

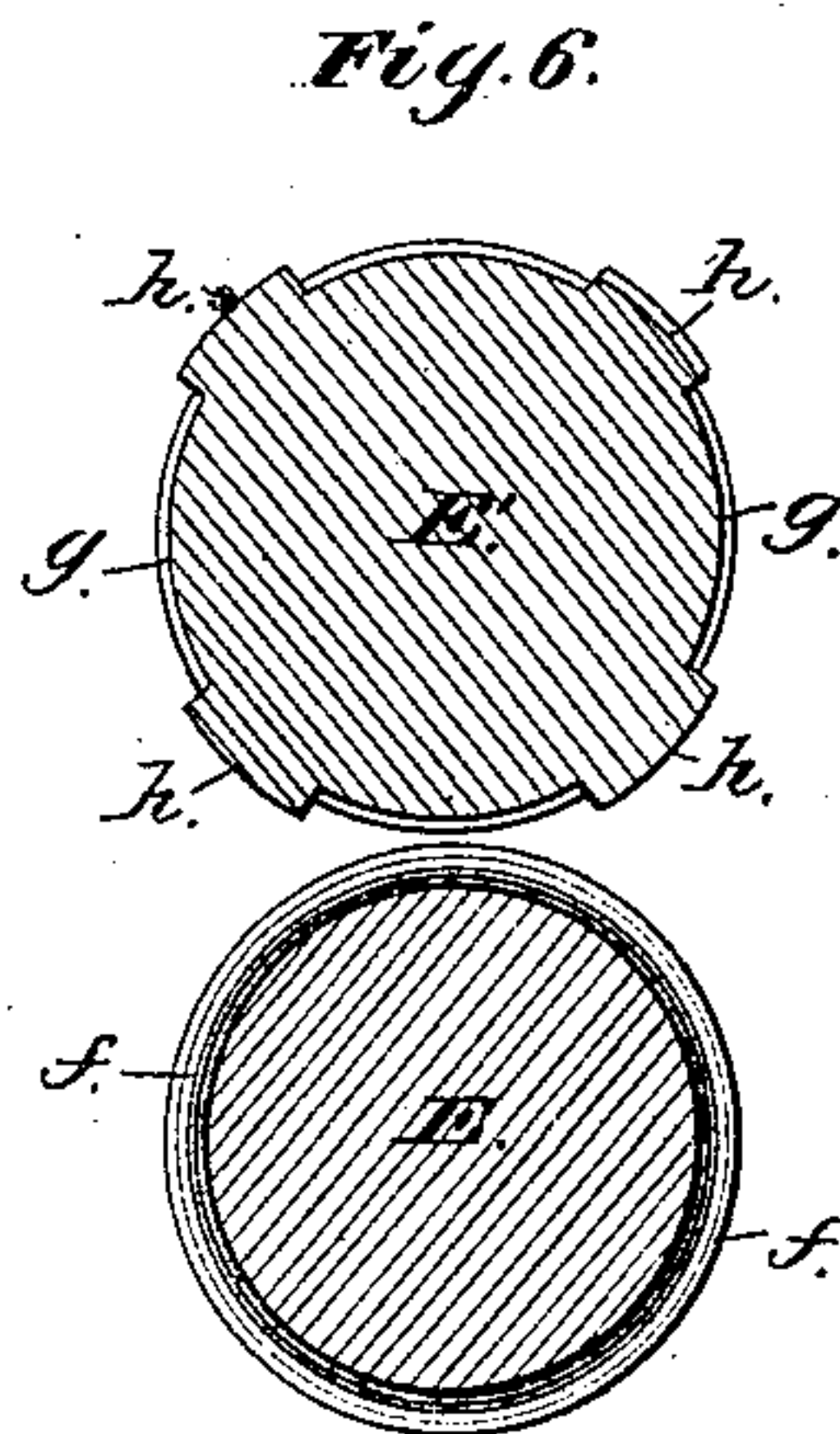
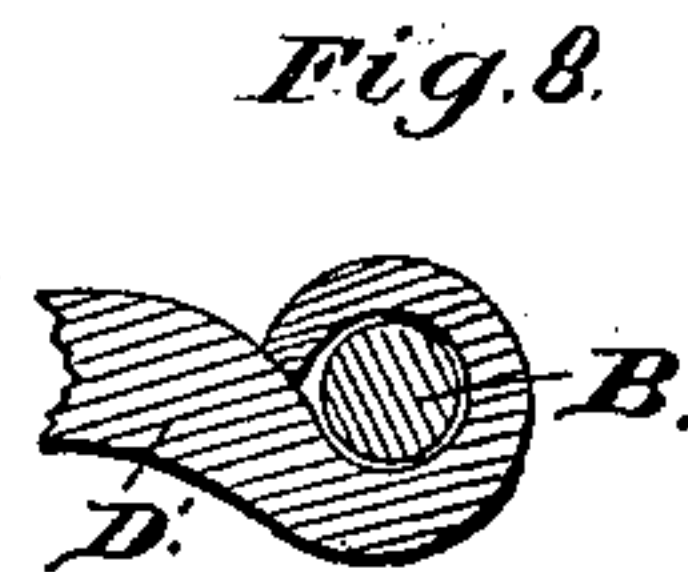
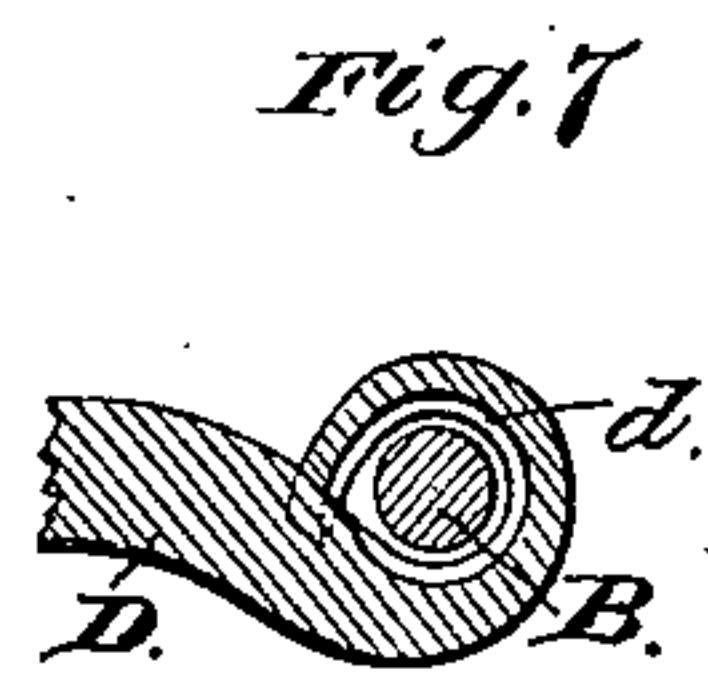
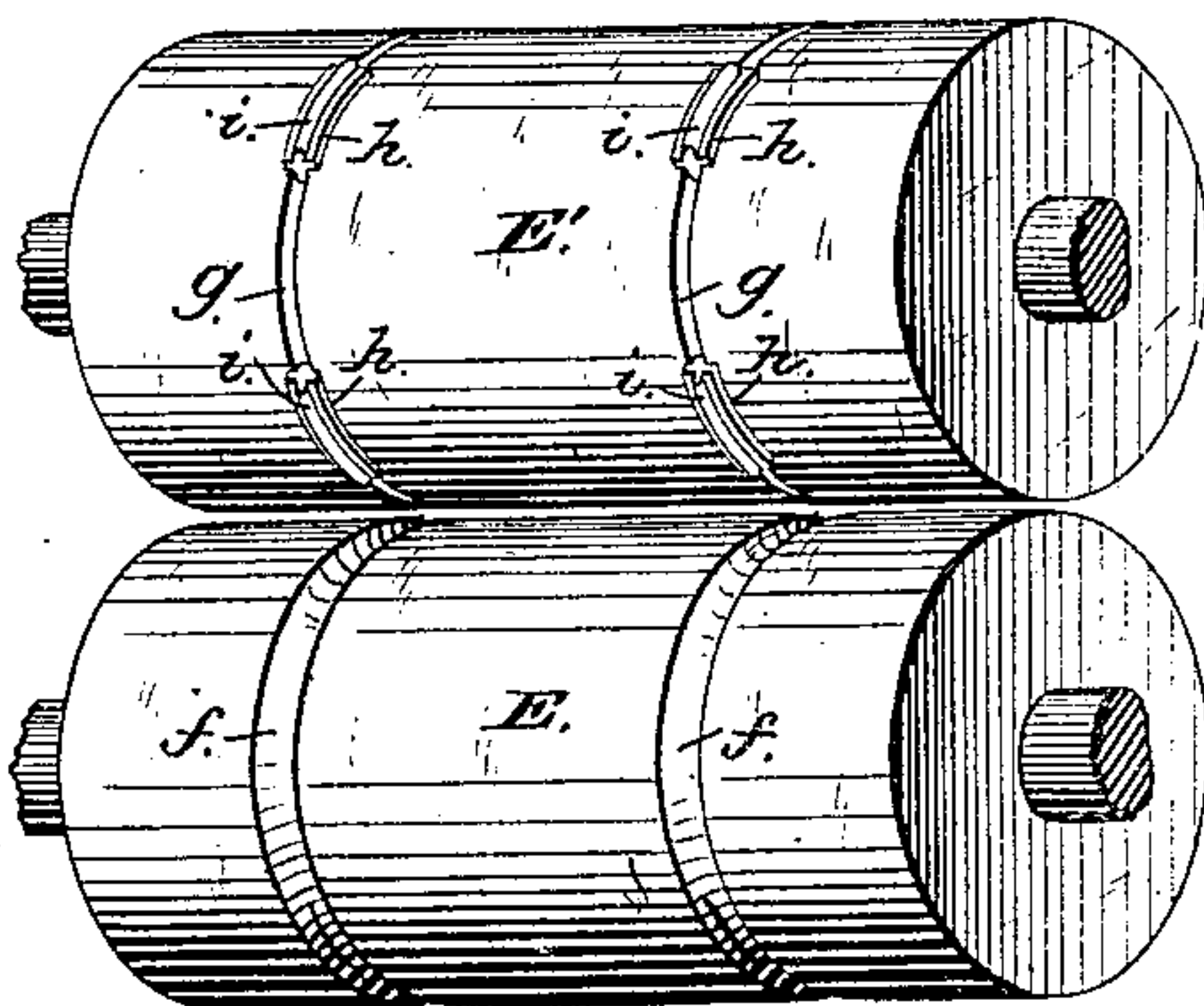
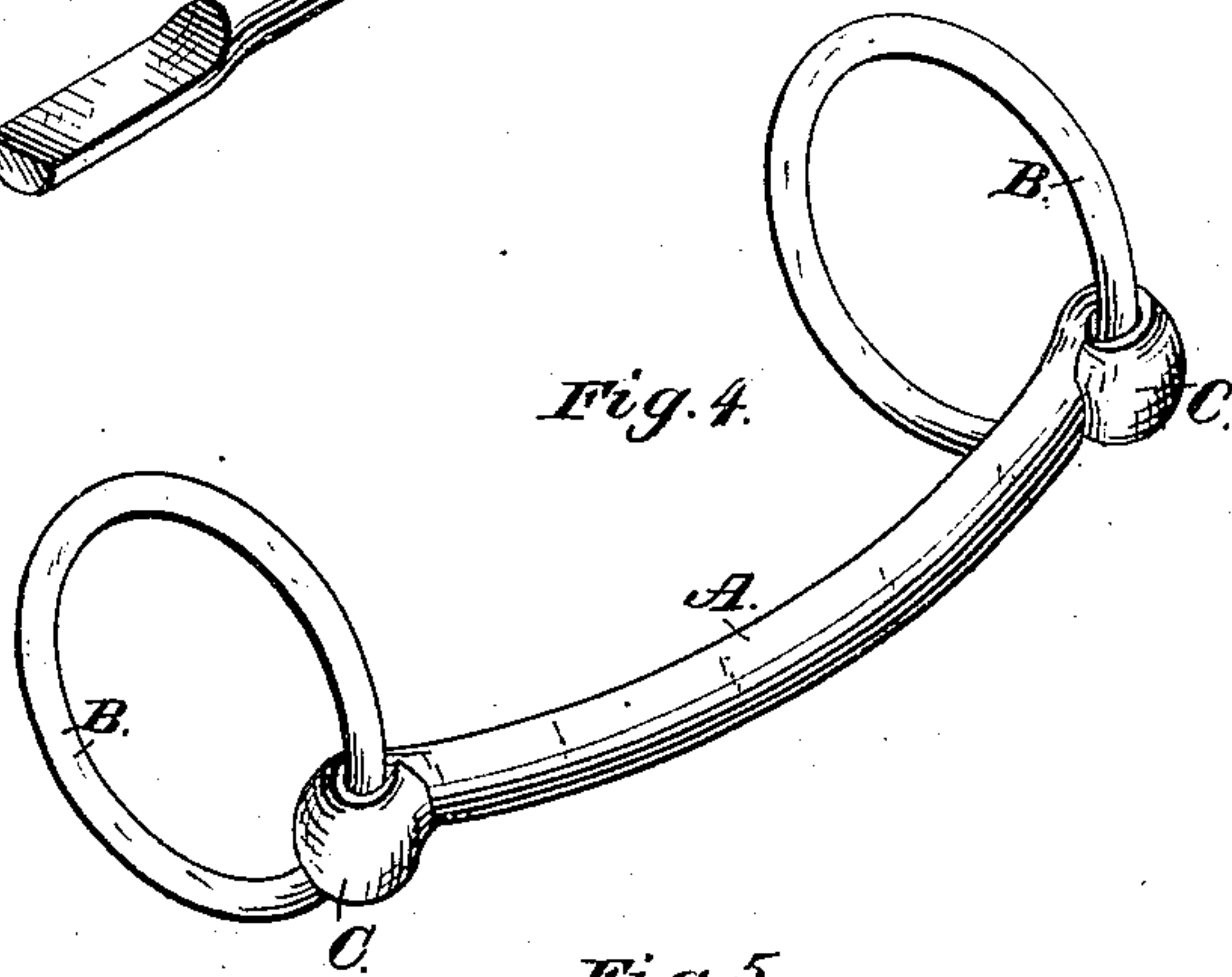
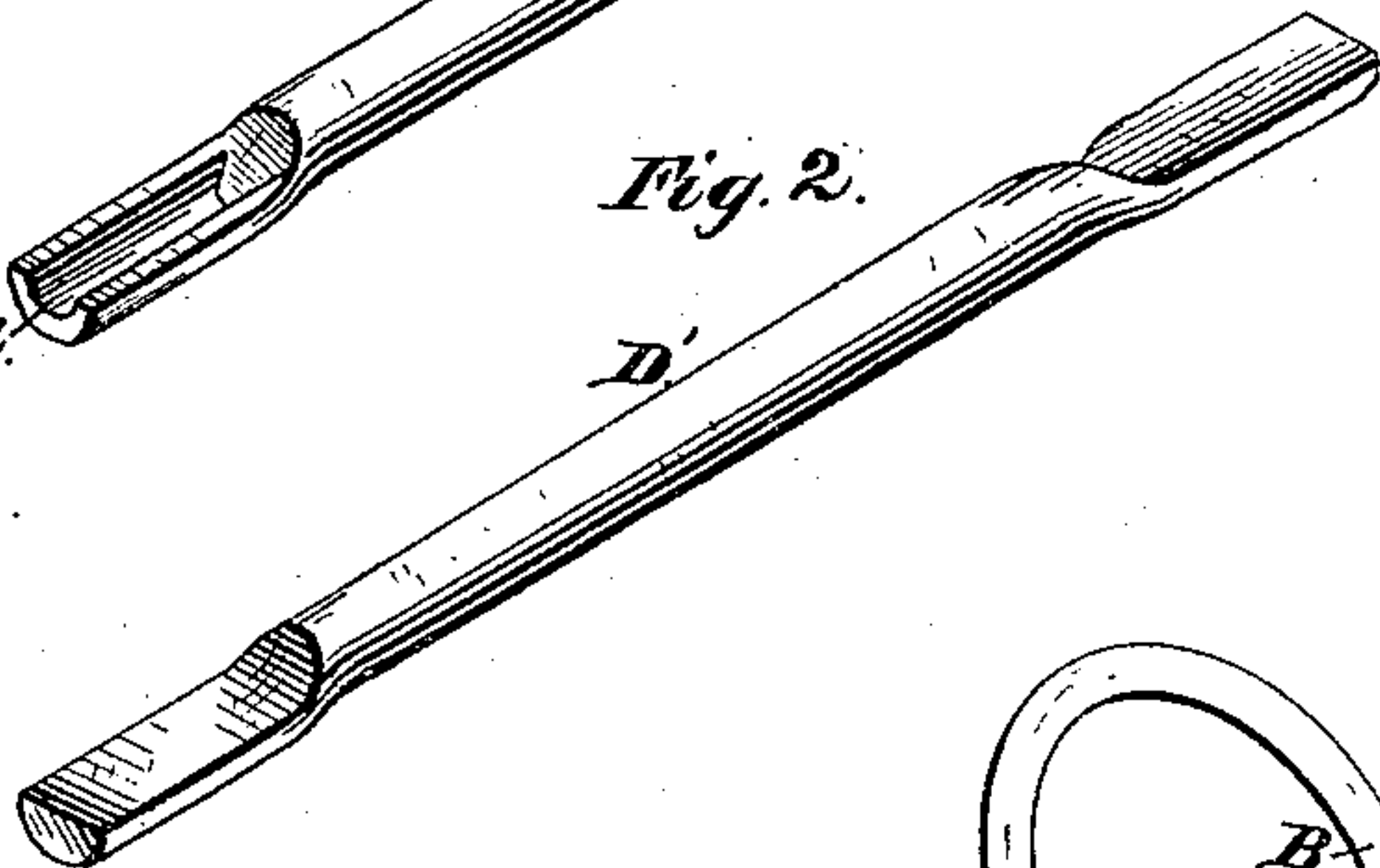
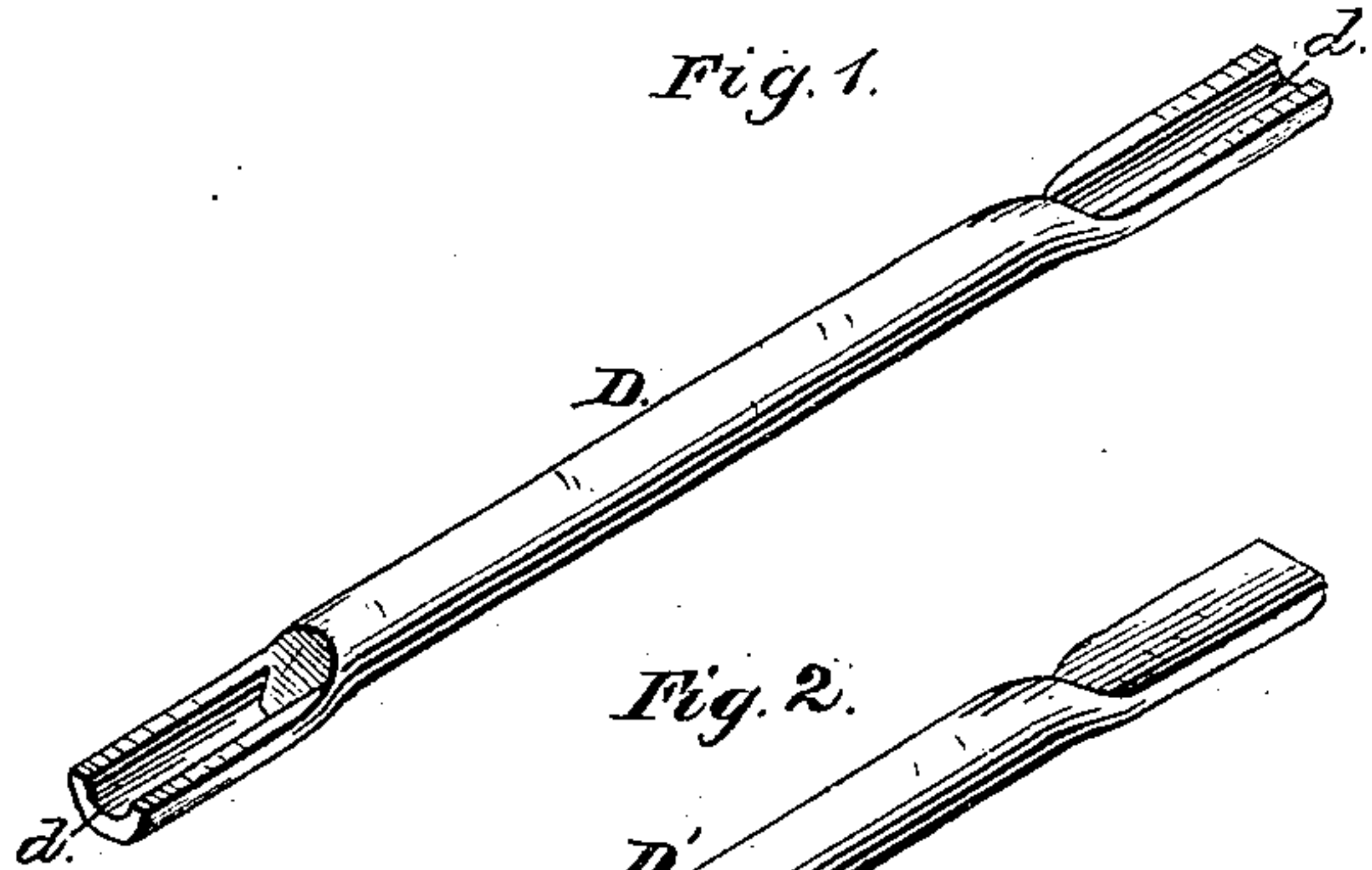
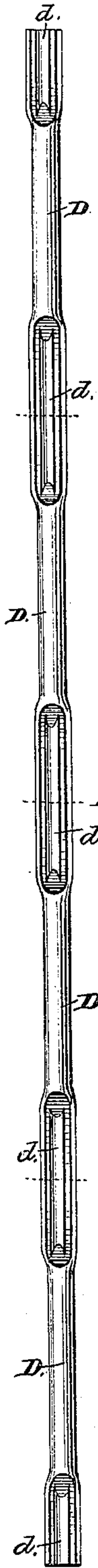
(Model.)

P. & W. B. HAYDEN.

Machine for Rolling Mouth Piece Blanks for Bridle Bits.

No. 238,779.

Patented March 15, 1881.



Attest.

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UNITED STATES PATENT OFFICE.

PETER HAYDEN, OF NEW YORK, N. Y., AND WILLIAM B. HAYDEN, OF COLUMBUS, OHIO.

MACHINE FOR ROLLING MOUTH-PIECE BLANKS FOR BRIDLE-BITS.

SPECIFICATION forming part of Letters Patent No. 238,779, dated March 15, 1881.

Application filed December 9, 1880. (Model.)

To all whom it may concern:

Be it known that we, PETER HAYDEN, a citizen of the United States, residing at New York city, New York, and WILLIAM B. HAYDEN, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented new and useful Improvements in Machines for Rolling Mouth-Piece Blanks for Bridle-Bits, of which the following is a specification.

Our invention relates to an improvement in the manufacture of bridle-bits, its object being to accomplish, by rolling, the formation of the blanks for the mouth-pieces of rolled or wrought iron bits, and thus increase the rapidity and lessen the cost of manufacture as compared with the old process of stamping and all other methods hitherto employed.

In the accompanying drawings, Figure 1 represents a single blank for the mouth-piece of a bit. Fig. 2 is a modification thereof. Fig. 3 represents a rod consisting of a number of connected blanks. Fig. 4 is a view of a bit. Fig. 5 is a perspective view of a pair of rolls for forming blanks according to our improvement. Fig. 6 is a transverse section of the same. Figs. 7 and 8 are longitudinal sections through the ends of the mouth-pieces formed by the blank and its modification.

The letter A in Fig. 4 designates the mouth-piece, the end portions of which are wider and thinner than the intermediate portion, and are bent around the rings B, forming the heads C.

D in Fig. 1 and D' in Fig. 2 represent blanks from which the mouth-pieces of bits are formed. It has been customary, in producing such blanks, to cut a suitable rod into pieces of a proper length, and then, by means of a drop-press or other suitable stamping-machine, to widen and make thinner the end portions, stamping first one end, and then turning the bar end for end to stamp the other. This method is, of course, slow, and therefore expensive.

By our invention we provide for economizing time and labor by forming a number of these blanks in one piece by a continuous operation, and in so doing we take a rod of a suitable length to form, say, a dozen or twenty blanks and pass it between suitable rolls, which we will presently describe, and as it passes

between these rolls it is widened and somewhat flattened and indented at proper intervals, as shown in Fig. 3, and for such portions of its length that when cut transversely through the centers of the widened, indented, and flattened portions, the short lengths so formed will constitute blanks for mouth-pieces, as shown in Fig. 1. The forming of the rod into the series of connected blanks composing a multiple blank is thus a continuous and very rapid operation, and the severing into short lengths or separate blanks is performed by feeding the rod through a cutting-machine.

In Fig. 3, which shows a rod formed into a number of connected blanks, the dotted lines indicate where the widened, flattened, and indented portions are to be cut, that portion of the rod between each two of said lines being, when the rod is cut, a separate blank.

In widening and flattening, or rather rendering thinner, the end portions of the blanks, we at the same time indent or groove said portions longitudinally, as shown at d, Fig. 1, in the surfaces which are to form the bearings of the rings, as by this means we render these end portions more easily bent, and their tips fit more snugly against the periphery of the intermediate portion of the bar which they meet. This is illustrated in Fig. 7, which represents a longitudinal section through the end of a mouth-piece formed from a blank so grooved or indented. The curved edge at the outer end of the groove embraces the periphery of the bar to a certain extent, and the joint requires less finishing than when the groove is omitted.

Fig. 8 shows a section of a mouth-piece formed from a blank not grooved, the straight edge of the tip requiring, of course, to be conformed to the periphery of the bar in making the joint.

The rolls E and E' (shown in Figs. 5 and 6) are to be mounted similarly to other metal-working rolls, the lower roll having one or more passes or peripheral grooves, f, about semicircular in contour, and having a diameter sufficient to permit the rod to be properly widened therein. The upper roll has coincident grooves or passes, the portions g of which are indentations semicircular in transverse contour, of proper size to embrace snugly the rod,

of a length equal to that of the blank between
its widened end portions, and the parts *h* of
these passes are projections lying between the
indentations, and being for the purpose of
5 widening and thinning the rod at proper in-
tervals and for suitable distances, as before
described. From the longitudinal centers of
these projections project ribs *i*, which form the
grooves in the widened portions of the rod.
10 The number of indentations and projections
of the upper roll will, of course, be governed
by the diameter of said roll.

What we claim is—

The combination, in rolls for rolling continu-
15 ous series of blanks for bit mouth-pieces in

one piece, of the roll *E*, having one or more
circumferential grooves, *f*, approximately semi-
circular in cross-section, with the roll *E'*, hav-
ing the indentation *g*, and the projections *h*,
provided with the longitudinal ribs *i*, substan- 20
tially as described.

In testimony whereof we have hereunto set
our hands in the presence of two subscribing
witnesses.

P. HAYDEN.

WILLIAM B. HAYDEN.

Witnesses:

A. HILL,

O. H. COLLIN.