D. F. BRIGGS & G. S. BOUTWELL.

DEVICES FOR CUTTING OUT AND CUPPING PLANCHETS.

No. 184,579. Patented Nov. 21, 1876.

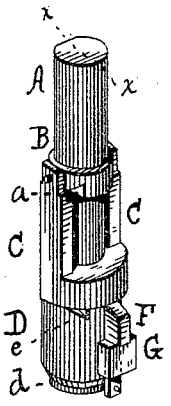

FIG. 1.

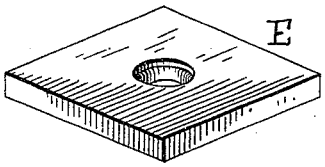

FIG. 2.

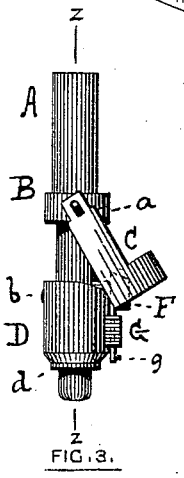

FIG. 3.

FIG. 5.

FIG. 6.

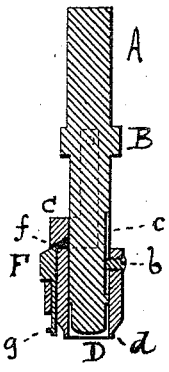

FIG. 4.

WITNESSES.

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IMPROVEMENT IN DEVICES FOR CUTTING OUT AND CUPPING PLANCHETS.

Specification forming part of Letters Patent No. **184,579**, dated November 21, 1876; application filed April 24, 1876.

To all whom it may concern:

Be it known that we, DANIEL F. BRIGGS and GEORGE S. BOUTWELL, of the city and county of Providence, in the State of Rhode Island, have invented a new and Improved Combined Cutting and Drawing Tool; and declare the following to be a specification thereof, reference being had to the accompanying drawings.

Figure 1 is a perspective view of our invention. Fig. 2 is a perspective view of the die. Fig. 3 is a side elevation with the plunger in operation. Fig. 4 is a longitudinal section on the line *x*. Fig. 5 shows the disk made by the cutter. Fig. 6 shows the disk drawn out into a cup shape by the plunger, and is the product of the machine.

Like letters indicate like parts.

Our invention may be used either in a single-action power-press, or in a hand screw-press.

It is designed to cut and draw stock into a cup shape for jewelry or other articles.

It consists in a sleeve furnished with a cutting-edge and sliding vertically upon a plunger, which draws the stock. A pawl upon the plunger bears against the sleeve, so as to give a direct pressure during the cutting operation, and then is swung outwardly by a wedge-faced bar, to allow the plunger to descend independently of the sleeve to draw the stock through the die.

The plunger A has a collar, B, to which is pivoted a pawl, C. The collar is cut away or beveled, as shown at *a*, to allow the pawl to swing outwardly. A sleeve, D, has a vertical sliding motion upon the plunger A, limited, however, by the set-screw *b*, which works against a flat bearing or depression in the plunger, as shown in section at *c* in Fig. 4. The lower part of this sleeve is a cutting-edge, *d*, fitting into the die E. The upper surface of the sleeve is cut away or beveled, as shown at *e*, to allow the pawl to swing outwardly while the plunger is descending, as hereinafter shown. The sleeve also has a tripping-bar, F, sliding within a guide, G. It has a beveled head, which engages with the pawl upon an inclined face made on the lower edge of the pawl for the purpose, as shown in section in Fig. 4 at *f*. The lower end of the bar F does not quite come even with the cutting-edge *d*, but is a short distance higher up. A pin, *g*, serves as a stop.

The operation is as follows: The sheet-brass, or other stock, is placed upon the top of the die E, and the tool descends upon it. The pawl C rests against, and bears directly upon, the sleeve D, and thus the cutting-edges are forced through the stock into the die E, and the disk H is formed. As soon as the cutter has passed through the stock, the lower end of the bar F comes in contact with the surface of the stock lying upon the die. The pressure continuing, the tripping-bar F is crowded upward, and, by means of its wedge-faced head operating against the incline *f* of the pawl C, pushes the pawl to swing outwardly, as shown in Fig. 3. The plunger A, having no longer any bearing against the sleeve D, passes down freely through the sleeve, and presses the disk H through the die E, thereby drawing it out into a cup shape, as shown at I. As the machinery now withdraws the tool, the cutter *d* adheres to the cut edge of the stock. The plunger A is withdrawn from the die, carrying with it the pawl C, which, as soon as it has risen above the beveled head of the tripper F, falls by its own weight into a vertical line, and again rests upon the upper edge of the sleeve D. The screw *b*, having now come to the lower end of the flat bearing or depression *c*, draws the cutter from the stock, the latter being detained upon the die by any suitable clearing device.

It is evident that the pawl must swing back past the central line *z z* (see Fig. 3) in order to rest solidly against the sleeve D in the descent.

We claim as a novel and useful invention, and desire to secure by Letters Patent—

1. The combination of the cutting-sleeve D, plunger A, and pawl C, and a tripping device, all operating substantially as and for the purpose specified.

2. The combination of the pawl C and tripper F, as and for the purpose specified.

3. The combination of the pawl C, tripper F, and cutting-sleeve D, substantially as described.

4. The improved combined cutting and drawing device, consisting of the plunger A, collar B, pawl C, cutting-sleeve D, die E, tripper F, with its guide G, all made and operating substantially as and for the purpose specified.

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