No. 652,359. Patented June 26, 1900.

G. HAIGH & C. HOUCK.

WEAVERS' PLIERS.

(Application filed Mar. 26, 1897.)

(No Model.)

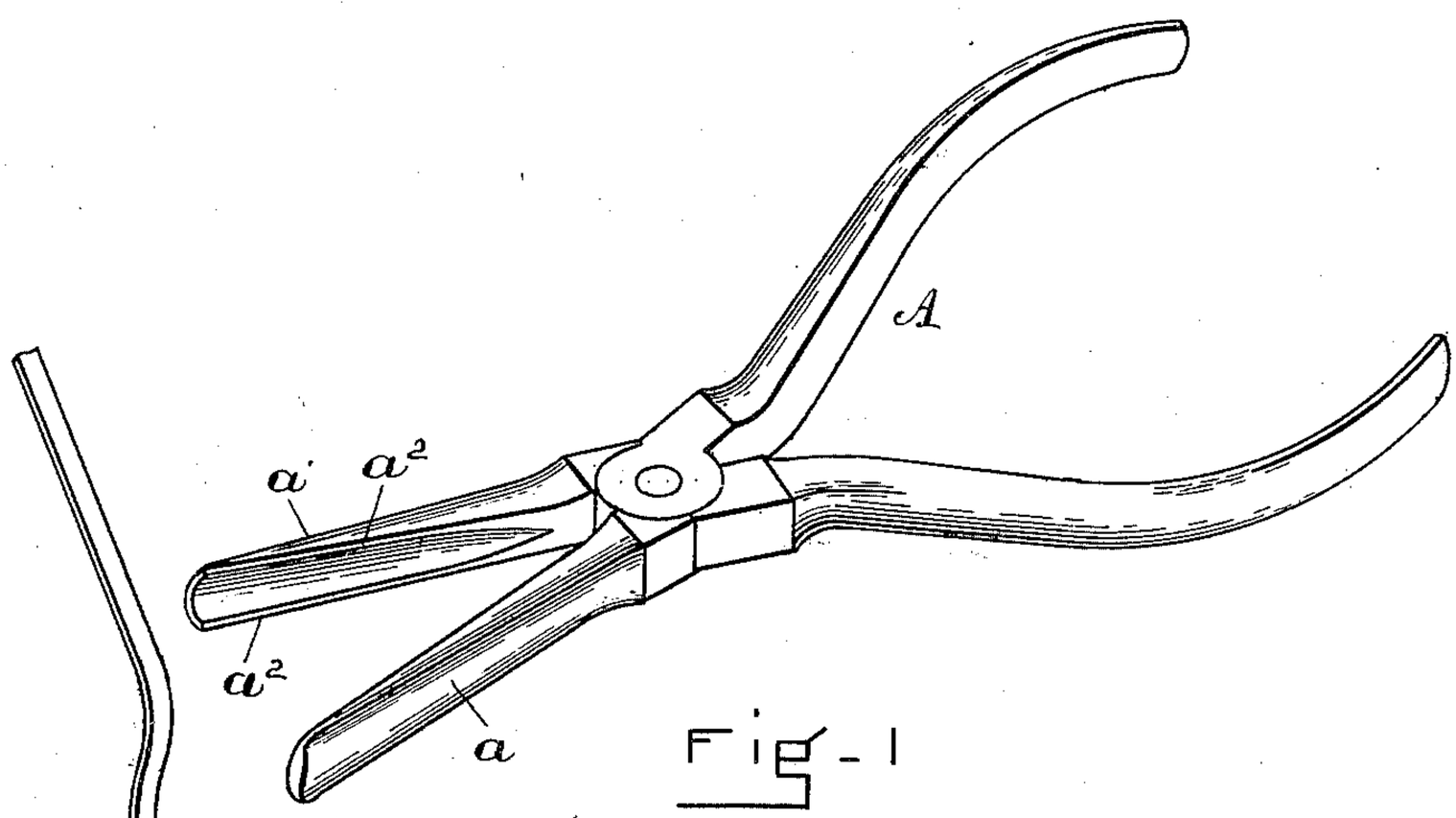

Fig. 1

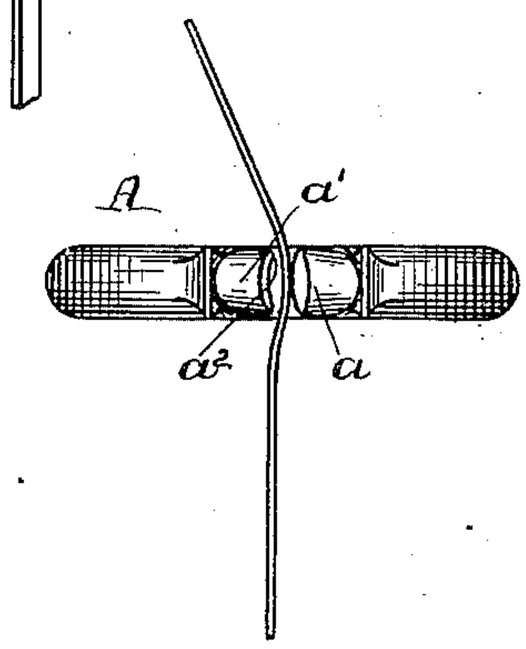

Fig. 2.

Fig. 4.

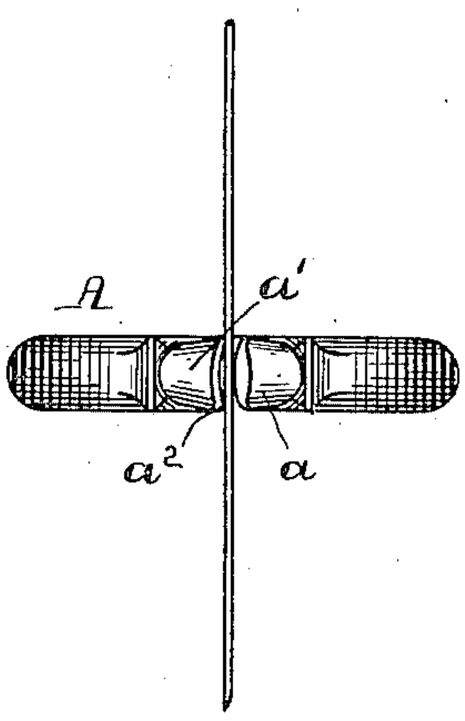

Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE HAIGH AND CHARLES HOUCK, OF UTICA, NEW YORK, ASSIGNORS TO THE UTICA DROP FORGE AND TOOL COMPANY, OF SAME PLACE.

WEAVERS' PLIERS.

SPECIFICATION forming part of Letters Patent No. 652,359, dated June 26, 1900.

Application filed March 26, 1897. Serial No. 629,318. (No model.)

To all whom it may concern:

Be it known that we, GEORGE HAIGH and CHARLES HOUCK, citizens of the United States, residing at Utica, in the county of Oneida and State of New York, have invented a new and useful Improvement in Weavers' Pliers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

Our invention relates to improved weavers' pliers for use, primarily, with a knitting-machine or other similar machine where it is necessary to make use of a pair of pliers having a narrow point or nose in order to straighten wires, such as the reeds of a knitting-machine. Our invention may be used, however, in other connections and will be found convenient wherever it is desired to straighten a piece of wire.

In the drawings, Figure 1 shows a pair of our improved pliers and also a bent wire near the nose thereof. Fig. 2 shows the pliers in position over the bend in the wire, the operator being about to close the pliers to straighten the wire. Fig. 3 shows a similar view after the wire has been straightened, as will be presently described. Fig. 4 is a vertical section through the ends of the jaws of our improved pliers when closed together.

A represents a pair of pliers of any desired shape having the relatively-long thin jaws a a'. The joint here shown is a pivot-joint; but we do not restrict our invention for use with this joint, as it may be used in connection with a box-joint, parallel pliers-joint, or one of any desired kind. The jaw a is made convex on its inner surface and is adapted to register with the jaw a', the inner surface of which is made concave.

The pliers are put in position over a bend in the wire, as shown in Fig. 2, the concave jaw a' being placed in the hollow of the bend, as shown. When the jaw a is made to approach the other jaw, the edges a^2 of the concave jaw a' meet the wire first. The convex jaw a, pressing the wire downward between these two edges into the concavity of the jaw a', straightens the wire, as shown in Fig. 3. The amount of curvature of the jaws is somewhat exaggerated in the drawings for convenience of illustration, as it has been found that a slight curvature will produce the requisite effect. By the use of these pliers it is possible to remove a crook or bend in a wire by merely bringing the jaws of the pliers together. With the old straight-pointed pliers it was necessary for the operator to turn his wrist in order to straighten the wire. This was objectionable in the use of pliers for straightening the reeds of a knitting-machine, because the said reeds are so near together that there was hardly room to perform the operation even with pliers having extremely-thin jaws.

We have shown our invention as contained in a pair of pliers having long thin jaws, the greater extent of which is occupied by the convex and concave surfaces, respectively. This is not a necessary feature, however, as it is sufficient if only a small extent of each jaw be made convex or concave, the essential feature being that the convexity of one jaw shall register with the concavity of the other. The length also of the jaws may be varied at will, being determined by the character of the work it is desired to perform with the pliers.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

As an improved article of manufacture the weavers' pliers for straightening reeds of knitting-machines herein described, the same comprising two handles pivoted together, one handle having a long, thin, tapering integral jaw provided in its inner face with a flat longitudinal concavity, the other handle having a long, thin, tapering integral jaw provided upon its inner face with a flat convex surface, the reverse of the concavity of the other jaw in dimensions, and adapted to coöperate therewith, as and for the purposes set forth.

GEORGE HAIGH.
CHARLES HOUCK.

Witnesses:
HUGH WHITE,
H. LAWRENCE WHITE.