

No. 692,796.

Patented Feb. 4, 1902.

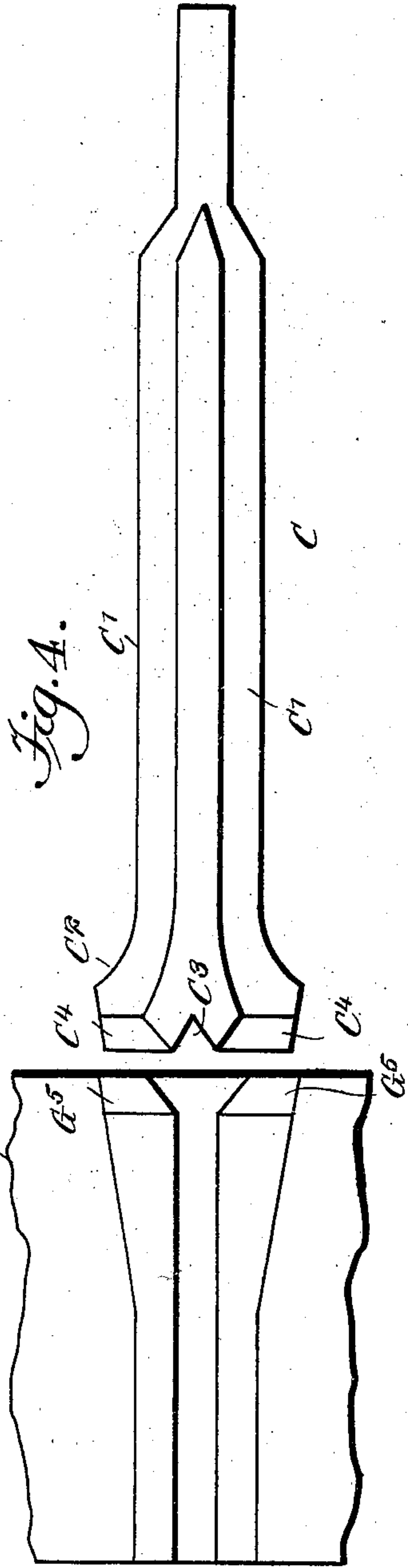
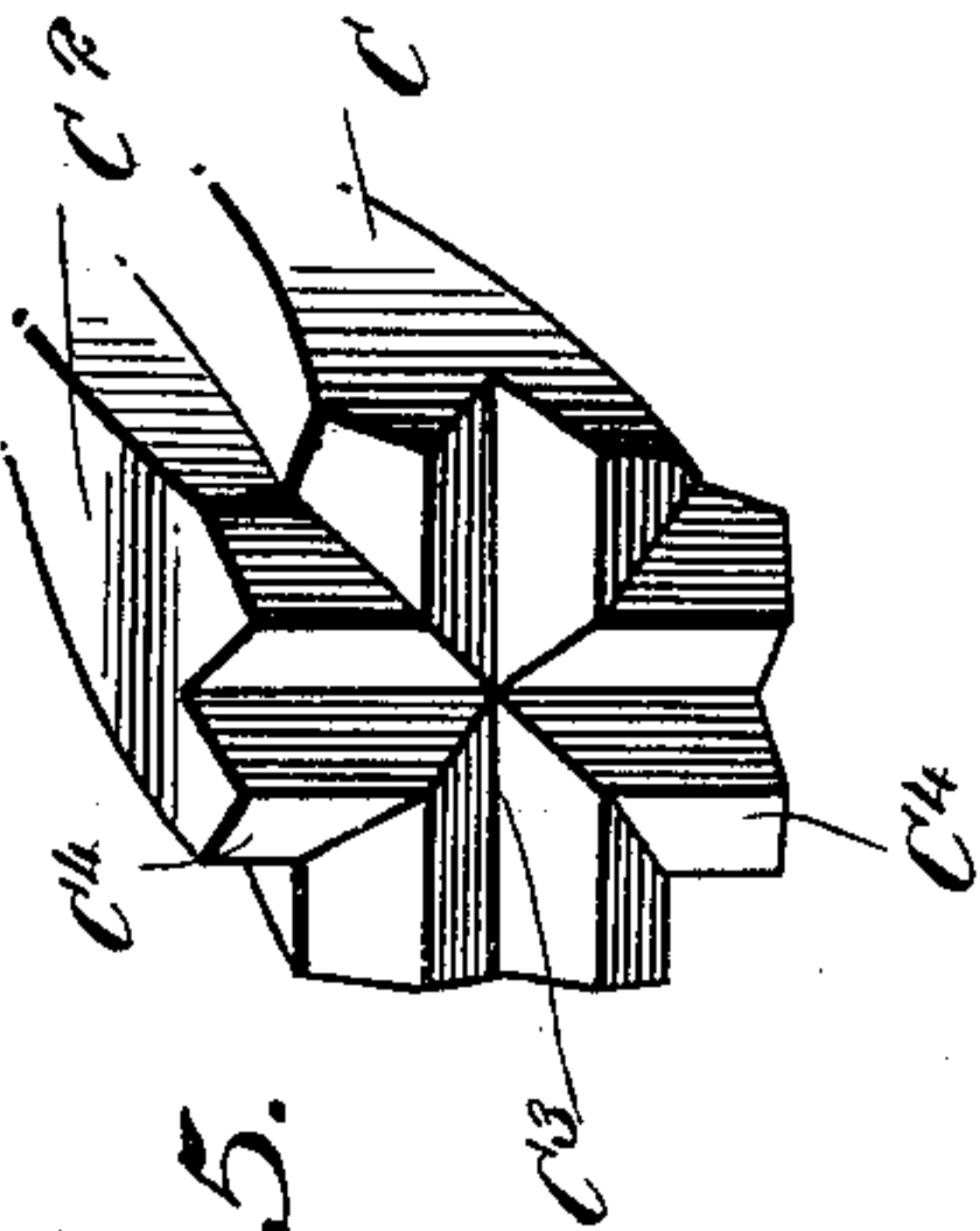
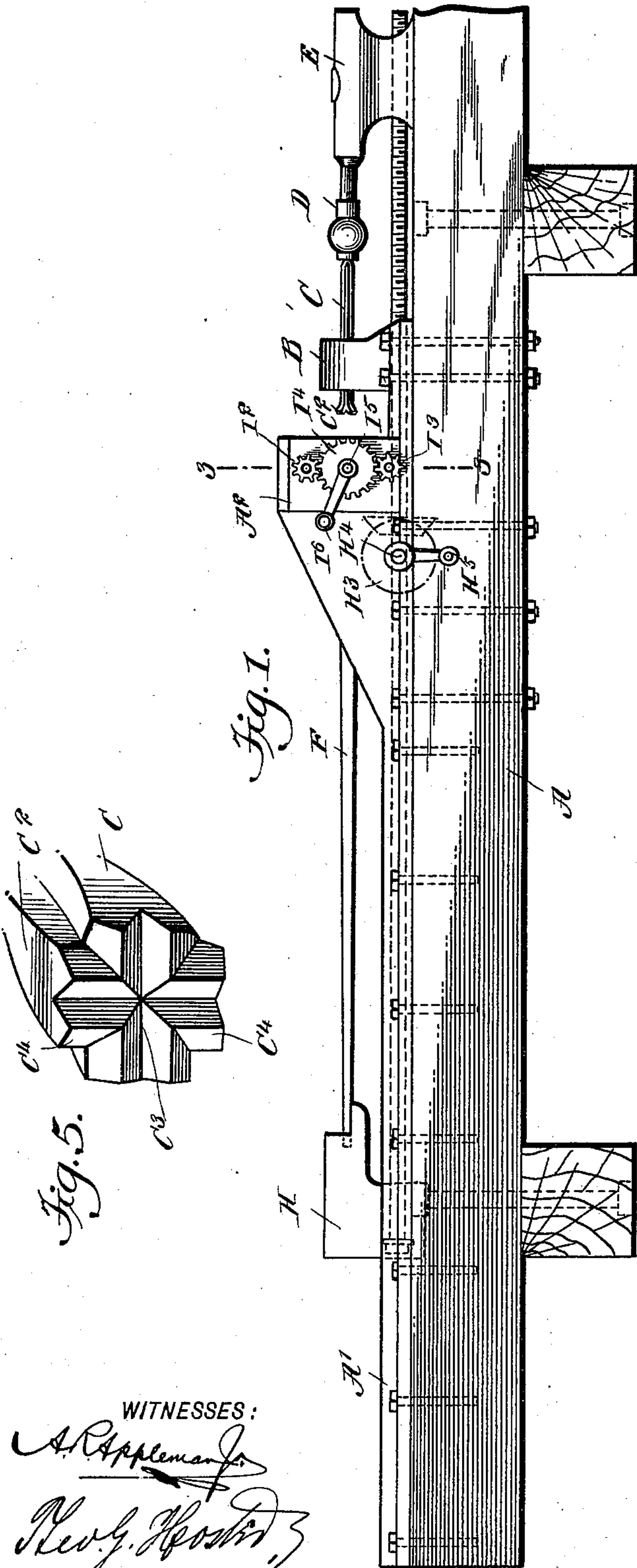
T. H. PROSKE.

SHARPENING MACHINE FOR DRILL BITS.

(Application filed Aug. 14, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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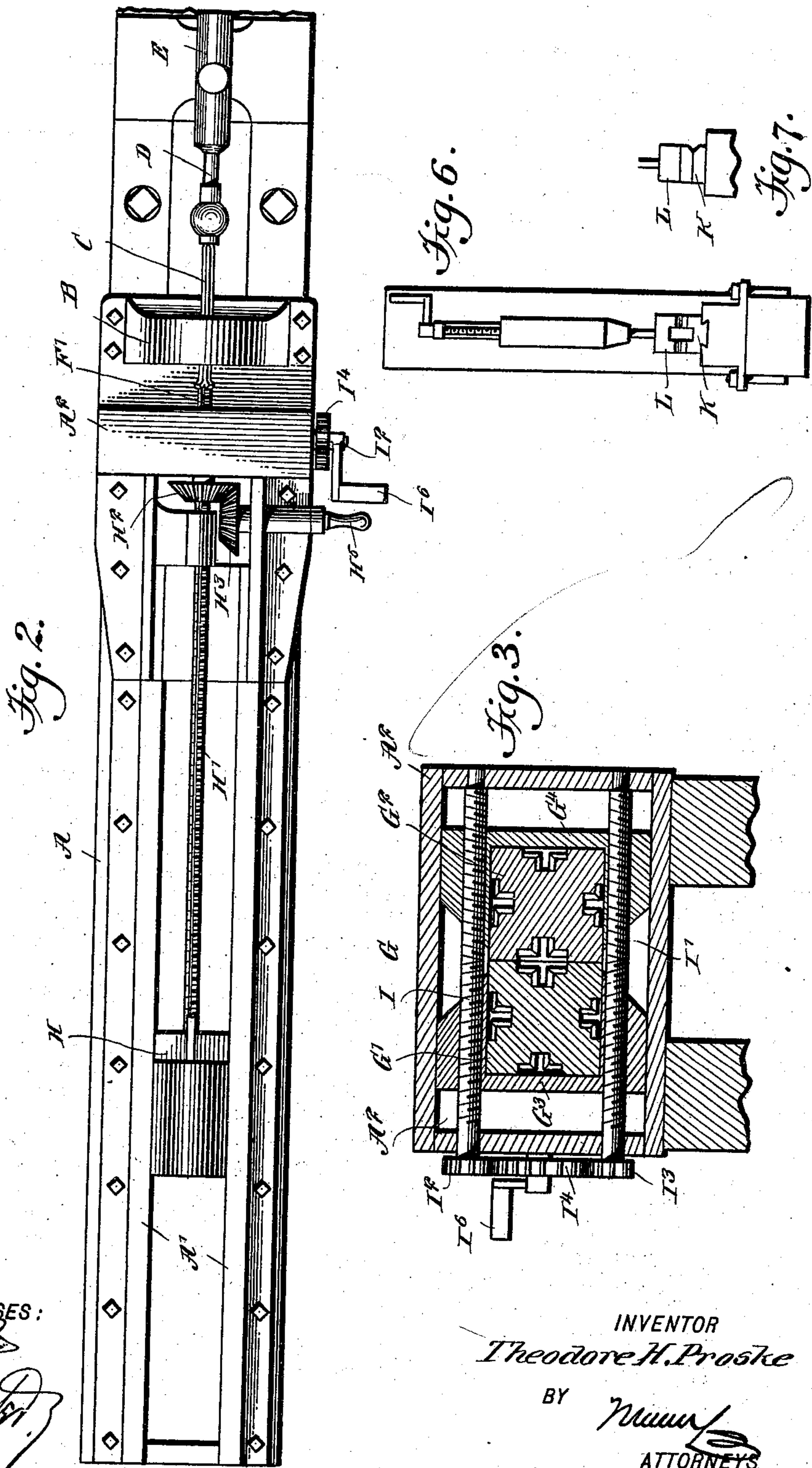
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

THEODORE H. PROSKE, OF VICTOR, COLORADO.

SHARPENING-MACHINE FOR DRILL-BITS.

SPECIFICATION forming part of Letters Patent No. 692,796, dated February 4, 1902.

Application filed August 14, 1901. Serial No. 71,996. (No model.)

To all whom it may concern:

Be it known that I, THEODORE H. PROSKE, a citizen of the United States, and a resident of Victor, in the county of Teller and State of Colorado, have invented a new and Improved Sharpening-Machine for Drill-Bits, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved sharpening-machine for quickly and accurately fashioning and sharpening the bits of machine-drills and other drills, the sharpening-machine being simple and durable in construction, not liable to get out of order, easily manipulated, and arranged to permit sharpening of drill-bits of various sizes.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement with a drill in position to be sharpened. Fig. 2 is a plan view of the same with the drill shown broken out. Fig. 3 is an enlarged transverse section of the improvement on the line 3 3 in Fig. 1, showing more particularly the dies and the means for opening and closing the same. Fig. 4 is an enlarged side elevation of one of the dies and the dolly. Fig. 5 is a face view of the dolly-head. Fig. 6 is a front elevation of the trimming-machine for trimming the drill-bit previously to sharpening the same, and Fig. 7 is a side elevation of the anvil and die of the trimming-machine.

The improved sharpening-machine is mounted on a suitably-constructed frame A, supporting a guide B, upon which a dolly C is loosely mounted to slide in a longitudinal direction, said dolly having radial wings C', terminating in a die-head C², formed on its face with a central shaping part C³ and with radially-extending bevels C⁴, as indicated in Figs. 4 and 5. The outsides of the wings C', at the face of the dolly-head, form shears for cutting off any surplus material that may be on a wing of the drill-bit. The outer end of

the dolly C is adapted to be engaged by a reciprocating striker, such as the drill-chuck D of a drilling-machine of any approved construction, for imparting blows to the dolly C, and thereby fashioning and sharpening the drill-bit, as hereinafter more fully described. The shank of the chuck D is mounted to slide in suitable bearings E, attached to the frame A, which latter also supports the rest of the drilling-machine. (Not shown.)

The bit F' of the drill F to be fashioned or sharpened is placed in an anvil-die G, while the end of the drill-shank rests on an abutment H, mounted to slide longitudinally in suitable bearings A', carried on the frame A. The die G is preferably made in sections G' G², (see Fig. 3,) held in boxes G³ G⁴, mounted to slide transversely in guideways A², attached to the frame A. The die-sections G' G² are preferably made square in cross-section, with part of a die on each face, and the die parts are of different sizes, so that when the sections G' G² are adjusted in the boxes G³ G⁴ the die can be used for receiving drill-bits of various sizes, as will be readily understood by reference to Fig. 3. The die-sections besides forming stops for the drill-bit and part of the drill-shank (see Fig. 4) are formed at their outer ends with bevels G⁵, located oppositely and operating, in conjunction with the bevels C⁴ on the dolly-head, to serve as a protection for the central shaping part C³ of the dolly and to also serve as a guide and bumper for the dolly.

The boxes G³ and G⁴ are engaged by screw-rods I I', each having right and left hand threads, so that upon turning said screw-rods the boxes G³ G⁴ are simultaneously moved toward or from each other to close or open the die-sections G' G².

In order to rotate the screw-rods I I' simultaneously, I provide their outer ends with pinions I² I³ in mesh with a gear-wheel I⁴, mounted to rotate on a stud I⁵, held on the bearing A², and on said gear-wheel I⁴ is secured a crank-arm I⁶ under the control of the operator. When the crank-arm I⁶ is turned in one direction, the die-sections G' G² are moved to open the die for the insertion of the bit, and when the crank-arm I⁶ is turned in the opposite direction the die-sections G' G² close to hold the bit securely in position dur-

ing the time the head C^2 of the dolly strikes the end of the bit and fashions the same according to the die G and at the same time sharpens the edges of the bit and removes the surplus material that may be on the wings of the drill-bit. It is expressly understood that the seats in the die-sections G' G^2 have bevels G^5 for engagement with the bevels C^4 of the dolly-head to properly guide the latter to the drill-bit and to insure accurate sharpening of the latter. The bevels C^4 also serve to remove any surplus material that may be on the wings of the drill-bit.

The abutment H is engaged by a feed-screw H' , journaled in suitable bearings on the frame A and carrying a bevel gear-wheel H^2 in mesh with a bevel gear-wheel H^3 , mounted to turn in suitable bearings arranged on the frame A , adjacent to the bearing A^2 . (See Figs. 1 and 2.) On the outer end of the shaft H^4 is secured a crank-arm H^5 , under the control of the operator, for turning the shaft H^4 and imparting its rotary motion by the gear-wheels H^3 H^2 to the feed-screw H' , so that the abutment H is moved toward or from the die G , according to the length of the drill under treatment at the time.

Prior to fashioning and sharpening the drill, it is necessary that the same be trimmed, and for this purpose an anvil K is provided, (see Figs. 6 and 7,) over which operates a die L , connected with the reciprocating piston-rod of a drilling-machine to move the die toward or from said anvil K and cut the drill prior to passing into the anvil-die G . It is understood that the drill is heated previously to trimming the same by the anvil K and the die

L , and while it is still in a hot condition it is placed in the anvil-die and acted upon by the dolly, as previously described, to give the desired shape and sharp cutting edges to the drill-bit.

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

1. A sharpening-machine for drill-bits, comprising a die, and a dolly reciprocating toward and from said die, the die and the dolly having registering bevels to serve as a protection to the shaping part of the dolly and as a guide and bumper for the same, as set forth.

2. A sharpening-machine for drill-bits, comprising a die provided with an operating-face bounded by angular edges, a dolly provided with an operating-face mating said face of the die, and provided further with radially-disposed wings provided with cutting edges mating said angular edges of said die.

3. A sharpening-machine for drill-bits, comprising a die provided with an operating-face bounded by angular edges, a dolly having radially-disposed wings provided with an operating-face bounded by angular edges, the arrangement being such that said operating-faces act as formers while said angular edges have a slight shearing movement.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THEODORE H. PROSKE.

Witnesses:

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DANIEL ARMS.