

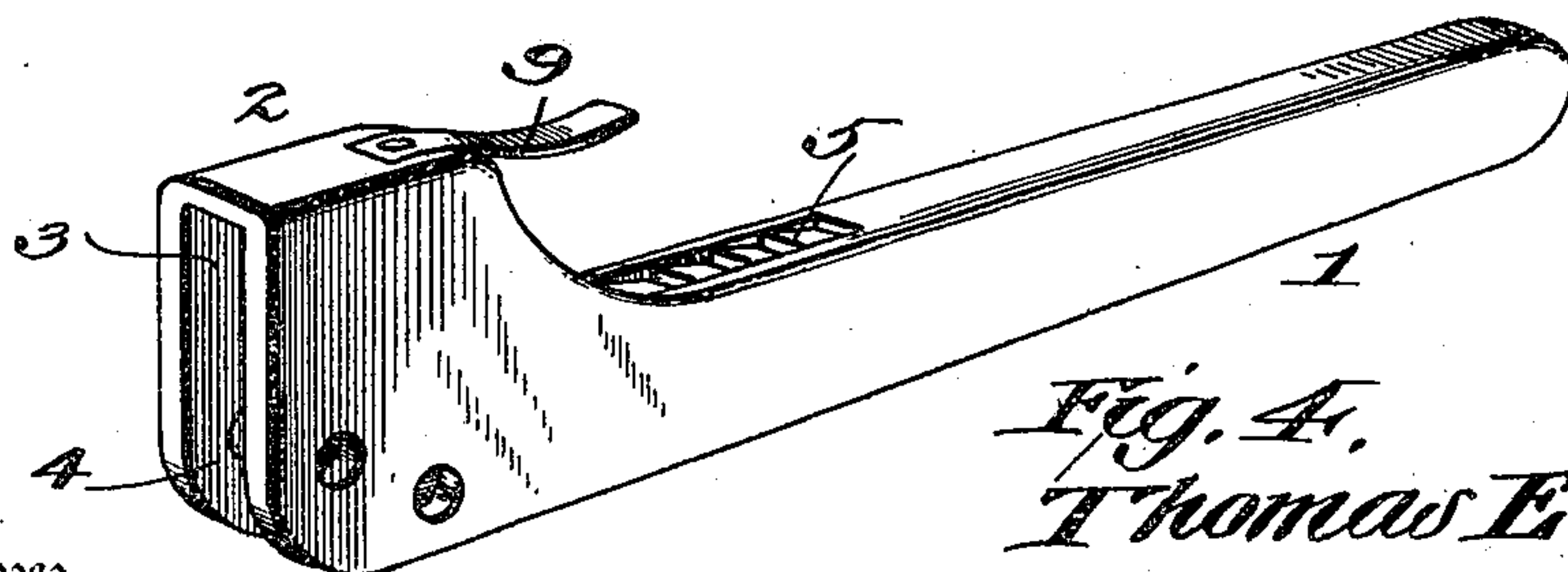
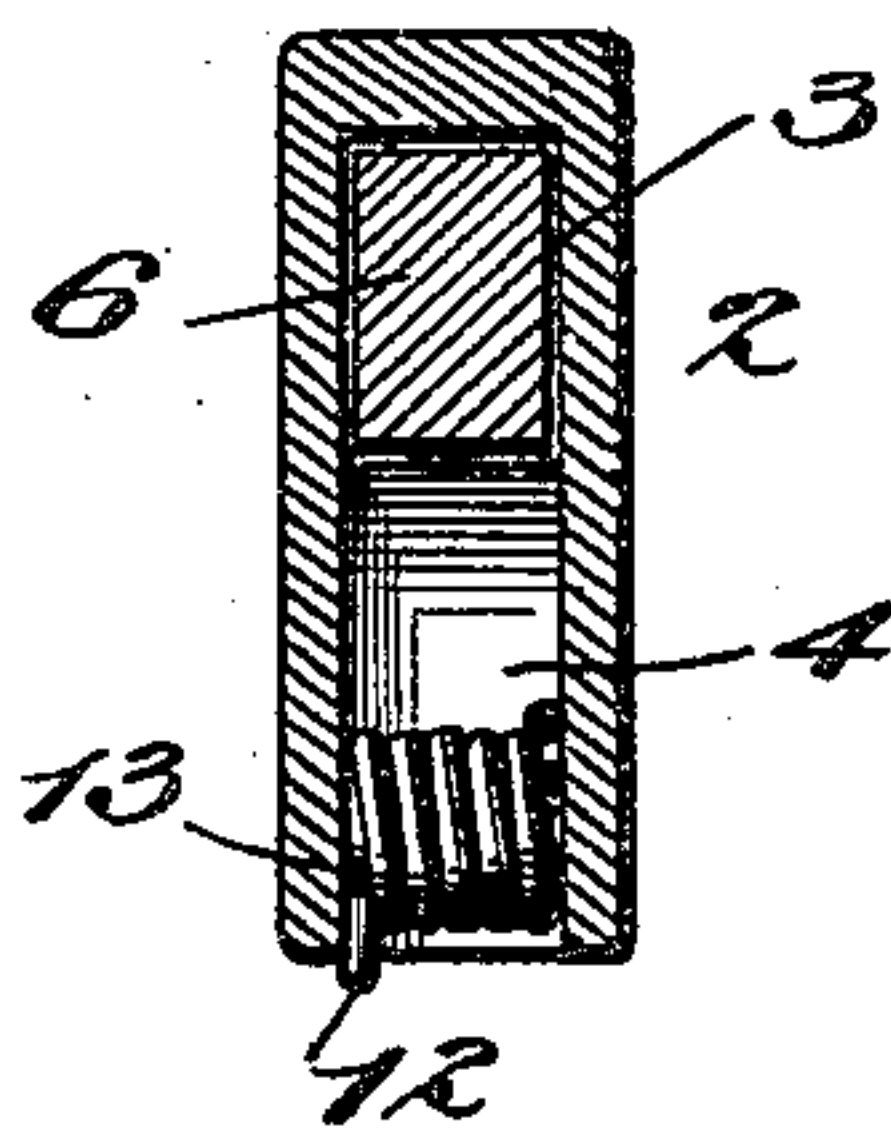
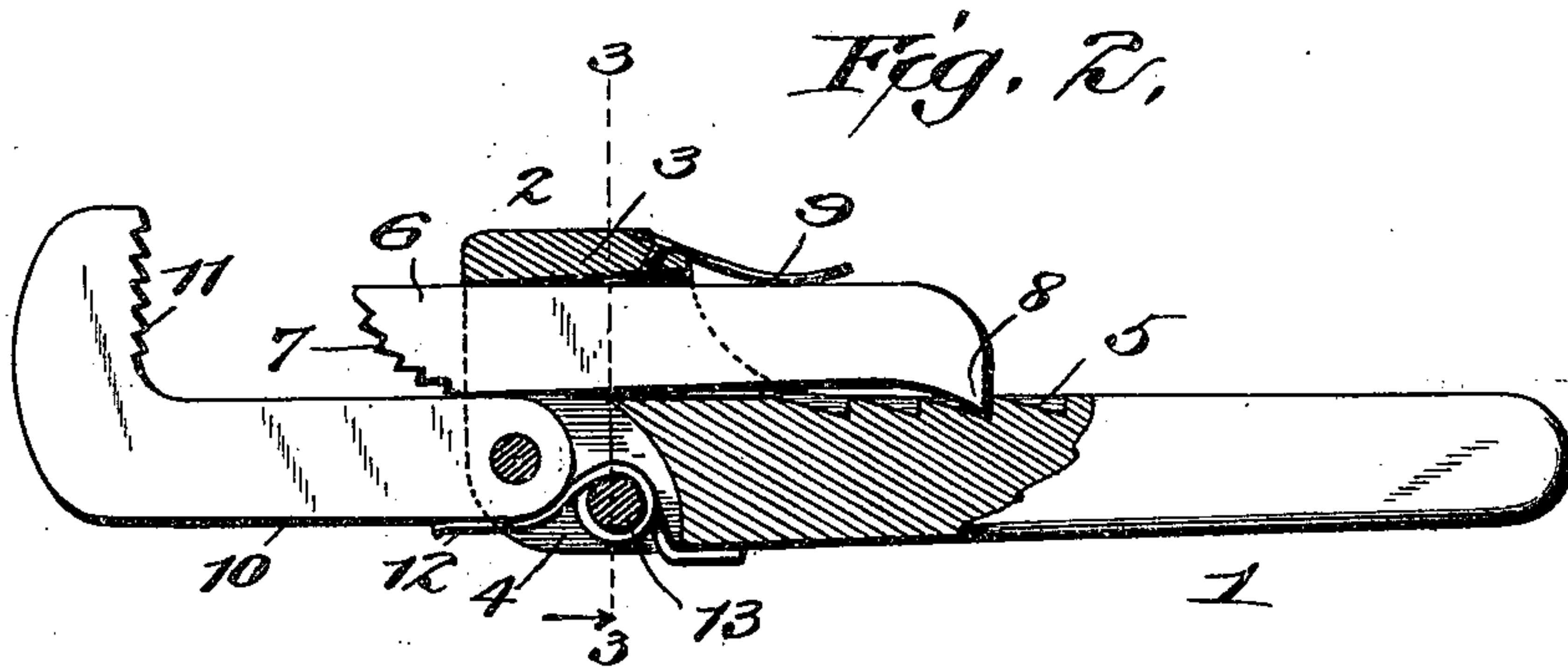
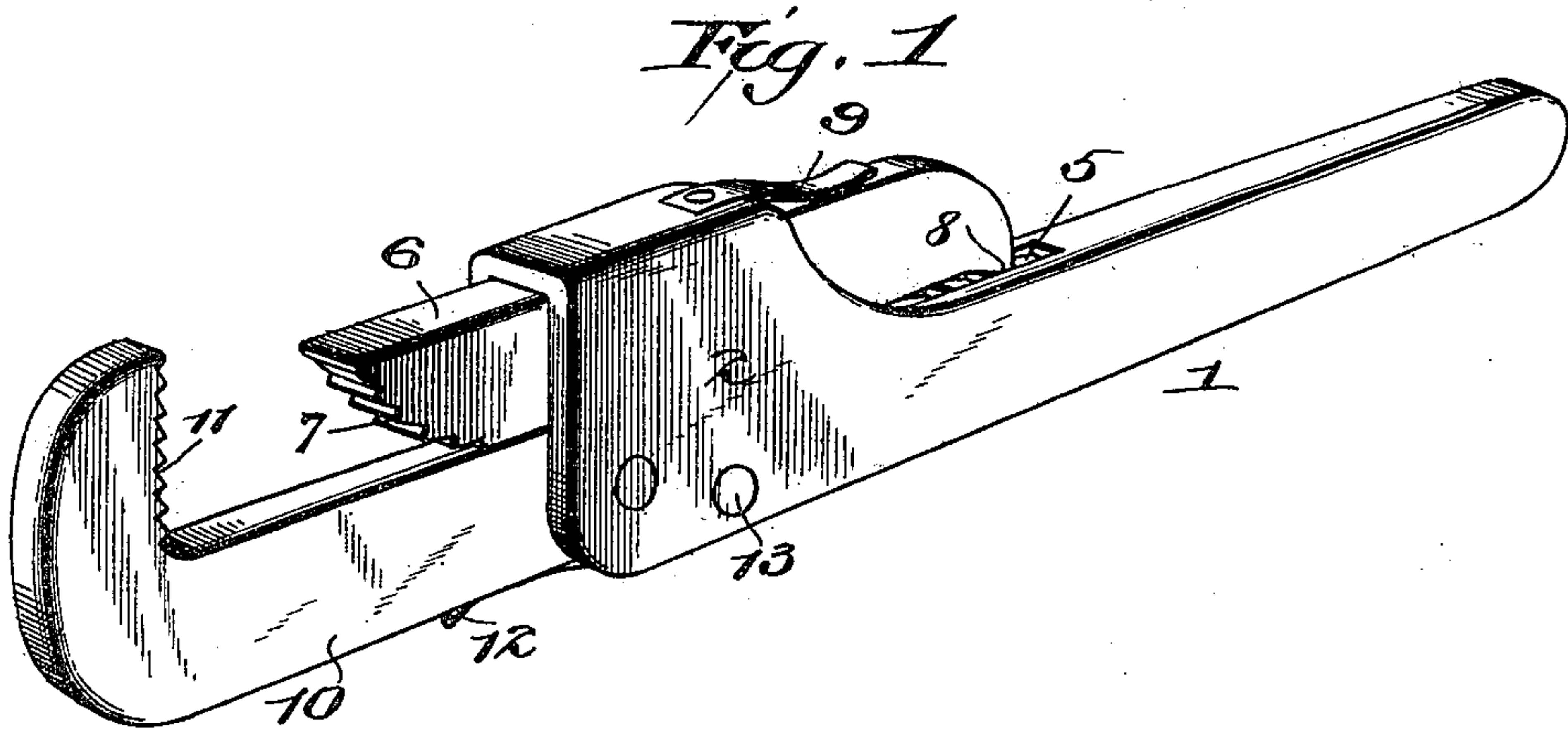
No. 667,743.

Patented Feb. 12, 1901.

T. E. SMYTHE.
WRENCH.

(Application filed May 4, 1900.)

(No Model.)



Witnesses
Wm. H. Gleason
Chas. E. Brock

334

Fig. 4.
Thomas E. Smythe,

Inventor:

Olmstead & Co.

Attorneys

UNITED STATES PATENT OFFICE.

THOMAS E. SMYTHE, OF GALION, OHIO.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 667,743, dated February 12, 1901.

Application filed May 4, 1900. Serial No. 15,496. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. SMYTHE, a citizen of the United States, residing at Galion, in the county of Crawford and State of Ohio, have invented a new and useful Wrench, of which the following is a specification.

My invention relates to wrenches, and more particularly to that class of adjustable wrenches which are known as "pipe-wrenches;" and it has for its object to produce a device of this kind which is simple and strong in construction and easily adjusted and applied to the object to be manipulated.

With this object in view my invention consists in the improved construction and novel arrangement of parts of a wrench, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a perspective view of my improved wrench. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view. Fig. 4 is a perspective detail view of the handle.

Referring more particularly to the drawings, 1 indicates the handle of my improved wrench, which is preferably formed from metal and may be of any suitable size and length. The inner end or head 2 of the handle is enlarged and recessed longitudinally, as shown at 3, and also at the lower side, as shown at 4, the upper surface of the handle to the rear of the longitudinal recess 3 being provided with forwardly-extending teeth or shoulders 5.

Arranged to slide longitudinally within the recess 3 is a jaw 6, the forward end of which is preferably slightly curved and provided with transversely-arranged teeth 7, and the rear end is provided with a slight downward extension 8, which is adapted to engage with the teeth or shoulders 5 and prevent the rearward movement of said jaw. If desired, a suitable spring 9 may be secured to the upper rear edge of the handle in position for its free end to engage with the rear end of the jaw 6 and hold its tooth or extension 8 in engagement with the shoulders 5.

Pivotally secured in the forward end of the head is a pivoted jaw 10, the outer end of which is formed into an L shape, which ex-

tends up in front of the forward end of the sliding jaw 6 and is preferably provided upon its inner face with teeth or notches 11. A spring 12 is seated within the recess 4 in position to have one end engage with the handle and the free end to engage with the rear face of the jaw 10 and normally hold it up with its toothed portion in front of the toothed portion of the sliding jaw. If desired, an enlarged pin 13 may be secured within the recess 4, upon which the spring 12 is seated, the spring being formed from a coiled piece of wire with the coils of a trifle larger diameter than the diameter of the pin.

In using my improved wrench the sliding jaw is drawn back far enough to permit of the object to be manipulated being inserted between the coacting faces of said jaws. After the wrench has been placed upon the object the sliding jaw is forced up against the object by pressure upon its rear end, the extension 8 being inclined forwardly, so as to readily slip over the inclined teeth or shoulders 5. As soon as it engages with the object between the jaws the end of the handle is drawn around in that direction, which will cause the forward end of the jaw to engage with the object and set its teeth therein and also crowd the article over against the teeth of the other jaw, which will thus prevent the wrench from slipping upon the object. After the object has been thus gripped between the jaws the continued pressure upon the handle will cause the rotation of the object in the ordinary manner.

By making the outer jaw L-shaped and pivoting its inner end adjacent to the sliding jaw it can be swung backward or outward for the purpose of placing the wrench in position, if desired, and it will also permit of the jaws being readily separated and releasing their grip upon the wrench by simply moving the handle backward or in the opposite direction from which it has been turned to screw the parts together. The pressure of the spring upon the rear face of the pivoted jaw will normally hold it always in its forward position or will return it there after it has been forced out of it by releasing the wrench, as above described.

Another advantage arising from the pivotal connection between the outer jaw and

the handle is that the wrench can be operated as a ratchet-wrench, for the reason that the jaws will automatically engage with and release themselves from the pipe as the outer end of the handle is moved back and forth by the operator. By pivoting the jaw to the forward end of the handle my wrench can be used in corners or places where it would be impossible to insert and manipulate a wrench having a rigid jaw. By making the sliding jaw extend entirely through the slotted head the pressure upon the forward or curved end will cause the rear end to be forced into engagement with the teeth upon the handle, for the reason that the central portion of the jaw will engage with the head as a fulcrum. Owing to the construction and coöperation of the parts of my wrench it will not crush the pipe being operated upon, and especially the smaller pipes.

It is evident that my wrench can be utilized for turning nuts or other angular objects as readily as it can be applied to the manipulation of pipes or round objects. It is also evident that variations can be made in the form and construction of my improved wrench, and I reserve the right to make such changes and alterations as will come within the scope of my invention.

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

1. In a wrench, the combination, with a handle, one end of which is formed into a longitudinally-perforated head, the upper face of which, adjacent to the head, is provided with teeth, an L-shaped jaw pivotally secured in the head in alinement with the handle, and a longitudinally-movable jaw through the head, the forward end of which projects in front of the pivotal point of the other jaw and

the rear end is adapted to engage with the teeth of the handle to the rear of the head, substantially as described.

2. In a wrench, the combination, with a handle, the head of which is slotted longitudinally and a portion of one side adjacent to the slot is provided with inclined teeth, of a jaw pivotally secured in the forward end of said slotted portion, the free end of which is L-shaped, a sliding jaw through the slotted head, the forward end of which is movable toward and from the free end of the other jaw and the rear end is provided with a tooth or projection for engaging with the teeth of the handle and a spring upon the head in position to engage with the rear end of the sliding jaw and force it into engagement with the handle, substantially as described.

3. In a wrench, the combination, with a handle, the head of which is slotted longitudinally and the handle adjacent thereto is provided with forwardly-extending teeth, of a jaw pivotally secured within the slotted portion of the handle, the free end of which is bent at an angle and provided on its inner face with teeth, a spring secured within the slotted portion of the head, one end of which engages with said jaw and normally forces it forward, a longitudinally-movable jaw within the slotted portion, the under side of the rear end of which is provided with a projection for engaging with the teeth of the handle, and a spring secured to the head in position to engage with the rear end of said sliding jaw and normally hold its projection in engagement with the teeth of the handle, substantially as described.

THOMAS E. SMYTHE.

Witnesses:

C. D. WORCESTER,
JOSEPH SPITTLE.