

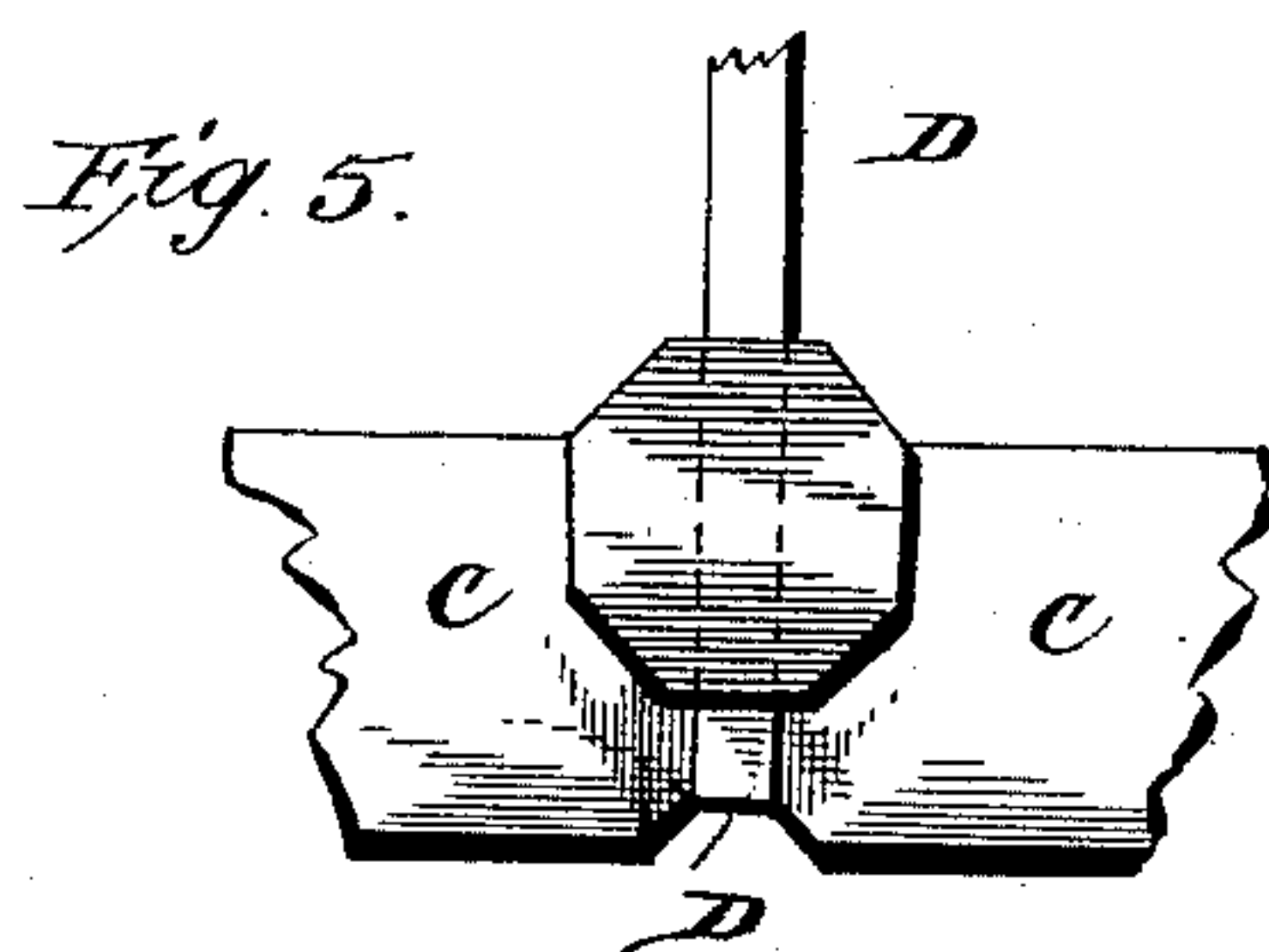
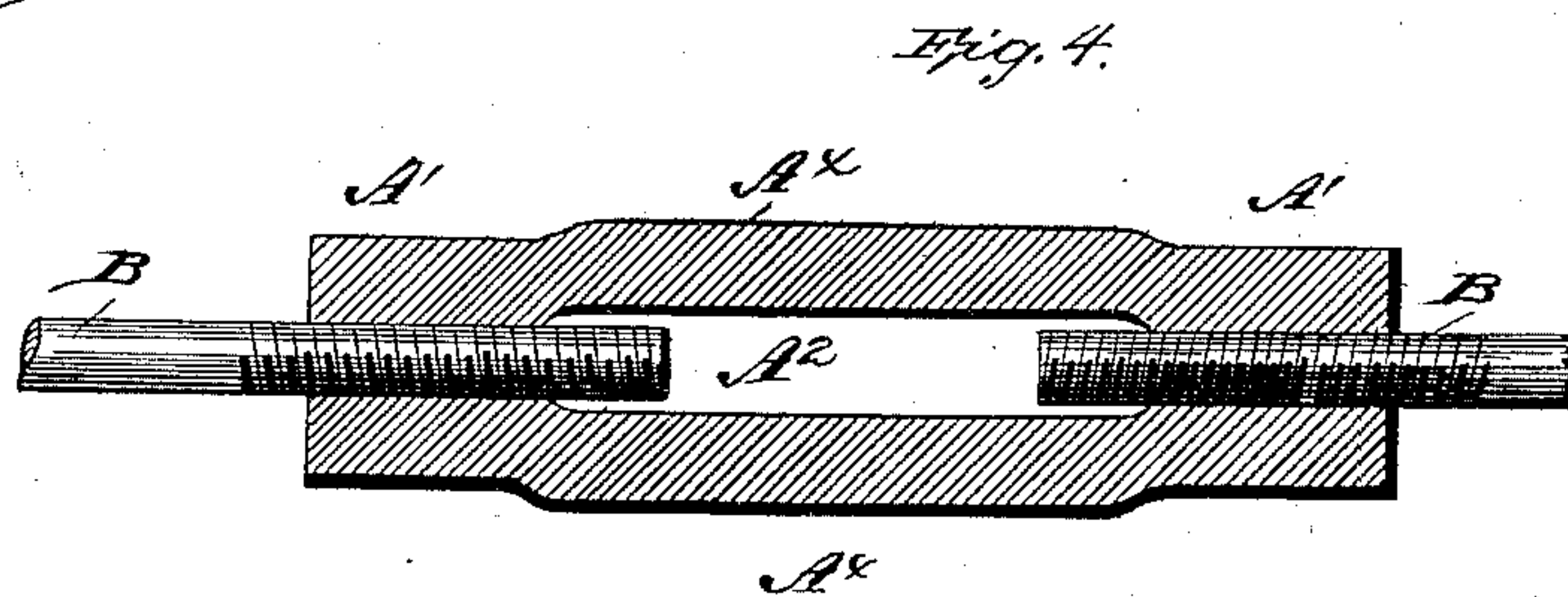
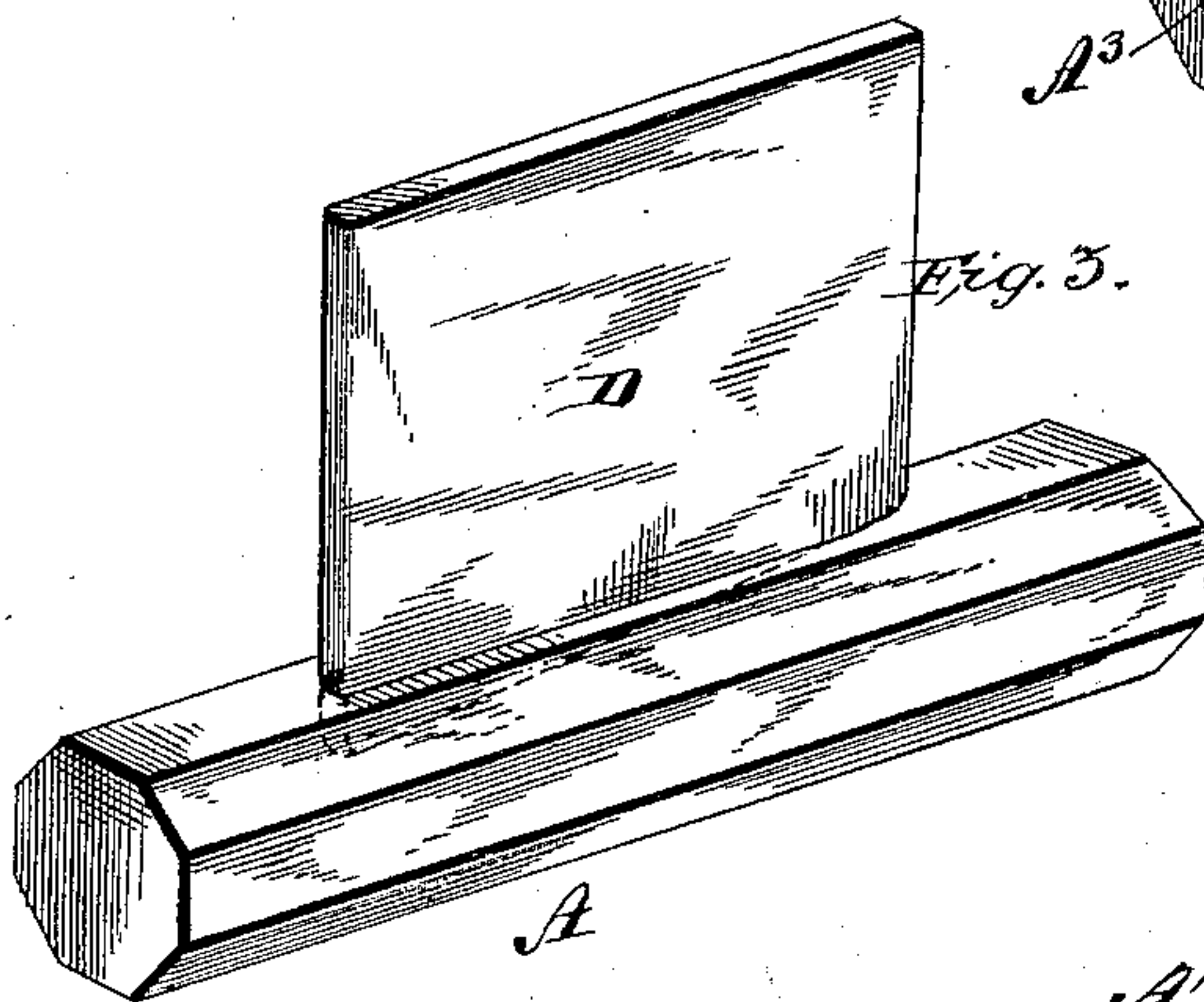
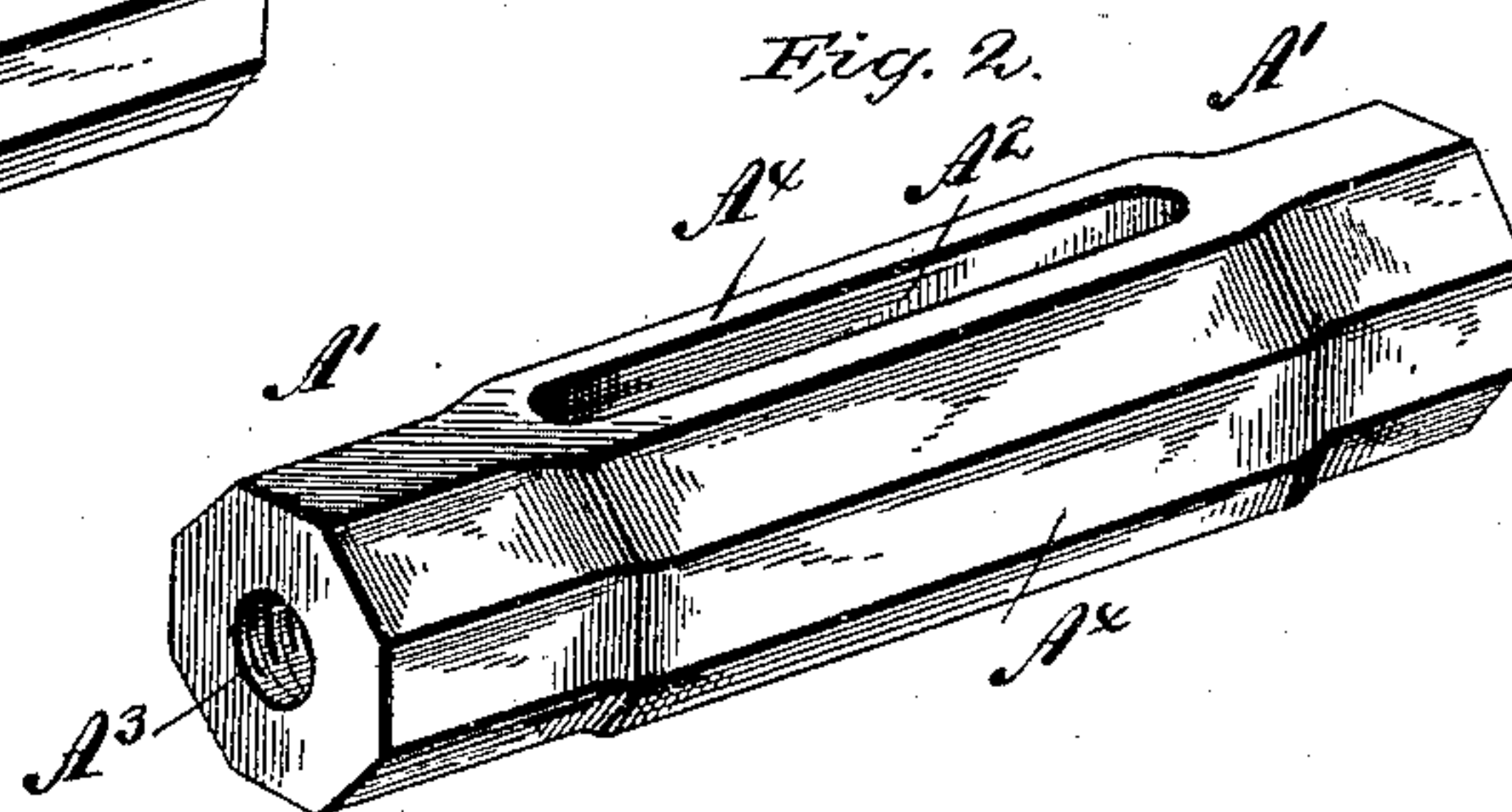
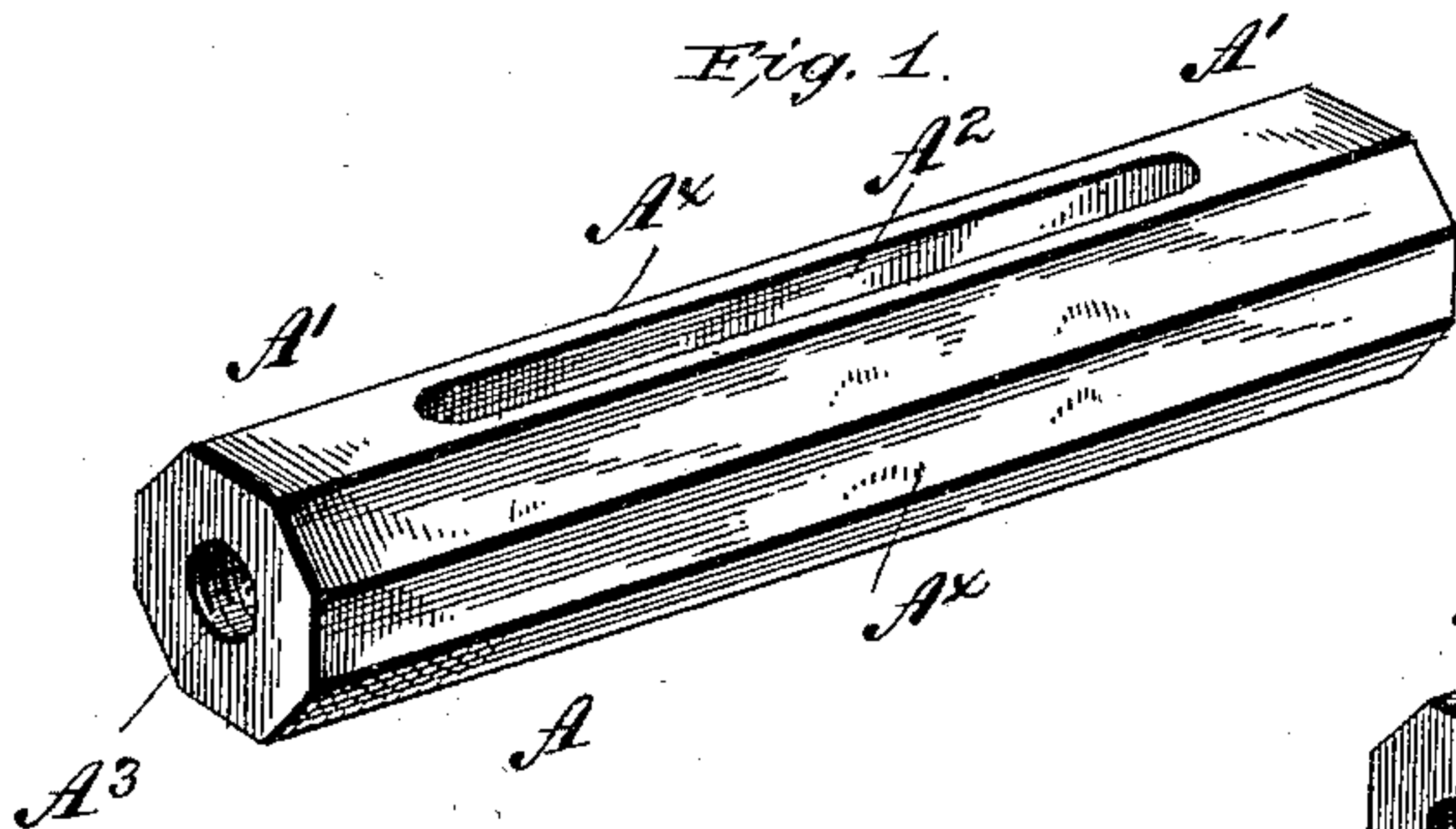
(No Model.)

C. H. WILLIAMS.

TURN BUCKLE.

No. 378,534.

Patented Feb. 28, 1888.



Witnesses:

S. C. Hill,
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Inventor:

C. H. Williams,

By

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UNITED STATES PATENT OFFICE.

CHARLES H. WILLIAMS, OF CLEVELAND, OHIO.

TURN-BUCKLE.

SPECIFICATION forming part of Letters Patent No. 378,534, dated February 28, 1888.

Application filed May 4, 1887. Serial No. 237,099. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. WILLIAMS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Turn-Buckles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to turn-buckles, and has for its object, in the main, to produce a turn-buckle which is entirely free from welded joints, and which can be manufactured at a minimum cost.

In manufacturing my turn-buckle the material is rolled in bar form, having the desired outline in cross-section and sawed off in lengths desired. An inspection-opening is formed directly through the body of the blank, and the same is, either with or without a spreading of the arms thereof, drilled, punched, or otherwise apertured for the reception of the rods to be used therewith, and to be screw-threaded or otherwise connected therewith. It will thus be seen that I produce a turn-buckle which is absolutely free from any weld-joints, which necessarily involve an increase in the cost of manufacture, and which cannot possibly be as strong as a turn-buckle of the same size without welded joints.

The practical advantages of my turn-buckle are more apparent and positive in the smaller sizes, the largest being, for example, adapted for connection with rods or bolts about one and a quarter inch in diameter. In turn-buckles of the larger size I prefer, for reasons relating to the cost of manufacture of the same, to construct them after the manner and in the form shown in my previous patents, Nos. 332,127 and 338,813, and the form shown in my application pending herewith, No. 229,487.

Referring to the drawings, Figure 1 is a perspective of a turn-buckle constructed in accordance with my invention. Fig. 2 is a similar view of the same with the arms spread or outwardly curved at each head of the buckle. Fig. 3 is a similar view illustrating one simple manner of producing the opening in the buckle. Fig. 4 is a transverse longitudinal section of the buckle connected to rods. Fig. 5 is an end elevation of a buckle and devices for forming the openings therein.

Similar letters of reference indicate like parts in all the figures of the drawings.

My buckle consists of a single integral unwelded blank, A, of any desired form in cross-section, herein illustrated as octagonal, and having an opening, A', formed through the body of the same and extending from head to head. Each of the heads is apertured, as at A³, by punching or, preferably, drilling, and screw-threaded or otherwise adapted to receive a rod, B. As before indicated, the material is rolled to the proper or desired form in cross-section, and sawed or otherwise severed into blanks to a desired length. The blank is then placed upon any suitable support or dies, C, which conform to the outline of the blank, except at such portions thereof through which the opening A² is to be formed. A punch, D, is then forced directly through the blank to form the opening A². After the punch has been passed through the blank I may, if I wish, spread the arms to the form shown in Fig. 2, it being understood that the arms are the portions A⁴ of the blank, between the heads A' thereof. Furthermore, I deem it important to state that in cases where I spread the arms the punch D may be reduced, so as to remove less metal, and therefore there will remain proportionately more metal in the arms, and the buckle will be proportionately stronger than when the opening is made sufficiently wide to freely receive the rod or rods used therewith. In this manner less stock is wasted in cutting the opening, the arms are thicker, and a smaller blank will be of sufficient cross-section in the head-forming portions thereof for the breaking strain of the rod or bolt used therewith, and the spreading of the arms gives the necessary clearance.

By the above it will be seen that I produce a turn-buckle which is absolutely free from weld-joints, and the material of which, during the manufacture, has not been injuriously disturbed, and especially the material in the heads thereof, which remains in its virgin condition, and therefore all the conditions necessary in the production of a strong, serviceable, cheaply-manufactured buckle are complied with.

Having described my invention, what I claim is—

1. A turn-buckle having seamless head and

body portions, the latter bent outwardly between the heads and provided with a transverse opening, substantially as and for the purpose specified.

- 5 2. A turn-buckle having seamless head and body portions of polygonal cross-sections, and a transverse opening through the body, the walls of said opening being free from a seam, substantially as specified.

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

CHARLES H. WILLIAMS.

Witnesses:

E. B. STOCKING,
W. S. DUVALL.