(No Model.)

C. V. GREENAMYER.

ADJUSTABLE PIPE WRENCH.

No. 444,779. Patented Jan. 13, 1891.

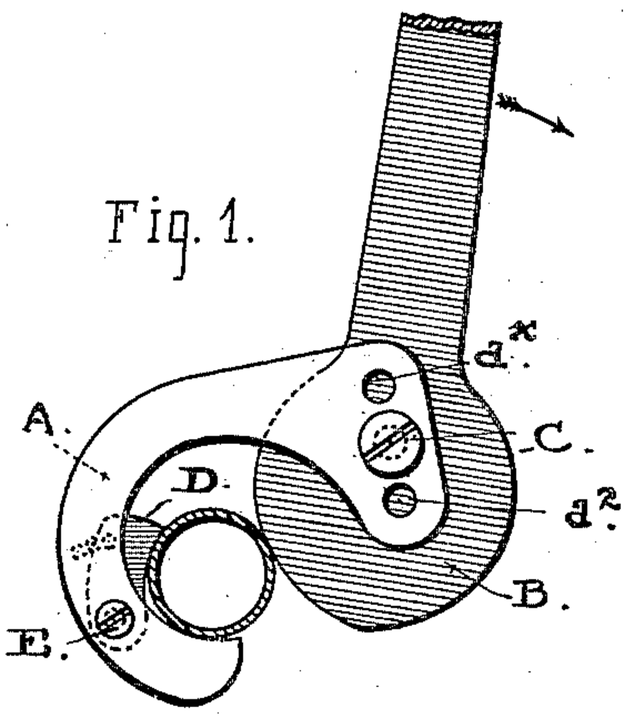

Fig. 1.

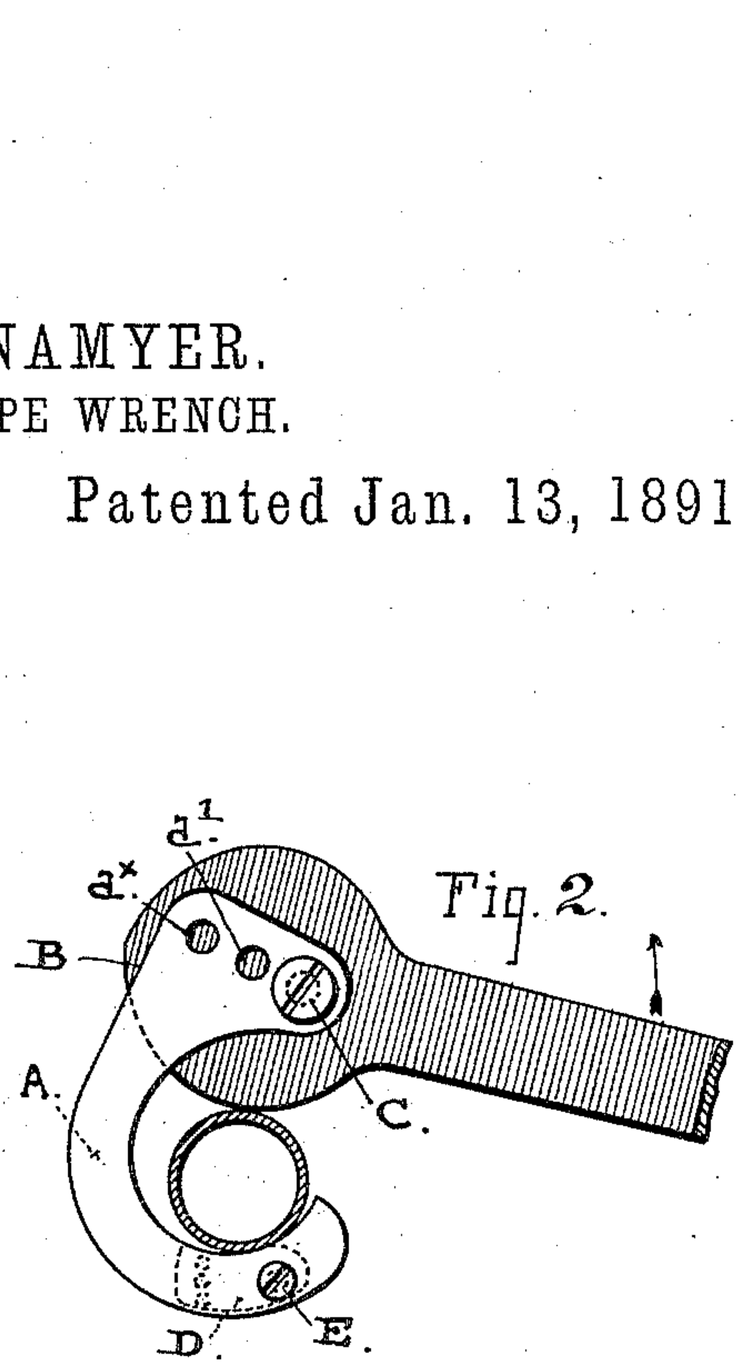

Fig. 2.

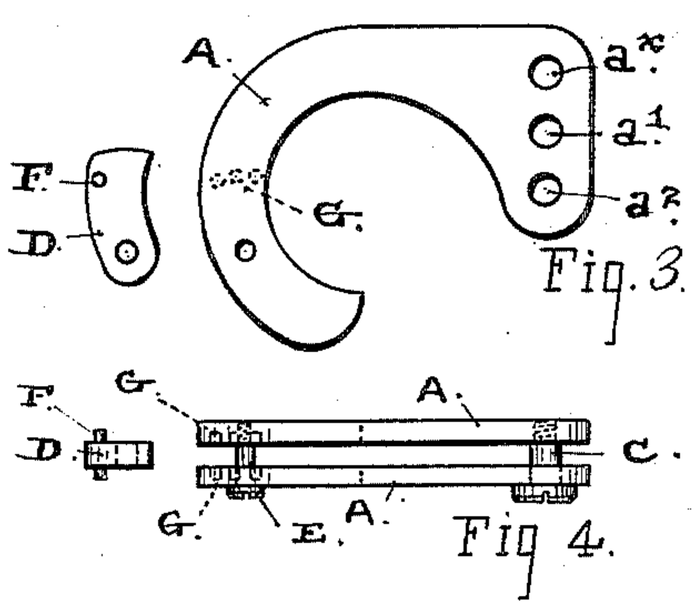

Fig. 3.

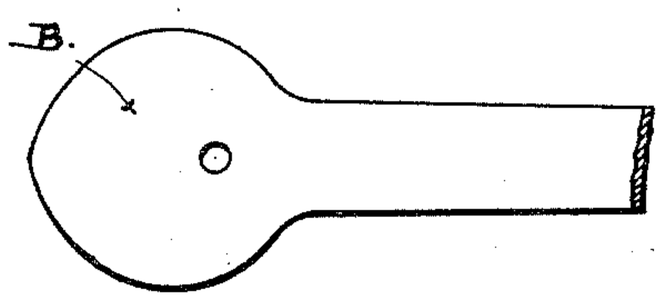

Fig 4.

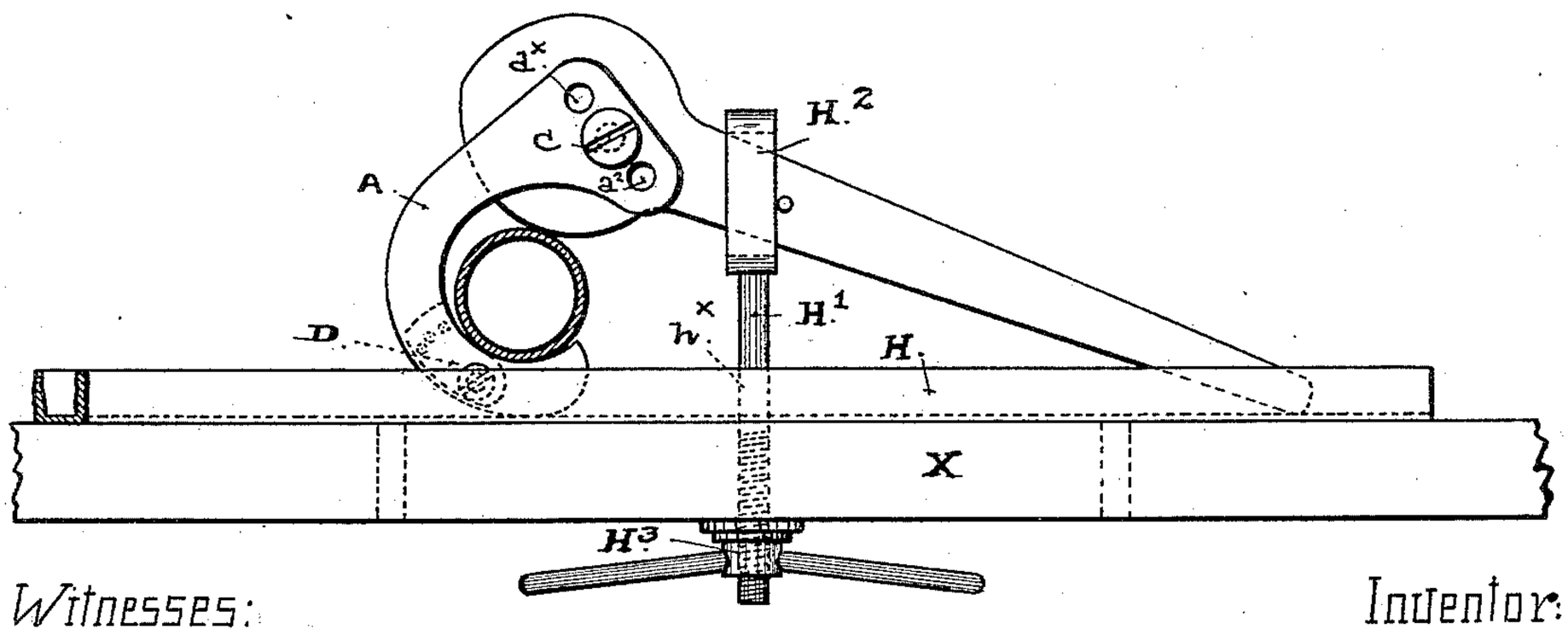

Fig. 5.

Witnesses:

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By Smith & Osborn

his Att'ys

UNITED STATES PATENT OFFICE.

CLARENCE V. GREENAMYER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE VERNER WRENCH CAR MOVER AND POWER MANUFACTURING COMPANY, OF SAME PLACE.

ADJUSTABLE PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 444,779, dated January 13, 1891.

Application filed September 9, 1890. Serial No. 364,476. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE V. GREENAMYER, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Adjustable Wrenches, of which the following is a specification.

This invention has for its object the production of an adjustable wrench or implement for gripping and operating on such large and heavy work as pipes, tubing, pipe-joints, and screw-couplings, for seizing and holding such pieces and parts in the work of cutting screw-threads, and in trimming or cutting the ends of pipes, and particularly for gripping smooth, cylindrical, and tubular work of different sizes.

The invention embraces certain novel construction and combination of parts consisting, mainly, of a flat head or part with oppositely-curved acting edges on the end of a lever or handle, a curved swinging jaw formed of twin hooks pivoted to the head at a point eccentric to each of its curved edges on a common pivot, and an adjustable bit fixed between the hooks at a point back of the bill and capable of being shifted and set beyond the acting or gripping edge of the swinging jaw, all as hereinafter more particularly described.

The accompanying drawings form part of this specification and illustrate these improvements and the manner in which they are combined for operation.

Figure 1 represents the wrench with the adjustable bit or reducer set to grasp pipes of the smaller sizes. Fig. 2 shows the parts adjusted to take pieces of the largest sizes that the tool is capable of grasping and holding. Figs. 3 and 4 are plan and top or edge views of the parts. Fig. 5 represents the wrench fixed on a work-bench by a clamp or attachment which converts the wrench into a handy substitute for a vise.

The twin hooks A A, forming the swinging jaw, are set side by side with a space between them to take in the head or part B, and they are attached to that part by a pivot C, on which they swing together as a common center of movement. The pivot is placed back of each curved face or edge at a point eccentric to it, and the jaw moving on this point can be set opposite to and in working position with one or the other curved face of the part B by swinging it to one side or the other on the pivot. By this adjustment the tool is capable of being used for right or left hand work or for screwing or unscrewing a threaded part from the same side, as will be understood from the two positions illustrated in Figs. 1 and 2, where the tool is caused to grip the work by a downward movement of the lever in the one adjustment, or in the other position given to the swinging jaw by an upward movement of the lever, thereby enabling the workman to operate in either case from the same side of the piece.

Several holes $a^{\times}$ a', &c., are provided in the butt or base of the hook in a row extending laterally or across the general axis of the shank of the hook for setting the pivot at different points, by which the size of the opening between the jaw and the head can be increased or reduced. These holes are arranged across the general axis of the shank from the back line of the hook toward the bill or point, and the hook is increased in width at the butt to furnish space for these holes. By shifting the pivot from the first hole at the back forward to another hole the opening between the jaws will be increased.

The twin hooks are united near the point by a piece D, inserted between them and fixed by a screw E, and this piece being shaped to correspond with the curvature of the hooks at that part, and being also adjustable laterally or into and out from the space between the hooks, it is made to serve both as a spacing-block to keep the hooks in line and preserve the space between them and as a reducer to decrease the size of the opening between the swinging jaw and the head and to furnish additional amount of gripping edge on the jaw for pieces of smaller diameters.

The piece D, which I have termed a "bit," is held in position by the screw E at one end, and a pin F fixed through it near the oppo-

site end to set into holes G in the hooks, so that by loosening the screw and springing apart the points of the hook the pin can be shifted from one set of holes to another set, thus throwing out or setting in the inner edge of the bit a greater or less amount with respect to the inner line or acting-edge of the jaw. This construction and the manner of setting the bit for different sizes of work are well illustrated in Figs. 1, 3, and 4 of the drawings. The holes G are arranged on a line concentric with the screw F in the inner faces of both hooks, and the bit is readily shifted and set by moving it on the screw as a center without withdrawing the screw. This part greatly increases the scope of the implement and prevents all danger of slipping on small pieces; but the twin hooks will be found to act effectively in many cases without the bit, as they give double the amount of gripping-face over a single hook, and the force or pressure is distributed equally on opposite sides of the other gripping-face that works between them.

A clamp H (shown in Fig. 5) furnishes a convenient means of holding the wrench when a pipe is to be threaded or cut, and in many situations it will be found a ready and efficient substitute for a helper or an additional workman, so that one man can hold one piece in a wrench thus set and fixed on a bench by the clamp while he screws up a coupling or joint with another wrench or handles a screw-plate or a pipe-cutter. The bed of this clamp is a bar H of narrow channel-iron with a hole $h^{\times}$ through it for the passage of an upright rod H′, on the upper end of which is a loop or stirrup H^2 of suitable width to take over the lever or handle of the wrench, while the lower end is screw-threaded and is fitted with a hand-nut H^3.

The channel-iron bar may be set on a bed-timber X or laid on a work-bench where suitable room beneath will be afforded to work the nut. The channel of the bar should be about the same width as the thickness of the jaws of the wrench, so that the upright sides or flanges will assist in steadying the tool.

By setting the handle of the tool through the loop of the rod with the end of the handle and the back of the hook-jaw resting in the channel and then turning up the nut it will be seen that the two acting faces or edges of the tool will be forced against and held firmly upon the piece inserted between them.

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

1. The combination, with the head having double-curved faces, and a handle, of the swinging jaw formed of twin hooks which are attached to the head by a common pivot to operate against either face, and a spacing-block fixed between the outer ends of the hooks and uniting them at or near the bill, substantially as described.

2. The combination, with the head having double-curved faces, of the twin hooks attached to the head by a common pivot, and the adjustable bit fixed between the hooks at the bill or outer end, capable of being set out from the inner line or acting edge of the hooks, substantially as described.

3. The combination, with a head or part having a curved acting face, of the twin hooks pivoted to said part on opposite sides by a common pivot and having a widened butt with spaced holes extending laterally across the axis of the hooks, as described, and the adjustable bit fixed between the hooks at the bill, for operation as set forth.

4. The herein-described wrench, consisting of the handle having an enlarged head with double-curved faces, the twin hooks pivoted to the head by a common pivot, the adjustable bit fixed between the hooks at the bill or outer end, and fastening means consisting of the screw, the spaced holes in the inner faces of the hooks, and the cross-pin, adapted to operate as set forth.

5. The combination, with the head or part having a double-curved acting face, and the swinging jaw formed of twin hooks attached to the head by a common pivot, of the grooved bar and the rod having on one end a loop or stirrup and on the other end a screw-threaded portion and a hand-nut.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

CLARENCE V. GREENAMYER. [L. S.]

Witnesses:
OTIS V. SAWYER,
EDWARD E. OSBORN.