

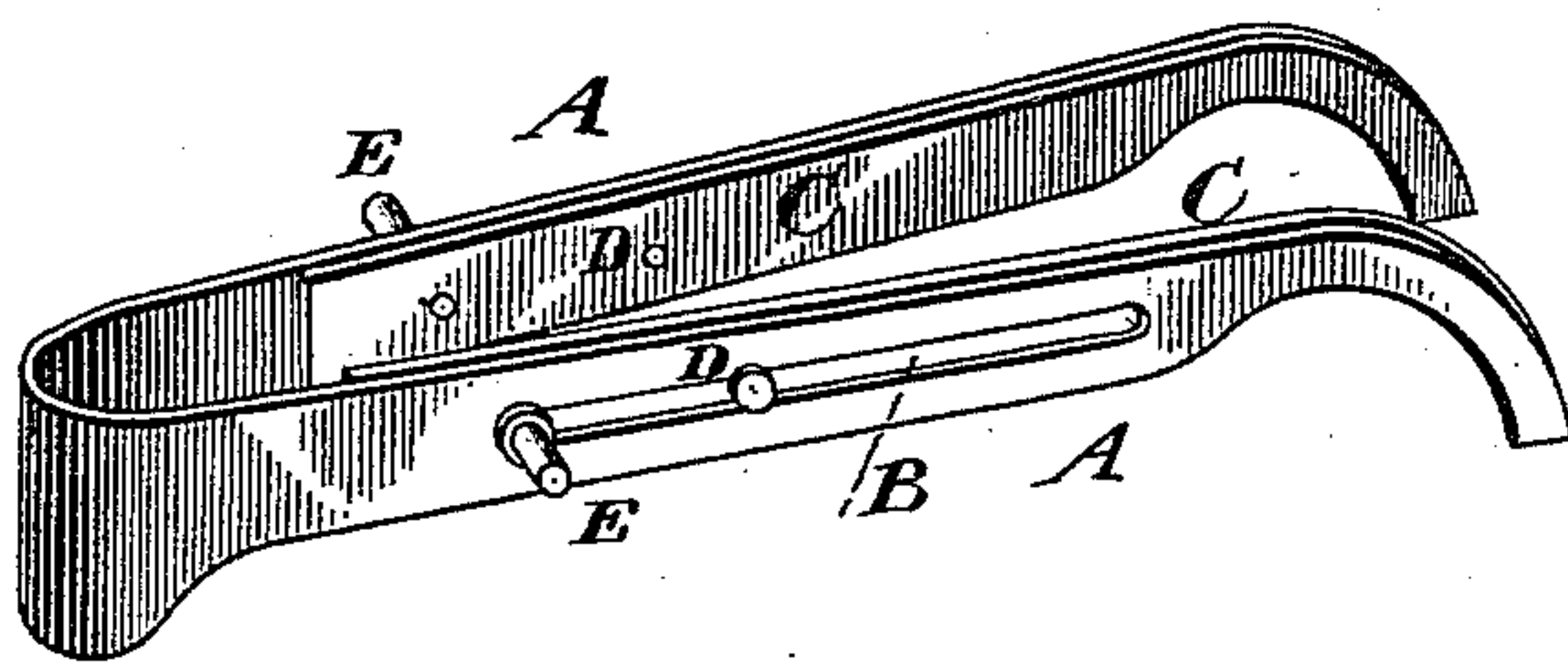
(No Model.)

E. P. SWAIN.  
WATCH MAKER'S TWEEZERS.

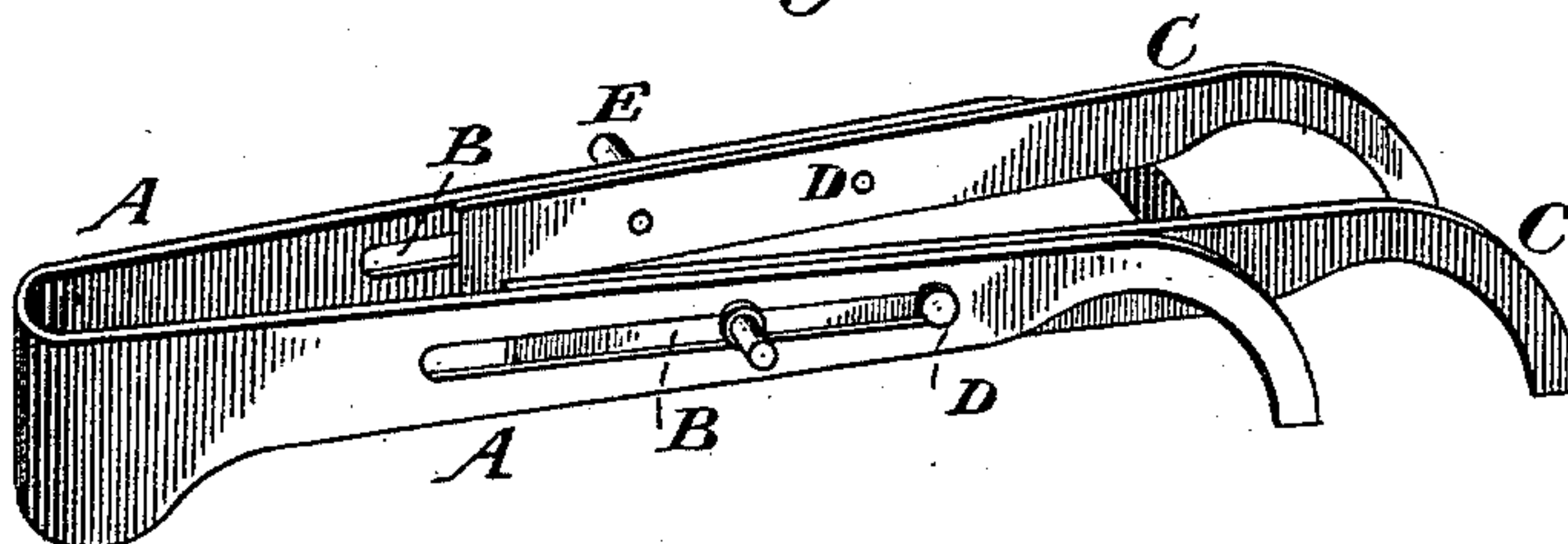
No. 420,125.

Patented Jan. 28, 1890.

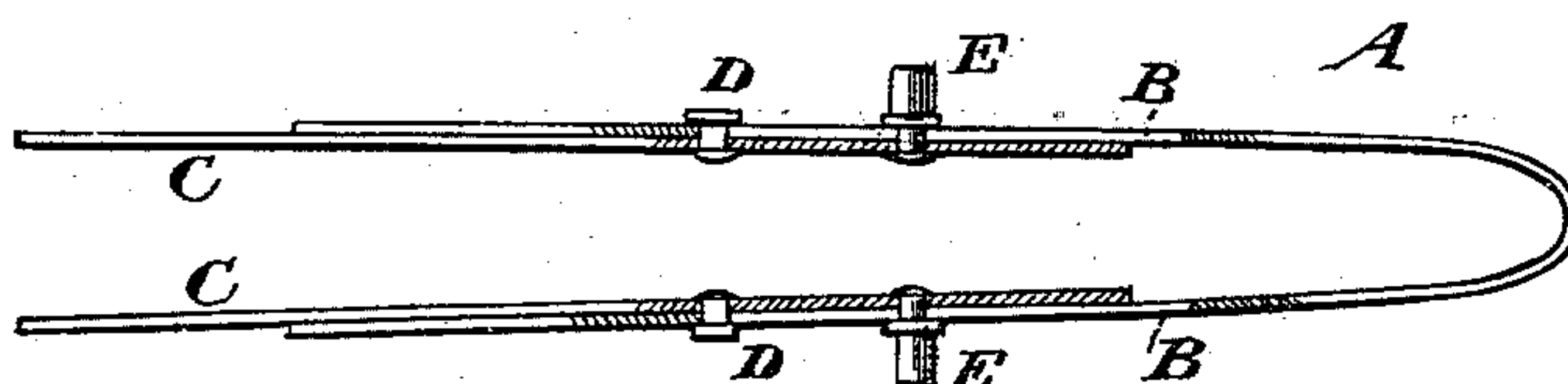
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses.*  
*A. Ruppert.*  
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# UNITED STATES PATENT OFFICE.

EDGAR P. SWAIN, OF YAZOO CITY, MISSISSIPPI.

## WATCH-MAKER'S TWEEZERS.

SPECIFICATION forming part of Letters Patent No. 420,125, dated January 28, 1890.

Application filed August 21, 1889. Serial No. 321,507. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR P. SWAIN, a citizen of the United States, residing at Yazoo City, in the county of Yazoo and State of Mississippi, have invented certain new and useful Improvements in Watch-Makers' Tweezers; 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 of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in watch-makers' tools; and it has for its object to improve upon that class of tools which are commonly known as watch-makers' tweezers.

The immediate object of the invention is to provide a tool of this description which may be readily adjusted, so as to adapt it for use in various classes of work, it being possible to easily and quickly convert the tool into either a heavy and rigid set of tweezers suitable for use in work in which a tool of this description is required; or it may with equal facility be converted into a sensitive tool suitable for the more delicate classes of work, or into a set of tweezers having double grasping-points upon each of its arms, thus adapting it for use where a firm and secure hold upon the article held is necessary.

To the above ends, and to such others as the invention may pertain, the same consists in the peculiar combinations and in the novel construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating like parts throughout the several views, and in which drawings—

Figure 1 is a perspective view of a tool constructed in accordance with my invention, in which view the adjustable arms are

shown as withdrawn or shortened. Fig. 2 is a similar view, in which the arms are shown as lengthened or extended. Fig. 3 is a plan view, partly in section.

Reference now being had to the details of the drawings by letter, A designates the pliers proper, which are made in the usual form and preferably of a single piece of heavy spring metal. Each of the arms of the tweezers A is provided with a longitudinal groove B.

C C are supplemental arms or plates corresponding in size and shape with the arms of the tweezers proper, and are fitted upon the inside face of each arm, as shown, being secured against lateral displacement by the lugs or rivets D, passed through the longitudinal slots in the outer arms of the tweezers A and secured to the arms C.

E are lugs, which are secured to the inner or supplemental arms C, and these lugs fit loosely within the slots B, and serve as handles for use in moving the supplemental arms longitudinally, as will be readily understood.

It will be readily seen from the foregoing description that the inner arms C may be readily adjusted at any point when desired, and that when they are extended to their extreme outer point of adjustment, as shown in Fig. 2 of the drawings, the tweezers will be extremely sensitive and in condition for use in delicate work. It will also be seen that when the supplemental arms are withdrawn so as to coincide with the outer arms an exceedingly strong and serviceable tool will be produced. By slightly extending the inner arms a set of tweezers having double grasping-points upon either arm will be produced.

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

1. A pair of tweezers having supplemental adjustable arms, substantially as described.

2. The combination, with the arm of a pair of tweezers, of a supplemental arm adjacent to said arm and longitudinally adjustable thereon, substantially as described, and for the purpose specified.

3. As an improved article of manufacture, a pair of tweezers made of a single strip of



spring metal and having its arms provided with longitudinal slots, as described, supplemental arms corresponding in size and form with the outer arms and secured against lateral displacement by rivets passed through the slots in the outer arms, and having lugs or extensions operating in said slot and adapted to move the supplemental arms longitudi-

nally, substantially as described, and for the purpose specified. 10

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

EDGAR P. SWAIN.

Witnesses:

GEO. J. KING,

EDWD. LUKE.