

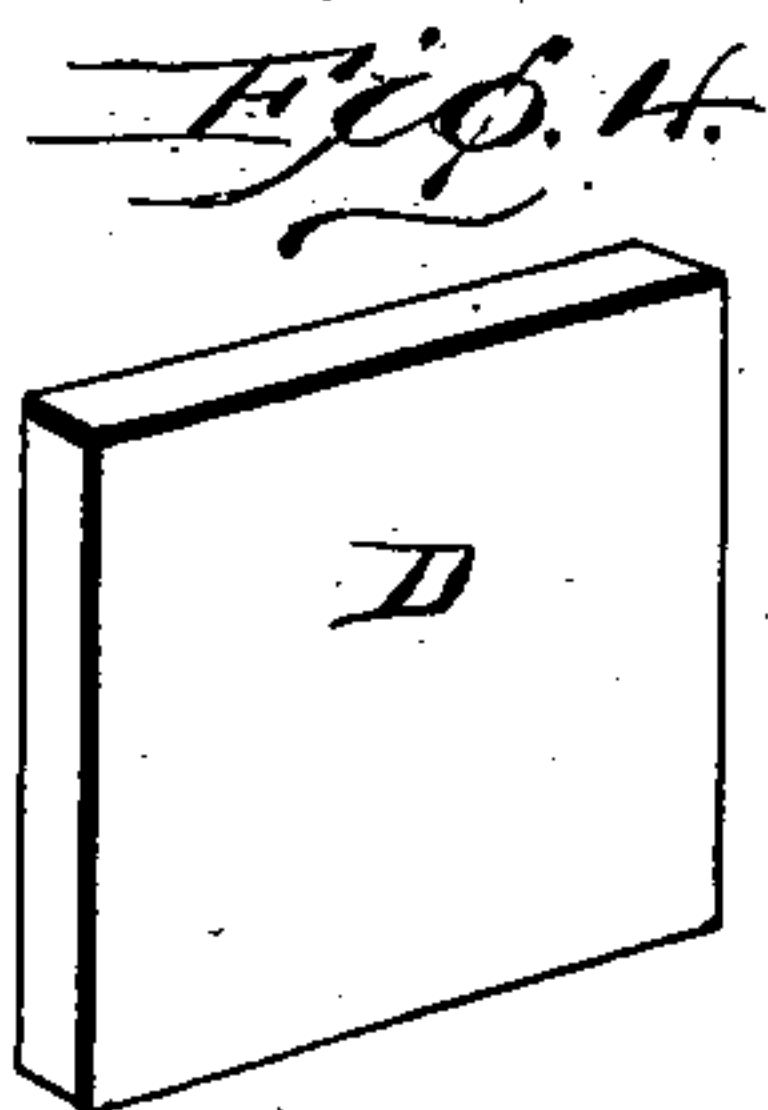
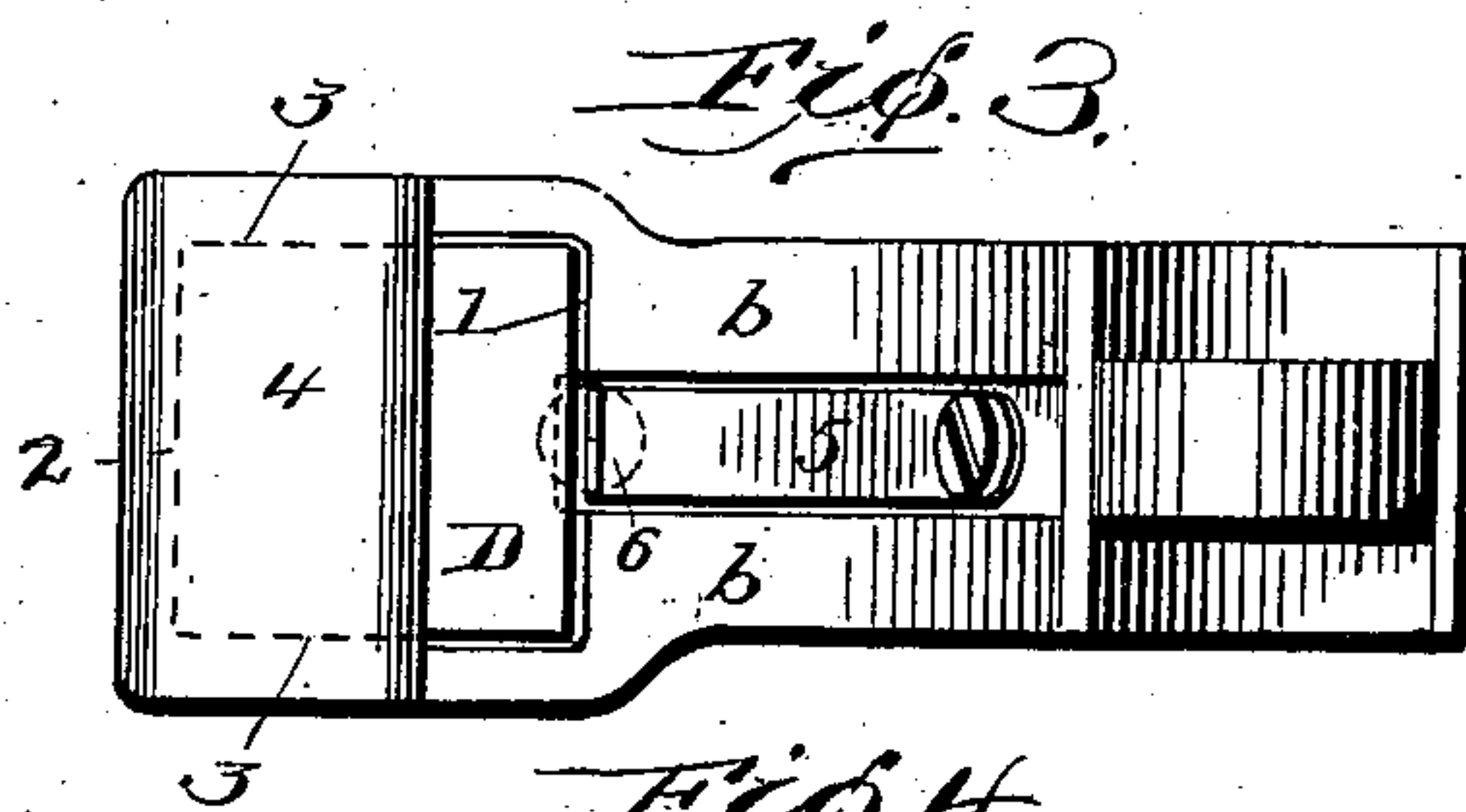
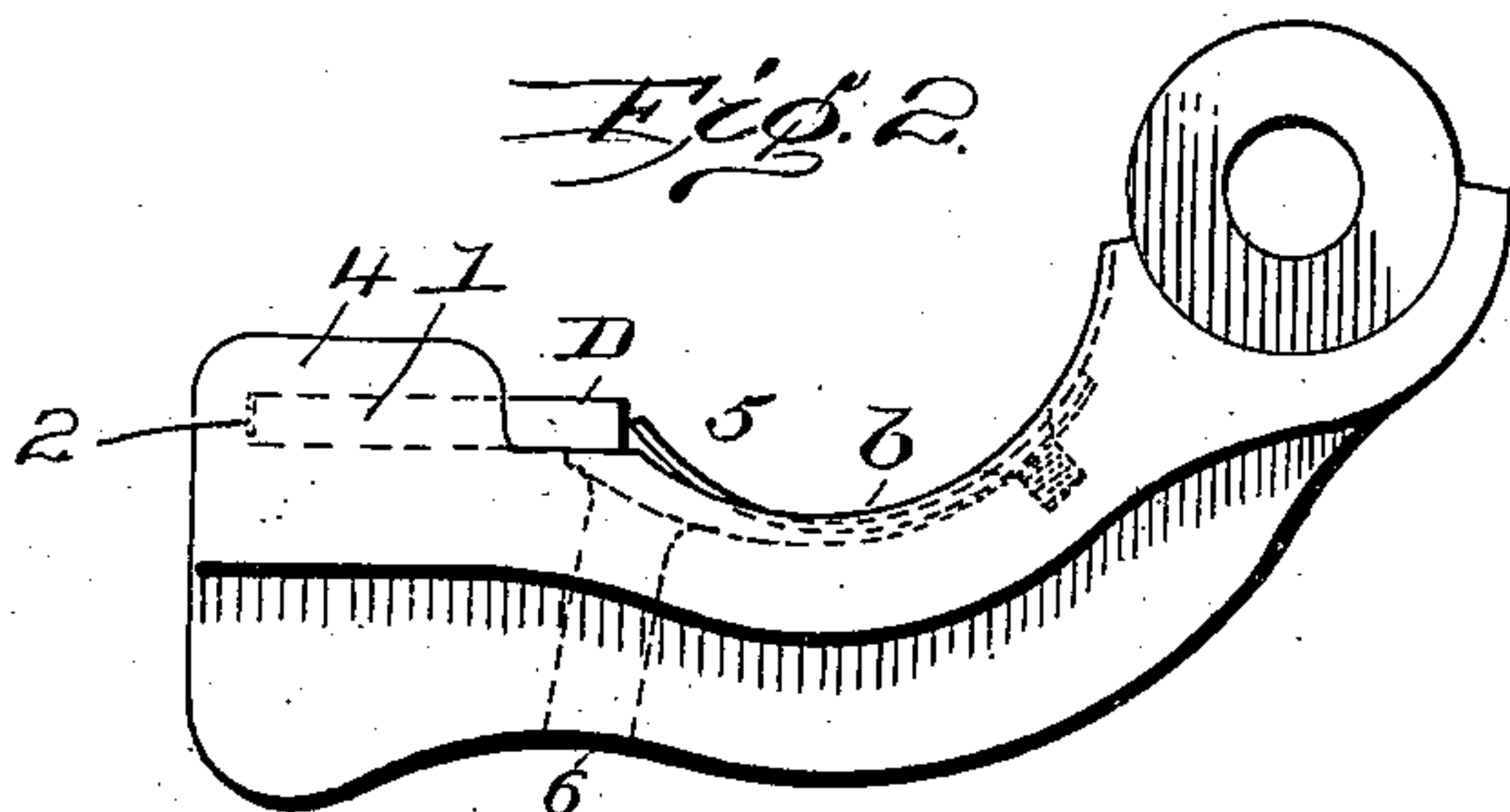
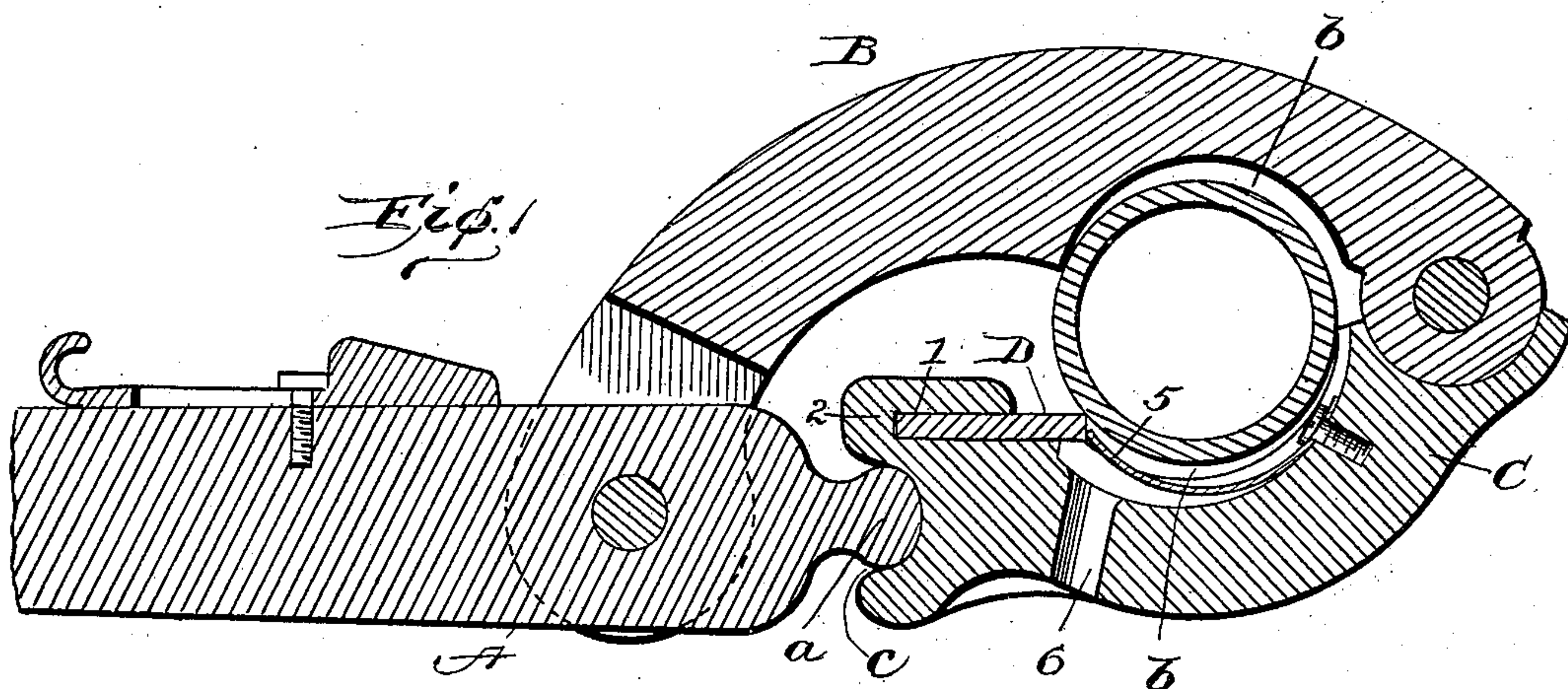
No. 698,765.

Patented Apr. 29, 1902.

A. UNDERWOOD.
PIPE WRENCH.

(Application filed Feb. 8, 1902.)

(No Model.)



witnesses:

J. M. Fowler
D. E. Wilson

Inventor

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Att'y.

UNITED STATES PATENT OFFICE.

ALFRED UNDERWOOD, OF OIL CITY, PENNSYLVANIA, ASSIGNOR TO OIL WELL SUPPLY COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 698,765, dated April 29, 1902.

Application filed February 3, 1902. Serial No. 92,369. (No model.)

To all whom it may concern:

Be it known that I, ALFRED UNDERWOOD, a citizen of the United States, residing at Oil City, in the county of Venango, State of Pennsylvania, have invented certain new and useful Improvements in Pipe-Wrenches; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a pipe-wrench embodying my invention. Fig. 2 is a detached view, in side elevation, of the bit-jaw. Fig. 3 is an under side or inverted plan view of the bit-jaw, and Fig. 4 is a detached view of the bit.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of pipe-tongs or pipe-wrenches having detachable and reversible die-blocks, teeth, or bits for engaging the pipe or rod, as the case may be, and has for its objects to simplify and strengthen the jaw and bit construction and to facilitate the insertion or removal of the bit when the same is to be reversed or removed for grinding or for renewal.

Heretofore, so far as I am aware, the detachable and reversible bits or die-blocks of pipe-tongs and pipe-wrenches have been held in position on the jaw by through-bolts, spring-pins, or set-screws, either with or without specially-formed bit-seats, the bits or die-blocks being either perforate, indented, or otherwise specifically shaped, all of which tends to the weakening of the structure and makes against the proper seating or engagement of the bit or die-block when reduced by grinding. To overcome such objections and disadvantages, I provide the bit-jaw with a bit pocket or recess for the reception of the bit or die-block, said pocket constructed to substantially surround the bit, and a spring keeper or detent arranged opposite the opening of said recess or pocket and adapted to prevent the escape of the bit or die-block, whereby a plain-face rectangular or equivalent form of bit or die-block may be used, and such a construction embodies the main feature of my invention.

A second feature of my invention embraces

the combination, with the bit recess or pocket, of a leaf-spring keeper, detent, or tongue so arranged with relation to the bit-recess as to prevent the escape of the bit therefrom, and a clearance-slot beneath the leaf-spring detent or keeper to prevent the lodgment of scale, dirt, or other matter liable to clog or obstruct said spring-detent.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the operating-lever, B one jaw pivoted thereon, and C a second jaw pivoted at one end on the jaw B and provided at its inner end with a recess *c* to receive the projection *a* on the end of the operating-lever, said jaws B and C being provided with the corresponding pipe-seats *b b*, all of which may be as shown or of any other known pivoted-jaw construction.

1 indicates a bit or die pocket formed on the inner or grip face of the jaw C, said pocket being of the form and dimensions required for the bit or block-die, preferably rectangular, and provided with the end wall 2 and the side walls 3 3 to form abutments or supports for the bit or die-block, the pocket being entirely or partially closed by the front wall 4, the essential of the pocket being that its form shall be such as to support the bit or die-block at the outer end and laterally and permit of its free withdrawal from the inner or open end of the pocket.

Arranged and properly secured within a recess formed in the grip-face or pipe-seat *b* of the jaw C is a leaf-spring 5, the free end of which when the tongs is not in use stands immediately in front of the mouth of the bit-pocket 1, so as to act as a keeper or detent for the bit or die-block D.

Formed in the jaw and communicating with the seat of the leaf-spring 5, at its inner end, is a clearance slot or opening 6 to permit the escape of scale, dirt, or other matter liable to obstruct the free movement of the inner end of the spring 5 or keeper.

The bit-pocket or die-pocket 1 being of the general character hereinbefore set forth and provided at its inner end or opening with the leaf-spring detent, the bit or die-block may be of simple rectangular form with plain faces,

devoid of indentations or perforations, and may be introduced or withdrawn from the pocket by simply depressing the detent or free end of the leaf-spring 5.

- 5 When the pipe tongs or wrench is in use, the biting edge of the bit or die-block will project sufficiently beyond the level of the free end of the leaf-spring detent to enable it to engage the tube, pipe, or rod to be seized
10 thereby, or, if necessary to the proper engagement of the bit, the free end of the leaf-spring 5 will recede or be pressed back by the pipe or tube and will again advance to prevent the escape of the bit or die-block when
15 the pipe or rod is released.

- Among the advantages arising from my invention are the simplicity and increased strength of both bit or die-block and tongs-jaw, the facility with which the bit or die-
20 block may be removed for grinding and replaced, the readiness with which the bit or die-block will adapt itself to its seat on the jaw, the absence of pins, screws, or like fastenings liable to be broken when the bit or
25 die-block cannot properly seat itself, and the recession of the leaf-spring detent to insure at all times the proper engagement of the bit or tooth with the pipe or rod to be seized.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 30

1. A pipe-tongs jaw having a bit or die-block pocket, constructed to substantially surround the bit or die-block, and a spring-detent arranged at the mouth of said pocket, 35 substantially as and for the purposes specified.

2. A pipe-tongs jaw having a bit or die-block pocket constructed to substantially surround the bit or die-block, and a leaf-spring 40 detent or keeper arranged at the mouth of said pocket, substantially as specified.

3. A pipe-tongs jaw having a bit or die-block pocket, a leaf-spring detent or keeper arranged at the mouth of said pocket, and a 45 clearance-slot which communicates with the seat of the leaf-spring detent, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 1st day of 50 February, 1902.

ALFRED UNDERWOOD.

Witnesses:

J. H. CHICKERING,
C. J. RHINE.