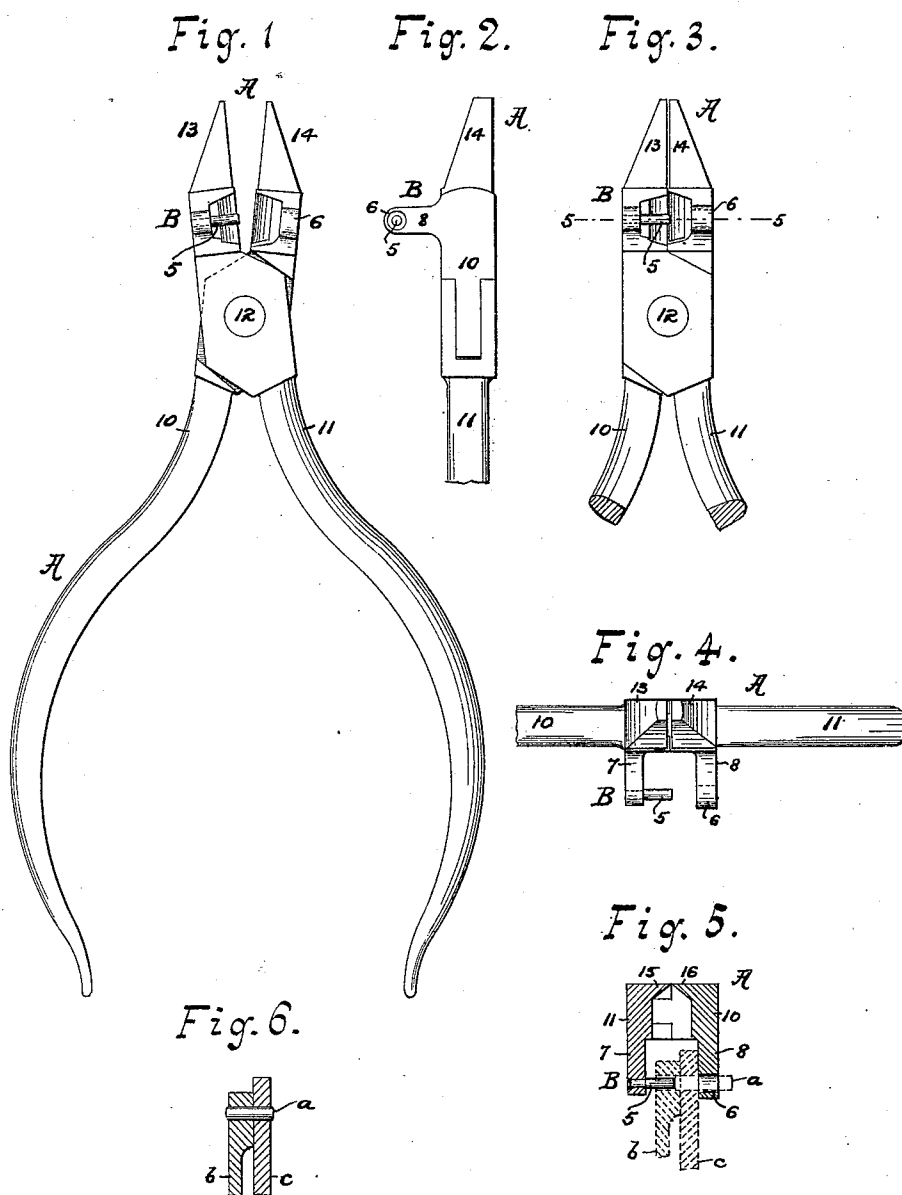


(No Model.)

L. HUGONIOT-TISSOT.
PLIERS.

No. 446,972.

Patented Feb. 24, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

LUCIEN HUGONIOT-TISSOT, OF MONTECHEROUX, FRANCE.

PLIERS.

SPECIFICATION forming part of Letters Patent No. 446,972, dated February 24, 1891.

Application filed October 17, 1890. Serial No. 368,422. (No model.)

To all whom it may concern:

Be it known that I, LUCIEN HUGONIOT-TISSOT, a citizen of the Republic of France, residing in Montecheroux, Department Doubs, France, have invented certain new and useful Improvements in Pliers, fully set forth in the following description and represented in the accompanying drawings.

This invention relates to a combined pliers and joint-starter adapted particularly for the use of jewelers in removing joint-pins connecting small articles together, or the pintle-pin of a hinge connecting, for instance, the pin portion with the supporting ears on the back of a breastpin or the like. It is well-known that where the joint-pin is flush with both of the outer faces of the article in which it is inserted, in order to remove such pin it is necessary to start it by some tool, usually another pin of about the same size set end to end with the joint-pin and hammered until the joint-pin is started so that it will project at one side far enough to give a proper hold for the grasp of a pair of pliers to wholly withdraw it.

It is the object of the present invention to provide, in a single tool, a joint-starter and pliers by which, after the joint-starter has been operated to start the joint-pin, the same tool may be employed to wholly withdraw the pin by using the pliers portion of the tool; and to this end it consists in the novel combined tool hereinafter set forth.

In the drawings which illustrate a practical embodiment of the invention, Figure 1 is a side elevation of the combined tool, the jaws of the pliers being partially open. Fig. 2 is a side elevation of the upper portion of the tool. Fig. 3 is a view similar to Fig. 1, showing a portion of the tool, the jaws of the pliers being closed. Fig. 4 is a plan view of the same. Fig. 5 is a horizontal section taken on the line 5 5 of Fig. 3, showing the effect of the operation of the joint-starter in starting a pin holding two articles together that are illustrated by dotted lines. Fig. 6 is a sectional elevation of two members united together by a joint-pin, such as it may be desired to remove by the combined tool.

Referring to said drawings it will be understood that the combined tool consists of a pair of pliers A and a joint-starter B. The pliers

A may be of any of the usual constructions. It is shown as of simple form, having two members 10 11, united by a pivot 12 and carrying at their upper ends jaws 13 14. These jaws may be provided with cutting-edges 15 16, as best shown in Fig. 5, by which wire and other small material may be severed. The joint-starter is preferably carried upon the jawed end of the pliers, and consists, essentially, of a starting-pin 5 and a perforated abutment 6, opposed to each other, so that as the pliers are closed together the end of the starting-pin will be moved nearer to the abutment. The starting-pin and perforated abutment are each provided at the end of arms 7 8, projecting a short distance from the vertical face of the pliers, so that a space is provided between the joint-starter and the pliers to accommodate the placing of articles between the arms in position for the action of the joint-starter. The perforation of the abutment 6 is in line with the starting-pin, and is preferably somewhat larger than the pin, so that joints of a larger diameter than that of the pin may be started and passed through the perforated abutment. The starting-pin 5 may of course be formed integral with the arm 7; but in the preferred construction it has a pin, as shown in Fig. 5, seated in a perforation at the end of the arm and properly riveted thereto.

In the use of the combined tool the joint to be started—for instance, the joint-pin *a*, connecting two members *b c* together—is placed between the arms 7 and 8 of the joint-starter B, so that the joint-pin *a* is in line with the starting-pin 5 and with the perforation in the abutment 6, the pliers being then in their open condition. As soon as the joint-pin *a* is in this position the pliers may be gradually forced together by the hand, when the starting-pin 5 will gradually force the joint-pin *a* outward through the perforation in the abutment 6, as indicated by the dotted lines in Fig. 5. By the time the pliers and joint-starter have been closed the joint-pin *a* will have been sufficiently projected to one side of the members *b c* that if they are not disconnected the joint-pin will extend enough so that upon the removal of the members *b c* and joint-pin *a* from between the arms of the joint-starter B the jaws of the pliers may be

used to grasp the projecting end of the joint-pin *a*, and thereby wholly withdraw it from the members *b c*. In some cases of course the joint-starter may have forced the joint-pin
5 entirely from the members without the use of the pliers; but the fact that the grasping-jaws and starter are combined in one tool and operated by the same means provides an exceedingly handy tool.

10 While the joint-starter has been described as being employed to start a joint-pin so that it may be wholly removed, it is obvious that the reverse action upon the joint-pin may be had. Thus if the joint-pin has been started
15 to partially hold the two members together the two members may be located between the arms 7 8, so that the starting-pin 5 will, upon the pliers being closed, force the joint-pin *a* to its seat, holding the two members together.

20 It is obvious that while the joint-starter B is illustrated and is preferably located upon the jawed end of the pliers above its pivot that it may be located below the pivot with substantially the same effect.

What is claimed is—

1. The herein-described combined pliers and joint-starter, the same consisting of a pair of hinged members having jaws at one end and a pin carried by one member and a perforated abutment carried by the other
25 member of the two. 30

2. The herein-described combined pliers and joint-starter, the same consisting of two members pivoted together and having at their upper ends jaws, and a pair of arms projecting
35 from the sides of the vertical face of the members, one arm carrying a pin and the other a perforated abutment in line with the pin.

In testimony whereof I have set my hand, this 9th day of August, 1890, in the presence
40 of two witnesses.

LUCIEN HUGONOT-TISSOT.

Witnesses:

LOUIS CHARTON,
J. CHAURO.