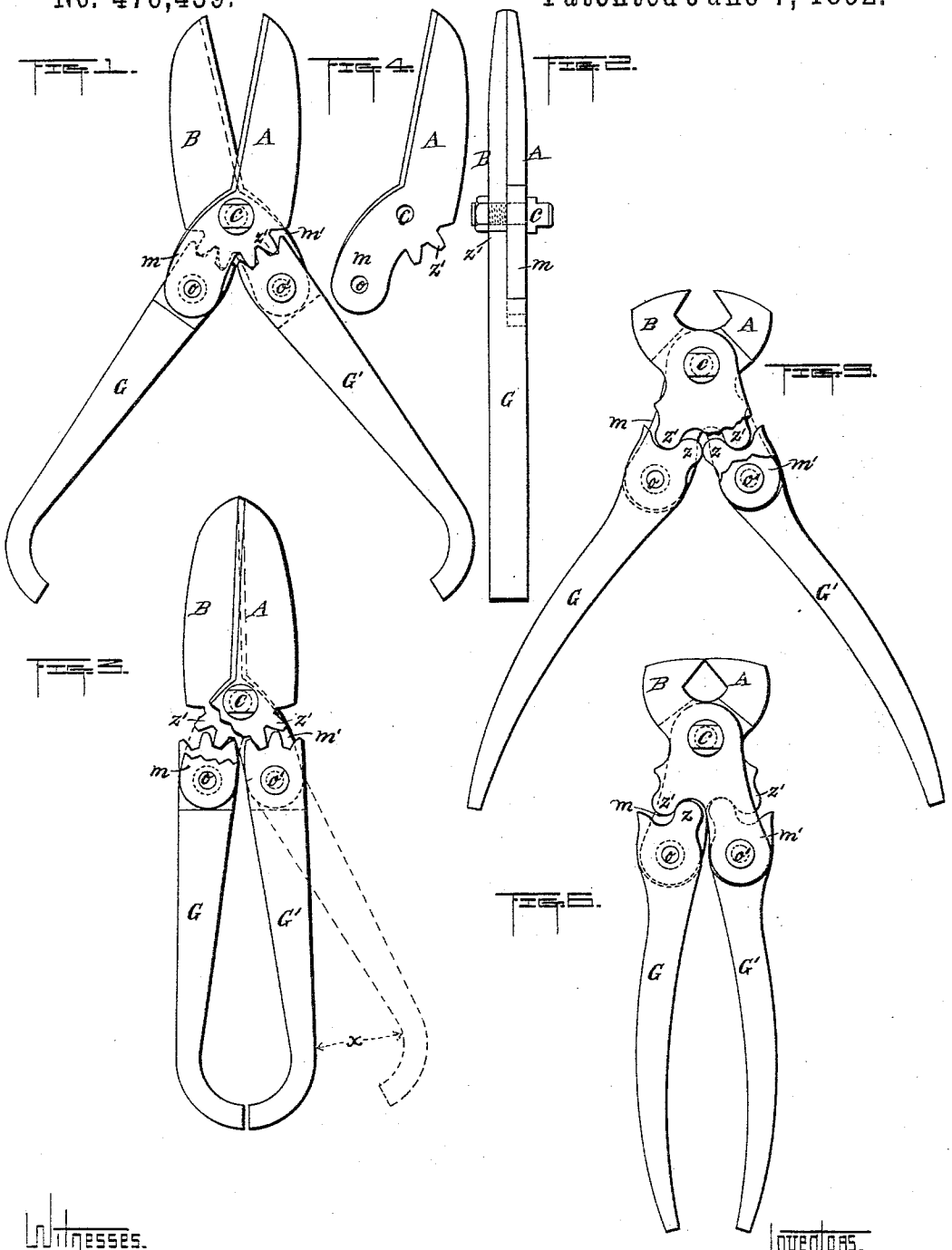
(No Model.) 2 Sheets—Sheet 1.

C. HAMANN & J. A. SCHMIDT.

SHEARS.

No. 476,459. Patented June 7, 1892.



Witnesses.

Robert Brown Howard
George Barry.

Inventors.

Carl Hamann &
Jacob Albert Schmidt
by attorneys,
Brown & Howard

(No Model.) 2 Sheets—Sheet 2.

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SHEARS.

No. 476,459. Patented June 7, 1892.

FIG. 7.

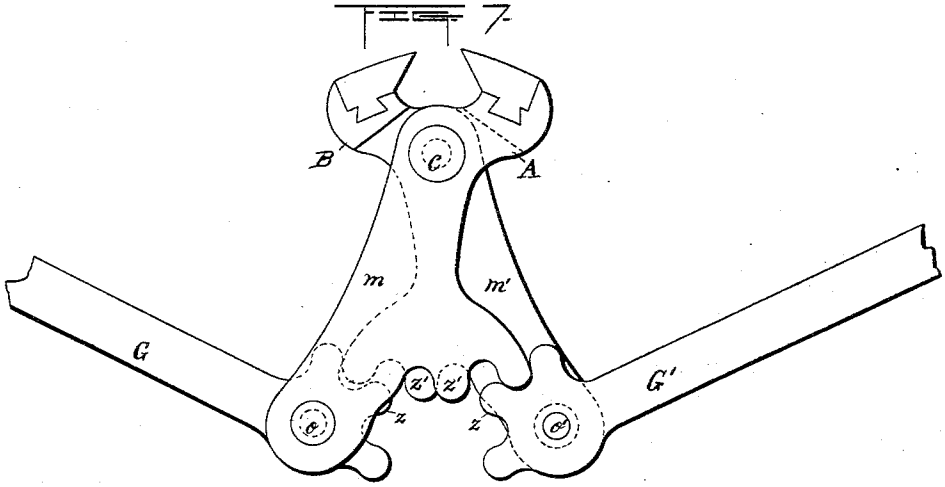


FIG. 8.

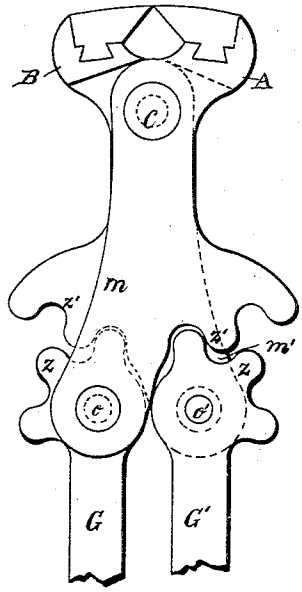
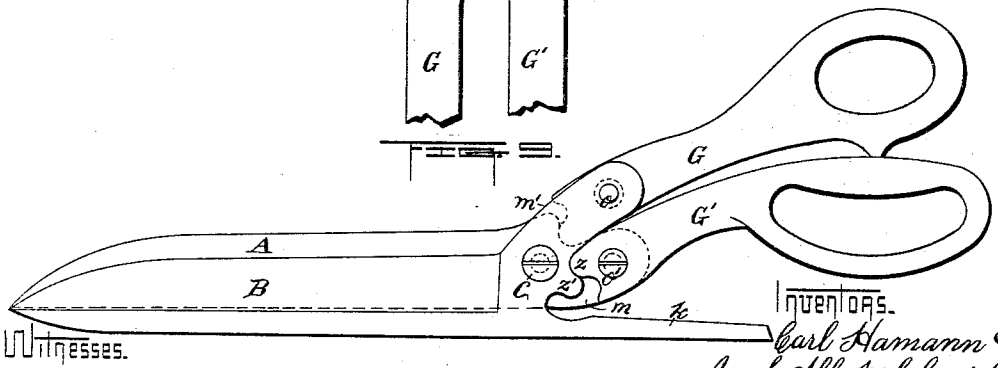


FIG. 9.



Witnesses.

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Prowont & Howard

UNITED STATES PATENT OFFICE.

CARL HAMANN, OF REINBECK, AND JACOB ALBERT SCHMIDT, OF BARMEN, GERMANY.

SHEARS.

SPECIFICATION forming part of Letters Patent No. 476,459, dated June 7, 1892.

Application filed April 22, 1892. Serial No. 430,173. (No model.)

To all whom it may concern:

Be it known that we, CARL HAMANN, of Reinbeck, and JACOB ALBERT SCHMIDT, of Barmen, both in the Empire of Germany, have invented a new and useful Improvement in Shears, Nippers, and the Like, of which the following is a specification.

This invention relates to shears, nippers, and similar tools in which two blades or jaws are approached to each other by the compression together of the handles; and the object of the invention is to so cause the movement of the handles to operate the blades or jaws that a great power or leverage may be attainable in the cutting or nipping action of the tool. Such improved tools will therefore be especially suitable for cutting or working hard materials, such as metal. The present improvement effects this end by permitting or causing the movement of the handles toward each other to be greater in proportion to the movement of approach of the "blades" (under which term is hereinafter included the jaws or other operative faces of the tool, whether sharp or otherwise) than is the case with tools in which the handles are each in one part with the respective blades.

In the accompanying drawings, Figure 1 is a side view of improved metal-cutting shears as shown partly open. Fig. 2 is an edge view thereof. Fig. 3 shows the same closed. Fig. 4 is a detail view of one of the blades. Figs. 5 and 6 are respectively open and closed aspects of a pair of wire-nippers made according to this invention. Figs. 7 and 8 are respectively open and closed aspects of another pair of improved wire-nippers of greater strength than those in Figs. 5 and 6. Fig. 9 is a side view of tailors' shears.

The blades A B, which are pivoted one on the other by a pin or bolt c, have each an extension handleward from the pivot m m', to which extensions the handles G G' are respectively pivoted by bolts o o'. These handles have each teeth z, which mesh with corresponding teeth z' on that blade A or B to which the respective handle is not pivoted. This construction causes the movement of the handles relatively to the blades to be greater than would be the case if the handles were solid with the respective blades.

In Fig. 3 the dotted position of the handle G' is equivalent to the closed position of the blades if the handle were fixed with the blade in the position in Fig. 1. The difference indicated by the arc x, Fig. 3, is therefore the gain of movement each handle acquires by this invention.

In Figs. 5 and 6 rounded teeth are shown instead of the usual-shaped teeth in Fig. 1. In all other and essential respects the construction is the same.

In Figs. 7 and 8 the nippers shown are of greater power, since the pitch-radius of the teeth z is much less than that of the teeth z'. This tool will require to be worked with two hands.

In Fig. 9 the tailors' shears are made on the same principle. One of the blades—the lower one—has, however, also a rearward extension k, which rests on the table, &c., on which the cutting is done and keeps the shears upright, serving as a stand or base-plate for them.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

Shears, nippers, or equivalent hand-tools in which the two corresponding blades, jaws, or faces are pivoted one on the other and provided with extensions on which are respectively pivoted handles having teeth gearing each with the blade, jaw, or face other than that to the extension of which the respective handle is pivoted.

In witness whereof we have hereunto set our hands in presence of two witnesses.

CARL HAMANN.
JACOB ALBERT SCHMIDT.

Witnesses:
ALFRED FUCHSS,
Clerk at Barmen, 19ª *Rauenwerth.*
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