(No Model.)

A. E. BROCKETT.

COMBINATION PIPE TOOL.

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

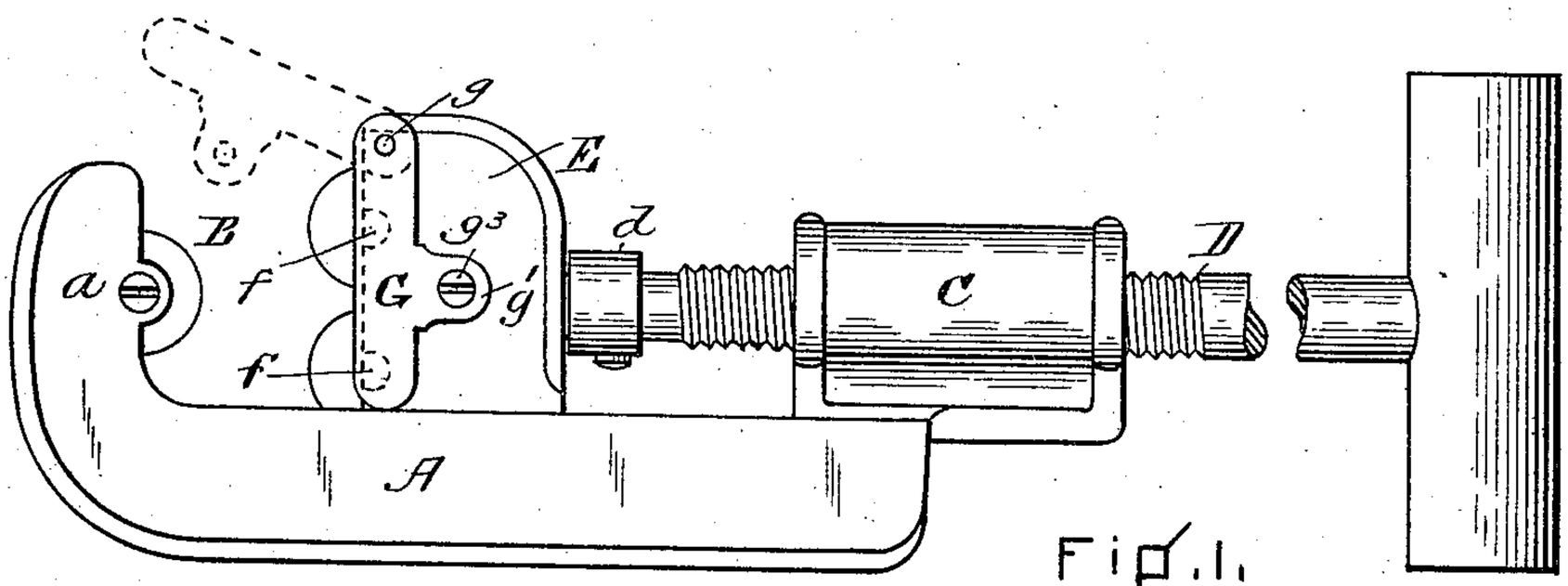

Fig. 1.

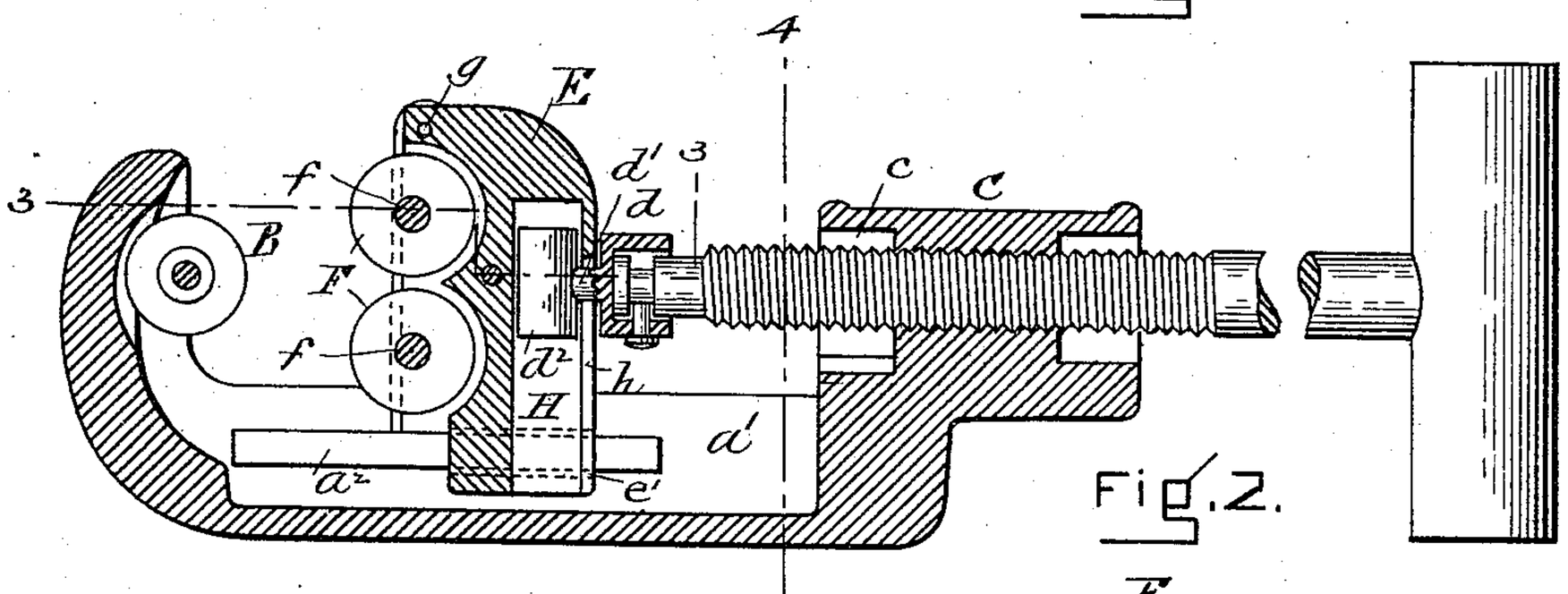

Fig. 2.

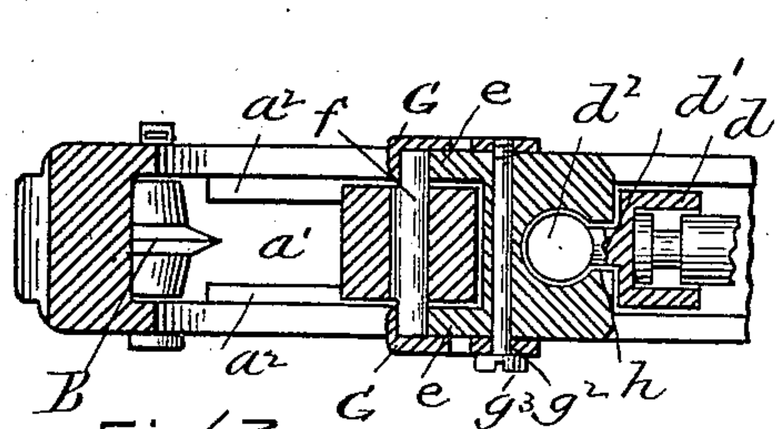

Fig. 3.

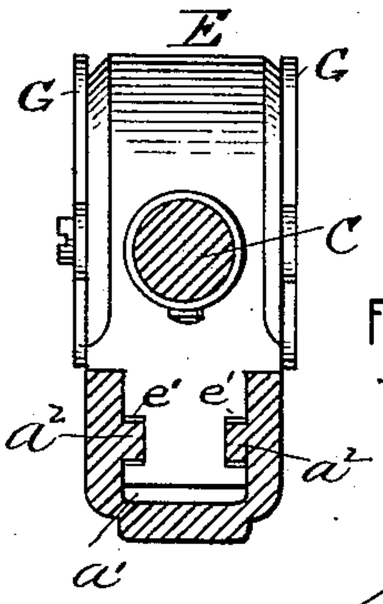

Fig. 4.

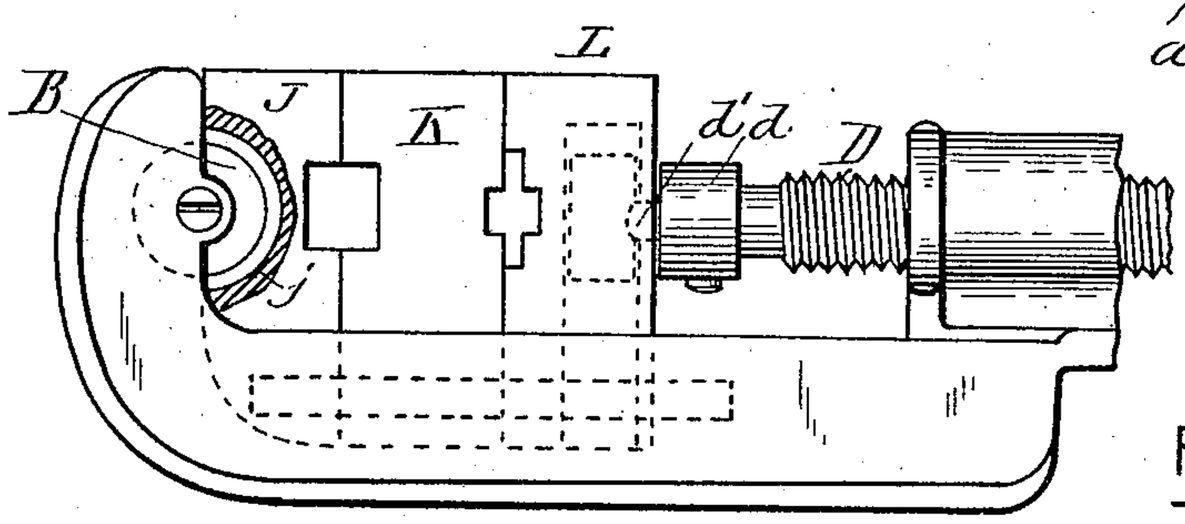

Fig. 5.

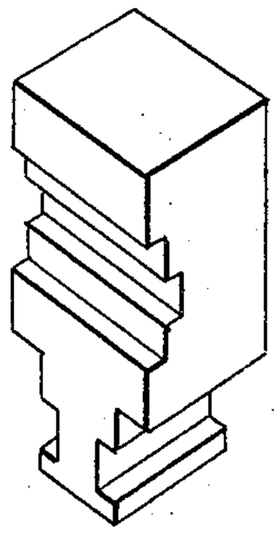

Fig. 6.

WITNESSES

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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.