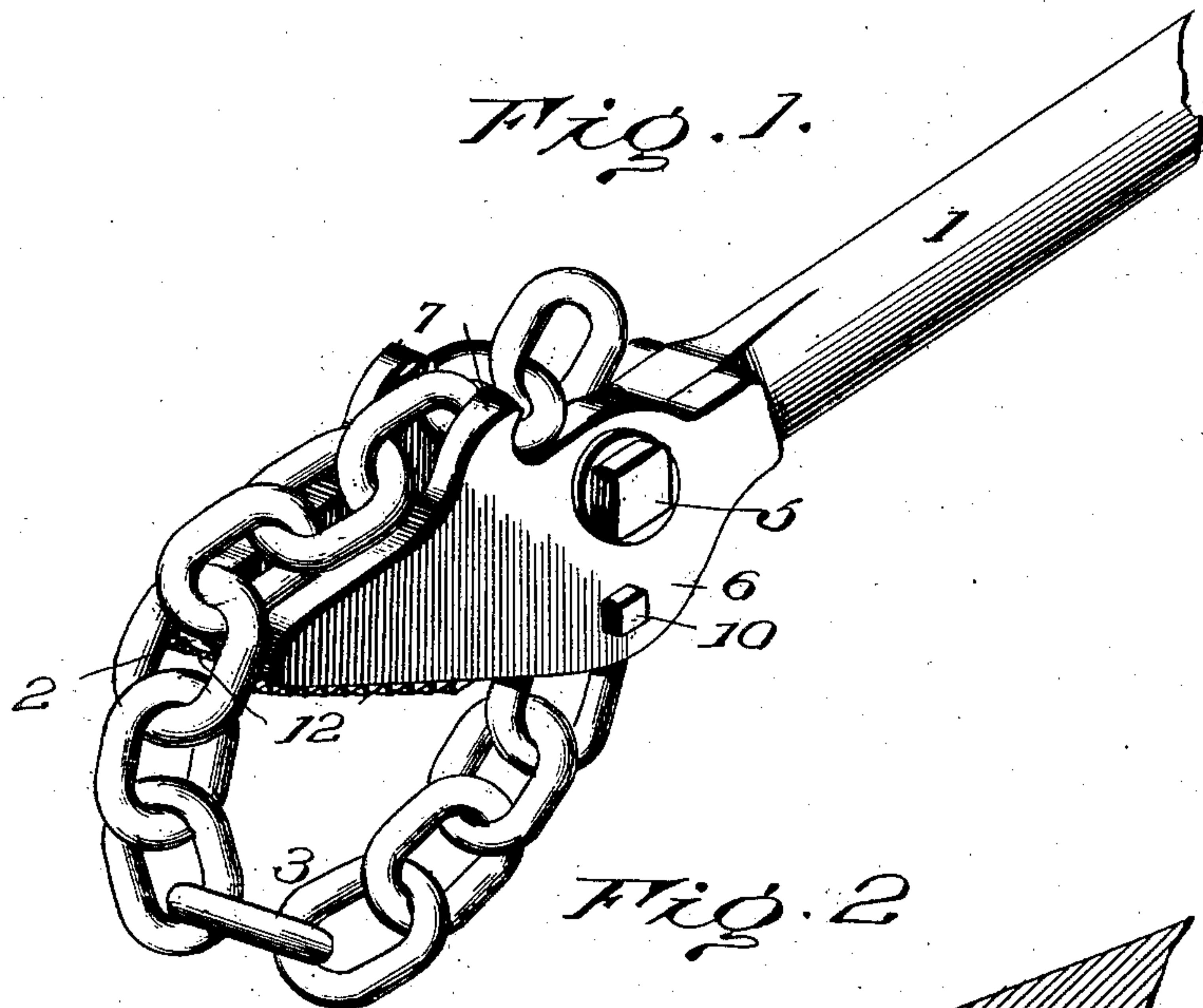
No. 703,292.

Patented June 24, 1902.

A. P. McBRIDE.
PIPE WRENCH.

(Application filed Dec. 24, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 703,292, dated June 24, 1902.

Application filed December 24, 1901. Serial No. 87,082. (No model.)

To all whom it may concern:

Be it known that I, ALBERT P. McBRIDE, a citizen of the United States, residing at Independence, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Pipe-Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the class of tools for rotating the work, either to tighten or loosen the parts coupled by means of screw-thread, said tool comprising a handle provided with a fixed jaw and an adjustable jaw.

The present invention deals more particularly with the handle and fixed jaw, the latter being laminated and the lamina arranged in echelon form to provide serrations or steps constituting teeth, which are shiftable side for side and end for end to present at least four sharp edges before grinding becomes necessary. The bits are fitted in recesses in the inner side of plates and are clamped between said plates and the sides of the handle by the same means securing the plates thereto. These plates are formed with anchoring-lugs for cooperation with a link of a heavy chain forming the adjustable jaw.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a wrench embodying the invention. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a transverse section on the line X X of Fig. 2. Fig. 4 is a perspective view of a side plate, the bit being removed. Fig. 5 is a perspective view of one of the bits. Fig. 6 is a perspective view of the end portion of the handle forming the fixed jaw.

Corresponding and like parts are referred to in the following description and indicated

in all the views of the drawings by the same reference characters.

The handle 1 consists of a bar and may be of any length and size, according to the required strength and work for which the tool is intended. The end portion of the handle is reduced and beveled, the beveled portion being channeled or grooved to provide a seat 2 for reception of links of the chain 3, by means of which the pipe, rod, or other object to be turned is gripped. Shoulders 4 are formed at the inner end of the reduced portion, and the inner ends of the bits 12 are adapted to abut thereagainst, so as to relieve the clamp-bolt 5 of strain when the implement is in operation.

Plates 6 are clamped against opposite sides of the handle 1 and constitute cheek-pieces and holders for the bits and are formed with lugs 7 for securing the chain 3 when adjusted to work. These lugs 7 are of hook form, and sufficiently stout to withstand the strain upon the chain when the tool is in use. The inner sides of the plates are longitudinally recessed, as shown at 8, to receive side portions of the handle, and the outer ends of the recesses 8 communicate with depressions 9, in which the bits 12 are fitted, the inner ends of the depressions corresponding with the shoulders 4 of the handle and serving to limit the inward movement of the bits. These plates 6 are secured to opposite sides of the handle by means of the clamp-bolt 5, passing through openings in the parts in coincident relation. The walls bordering upon the sides of the recess and depression 9 embrace the upper and lower sides of the handle and prevent turning of the plates 6 upon the clamp-bolt 5. The front end of each side plate 6 is beveled in conformity to the beveled portion of the handle 1, so as to expose a nearly-equal portion of bit. The rear portion of the side plates is contracted to correspond with the thickness of the handle, so as to make a neat joint and finish therewith.

The bits 12 involve a laminated structure, the lamina or elements being of graduated lengths and reversible to admit of any one of the four corners being brought into position to form a biting edge. The front or projecting ends of the lamina or bit-sections have an echelon arrangement, whereby serrations

or teeth are provided to take hold of the work. The ends of the bit-sections are clear. Hence any one of the four corners of each element can be brought into position for use. The bits 12 are of a size to comfortably fit within the depressions 9 and have a portion occupy a cut-away part of the handle forming the reduced end and the shoulder 4. The bits are clamped between the side plates and the adjacent sides of the handle by means of the clamp-bolt 5, thereby obviating the employment of extraneous fastenings, such as keys and clamp-screws. Upon loosening the clamp-bolt 5 and moving the side plates 6 outward the bits as a whole may be removed or any element or section thereof may be adjusted or replaced, as desired.

The chain 3 is secured to the handle by means of a bolt 10, which passes through corresponding openings in the lower edge portion of the plates 6, a sleeve 11 being slipped upon the middle portion of the bolt to prevent wear thereof by the chain. This bolt 10 is utilized to supplement the action of the clamp-bolt in drawing the plates 6 close against the sides of the handle 1 when it is required to clamp the bits 12 and prevent displacement thereof.

In practice the chain, which in the present instance constitutes the adjustable jaw, is passed around the work to be gripped and a link thereof is engaged with the lugs 7, a portion of the chain lying between the projecting edge portion of the plates 6 and the terminal parts of the handle bordering upon the seat 2. Upon oscillating the handle the teeth of the bits take hold of the work and cause rotation thereof in the well-known manner.

Having thus described the invention, what is claimed as new is—

1. In a wrench of the character set forth, a handle, plates arranged at opposite sides of the handle and having a depression in their inner sides, bits located in said depressions, and means for securing said plates to opposite sides of the handle and at the same time clamping the bits between the proximal sides of the plates and handle, substantially as set forth.

2. In a wrench substantially as set forth, a handle having shoulders at opposite sides, plates having side depressions and arranged at the sides of the handle provided with the shoulders, bits located in the depressions of the said plates and having their inner ends abutting against the aforementioned shoulders of the handle, and means for securing the plates to the handle and clamping the bits between proximal sides of the plates and handle, substantially as set forth.

3. In a wrench of the character described, a handle having shoulders at opposite sides, plates placed against opposite sides of the

handle and having depressions in the outer ends of their inner sides, the inner ends of the depressions corresponding with the aforesaid shoulders, bits located in said depressions and having their inner ends abutting against the aforesaid shoulders and inner ends of the depressions, and means for securing the plates to the handle and clamping the bits between said handle and plates, substantially as set forth.

4. In a wrench, a handle, plates located at opposite sides of the handle and having projecting portions to overlap or embrace the upper and lower sides of said handle, bits located between the side plates and handle, and means for securing the side plates to the handle and at the same time clamping the bits, substantially as specified.

5. In combination, a handle, plates located at opposite sides of the handle and provided with bits and having a part widened and projecting above and below the handle, the upper being provided with lugs, a clamp-bolt for securing the plates to the handle, a chain adapted to make adjustable connection with said lugs, and a bolt for connecting the chain to the side plates and also serving to draw the latter close against the sides of the handle, substantially as set forth.

6. A wrench comprising a handle having its outer end beveled and channeled to provide a seat, plates located at opposite sides of the handle and provided with bits and having projecting lugs, means for securing the plates to the handle, and a chain secured at one end and adapted to have its loose end make adjustable connection with the lugs, substantially as set forth.

7. The herein-described wrench comprising a handle having its outer end reduced, beveled and channeled to provide a seat and having shoulders at the base of the reduced portion, plates located at opposite sides of the handle and having a recess and depression in their inner sides and having lugs at their upper edges, laminated bits located in the depressions of the side plates and having their inner ends abutting against the aforesaid shoulders, means for securing the plates to the sides of the handle and clamping the bits between proximal sides of the plates and handle, and a chain secured at one end and adapted to make adjustable connection at its opposite end with the said lugs, substantially as set forth.

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

ALBERT P. McBRIDE. [L. S.]

Witnesses:

E. J. KEIM,

J. F. OVERFIELD