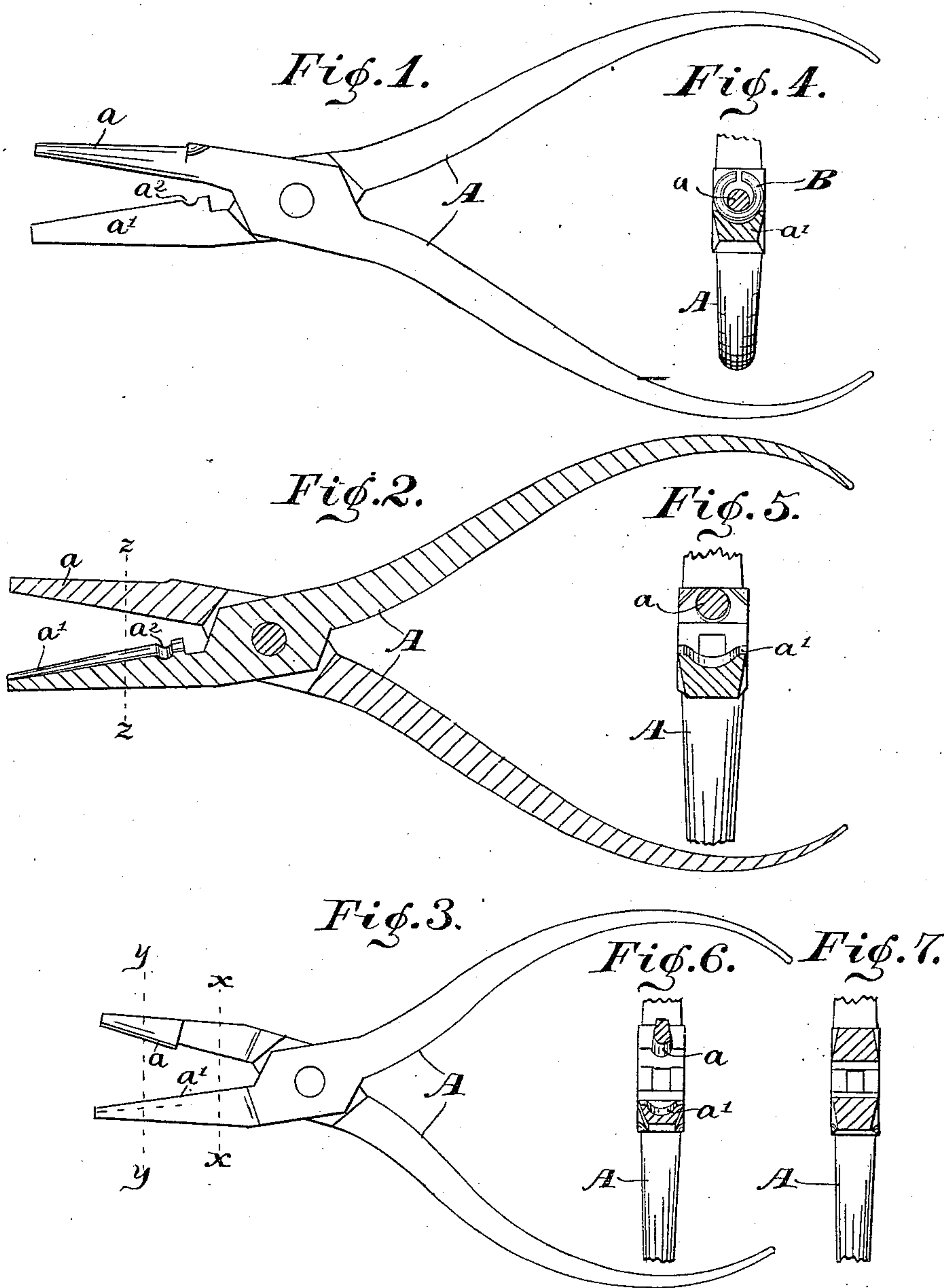


(No Model.)

R. OEHLER.
WATCH MAKER'S PLIERS.

No. 309,976.

Patented Dec. 30, 1884.



WITNESSES.

Cha. N. Leonard.
E. W. Bradford.

INVENTOR.

Roman Oehler,
PER
C. Bradford.
ATTORNEY.

UNITED STATES PATENT OFFICE.

ROMAN OEHLER, OF INDIANAPOLIS, INDIANA.

WATCH-MAKER'S PLIERS.

SPECIFICATION forming part of Letters Patent No. 309,976, dated December 30, 1884.

Application filed March 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROMAN OEHLER, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Pliers, of which
5 the following is a specification.

The object of my said invention is to provide pliers which are adapted to close the joints of rings, links, watch-bows, &c., tightly
10 without hammering or in any way disfiguring the surface of the ring or other article. I accomplish this object by forming one of the jaws of the pliers round, or round on its inside face, and the other jaw correspondingly
15 hollow, whereby they are adapted, when pressed together upon an open ring, to contract it and close the joint.

Referring to the accompanying drawings, which are made a part hereof, and on which
20 similar letters of reference indicate similar parts, Figure 1 is a side elevation of a pair of my improved pliers; Fig. 2, a central longitudinal section of the same; Fig. 3, a side elevation, in which the jaws of the pliers are
25 rounded for only a part of their length; Fig. 4, a cross section through the jaws of the pliers, showing the operation, a ring being shown as it appears during the process of closing; Fig. 5, a cross-section looking to the
30 right from the dotted line $z z$ in Fig. 2; Fig. 6, a cross-section looking to the right from the dotted line $y y$ in Fig. 3, and Fig. 7 a similar view on the dotted line $x x$.

In said drawings the portions marked A
35 represent the pliers, and B the ring.

The pliers A are not peculiar in their construction, except in the formation of the jaws. One of said jaws, a , is preferably formed round, as shown, tapering from the back of the jaw
40 toward its point; but, if preferred, its inside face may be formed convex, and its back formed in any shape desired, the convex formation of its face being all that is necessary to accomplish its object in most cases. The other
45 jaw, a' , is formed concave, tapering in size to

correspond to the tapering of its fellow. Near the rear end of this jaw a transverse groove, a^2 , is preferably formed. It is half-round, and serves as a rest in which the large rings or watch-bows may be placed while being
50 operated on, and they are thus prevented from having their surfaces dented or in any way defaced by the sharp corners of the jaw.

The jaws may be constructed, as shown in Figs. 1 and 2, concave and convex their entire length, or, as shown in Fig. 3, being
55 square for a portion of their length, and be thus adapted to hold, as well as bend, a ring or other article.

My improved pliers operate as follows: The
60 ring being formed and placed in position in the chain or other place where it belongs, the ends are closed together and a perfectly tight joint formed by placing the side of said ring opposite the opening between the jaws
65 and pressing them together. (See Fig. 4.) The diameter of the convex and concave jaws being less than that of the ring to be closed, it operates to contract said ring and bring the
70 ends together, as will be readily understood.

In closing up large rings or tightening watch-bows, they are placed near the rear end and in the transverse groove a^2 in the lower jaw, a' . This conforming more perfectly to the shape of the ring, it does not mar its
75 surface, as before described.

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

The pliers described, one jaw having a tapered convex face, the other jaw a tapered concave face, the concave jaw having the transverse groove a^2 , substantially as described.

In testimony whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, 85 this 18th day of March, A. D. 1884.

ROMAN OEHLER. [L. S.]

In presence of—

E. W. BRADFORD,
CHAS. L. THURBER.