J. GRAF & P. MADLENER.
Tools for Forming Cork-Fasteners.

No. 211,395. **Patented Jan. 14, 1879.**

Fig. 2.

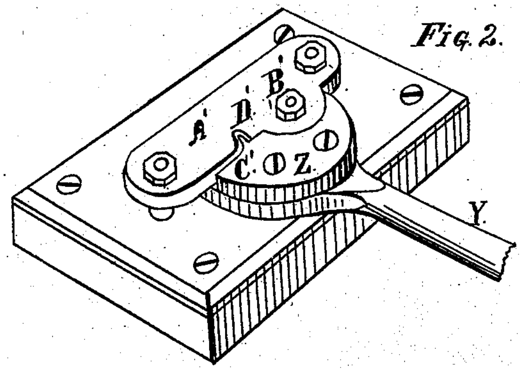


Fig. 1.

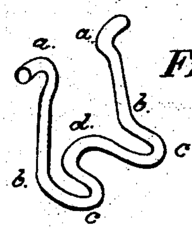
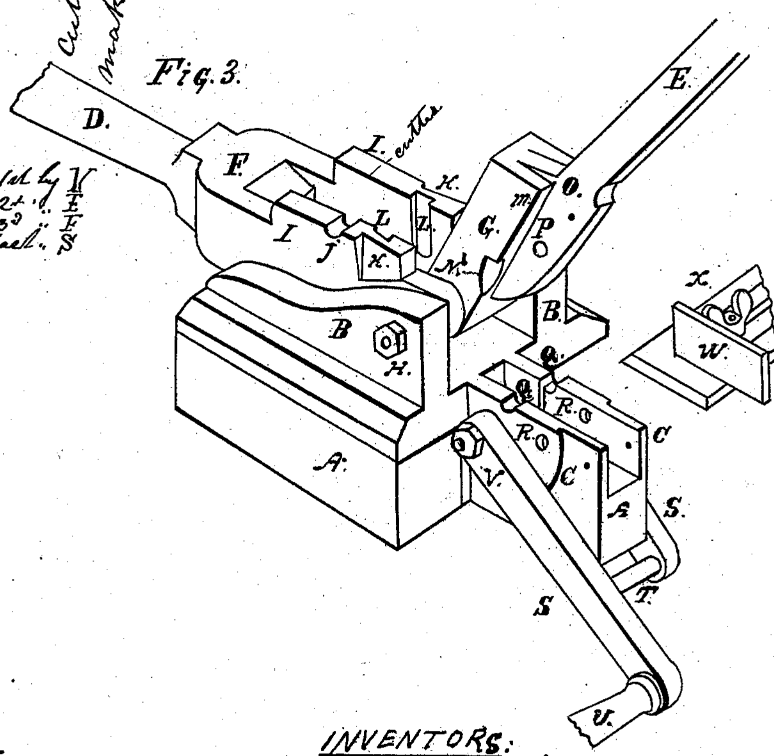


Fig. 3.



WITNESSES:
B. R. Erwin
Chas. Beyer

INVENTORS:
John Graf
Philipp Madlener
By Jas. B. Erwin
Attorney

UNITED STATES PATENT OFFICE.

JOHN GRAF AND PHILIPP MADLENER, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN TOOLS FOR FORMING CORK-FASTENERS.

Specification forming part of Letters Patent No. **211,395,** dated January 14, 1879; application filed March 20, 1878.

To all whom it may concern:

Be it known that we, JOHN GRAF and PHILIPP MADLENER, of the city of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Machines for Making Cork-Fasteners; and we do hereby declare that the following is a full, clear, and exact description thereof, which 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 of the accompanying drawings represents a perspective view of the cork-fastener manufactured with my machine. Fig. 2 is a perspective view of the machine for forming the first crooks, *a a*, in the wire. Fig. 3 is a perspective view of the device for cutting the wire and forming the other crooks, *b*, *c*, and *d*.

The object of my invention is to furnish improvements in machines for manufacturing cork-fasteners; and consists in a combination of gage, levers, shears, dies, and cranks for cutting, bending, and twisting wire in their construction, all of which is explained by referring to the accompanying drawings, in which—

A represents a block of metal provided with lugs B B and C, all of which are cast in one piece. D and E are levers for operating the dies F and G, which are both secured to the lugs B with the bolt H. The die F consists of lugs I, provided with groove J, having chamfered edges K and slots L. The die G consists of shoulders *m*, which are each provided with recesses N and shoulder O, through which is a hole, P.

The lugs C are each provided with grooves Q and holes R. The levers S S are connected together by the rod T, so that they may both be operated simultaneously by moving the handle U. The levers S are both attached to the lugs C by the bolt V.

W is a gage, which is adjusted with the set-screw X for measuring the lengths of the wires. Y is a lever, which is provided with a substantial metal plate, Z, for forming the first crook in the wire. The lever Y is attached to the plate A′ with bolt B′.

C′ is a small shoulder, which is fitted to a corresponding depression, D′, in the plate A′.

The wire is formed into the shape shown in Fig. 1 in the following manner: The handle E being down, the end of the wire is inserted through the holes R and P and against the gage W, when the handle D is turned forward and pressed downward, thus bringing the die F upon the wire, which cuts the proper length for the fastener, after which the piece thus cut is placed against the edge of the plate A′ in front of the depression D′, when lever Y is turned toward the left, thus bringing the shoulder C′ against the wire and pressing it into the depression, whereby the crooks *a a* (shown in Fig. 1) are formed. It is then laid across the lugs C in the grooves Q, when the lever E is pressed downward upon it, forcing it between the lugs C, and thus forming the crooks or angles *d*, which leaves the wire in a V shape, when the lever D is again brought forward and against the wire, thus bending the ends downward and forming the crooks *c*, when the handle U is brought forward from beneath, bringing the levers S against the ends of the wire, which movement bends them forward, thus forming the crook *b*, when the fastener is complete.

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

1. The combination of the block A, provided with lugs B and C, with the die F, provided with grooves J, K, and L, die G, provided with shoulders *m*, recesses N, shoulder O, through which is a hole, P, and levers S S, provided with handle U, all substantially as and for the purpose specified.

2. The combination of the device consisting of block A and levers S with gage W, substantially as and for the purpose specified.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JOHN GRAF.
PHILIPP MADLENER.

Witnesses:
K. SHAWVAN,
JAS. B. ERWIN.