

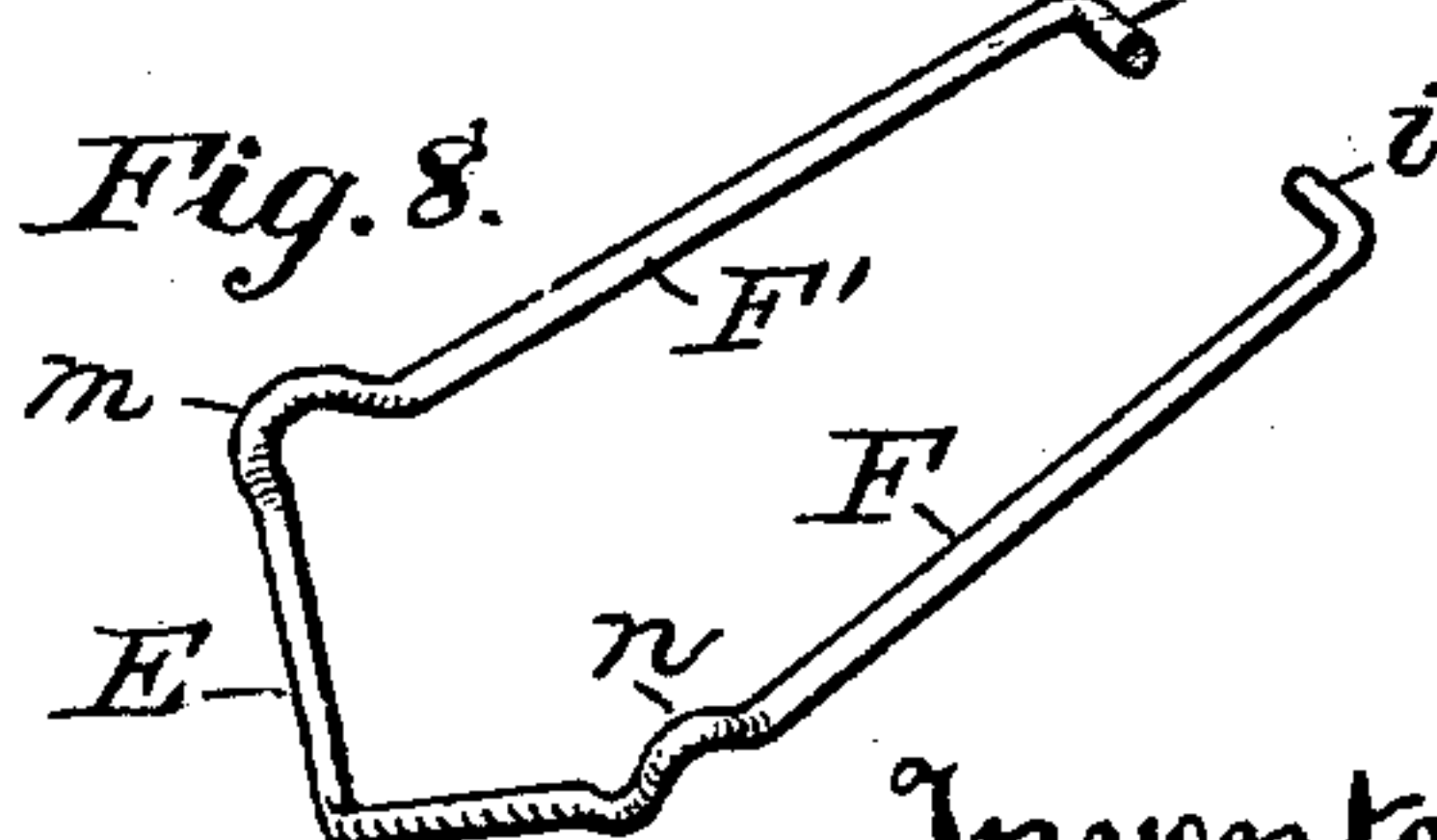
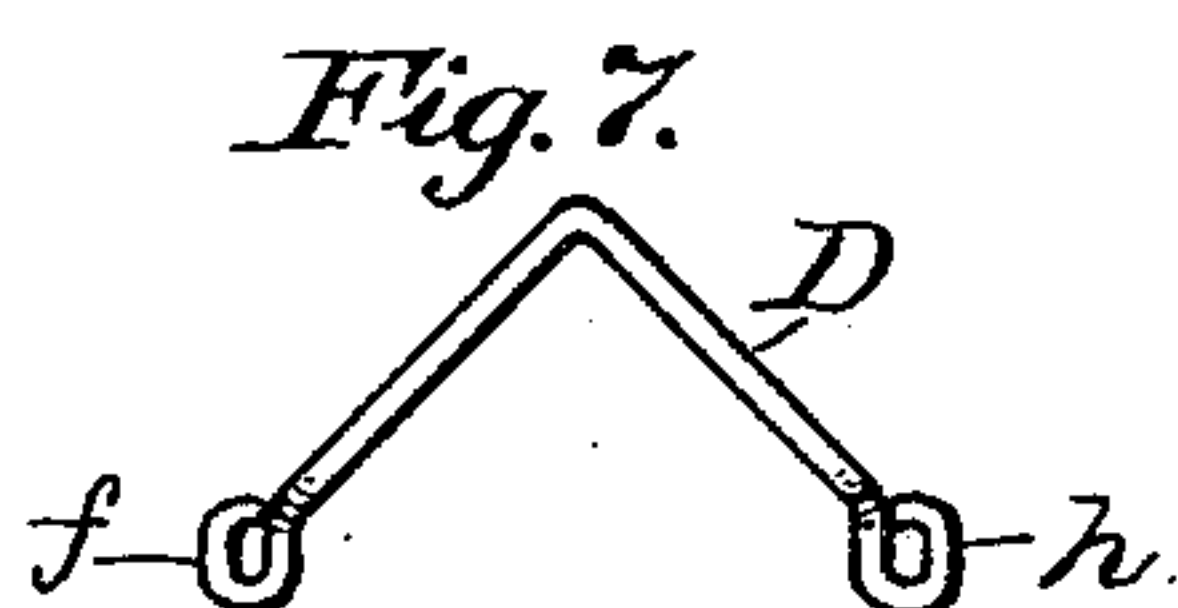
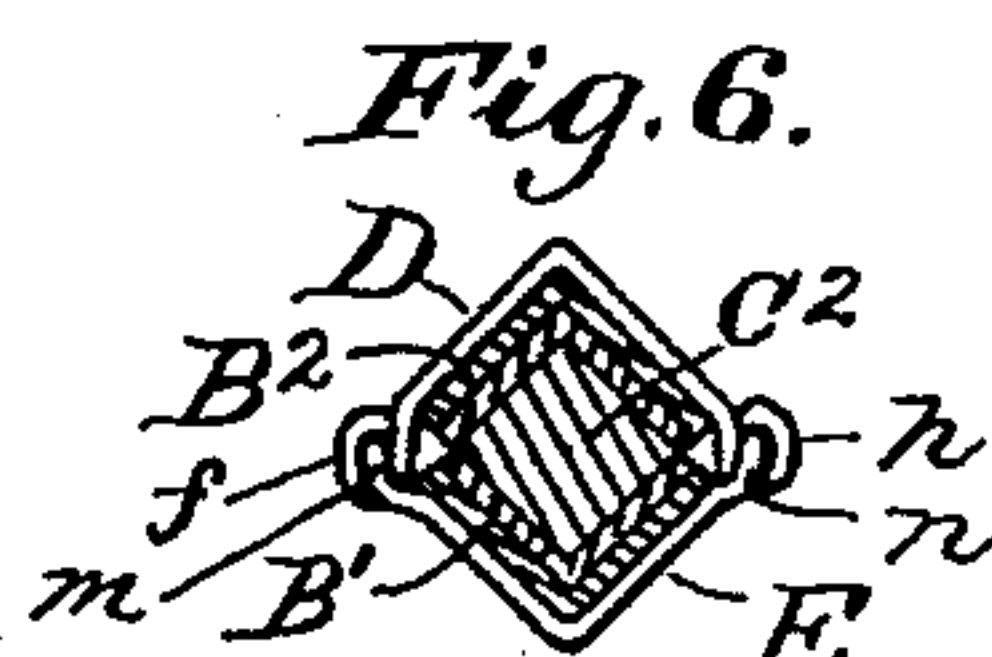
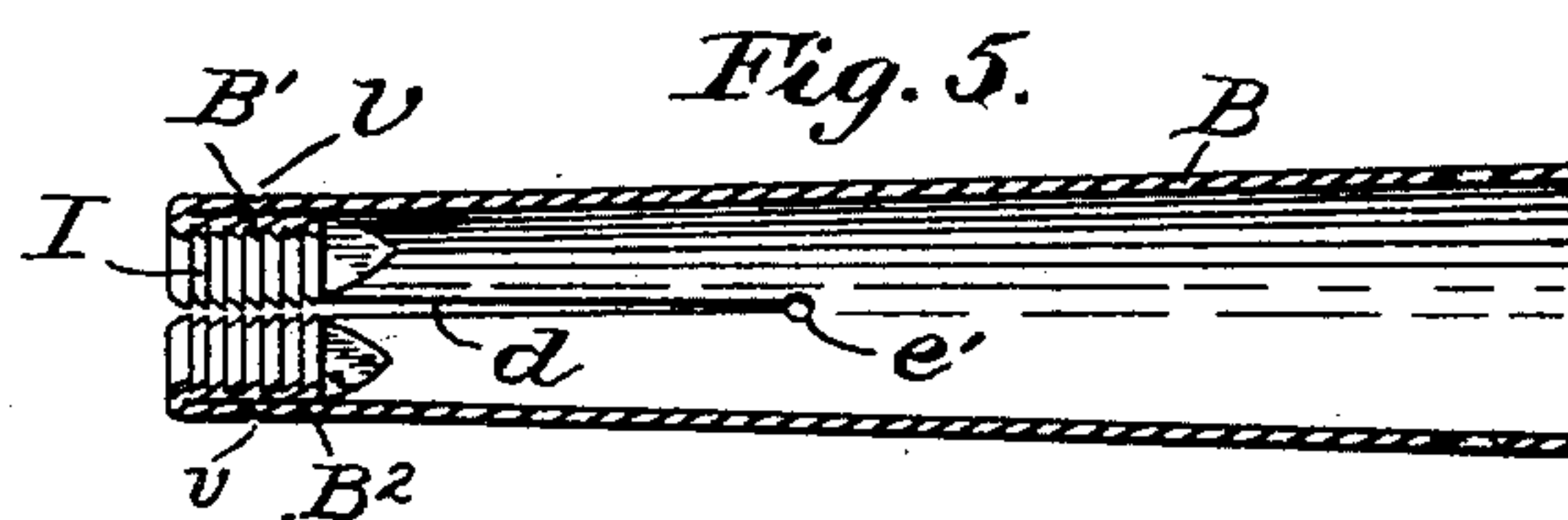
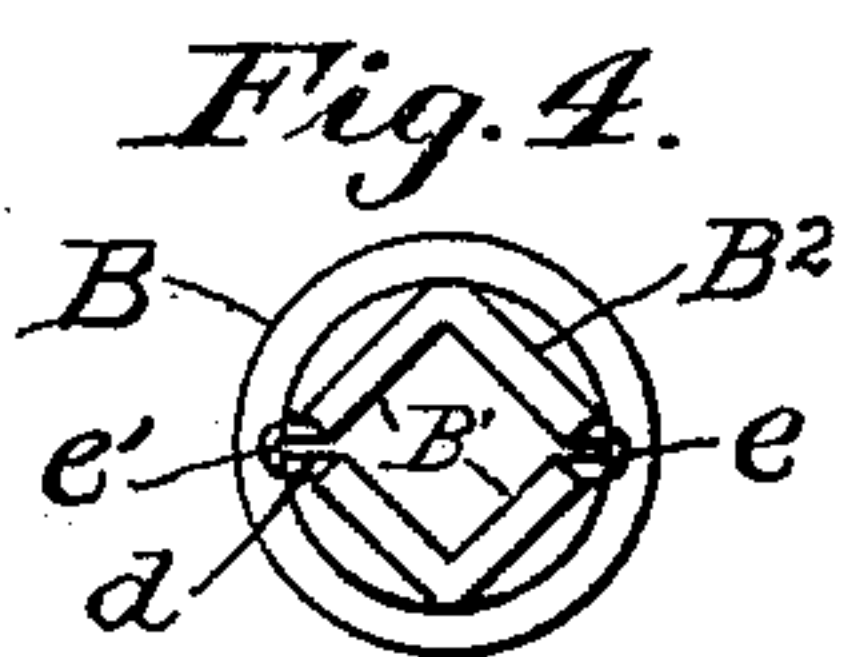
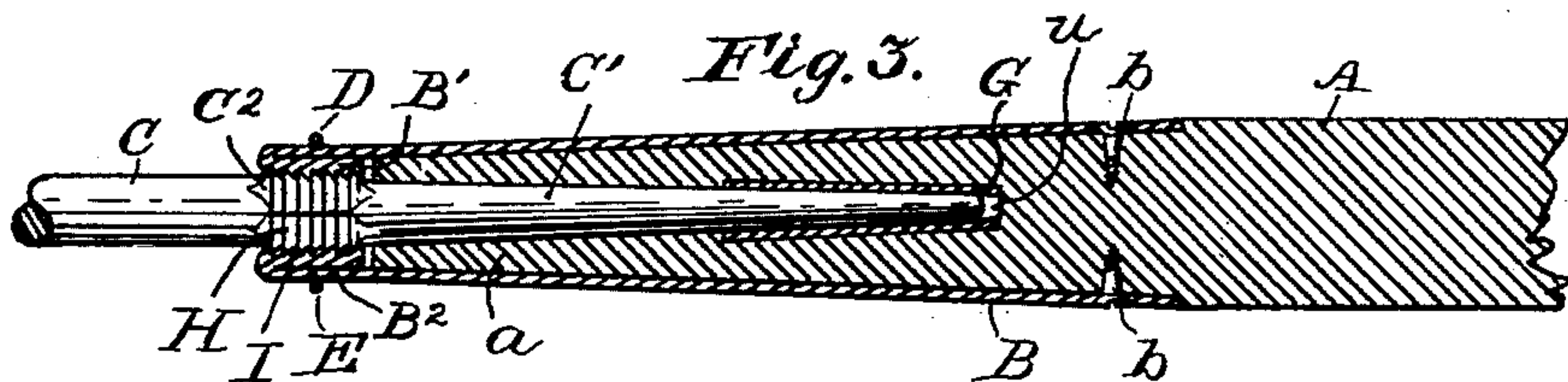
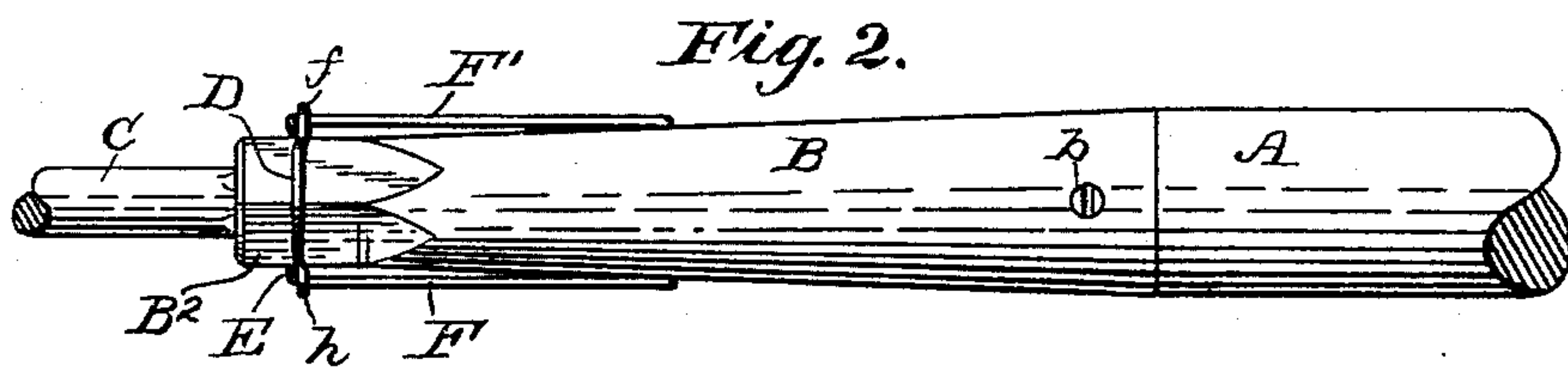
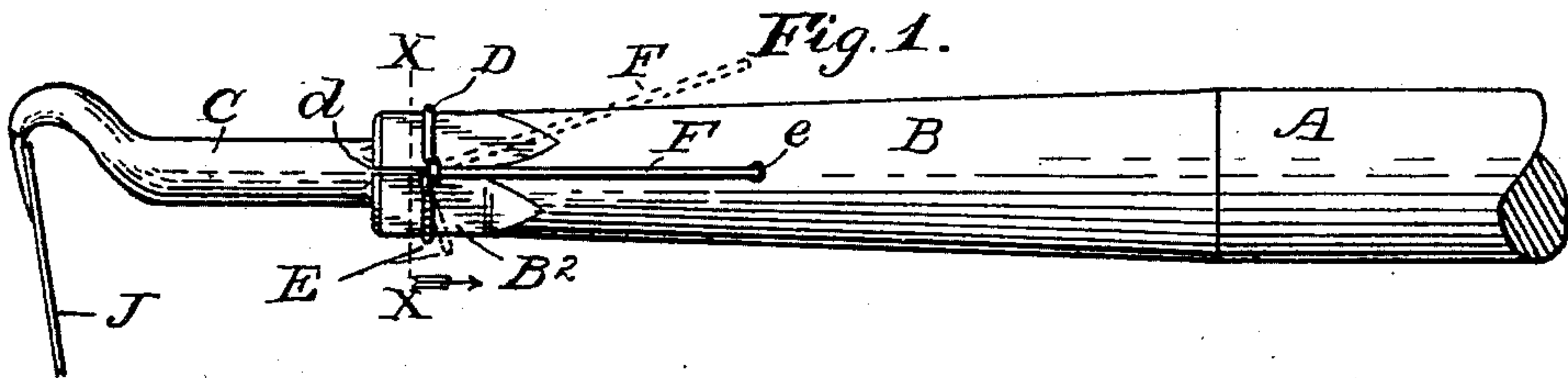
No. 631,041.

Patented Aug. 15, 1899.

G. G. GRISWOLD.
TOOL SHANK CONNECTION.

(Application filed May 3, 1899.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

GLEN G. GRISWOLD, OF WHEELER, OHIO.

TOOL-SHANK CONNECTION.

SPECIFICATION forming part of Letters Patent No. 631,041, dated August 15, 1899.

Application filed May 3, 1899. Serial No. 715,467. (No model.)

To all whom it may concern:

Be it known that I, GLEN G. GRISWOLD, a citizen of the United States, residing at Wheeler, in the county of Lake and State of Ohio, have invented certain new and useful Improvements in Tool-Shank Connections; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to tool-handles and the shanks of tools connected therewith; and it consists in improved shank connections embracing new and novel forms of construction of the clamping-handle, the tool-shank, and the clamping device therefor; and it consists, further, in the parts and combination and arrangement of parts described hereinafter and pointed out in the claims.

My object is to provide an effective tool-shank connection which may be manipulated conveniently and quickly without requiring the aid of tools in the operation and which may be cheaply constructed and durable and economical in use. This object is fully attained in my invention.

Referring to the drawings, Figure 1 represents a side view, and Fig. 2 a top view, of a handle embodying the tool connection as constructed in accordance with my invention; Fig. 3, a longitudinal central sectional view taken vertically with Fig. 1; Fig. 4, an end view of the ferrule; Fig. 5, a longitudinal central sectional view of the ferrule, taken vertically, as in Fig. 3; Fig. 6, a transverse sectional view taken on a line X X in Fig. 1; Fig. 7, a front elevation of one part of the locking-clamp, and Fig. 8 a perspective view of the other part of the clamp.

In construction the handle A may be made of wood or other similar material and of any desired type, but having an end *a* to receive the tool-shank, provided with a suitable bore *u*, slightly tapering, so as to be largest at the mouth, and preferably tapering at the outside, so that the ferrule B may be driven on tightly, and the latter is secured by means of screws *b*, or a pin may be substituted therefor.

The body of the ferrule B is circular; but the end for a suitable distance is pressed to an approximately square form B² in cross-section, a portion of the extreme end B' being turned under upon itself while in sheet form to provide extra strength on which are formed the grip-teeth I. A slit *d* is cut in one or two sides of the ferrule and also through the end of the handle, extending longitudinally from the end, so that the grip-teeth may be forced down upon the shank, the slit closing somewhat as the two parts of the ferrule are drawn together. At suitable points in the ferrule are latch-sockets *e e'*, which are preferably made at the terminal end of the slits, the latter being cut into the socket-hole, and the handle should be bored in a short distance to register with the socket.

At the bottom of the bore *u* in the handle is an open-end thimble G, which is tapering and is forced to its seat in the wood to provide a solid bearing for the tapering end C' of the shank; but this thimble is not essential when the handle is made of hard compact material that would not be liable to swell and stick to the shank.

The shank C may have connected to it any tool desired, that in the drawings being a fragment of a hoe-blade J. At a proper part relative to the depth of the bore in the handle the shank has a squared section C², which is provided with grip-teeth H, corresponding to those in the inner side of the ferrule. The teeth may be of V form, but are preferably of the ratchet-tooth type, having the bearing-faces at an acute angle, as shown. The teeth do not come in contact except when forced together by the locking-clamp.

The locking-clamp is formed in two parts D and E, the latter having extensions forming levers F F', provided at their extremities with turned-in latch-pins *i i'*, which engage the sockets *e e'*. The part E is approximately of V form to conform to the squared end B² of the ferrule and has curved portions *m n* at the juncture with the levers to provide fulcrums in connection with the loops *f h*, formed at the ends of the part D, which is in other respects similar to the part E, and both made, preferably, of round-section cast-steel or steel wire of sufficient thickness.

The manner of assembling the several parts

will be clearly understood by reference to the drawings, the shank being freely inserted endwise when the clamp-levers are in the position indicated by dotted lines in Fig. 1. As
 5 a guide for locating the clamps I preferably provide shallow notches *v*, in which they rest while being locked, the levers being sprung apart while entering the pins *i i'* and when withdrawing them from the sockets.

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

1. A tool-shank having a portion thereof square in cross-section and provided with grip-teeth upon the flat surfaces thereof and hav-
 15 ing a tapering section extending from the square section to the rear end thereof.

2. A tool-handle having a tapering bore at one end thereof and provided with an external
 20 ferrule having its outer end square in cross-section and provided with internal grip-teeth on the flat surfaces thereof and a slit extending longitudinally from the outer end, and a locking-clamp whereby the end divided by
 25 the slit may be forced together.

3. In a tool-shank connection, the combination with the bored handle, of an exterior ferrule having its outer end formed square in cross-section and provided with internal trans-

verse grip-teeth and a slit extending longitu- 30
 dinally from the outer end, sockets in the side of the ferrule, and a locking-clamp binding the end of the ferrule and having levers provided with latch-pins engaging the sockets.

4. In a tool-shank connection, the combina- 35
 tion with the bored handle, of the thimble seated at the bottom of the bore whereby to support a shank end removably, the shank seated in the thimble, the slitted exterior ferrule, and the locking-clamp binding the 40
 slitted ferrule to the shank, substantially as set forth.

5. In a tool-shank connection, the combina-
 tion of the handle having the bore *u* and slitted at the outer end thereof, the shank 45
 having the square portion provided with the grip-teeth *H*, the ferrule *B* provided at the outer end with the internal grip-teeth *I* and slit *d*, the sockets *e e'*, the locking-clamp *D E* provided with the levers *F F'*, and the latch- 50
 pins *i i'* engaging said sockets, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GLEN G. GRISWOLD.

Witnesses:

WM. H. GENUNG,
 MAUDE DAYTON.