

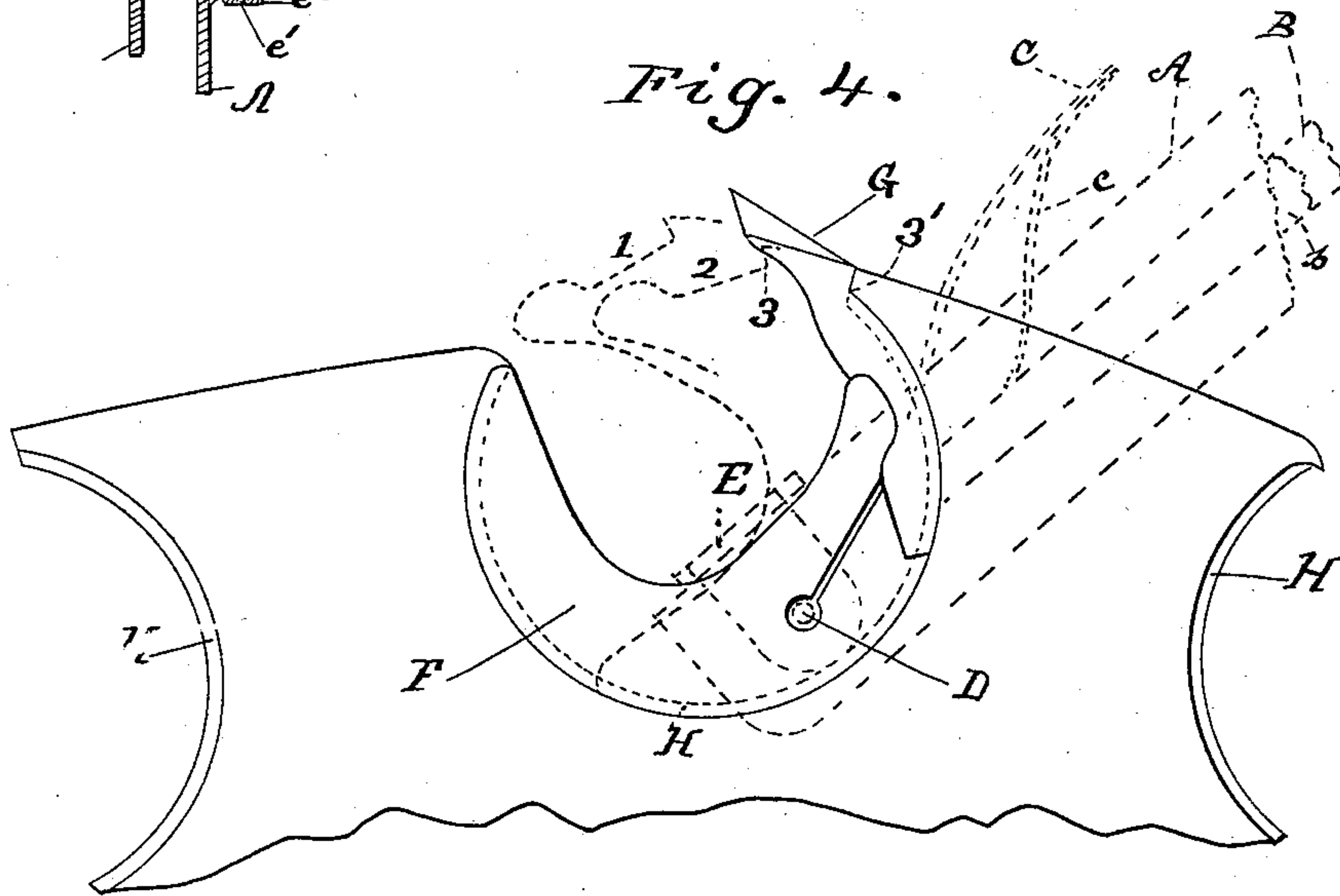
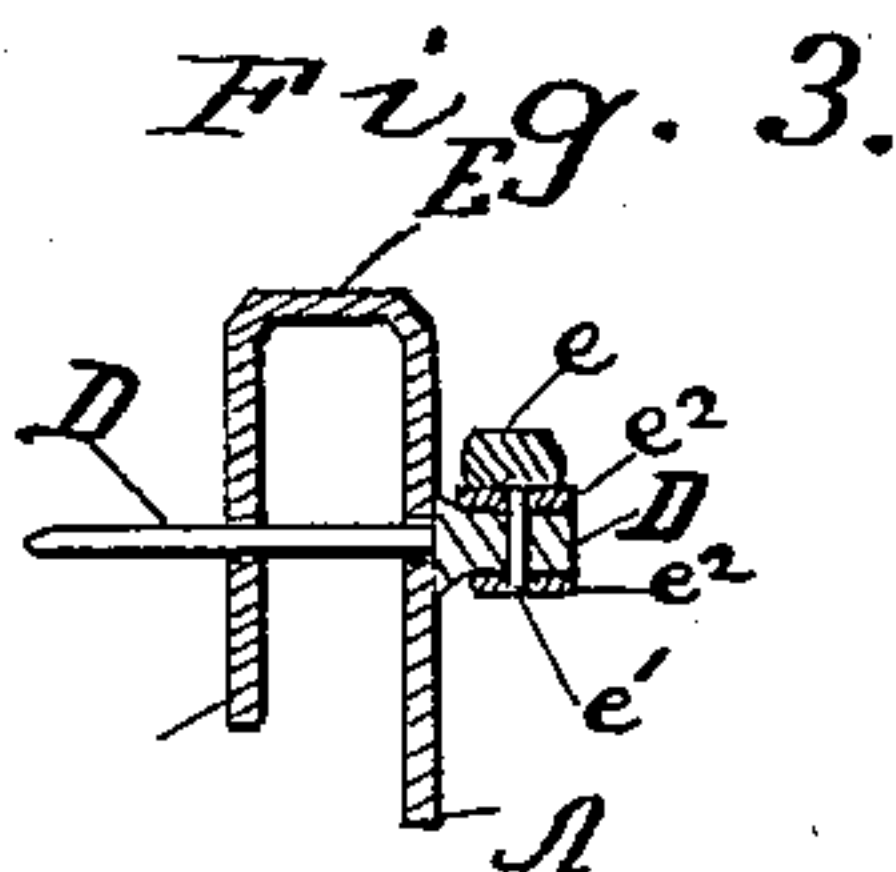
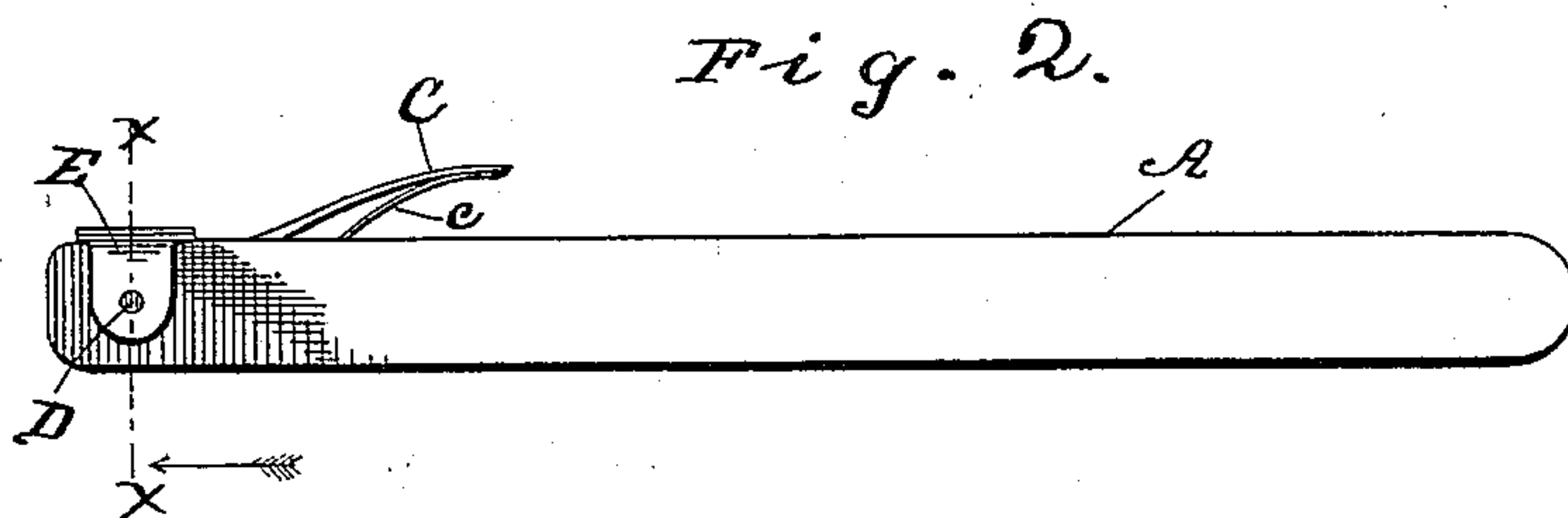
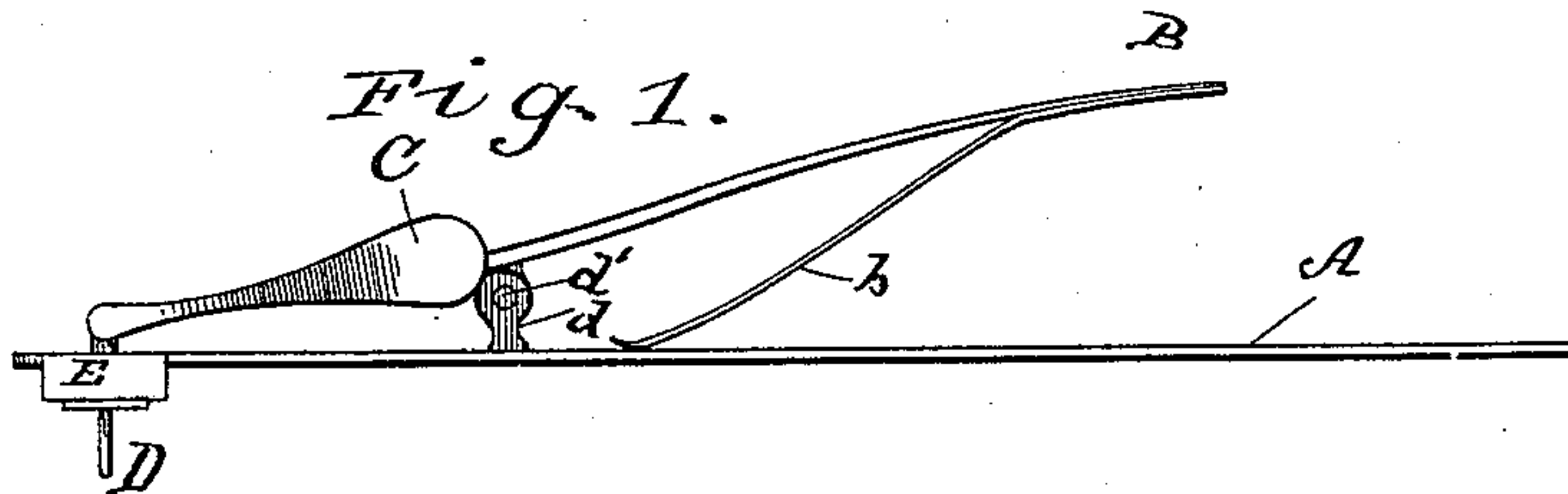
(Model.)

R. P. SMITH.

TOOL FOR MANIPULATING INSERTIBLE SAW TEETH.

No. 433,913.

Patented Aug. 5, 1890.



Witnesses

Thos. Houghton.

Henry C. Stewart

Richard P. Smith Inventor

By his Attorney

Geo. H. Woodhams

UNITED STATES PATENT OFFICE.

RICHMOND PERY SMITH, OF MARSHFIELD, OREGON, ASSIGNOR OF ONE-HALF
TO THOMAS G. OWEN, OF SAME PLACE.

TOOL FOR MANIPULATING INSERTIBLE SAW-TEETH.

SPECIFICATION forming part of Letters Patent No. 433,913, dated August 5, 1890.

Application filed May 2, 1890. Serial No. 350,302. (Model.)

To all whom it may concern:

Be it known that I, RICHMOND PERY SMITH, a native-born citizen of the United States, residing at Marshfield, in the county of Coos and State of Oregon, have invented certain new and useful Improvements in Tools for Manipulating Detachable Saw-Teeth; 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 and figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a simple, cheap, and effective wrench or tool, both for the insertion and extraction of detachable saw-teeth, adapted to be used in circular and other saws, and it is constructed to operate on the usual bit-holder and bit, as shown by letters F and G in Figure 4.

In the drawings hereto annexed, Fig. 1 represents a top view of my invention; Fig. 2, a side elevation of same; Fig. 3, a cross-section of the clamp and pin on line *x x* of Fig. 2; Fig. 4, a view of a portion of a saw-blade with the tooth-bit G and its holder F and tool (indicated by dotted lines) in the various positions assumed while the bit or tooth is being inserted.

The bit-holder F, it will be seen, is crescent-shaped, corresponding to the circular form of the segmental openings H H in the saw-blade and having a perforation at the end of a slot near its outer end, and the bit or saw-tooth G is shaped, as shown, to interlock with the bit-holder and also to continue by its periphery the circle of the bit-holder unto the point 3', Fig. 4, where it forms a shoulder, which when the bit is driven home to its proper operative position abuts against a corresponding shoulder on the saw-blade and prevents the bit from being pressed too far within the segmental opening. The bit and holder also, as commonly constructed, have a V-shaped groove on their convex edge to enable them to engage and slide on a similar V-shaped ridge on the concave edge of the segmental opening H in the saw-blade.

A, the main arm of my wrench, Fig. 2,

has a flat plain surface with a U-shaped clamp E at its fulcrum end formed by doubling over the metal like an ear. This clamp is perforated vertically to its plane by a round hole, through which a pin D plays. This pin is pivoted between the bifurcated ends *e e'* of lever B, which lever is also pivoted at *d'* between lugs *d* on the rear side of lever A, as shown by Fig. 1. A spring *b*, Fig. 1, attached to lever B and bearing on lever A, serves to hold the pin D in engagement with clamp E. This pin D is also detachable, having a ring at its upper end, through which a pivot on the end of a small lever C, Fig. 3, plays, actuated by the pivoted lever C and its spring *c*, Fig. 2.

The application and operation of my improved wrench may be thus described. The pin D being withdrawn by pressure on lever B from engagement with the clamp E, and the bit-holder F being inserted in said clamp, with the inner edge of said holder in contact with the closed end of the clamp, so that the perforations in both clamp and bit-holder at *f* shall register, the pin is suffered to resume its engagement by the automatic pressure of spring *b*, and thus secures the bit-holder in position in the clamp. The bit-holder is then placed in position with relation to the segmental opening H of the saw-blade, as shown at 1, Fig. 4, and the lever A gradually swung round to the various positions 2 and 3, Fig. 4, the bit-holder sliding upon the V-shaped ridge of the opening until it reaches a point where the bit or saw-tooth should be connected to continue the circle and slide on the ridge. A continuous pressure on lever A will swing the holder and bit until checked by the shoulder at 3'.

It will be seen that the base of the clamp E, dotted lines, Fig. 4, forms a fulcrum fitting closely to the inner edge of the bit-holder, and also makes the bit-holder and the lever A a continuous, entire, and inflexible lever, as if they were solidly welded together. For the same reason the wrench or lever serves to extract as well as to insert the bit and holder.

The pin D, being detachable, may be replaced when worn or defective.

The wrench can be used for operating on solid teeth, as well as those composed of both bit and holder.

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

1. A tool for inserting and extracting detachable saw-teeth, having a clamp E thereon adapted to bear upon the inner edge of the tooth or holder, and a detachable pin D for engagement with openings both in the tooth or holder and the clamp, all substantially as shown and described.

2. A tool for inserting and extracting detachable saw-teeth, consisting of a lever A, having a clamp E thereon perforated and adapted to receive a saw-tooth or holder and

bearing upon the inner edge of said tooth or holder, a detachable pin D to engage perforations in the bit and clamp, a pivoted spring-lever B to actuate said pin, and an additional spring-pivoted lever C, both to secure and detach said pin, all substantially as shown and described.

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

RICHMOND PERY SMITH.

Witnesses:

J. M. ARRINGTON,
JOHN F. HALL.