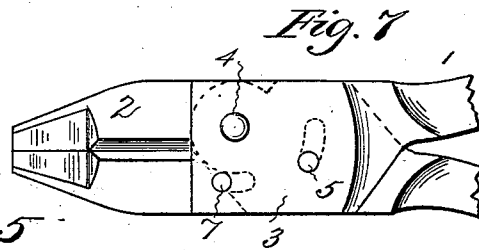
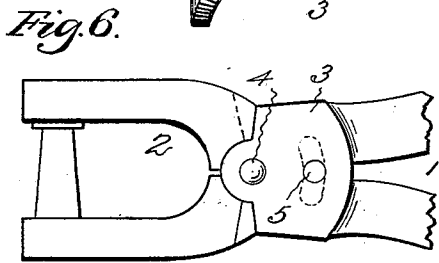
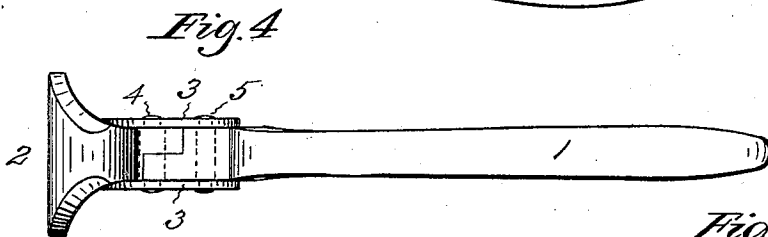
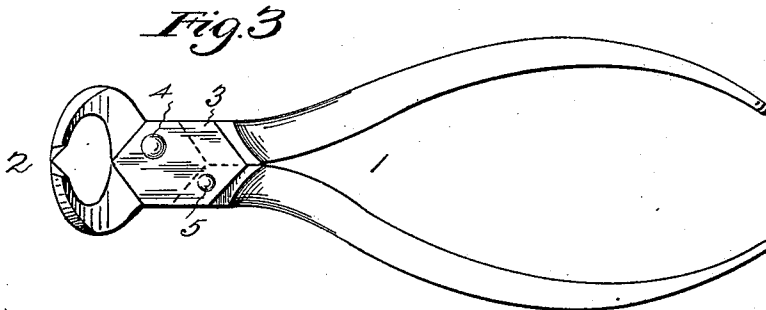
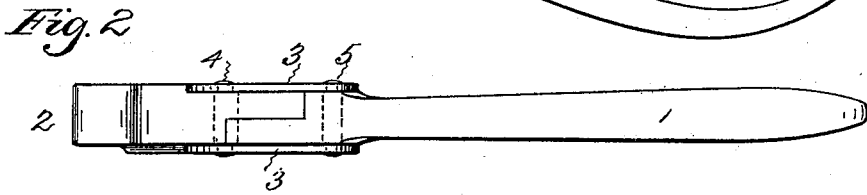
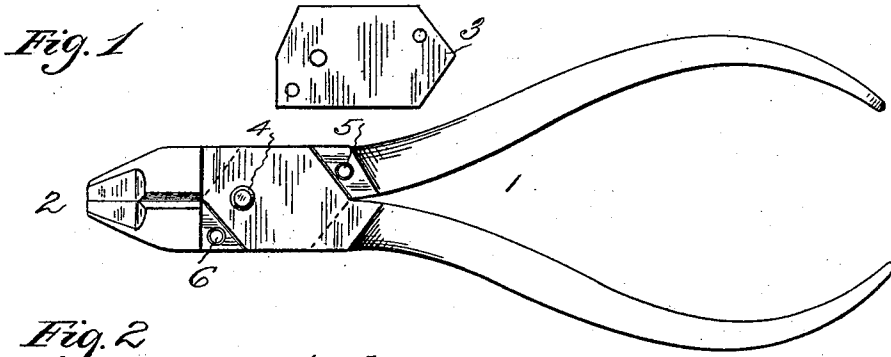


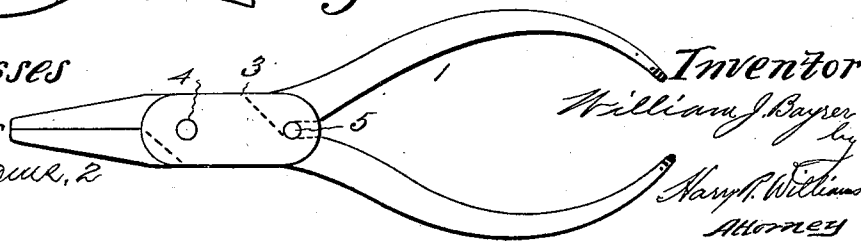
W. J. BAYRER.
NIPPERS.

APPLICATION FILED OCT. 1, 1902.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM J. BAYRER, OF PLANTSVILLE, CONNECTICUT.

NIPPERS.

SPECIFICATION forming part of Letters Patent No. 723,356, dated March 24, 1903.

Application filed October 1, 1902. Serial No. 125,578. (No model.)

To all whom it may concern.

Be it known that I, WILLIAM J. BAYRER, a citizen of the United States, residing at Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Nippers, of which the following is a specification.

This invention relates to the construction of a joint for a nipper, plier, punch, or the like tool.

The object of this invention is to provide a joint for such a tool which is simple and cheap to manufacture and strong and durable in use. Tools of this nature have been constructed with a box-joint—that is, one part having a milled opening and the other part extending through the opening; but such a construction is expensive to manufacture. These tools have been constructed with a halved joint—that is, each part having one-half cut away and the two halved sections laid together and held by a pivot. Such a construction is cheap to manufacture; but the twisting strains when in use come upon the ends of the pivot and cause the joint to work loose, thus destroying the efficiency of the tool. This joint is particularly unserviceable for nippers with cutting-blades on one side. Tools of this character have also been constructed with halved sections that are held together by links—that is, by two pivots connected by plates; but such a construction does not form a strong box-joint.

The present invention resides in a tool having the levers halved together, each being shaped like the other and formed by a simple drop-forging process and held together between plates in such manner as to form a strong box-joint.

This invention is illustrated by the accompanying drawings, in which—

Figure 1 shows a pair of wire-cutting pliers having the improved joint with one of the side plates removed. Fig. 2 shows an edge view of these pliers. Fig. 3 shows a pair of nippers having the improved joint. Fig. 4 shows an edge view of the nippers. Fig. 5 shows a pair of pincers that embody the invention. Fig. 6 shows a belt-punch that embodies the invention, and Fig. 7 shows another pair of nippers.

The levers of these tools may have handles

1 of any shape, and the jaws 2 may be formed to hold or cut wire, as shown in Fig. 1, to cut wire, as shown in Fig. 3, to hold wire, as shown 55 in Fig. 5, or to punch leather or paper, as shown in Fig. 6. These levers, which are similarly shaped, are preferably drop-forged, and each is reduced in thickness at the joint-section, so that when assembled they will be 60 halved together. A plate 3 is placed outside each of the sections of the two parts which are halved together. Each of these plates, which correspond with each other, has a perforation that registers with the pivot-perfo- 65 ration through the lever parts, and the pivot 4 extends through the lever parts and the plates and is headed over at its ends on the outside of the plates, so as to hold all of these parts together. The pivot may be shouldered at each 70 end, so that when the ends are headed over the plates will not bind the two intermediate parts together. The pivot-opening through the lever parts that are halved together may be located at any desired position—that is, it 75 may be in line with the opening between the jaws, as shown in Figs. 1, 5, and 6, or it may be to one side of the line of opening between the jaws, as shown in Figs. 3 and 7. The levers hinge on this single pivot-pin 4 when the 80 handles are opened and closed for working the jaws. Another pin 5 extends from one plate to the other. This pin is preferably shouldered, so that when its ends are headed over the plates will be held fast without bind- 85 ing the intermediate parts together. This pin 5 may be, as illustrated in Fig. 1, passed from one plate to the other through the end of one of the handle parts. When arranged in this manner, the plates become fixed to one of the 90 handle parts and the other handle part only swings on the pivot. In the form shown in Fig. 3 the plate-pin 5 is located at one side, so as to pass through but one of the handle parts. In the form shown in Fig. 5 the plate- 95 holding pin is arranged at the center between the ends of the handles, so that both handles are free to oscillate on the pivot-pin. In this form the plates are not fixed to either part. In the form shown in Fig. 6 the plate-pin is 100 located near the center and the lever parts are slotted, so that the handles may be oscillated to open and close the jaws. In the form shown in Fig. 1 two plate-holding pins 5 and

6 are used. In this case the plates are fixed to one of the lever parts. In the form shown in Fig. 7 two plate-pins 5 and 7 are illustrated, slots being made in the lever parts for the passage of these pins. In all cases there is but one pivot-pin, the other pin being simply to hold the plate in such manner as to form a box-joint over the halved parts. The plates are in no sense links, and the plate-holding pins do not act as pivots. At least one plate-holding pin should be a considerable distance farther from the jaws than the pivot-pin. This construction allows the lever parts, with the handles and jaws, to be made alike and to be formed to final shape by a simple drop-forging process, and yet when these halved parts are put together and fastened by the plates and the pins, as illustrated, a strong box-joint is formed which will prevent any

twisting or straining of the parts when they are used to grip or cut a piece of metal at one side of the middle of the jaws.

I claim as my invention—

A nipper consisting of two levers each having a handle and an integral jaw, the said levers being halved together, a single plate lying on each side of the halved parts of the levers, a single pivot-pin passing through the halved sections of the levers and through the plate on each side, and a pin located farther from the jaws than the pivot-pin and passing through the plate on each side for holding the plates together, substantially as specified.

WILLIAM J. BAYRER.

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