

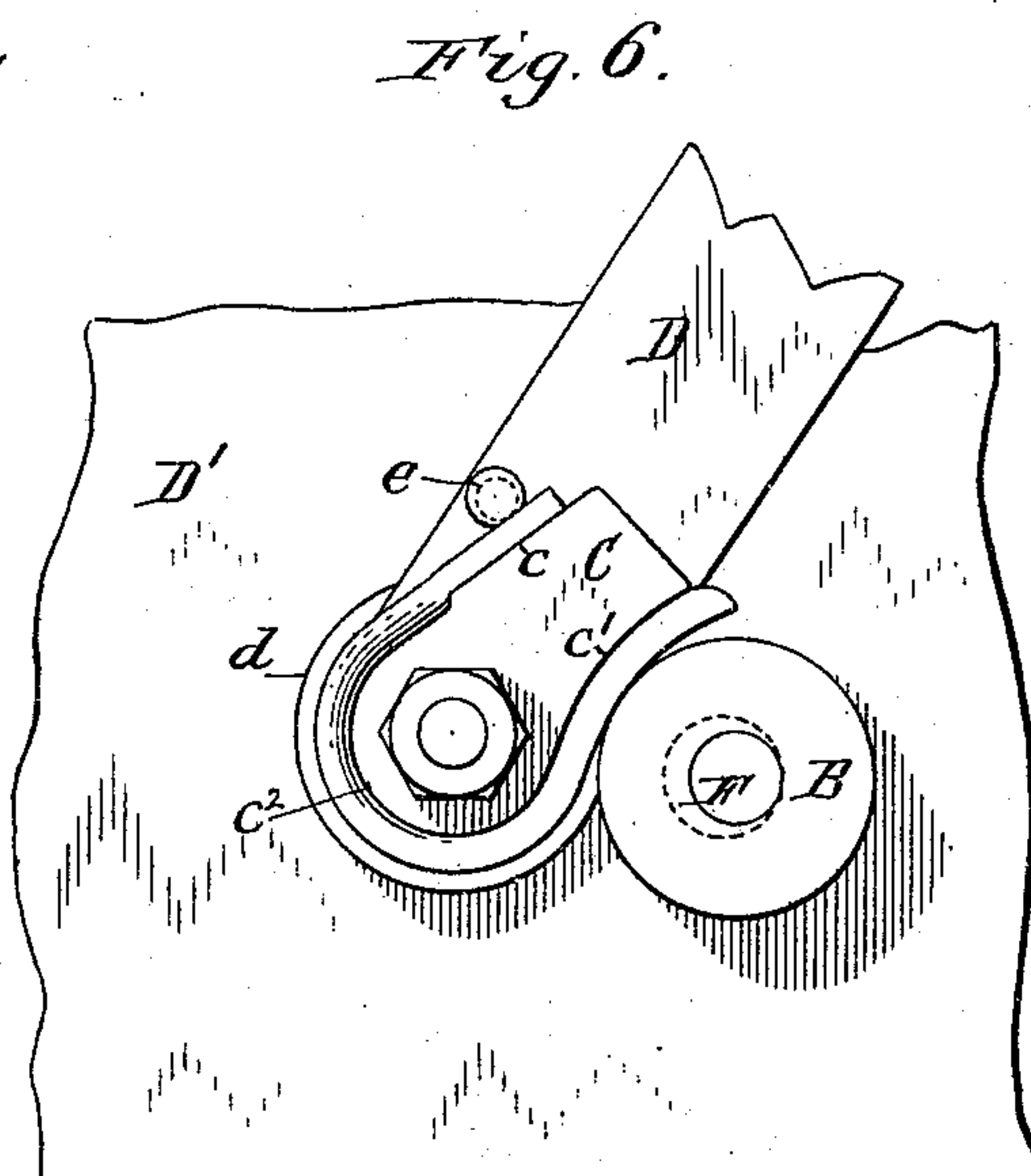
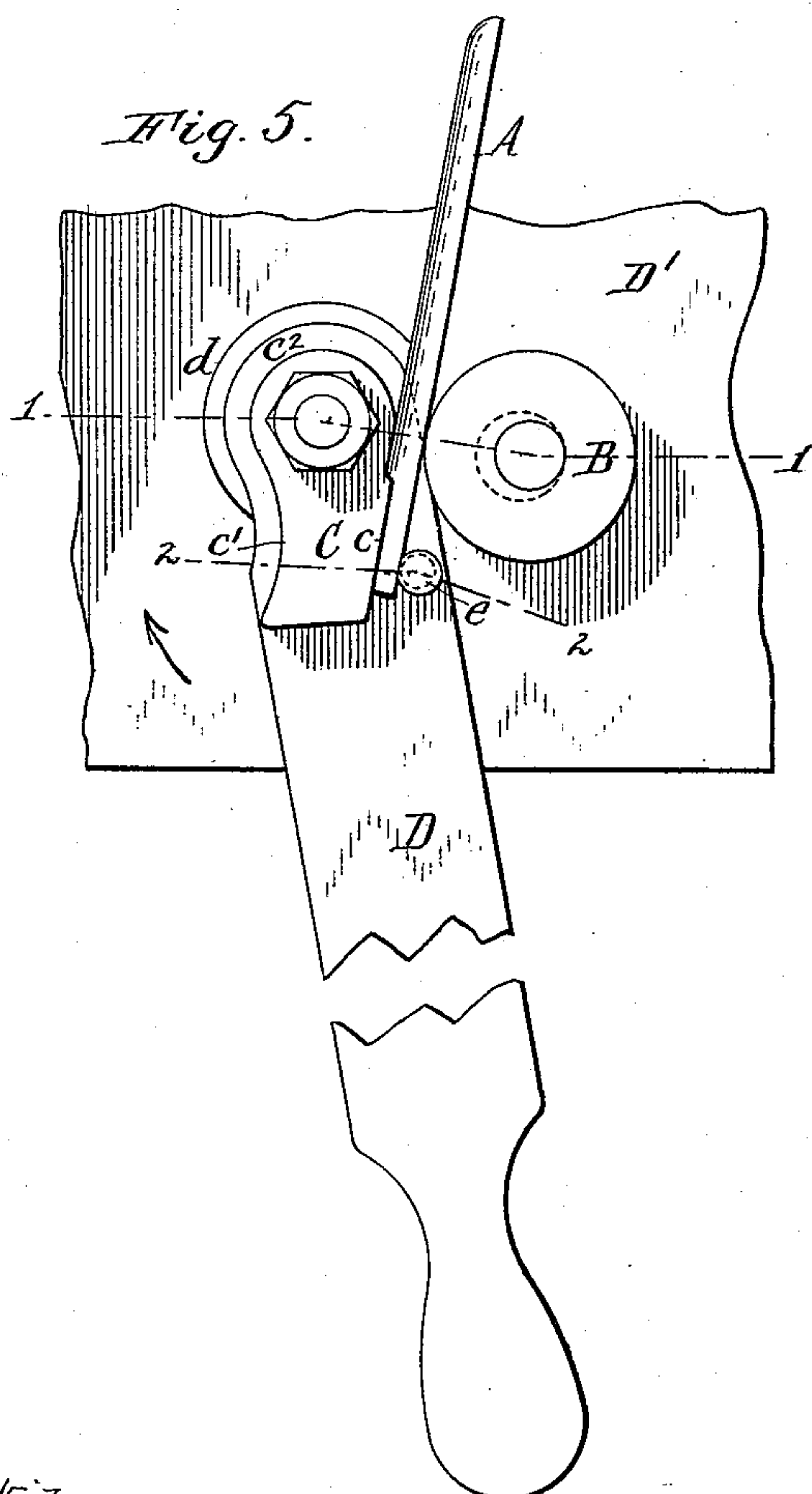
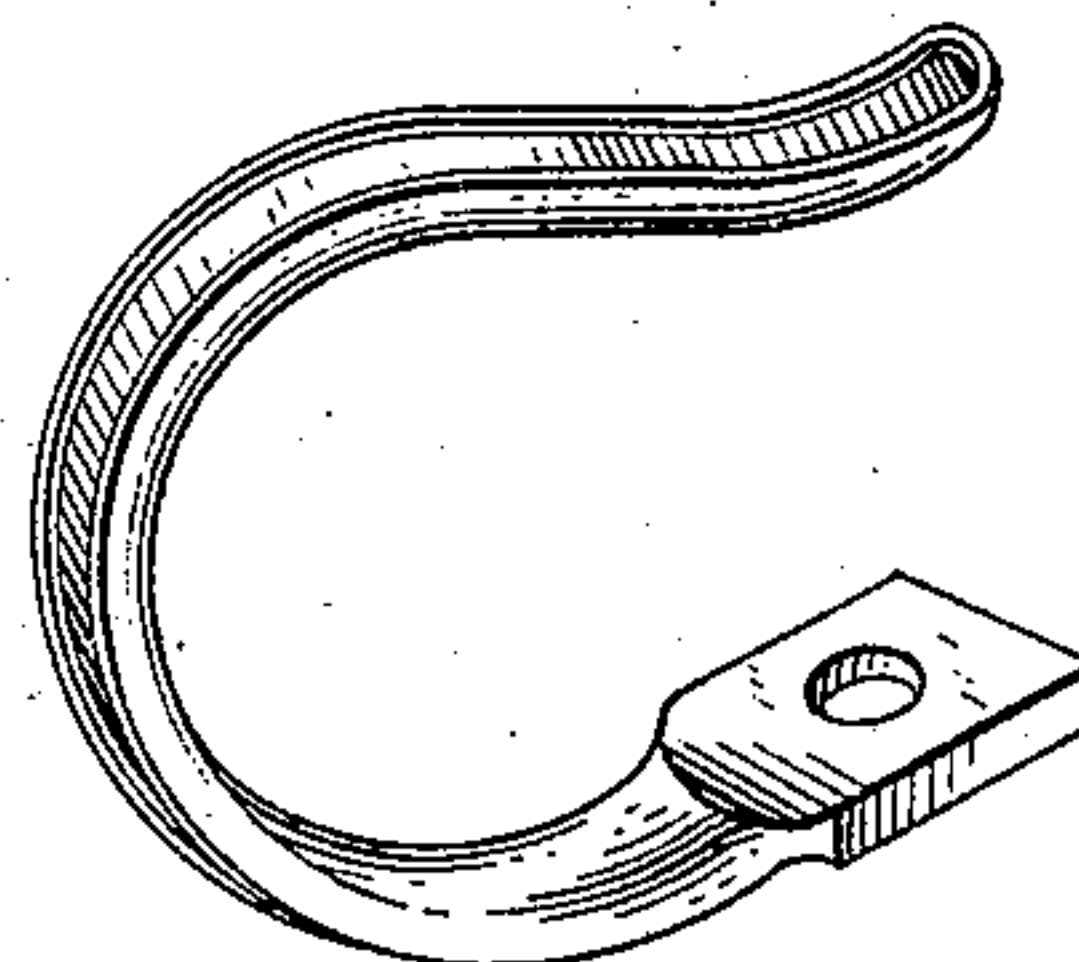
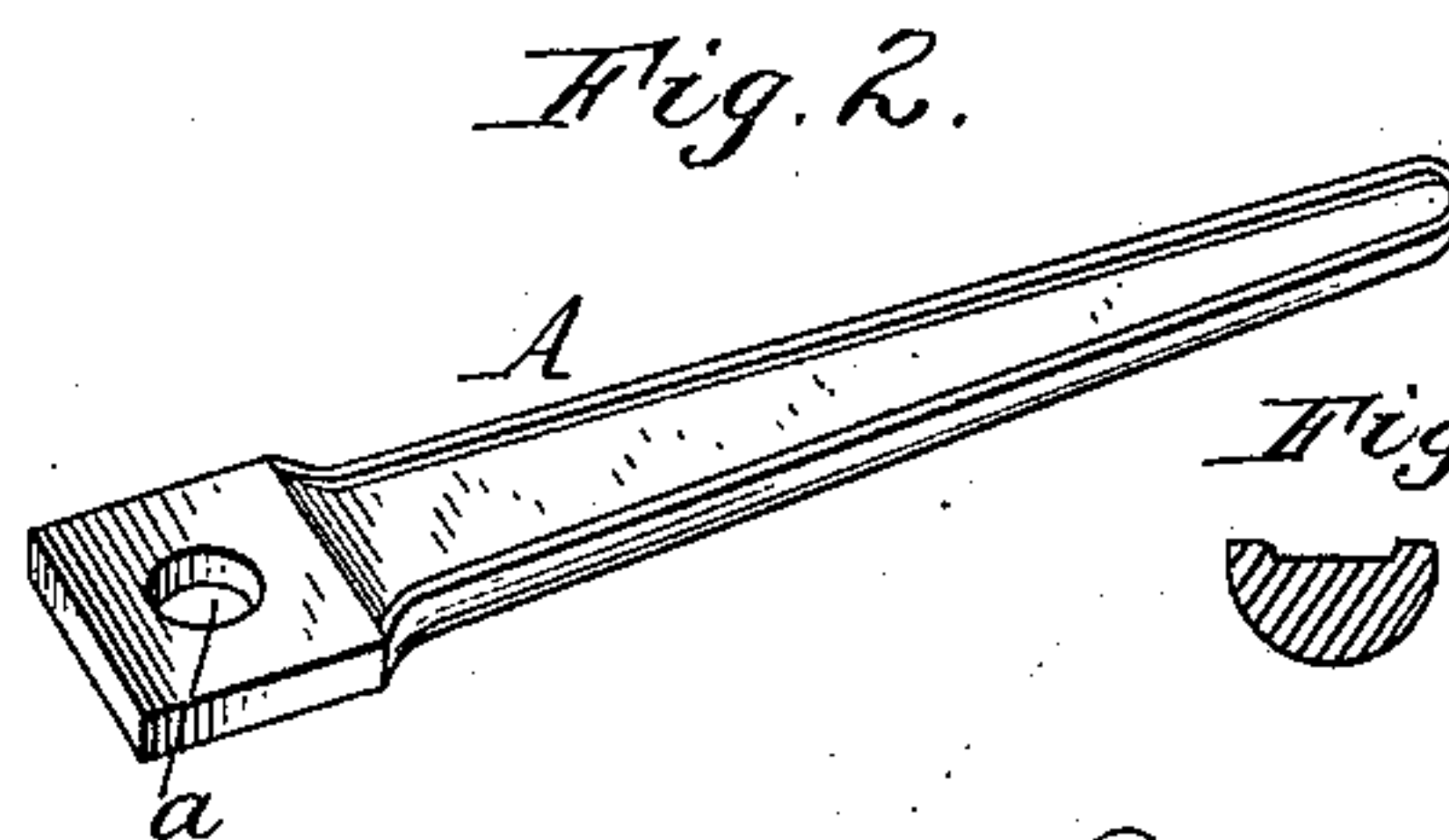
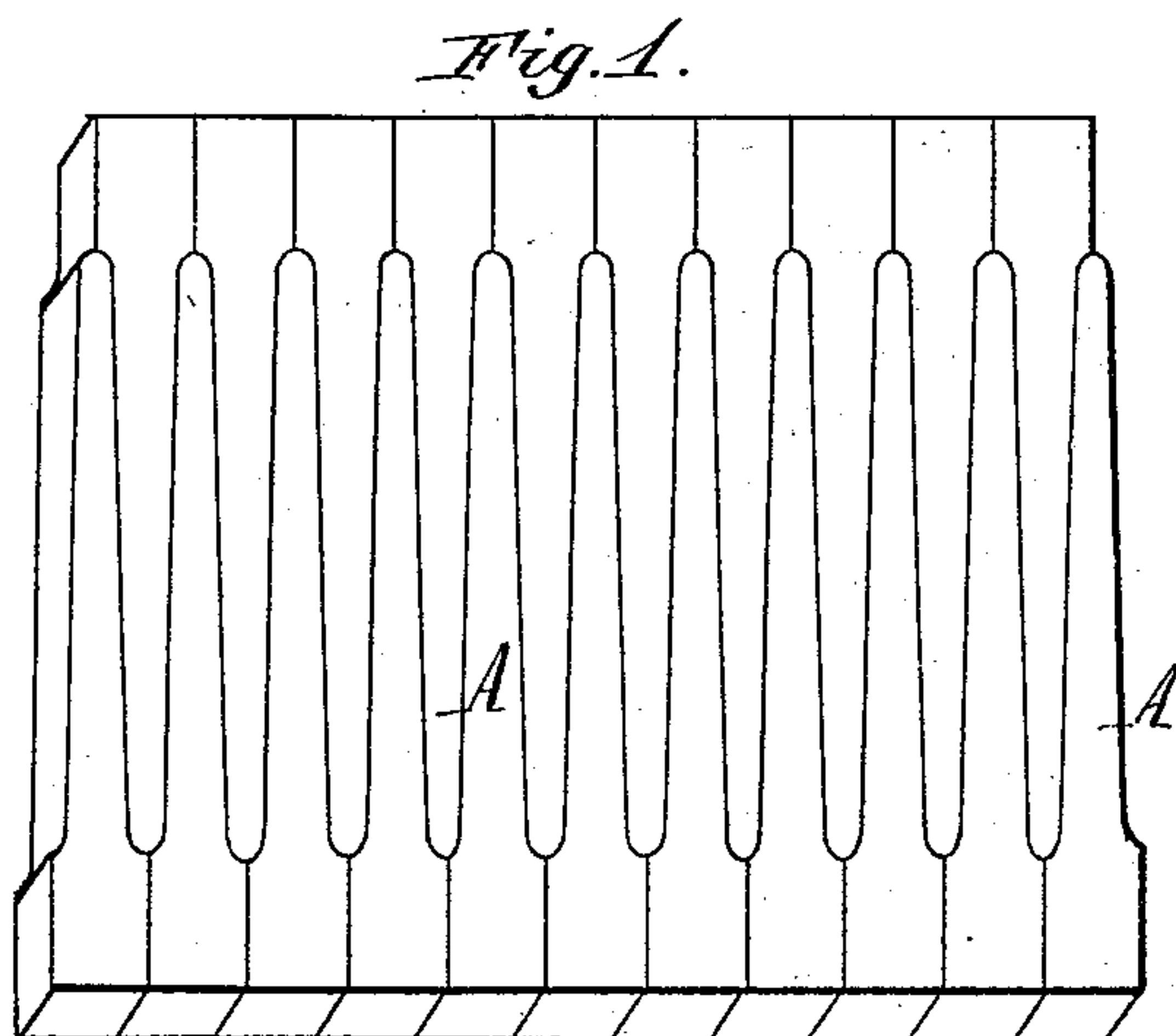
(No Model.)

H. E. KELLEY.

METHOD OF MAKING HARNESS CHECK HOOKS.

No. 488,677.

Patented Dec. 27, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE

HARRY E. KELLEY, OF NIAGARA FALLS, NEW YORK.

METHOD OF MAKING HARNESS CHECK-HOOKS.

SPECIFICATION forming part of Letters Patent No. 488,677, dated December 27, 1892.

Application filed November 14, 1891. Serial No. 411,926. (No specimens.)

To all whom it may concern:

Be it known that I, HARRY E. KELLEY, a citizen of the United States, residing at Niagara Falls, in the county of Niagara and State of New York, have invented new and useful Improvements in Methods of Making Sheet-Metal Hooks, of which the following is a specification.

This invention relates to an improved method of making harness check-hooks from sheet-metal.

My invention has for its objects to produce a cheaper and stronger check-hook than can be produced by casting and to facilitate the operation of polishing or finishing the hook.

In the accompanying drawings:—Figure 1 is a perspective view of a number of hook-blanks arranged side by side in the position in which they are cut from a strip of sheet metal. Fig. 2 is a perspective view, showing the form of the blank after it is stamped and perforated and before it is bent. Fig. 3 is a cross section of the blank. Fig. 4 is a perspective view of the finished hook. Fig. 5 is a fragmentary view of a machine which may be employed for bending the stamped blank into hook-form and showing the blank in place between the shaping dies, ready to be bent. Fig. 6 is a similar view of said machine, showing the position of the shaping dies after the hook is bent.

Like letters of reference refer to like parts in the several figures.

In practicing my invention, a straight, flat blank A of the proper form is first cut from a strip of steel or other sheet metal by suitable dies or cutters, a number of such blanks being preferably cut at one operation, as shown in Fig. 1. These blanks have substantially the dimensions and outlines of the hooks to be produced so that no metal is wasted. The desired cross-section which the check hook is to have, is next imparted to the blank by stamping the same by means of dies having suitable shaping faces, after which the bolt-hole *a* is punched in the large end of the blank by a suitable tool. The hook shown in the drawings is made convex on its inner side and its outer side is formed with a raised marginal bead. If preferred, the bolt-hole may

be formed simultaneously with the cutting of the blank, or at the same time with the stamping operation. The blank after being stamped and punched, is next polished or finished by buffing or burnishing it, and it is then bent to the desired hook-form between suitable dies having proper shaping faces, or by other means. I prefer to employ for this purpose, a machine of the construction shown in the drawings. This machine consists essentially of a cylindrical die or abutment B and a bending or shaping die C having an outline or shaping face corresponding to that of the hook to be formed, the die being provided on one side with a flat face *c* against which the shank of the hook is placed, on its opposite side with a concave face *c'* for forming the nose of the hook, and between the faces *c c'* with a convex face *c²* for forming the bight of the hook. The shaping die is secured to the inner portion of a hand lever D, provided at its inner end with a hub or journal *d* which turns in an upright opening formed in a table or other support D'. *e* is an upright pin or projection arranged on the hand lever D adjacent to the rear side of the shaping die C and between which latter and the pin the rear portion or shank of the blank is placed in bending the same, as shown in Fig. 5. The abutment-die B is journaled upon the contracted upper end of an arbor F, which latter is secured in an opening in the table D'.

In bending the straight hook-blank, the shank thereof is placed between the pin *e* and the adjacent face of the shaping die C, with the back or inner face of the blank against the shaping die. The latter is then turned by means of its hand lever in the direction of the arrow shown in Fig. 5. As the inner end of the blank is firmly held against the shaping die, the free end of the blank is compressed between the two dies and compelled to follow the contour of the shaping die, thus bending the same into hook-form. The abutment-die B is rotated from the shaping die by the frictional contact of the intervening hook-blank, so that the abutment die is caused to turn with the same peripheral speed as the shaping die, whereby marring or defacement of the polished hook-blank is prevented.

In making check-hooks from steel, the hook, after being blanked, stamped, punched and bent, is preferably tumbled, after which it may be tinned, lacquered, japanned, nickel-plated or otherwise finished.

In making hooks from brass, German silver, bronze, aluminum or other metal having a smooth surface which is readily polished, the hook, after being blanked and stamped to the desired cross section, is polished and then bent into hook-form.

A sheet-metal hook constructed according to my improved method, is much stronger than a cast metal hook and is produced at considerably less cost. The stamping operation preceding the bending of the blank into hook-form, not only imparts to the blank the desired cross section, but also compresses and compacts the molecules of the metal thus rendering the hook very strong.

By polishing the hook-blank in its straight, flat form, instead of in the curved form, as is necessary in a cast hook, all portions of the blank can be conveniently presented to a buffing or polishing wheel, thus facilitating the polishing operation and effecting a saving in time and labor.

The face of the hook may be ornamented with any suitable design or pattern in stamp-

ing the blank, by providing the stamping dies with the desired ornamentations.

I claim as my invention:—

1. The herein described method of making a hook from sheet metal consisting in severing the blank from the sheet metal and there- by giving it the proper outlines and dimensions of the finished article, then stamping the blank between dies to impart the desired cross section and condense the metal, and then bending the condensed blank into the form of a hook, substantially as described.

2. The herein described method of making a sheet metal hook, which consists in cutting from a sheet of metal a straight blank having the dimensions and outlines of the hook to be produced, then stamping the blank between dies to impart the desired cross section and condense the metal, then polishing or finishing the stamped blank, and finally bending the polished or finished blank into hook-form, substantially as set forth.

Witness my hand this 2d day of November, 1891.

HARRY E. KELLEY.

Witnesses:

JNO. J. BONNER,
ALICE G. CONNELLY.