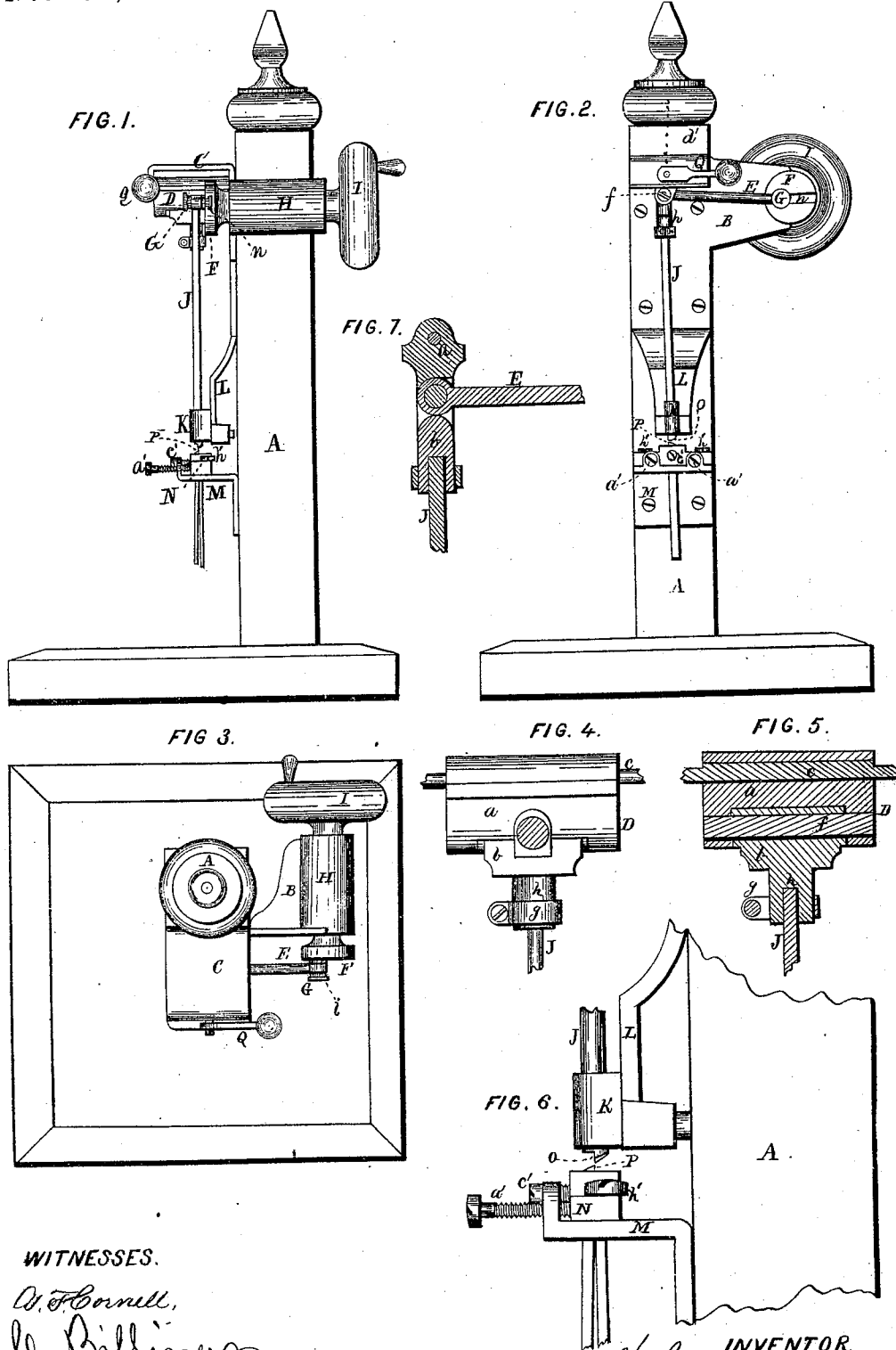


W. H. CLARK, W. J. CLARK & A. O. KITTEDGE.

SHEET-METAL SCROLL-CUTTER.

No. 171,916.

Patented Jan. 11, 1876.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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COMPANY, OF SAME PLACE.

IMPROVEMENT IN SHEET-METAL-SCROLL CUTTERS.

Specification forming part of Letters Patent No. **171,916**, dated January 11, 1876; application filed
October 4, 1875.

To all whom it may concern:

Be it known that we, W. H. CLARK, W. J. CLARK, and A. O. KITTREDGE, of Salem, in the county of Columbiana and State of Ohio, have invented a certain new and Improved Sheet-Metal-Scroll Cutter; and we do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings making part of the same.

Figures 1 and 2 are side views of the scroll-cutter. Fig. 3 is a plan view. Figs. 4, 5, 6, and 7 are detached sections.

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

The nature of this invention relates to cutting scroll-work in sheet metal; and the object thereof is to cut said scrolls by a reciprocating cutter in combination with a stationary cutter, between which the sheet is moved in the line of the scroll-tracing, and thereby cut conjointly by the two cutters, substantially in the manner as follows:

In the drawing, A represents a post or standard, to which is secured a bracket, B, Fig. 3, in the part C of which is pivoted a vibrating head, D, a detached view of which is shown in Figs. 4 and 5. Said head consists of two sections, *a* *b*, Fig. 4. Section *a* is pivoted in the part C of the bracket B by the eccentric shaft *c*, whereon it vibrates. The part of said shaft on which the section *a* of the head vibrates is eccentric to the ends or journals of the shaft, which have their bearing in the sides of the bracket, as seen in Fig. 5. The purpose of the eccentricity of the shaft *c* will hereinafter be shown. Section *b* of the head is connected to section *a* by a hinged joint, of which *f*, Fig. 5, is the pivotal pin. To said pivotal pin is attached one end of a connecting-rod, E, Fig. 2, whereas the opposite end of the rod is attached to a crank-wheel, F, by a wrist-pin, G. Said wrist-pin is secured to the wheel by being fitted thereto in a dovetailed groove, *n*, Figs. 1 and 2. A corresponding dovetail is formed on the pin, which is secured in the groove by a screw, *i*, forming the head or outer collar of the pin,

and by which said pin is made adjustable in the wheel for shortening or lengthening the stroke of the connecting-rod, for a purpose presently shown. The shaft carrying the crank-wheel has its bearings in the sleeve H of the bracket, and is driven by a pulley or wheel, I. The lower end of section *b* of the vibrating head is a cleft socket, *h*, Fig. 4, within which is fitted and secured by a band or clip, *g*, the stem J of the cutter O. Said cutter is formed at the lower end as will be seen at O, Fig. 6, the shape of which is that of a chisel having a basil only on one side, and the cutting-edge oblique to the sides of the chisel, thereby forming one pointed corner, as seen in Fig. 2. The lower part of the stem of the cutter is held loosely in a guide, K. Said guide is pivoted to the arm L, so that it may vibrate, and thereby adjust itself to the vibratory movement of the stem of the cutter. M, Fig. 6, is a bracket, whereon is secured an adjustable block, N, by means of the screws *h'*, which permits of its adjustment near to or away from the cutter O by means of the adjusting-screws *a'*. In said block is secured, by a set-screw, *c'*, a cutter, P, corresponding in character to the cutter O, wherewith it co-operates for cutting. The relative position of the two cutters in respect to each other is such as shown in Fig. 6, wherein it will be seen that the plain or straight sides thereof slide upon each other as a pair of shears, and that the cutting-edges have the same oblique angle, and in the same direction, thereby bringing the two pointed corners in close proximity to each other.

Having described the construction of the scroll-cutter, the practical operation of the same is as follows: A sheet of metal on which the design of a scroll is traced is laid under the reciprocating vibratory cutter O, which for that purpose is lifted from its contact with the lower one by means of the handle Q, attached to the end of the eccentric shaft *c*. By turning said handle to the position indicated by the dotted line *d'*, Fig. 2, it will turn the eccentric side or swell of the shaft upward, thereby lifting the head referred to so far as

to permit the introduction of the sheet between the two cutters, the upper one of which continues to operate by virtue of its connection with the head, which is vibrated by the connecting-rod E and crank-wheel, thereby giving a reciprocating vertical action to the cutter, whether it be raised above the lower one or down in cutting relation therewith. When the sheet of metal is interposed between the cutters the eccentric shaft C is turned by the handle Q, thereby pushing the upper cutter down and bringing it in contact with the sheet. The upper cutter, in its relation to the lower one, acts conjointly therewith as a shear, whereby the metal is cut through along the lines of the design as the sheet is moved about by the operator. The cutting-blades being very narrow, no trouble is found in cutting quick curves and acute angles that may form any part of the scroll design, the cutting of which can be commenced at any place in the work without cutting in from the side of the sheet to reach the lines of design by simply lifting the reciprocating cutter from its contact with the lower or stationary one, so

that the sheet may be interposed between them. The length of the stroke of the cutter can be varied by shifting the wrist-pin G, to which the rod E is connected, along in the groove of the crank-wheel, toward or away from the center of the wheel, as may be desired.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In sheet-metal-scroll cutters, the combination of the sections *a b* of the head, eccentric shaft *c*, rod E, stem J, and cutters, operating conjointly substantially as and for the purpose set forth.

2. The combination of the grooved crank-wheel F, adjustable wrist-pin G, connecting-rod E, and the vibratory head, consisting of sections *a b*, in the manner as described, and for the purpose set forth.

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