(No Model.)

A. E. BROCKETT.

COMBINATION PIPE TOOL.

No. 575,685. Patented Jan. 26, 1897.

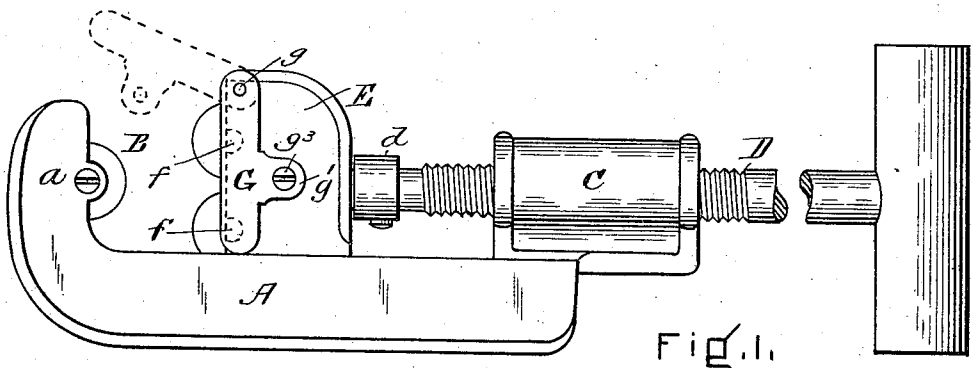

Fig. 1.

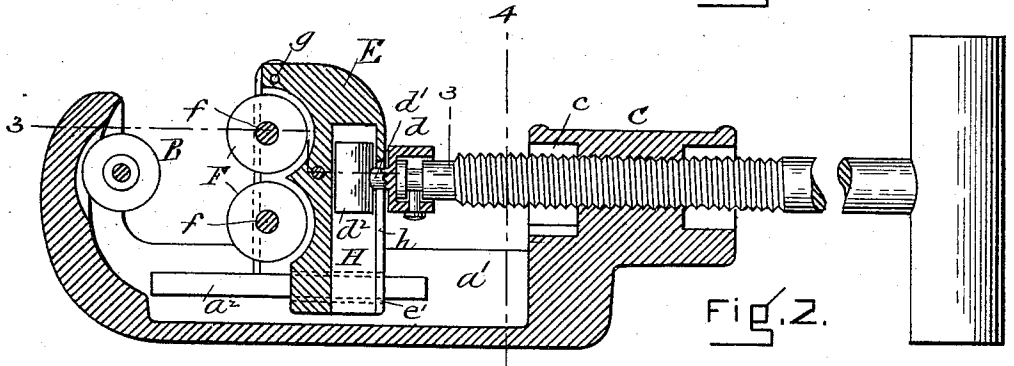

Fig. 2.

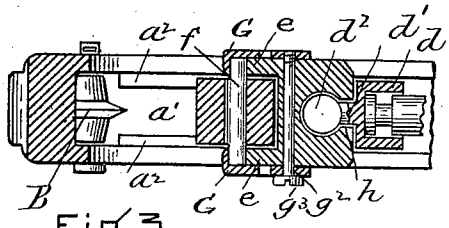

Fig. 3.

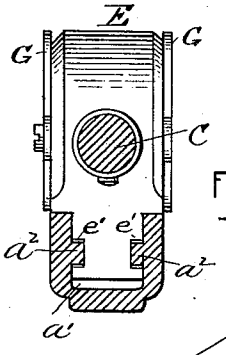

Fig. 4.

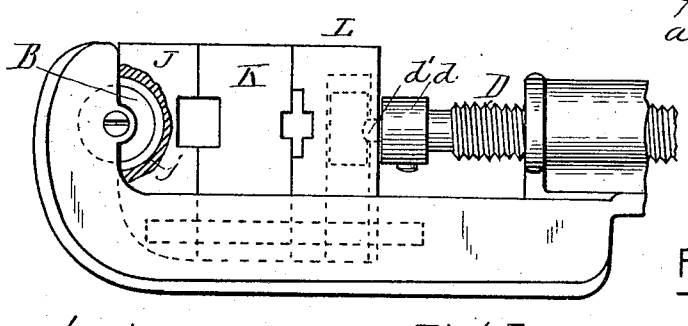

Fig. 5.

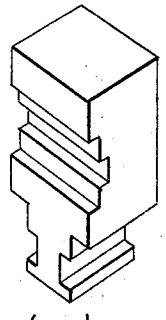

Fig. 6.

WITNESSES

Frank G. Parker

Eva A. Guild

INVENTOR

Athalia E. Brockett

by Thos. O. G. Brock his atty

UNITED STATES PATENT OFFICE.

ATWATER E. BROCKETT, OF EVERETT, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WILLIAM G. NIXON, OF BRAINTREE, MASSACHUSETTS.

COMBINATION PIPE-TOOL.

SPECIFICATION forming part of Letters Patent No. 575,685, dated January 26, 1897.

Application filed April 6, 1896. Serial No. 586,330. (No model.)

To all whom it may concern:

Be it known that I, ATWATER E. BROCKETT, of Everett, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Combination Pipe-Tools, of which the following is a specification.

My invention relates to a tool which may be used as a pipe-cutter, and also may be used as a vise by substituting for the cutting-tools proper vise-jaws; and it consists, mainly, in a yoke-piece provided with suitable ways whereby to steady the tools which are contained therein, and having at one end a back-rest and at the other end a post suitably threaded for the adjustment of the tool and adapted to receive either a cutting-tool or a pair of vise-jaws, as may be desired.

My invention also consists in certain details of construction described below.

In the drawings, Figure 1 is a side elevation, and Fig. 2 a longitudinal section, of a tool embodying my invention. Fig. 3 is a horizontal section on the line 3 3 of Fig. 2, and Fig. 4 a cross-section on line 4 4 of Fig. 2, the above figures showing the tool when in use as a pipe-cutter. Fig. 5 is an elevation, partly in section, of the essential parts of my device when used as a vise, Fig. 6 showing one of the vise-jaws.

A is the yoke-piece, having at one end a back-rest *a*, carrying a rotary cutter B. At the other end of the yoke is a post C, threaded on its interior, in which is the screw-handle D. The yoke-piece is chambered, as indicated at *a'*, and for a portion of its length the walls of said chambered portion are provided with ways a^2. To the end of the screw-handle D is attached a head-block *d*, having connected to it by the neck *d'* a key d^2.

E is a tool-support consisting of two side pieces *e*, in the front face of which are mounted the tools (either rolls or cutters) F. These tools are carried upon spindles *f*, which are preferably so set into the front face of the parts *e* that they will not rotate. For this purpose I prefer to cut off a segment of one end of each spindle, so that a portion of the spindle shall be flat and lie flush with the front face of the wall *e* of the tool-support, as will be seen from Figs. 1 and 3. These spindles are held in place by means of angle-arms G, which are pinned at *g* to the upper part of the tool-support E, forming flanges, one of which rests against the front face of the tool-support E, while the other extends around to its side. An ear *g'* projects backward and is provided with a hole g^2, which, when the tools are in place, registers with a corresponding hole in the tool-support. A pin g^3 holds these parts G and E together. By this means the tools F may be easily changed, the pin g^3 being first removed and the angle-arms being thrown up to release the spindles. I prefer to use two angle-arms, but one only is necessary, a socket of ordinary construction being provided at the opposite side of the tool-support to that carrying the part G. I prefer to attach this tool-support to the screw-handle in the manner described in another application filed by me April 6, 1896, Serial No. 586,331, the tool-support for this purpose being provided with a deep vertical socket H, slotted on one side, as at *h*, the socket being adapted to receive the key d^2 and the slot allowing the tool-support to pass down around the neck *d'*. (See Fig. 3.) The lower part of this tool-support is grooved on each side at *e'* and is made sufficiently narrow to set down into the hollow portion *a'* of the yoke-piece. To remove this tool-support it is only necessary to withdraw the screw-handle D, so that the head-block *d* lies in the opening *c* of the post, in which position the tool-support is free from the ways a^2. The tool-support may then be lifted off from the key.

If it is desired to use this combination-tool as a vise, a vise-block J is provided, chambered on one side, as is indicated at *j* in Fig. 5, so that it may rest against the back-rest *a* without engaging with or touching the cutter B and yet receive the necessary support from the back-rest. It is provided at its lower end with grooves *e'* to slide on the ways a^2, and is so shaped at its lower end as to be dropped into the chamber *a'* in the yoke-piece at the end nearest the post. It is then slid along upon the ways a^2 into position to form the stationary member of the vise. A movable member having a corresponding face and having its lower portion constructed in a similar manner is put into position so that it also

will slide along the ways a^2, being attached in some suitable way to the screw-handle D, for example in the same manner that the tool-support E was attached. If desired, an intermediate block may be introduced, so as to form a double vise, the tool when so used being shown in Fig. 5, where K indicates the intermediate block and L the block which is connected to and operated immediately by the screw-handle D.

It is obvious that the screw-handle may be connected to the screw-support or adjustable vise-jaw in any suitable manner, but the manner shown and described appears to me to be the best for the purpose. It is very desirable that the tool-spindles shall not rotate with the tool, as the turning of a steel spindle in a malleable-iron casting wears the casting and the tools soon are unsteady.

The tool above described is both strong and compact. The yoke-piece is chambered without being weakened materially, as the ways a^2 serve as ribs which strengthen the walls of the chamber at the same time that they serve as guides for the tool-support. As the yoke-piece is chambered, the axes of the cutter-tools carried by the tool-support, as well as the cutter-tool carried by the back-rest, may be lowered toward the floor of the bed-piece, so the lower cutter may rotate partially within the walls of the chamber, and for this reason the tool as a whole may be made much narrower than any tool now known to me, the construction above described being preferable to any structure wherein a tool-support is slotted and guided in walls in the chambered ways by means of a bolt, such a construction both weakening the bed-piece, upon which a great portion of the strain in such a pipe-cutter comes, and also requiring much time in which to make any change of tool. Moreover, it weakens the tool-support also.

What I claim as my invention is—

1. In combination with a removable sliding tool-support carrying one or more rotary tools, a yoke having a back-rest at one end and a post at the other end and containing a chamber adapted to receive said tool-support and in which one of said rotary tools may partially revolve, the walls of said chamber being provided with inwardly-projecting ribs shorter than the length of said chamber and serving both to strengthen said walls and also as ways for said tool-support and said post carrying a screw-handle adapted to engage with and operate said tool-support, all as and for the purposes set forth.

2. A support for carrying rotary tools having two side portions *e* suitably connected and each provided on its front face with sockets adapted to receive a tool-spindle, in combination with an angle-piece G pivoted to said tool-support and forming one side of said spindle-socket and closing the end thereof and provided with means whereby it may be locked in position to hold said spindles in place, all as set forth.

3. A combination-tool having a back-rest carrying a rotary tool and a post carrying a screw-handle, said back-rest and post being connected by a chamber having suitable ways running a portion of the length of said chamber, in combination with a pair of vise-jaws, one of which is chambered and adapted to rest against said back-rest without engaging with its rotary tool and to slide upon and be removable from said ways, and the other adapted to engage with said screw-handle and be adjusted toward and from its mate upon said ways, all as set forth.

In testimony whereof I have hereunto set my hand this 24th day of February, 1896.

ATWATER E. BROCKETT.

Witnesses:

GEORGE O. G. COALE,

EVA A. GUILD.