(No Model.)

M. BLAKEY.

MACHINE FOR MAKING TAPERED THREADED SOCKETS.

No. 312,700. Patented Feb. 24, 1885.

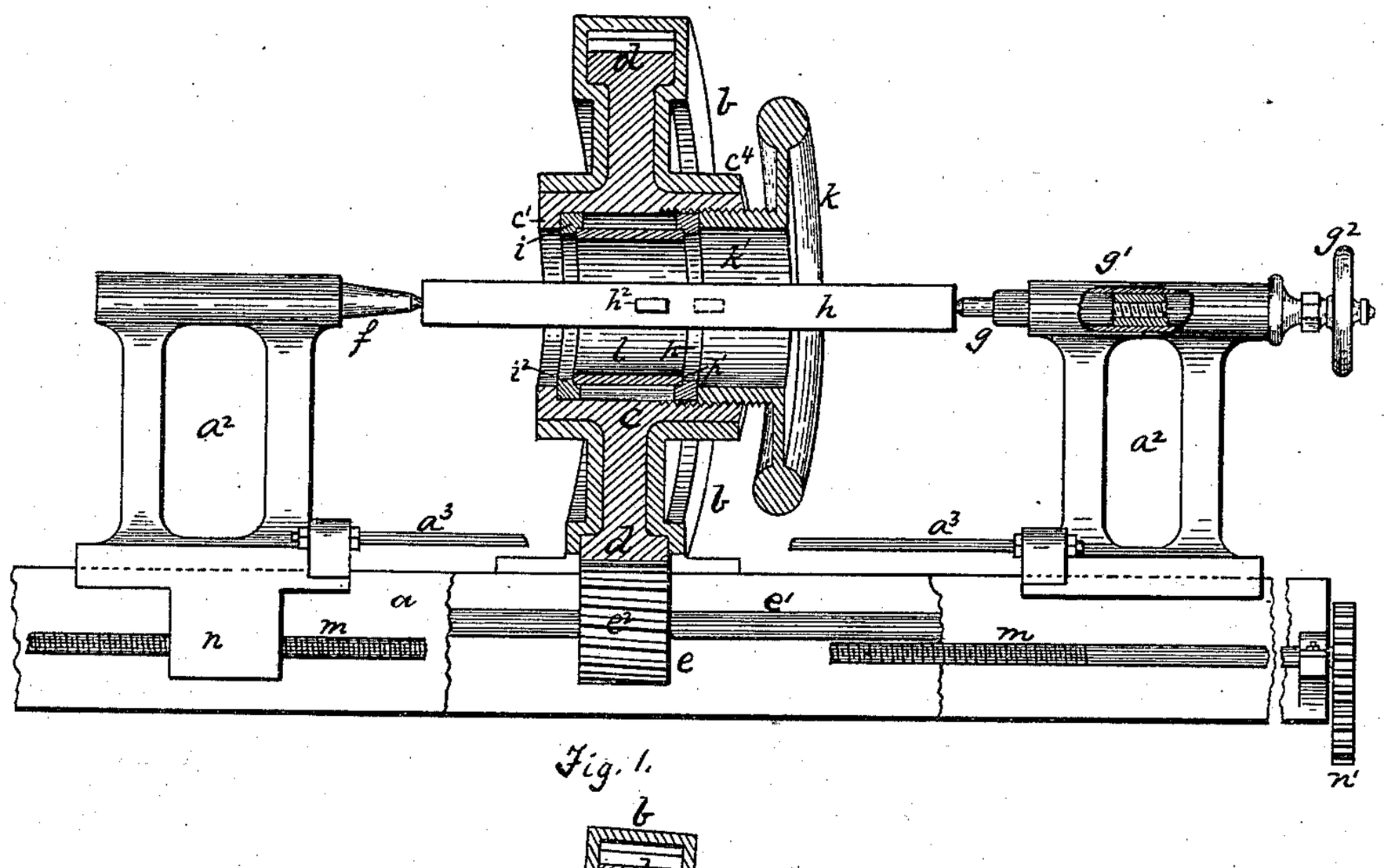

Fig. 1.

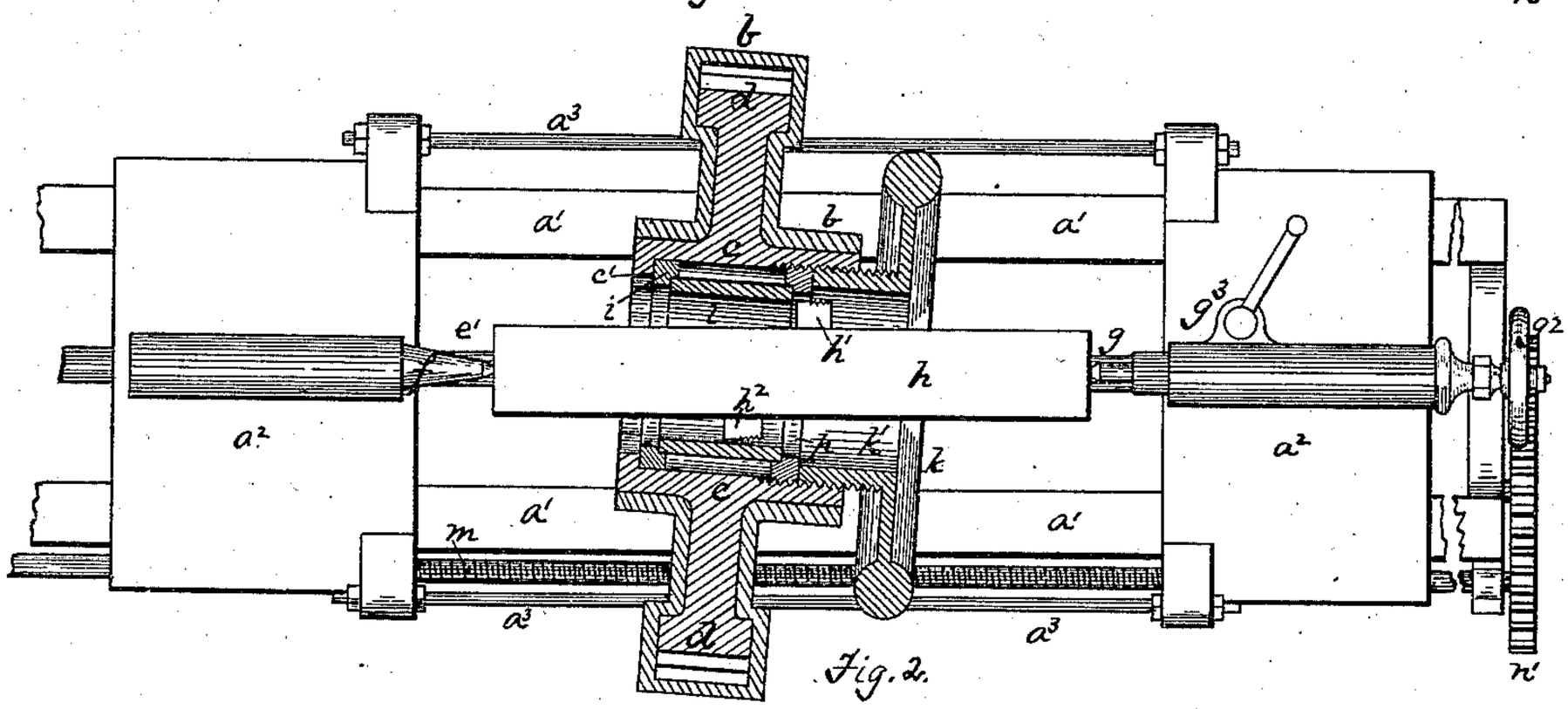

Fig. 2.

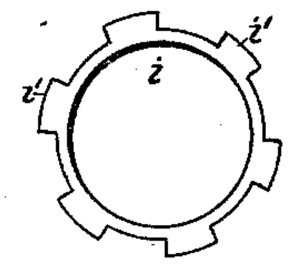

Fig. 3.

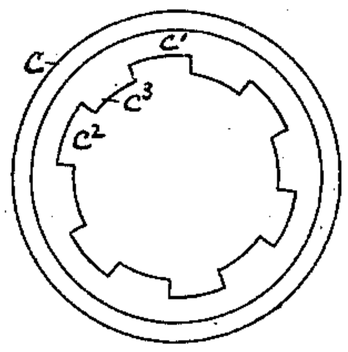

Fig. 4.

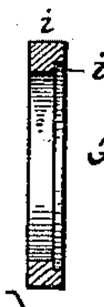

Fig. 5.

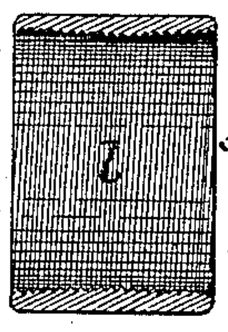

Fig. 6.

Witnesses.

W. B. Corwin

J. A. Burns.

Inventor.

Mildred Blakey

by his attys

Bakewell & Kerr

UNITED STATES PATENT OFFICE.

MILDRED BLAKEY, OF ALLEGHENY CITY, PENNSYLVANIA.

MACHINE FOR MAKING TAPERED THREADED SOCKETS.

SPECIFICATION forming part of Letters Patent No. 312,700, dated February 24, 1885.

Application filed July 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, MILDRED BLAKEY, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machines for Making Tapered Threaded Sockets; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention consists of an improved machine for making tapered sockets for connecting the ends of gas and similar pipes. Formerly these sockets were always made with a threaded bore of uniform diameter, so that when they were screwed onto the pipe the first thread only could take hold, and to secure the pipe required to be turned as many times as there were turns in the thread in the distance it was inserted. The later practice has been to make the sockets with a portion of their length tapered slightly on the inner or threaded portion, so that the end of the pipe could be entered sufficiently for a number of threads to take hold. This taper is made to extend various distances into the socket, according to the wish of the maker.

My machine, while adapted to tapering the sockets to any extent, is especially fitted for cutting the double taper shown in Figure 6.

To enable others skilled in the art to make and use my invention, I will now describe it by reference to the accompanying drawings, in which—

Fig. 1 is an elevation, partly in section, of my improved machine. Fig. 2 is a plan view, also partly in section. Figs. 3, 4, and 5 are details, and Fig. 6 is a sectional view of a socket after it has been threaded on my improved machine.

Like letters of reference indicate like parts in each.

On a suitable bed, *a*, is a housing or frame, *b*, of a hollow revolving chuck, *c*. Formed in one piece with the chuck *c*, or fastened thereto, is a gear-wheel, *d*, into which a driving-pinion, *e*, mounted on a shaft, *e'*, meshes. The housing *b*, with its chuck *c*, stands slightly angling to the bed *a*, as shown in Fig. 2. Extending lengthwise of the bed are guides *a'*, upon which the standards a^2 of the lathe-centers *f g* are placed. The standards a^2 are fastened together by rods a^3, so as to form a frame for sustaining the cutter-bar. Between the two centers *f g* a cutter-bar, *h*, provided with cutters $h' h^2$, is placed, being removably secured by means of the screw-spindle *g'*, which can be operated by the wheel g^2. The spindle is held in its adjusted position by means of a locking cam or dog, g^3. One end of the chuck *c* is provided with a solid flange, *c'*, which is formed with recesses or notches c^2. A collar, *i*, having radial projections *i'*, which are counterparts of the recesses c^2, is placed in the chuck *c*, inside of the flange *c'*, and there secured, after being inserted, by turning the lugs *i'* past the recesses c^2, so that they come opposite to the lugs c^3 of the flange *c'*. The opposite end of the chuck *c* is threaded, as at c^4, for the reception of the threaded sleeve *k'* of a fly-wheel, *k*. The sleeve *k'* bears against a collar, *p*, which is provided with a projecting flange or shoulder, *p'*, near its inner end, which corresponds to the flange or shoulder i^2 of the collar *i*. The purpose of this construction is to secure the socket *l* in place in the chuck *c*. This is done by turning the collar *i* until its projections *i'* coincide with the recesses c^2 of the flange *c'*, and then slipping it out of place. The socket *l* is then inserted and the collar *i* put back in place. By screwing up the sleeve *k'* the socket will be secured between the shoulders i^2 and *p'*, as shown in Fig. 1, and be ready for the operation thereon of the cutters $h' h^2$. The cutter-bar *h* is then put in place between the centers *f* and *g*, and the machine is in the condition shown in Fig. 2, and is ready to begin to operate upon the socket. The teeth of the driving-pinion *e* extend angling across the face, as shown at e^2, to enable it to drive the angled wheel *d*. The axial movement is given to the cutter-bar frame by means of a screw-shaft, *m*, mounted on the frame *a*, and communicating motion to the cutter-frame by means of a nut, *n*, on one of he standards a^2. The screw *m* is driven from the shaft *e'* by means of gearing *n'*. The shaft *e* is driven in any usual manner.

The operation of my improved machine is as follows: The socket *l* being put in place in the chuck *c*, and the cutter-bar being secured between the centers *f* and *g*, with the cutters $h' h^2$ in the position shown in Fig. 2, power is applied to the chuck *c* by means of the pinion *e* and gear-wheel *d*, and at the same time to the center standards, a^2, so as to cause the chuck *c*

to turn and the cutter-bar to travel axially. The angled position of the socket *l* soon causes the cutter *h'* to come in contact with its inner surface at a point midway between its ends, when it will cut the socket tapering from the middle to the end and form a thread on the tapered surface. At the same time the cutter h^2 encounters the other end of the socket, and by reason of the angling position of the latter cuts a thread from the end to the middle of the socket, tapering that end simultaneously with and to the same degree as the other end is tapered by the cutter *h'*. When this operation is completed the machine is stopped, the cutter-bar *h* loosened by means of the screw *g'* and removed, the collar *i* taken out, and then the socket *l* is removed and replaced by an unthreaded socket and the operation repeated.

While I have shown my machine provided with two cutters, *h' h²*, I do not limit myself thereto, for the reason that I can use the machine with one bit, and if a double tapered socket has to be produced I can make it by reversing its position and subjecting it to two cutting operations.

The cutter or cutters may be arranged for cutting a tapered thread of any desired length either throughout the whole or part only of the length of the socket.

If desired, the screw *m* may be applied to the housing *b* so as to give it an axial as well as a rotary movement, the cutter-bar in such case being stationary. This is an obvious change, and can be easily made by the skilled mechanic.

I do not limit myself to any particular manner of holding or chucking the socket, as there are many obvious and known ways by which it may be done.

The machine is simple in its construction and easy and efficient in operation.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for producing a tapered threaded surface on the inside of pipe-sockets, the combination of a hollow rotatory chuck for supporting the socket during the threading operation in an angling position to the cutter-bar, with a cutter-bar extending through said chuck and provided with one or more threading-bits, the said chuck or cutter-stock having an axial movement, substantially as and for the purposes described.

2. In a machine for producing threaded tapered surfaces on the inside of sockets, a cutter-bar having an axial movement, and carrying the cutters, in combination with a rotatory head which supports the socket in an angling position to the stock, and means for communicating an axial movement to the tool-stock and a rotatory movement to the socket-holder, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 8th day of July, A. D. 1884.

MILDRED BLAKEY.

Witnesses:
W. B. CORWIN,
THOMAS W. BAKEWELL.