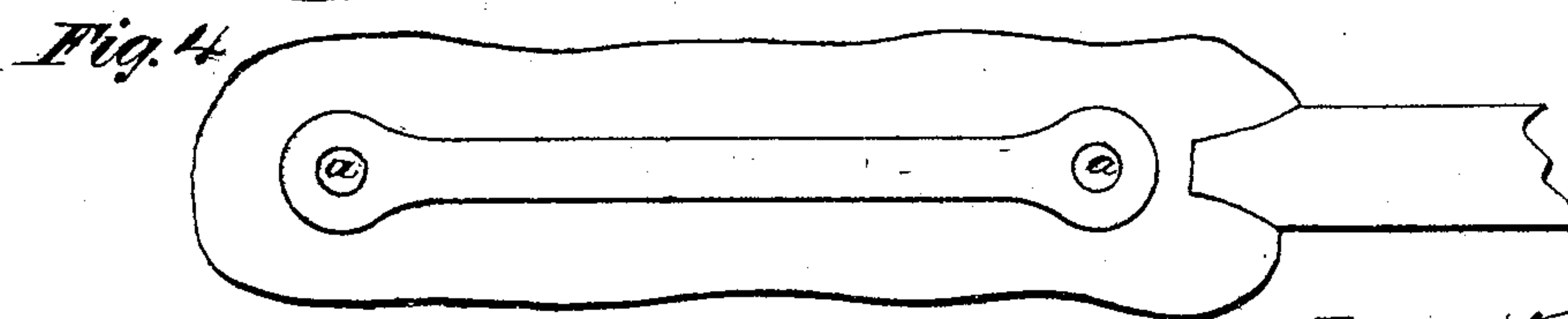
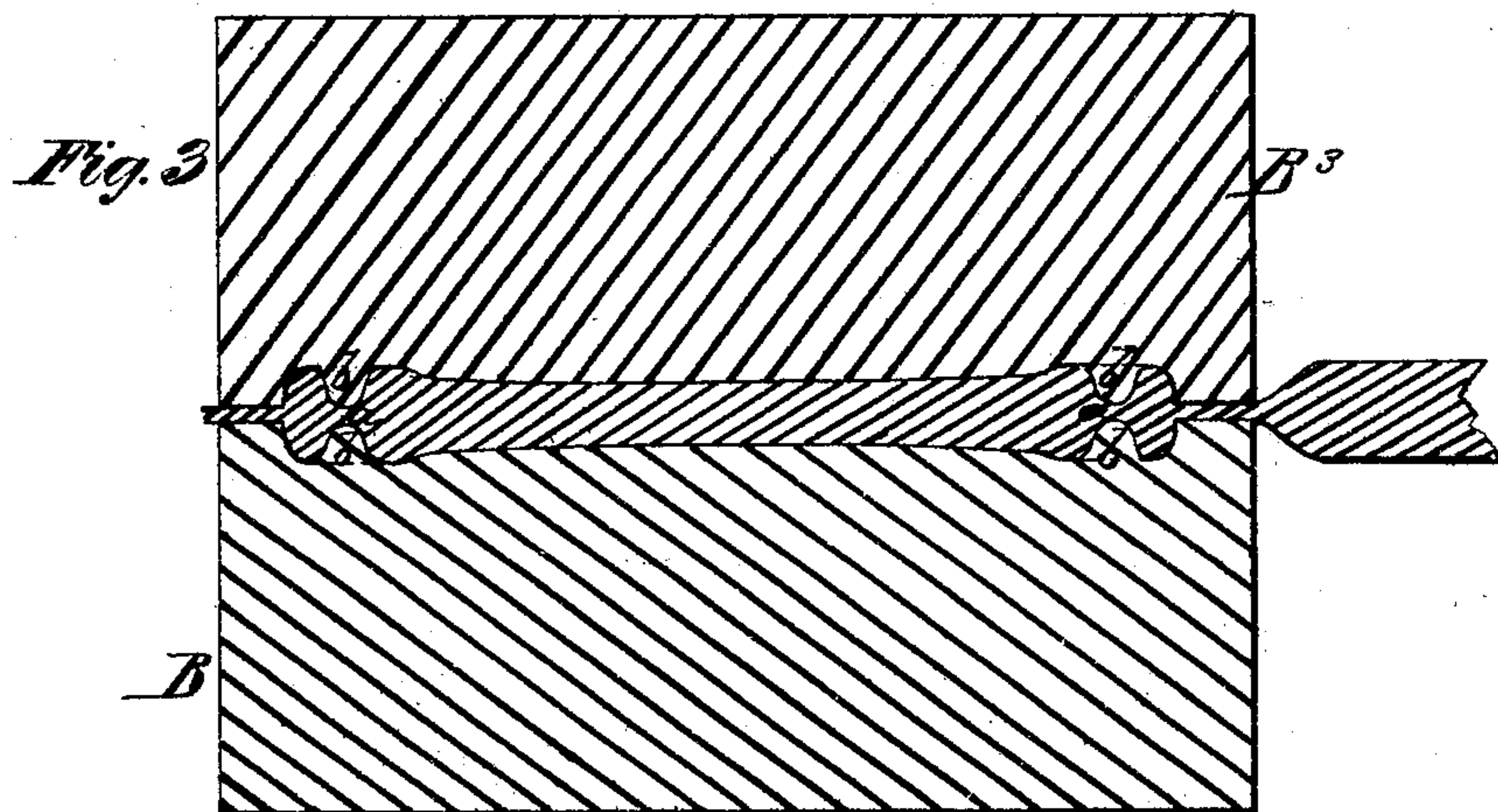
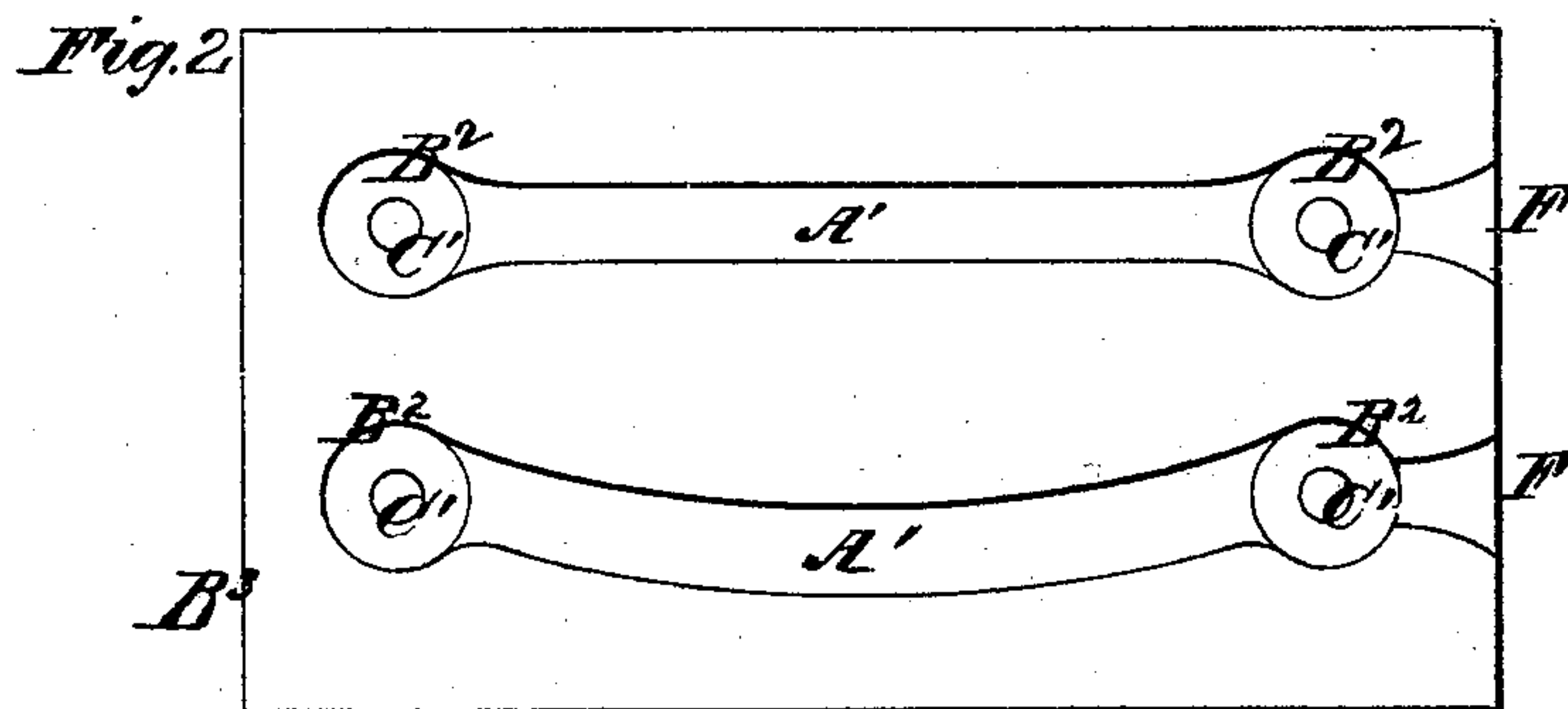
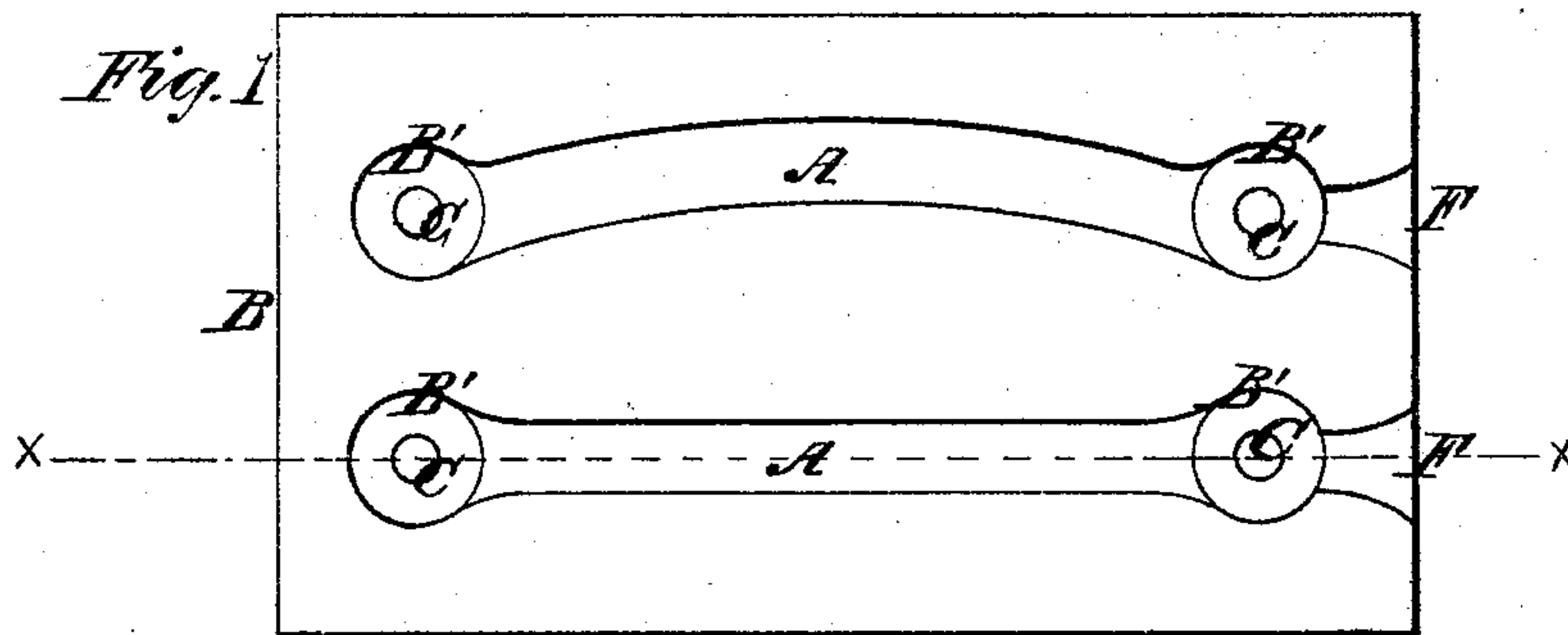


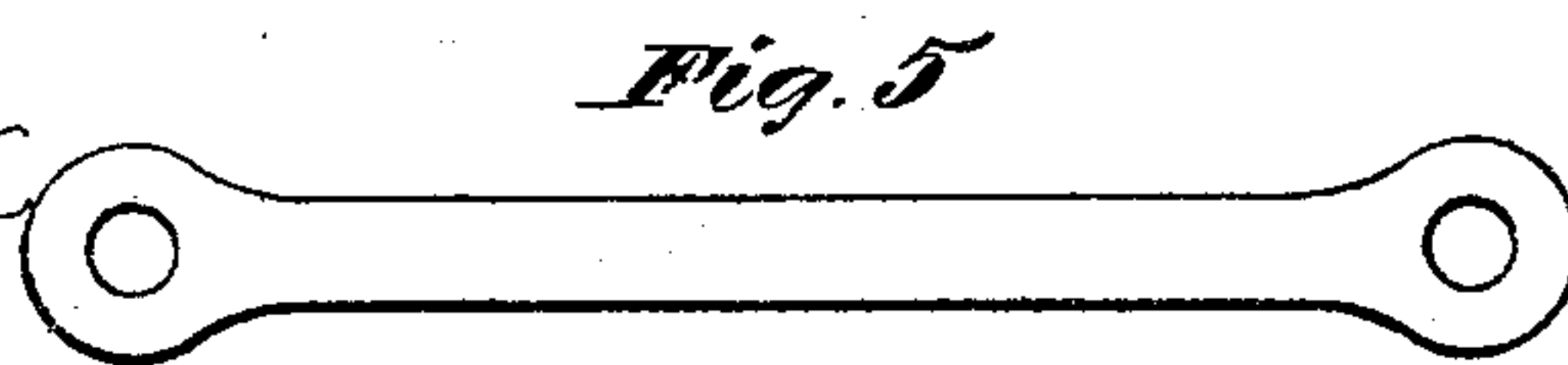
E. D. CLAPP & F. VAN PATTEN.  
Dies for Forming Stiff Bridle-Bits.

No. 151,754.

Patented June 9, 1874.



*Witnesses.*  
*James Martin Jr.*  
*J. M. Campbell*



*Inventor.*  
*Emerous D. Clapp*  
*Frederick Van Patten*  
*by their Attys*  
*Mason Fenwick Lawrence*



# UNITED STATES PATENT OFFICE.

EMEROUS D. CLAPP AND FREDERICK VAN PATTEN, OF AUBURN, N. Y.

## IMPROVEMENT IN DIES FOR FORMING STIFF BRIDLE-BITS.

Specification forming part of Letters Patent No. 151,754, dated June 9, 1874; application filed December 2, 1873.

*To all whom it may concern:*

Be it known that we, EMEROUS D. CLAPP and FREDERICK VAN PATTEN, of Auburn, in the county of Cayuga and State of New York, have invented a new and Improved Die for Mouth-Pieces of Bits for Horses; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a top view of the lower die with cavities in it adapted for making the mouth-piece either straight or curved. Fig. 2 is an inverted view of the upper half of the same die. Fig. 3 is a section of the upper and lower halves of the die with a mouth-piece between them, and produced according to our invention. Fig. 4 is a plan view of the mouth-piece made in the straight cavity of the die as it appears before it is trimmed. Fig. 5 is a similar view of the mouth-piece after it is trimmed.

Our invention consists in a die for making blanks for stiff mouth-pieces of bits for horses and other animals, said die producing the blanks with heads which have nearly all the metal which is usually punched out to form the eyes or ring-holes forced into them, and with countersinks or sockets on opposite sides, the bottom of said countersinks or sockets being simply a thin web of metal, which can be readily punched or drilled out, and thus the ring-holes formed with but little labor and expense for boring, and as nearly all the metal which would be punched or bored out to form the eyes in the old plan is forced into the heads, much stronger and more solid heads are secured.

In the drawings we have shown a cavity which is straight longitudinally, and also a cavity which is curved in the same direction; but we do not confine our invention to having two forms of cavity in each die-block.

A is a half-round groove formed in the lower die-block B. At each end of this groove an enlarged circular cavity, B<sup>1</sup>, is formed, the groove and cavity intersecting one another, as shown. C C are raised projections of slight-

ly-conical form, extending up from the base of the circular cavities, each being in the center of its respective cavity. The space around each of these projections is equal to one-half of the required thickness of the heads of the mouth-piece of the bit. The groove is equal to one-half of the required thickness and width of the mouth-piece. A similar groove, A', cavity B<sup>2</sup>, and projections C' C' are formed in the upper half of the die-block B<sup>3</sup>. F F are depressions, shallower than the cavities, but uniting with the same at one end of each half of the die-blocks. These cavities receive the bar of metal, and compress or flatten it into a convenient form for cutting off the bit-blank in rear of the head. They also ease and assist the operation of forging a perfect head at that point.

To make a blank for a mouth-piece with the die, take a metal rod of proper size, which is broader than it is thick, and place it, while hot, upon the lower die, and bring down the upper die upon it until the desired form is secured. This done, raise the upper die-block, and, if the iron is still hot enough, pass it along until the first blank is cleared from the lower die-block, and then bring the upper die down again upon the bar, and so on until the bar of iron requires a new heat at the forge.

The blanks produced will have a thin web, a, between sockets b b, as shown. After the blanks are produced the fins are trimmed off, and the eyes finished by punching, drilling, or otherwise, as found necessary.

What we claim as our invention, and desire to secure by Letters Patent, is—

The die, substantially as shown and described, for making blanks for stiff mouth-pieces of bits with ring-heads, which are socketed on opposite sides, leaving a thin web between, which web can be readily removed in the finishing operation, as set forth.

EMEROUS D. CLAPP.  
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Witnesses:

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