

Booth & Mills.

Forging Metal.

N^o 15,278.

Patented Jul. 8, 1856.

Fig. 1.

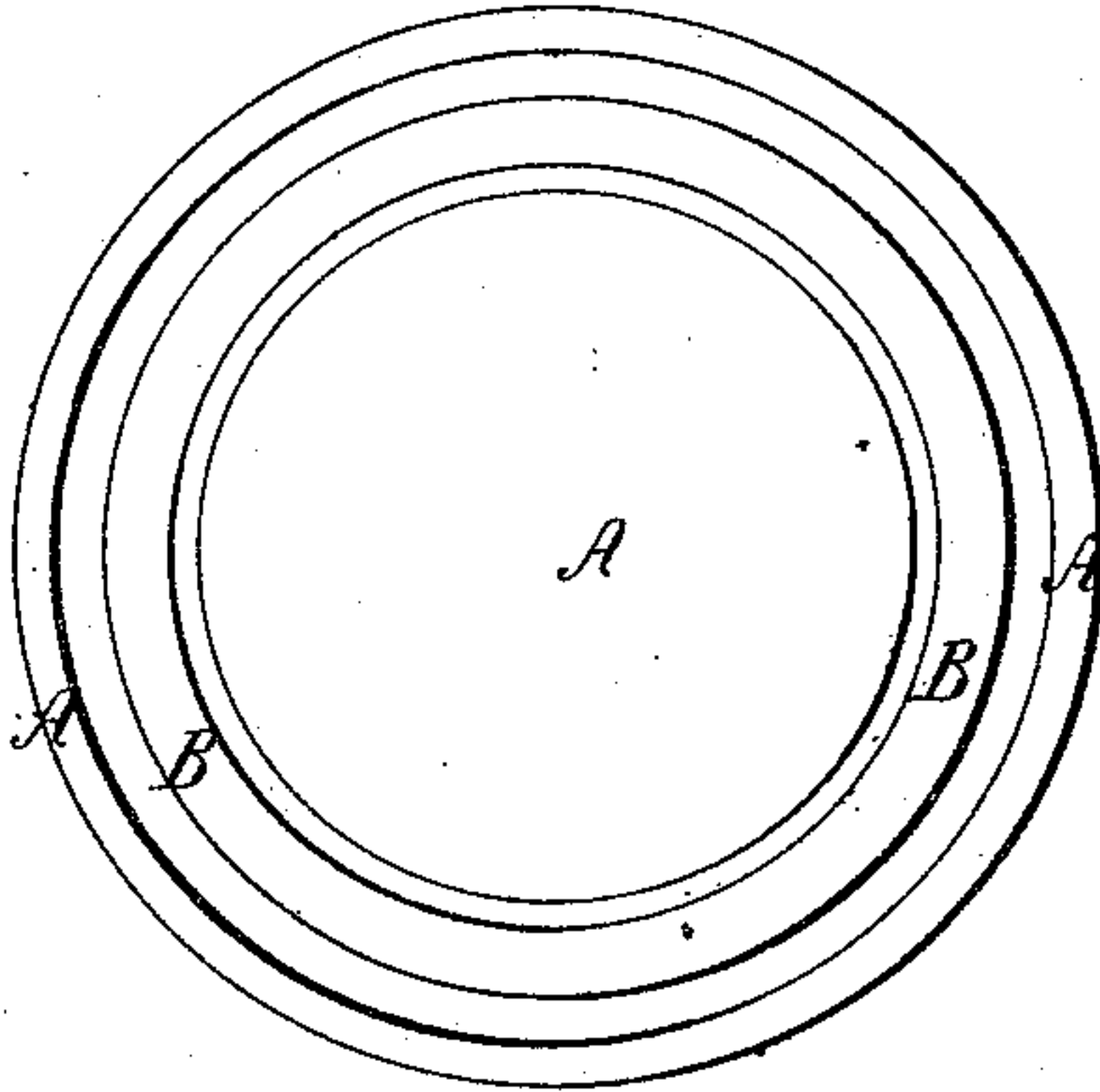


Fig. 2.

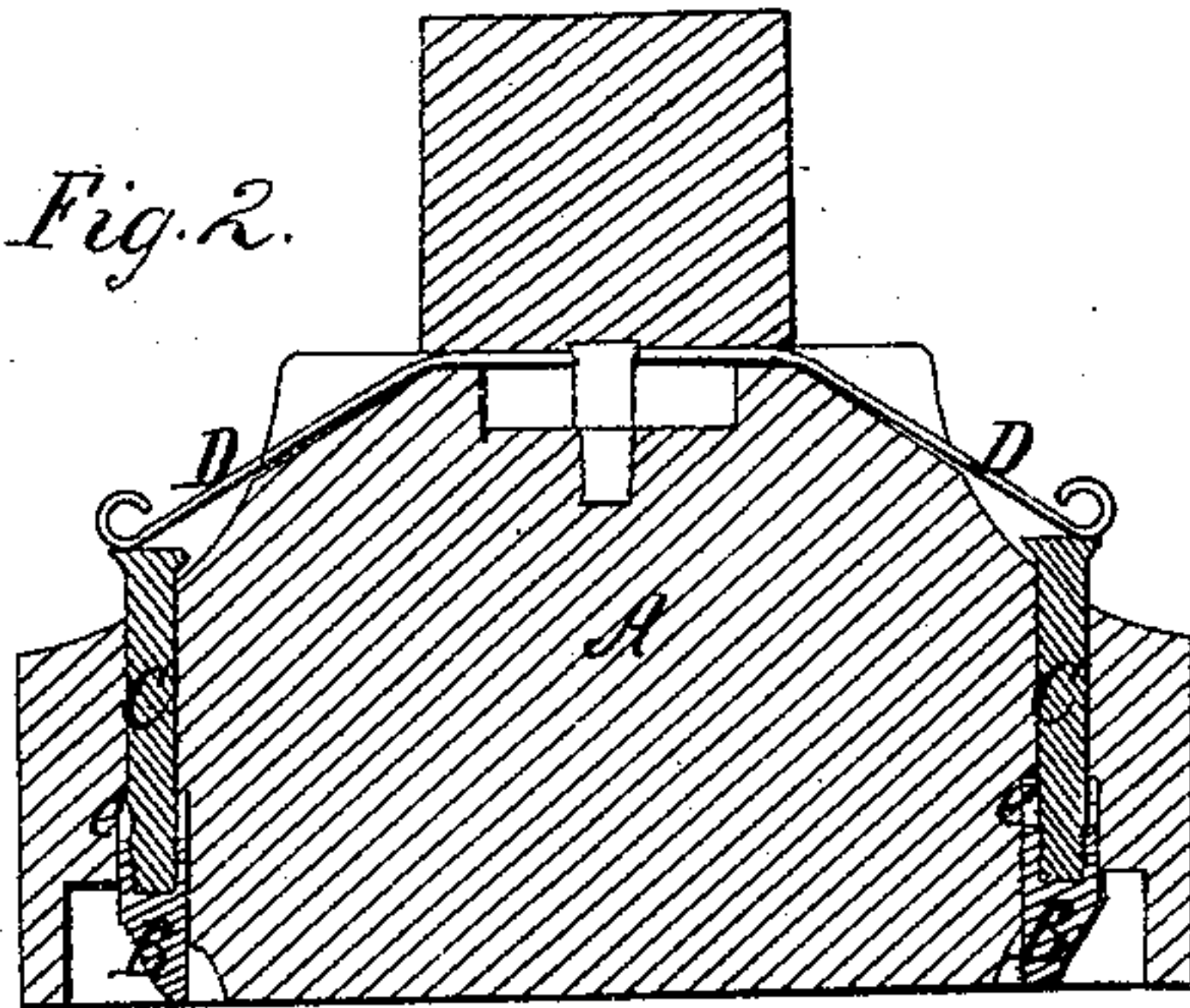


Fig. 3.

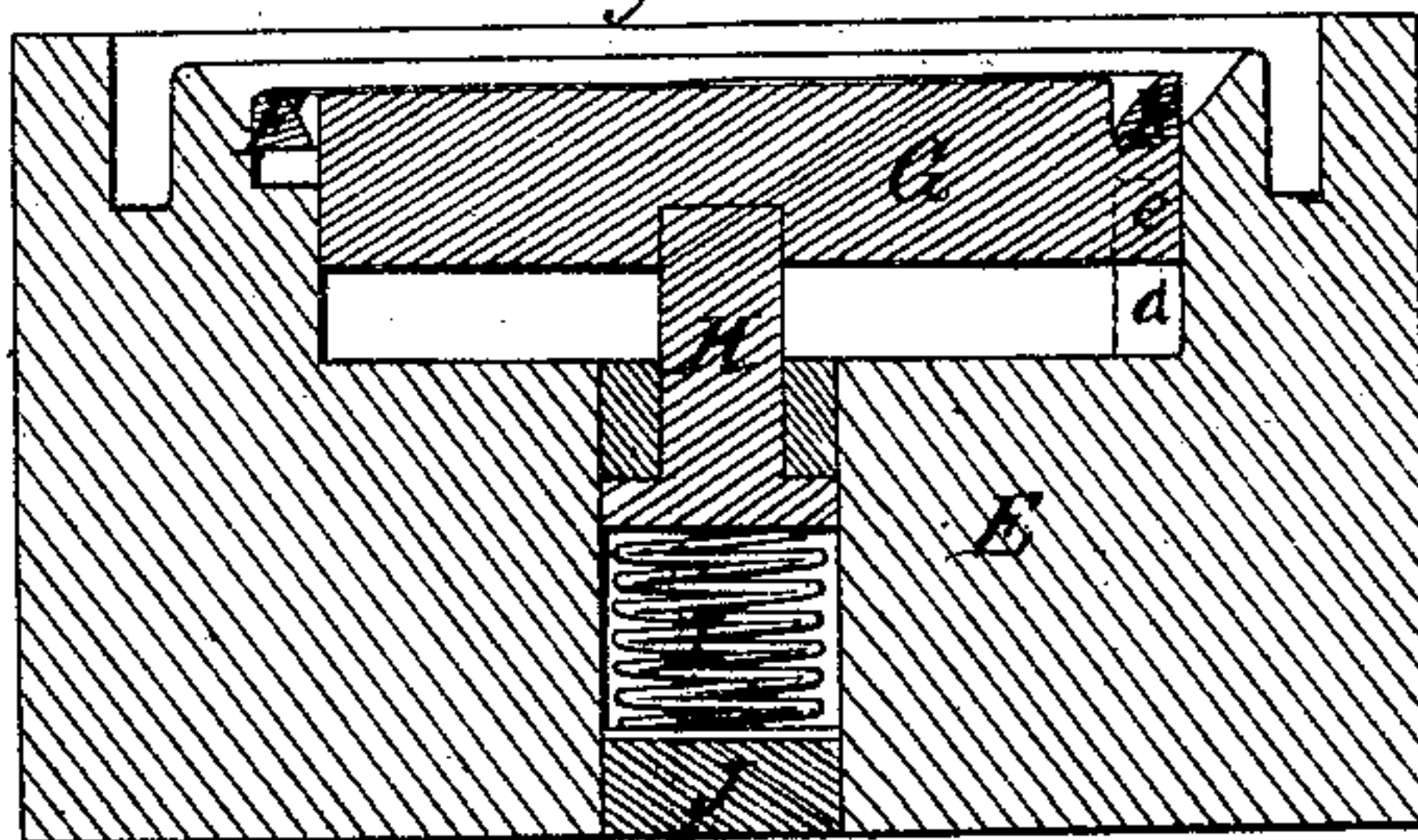
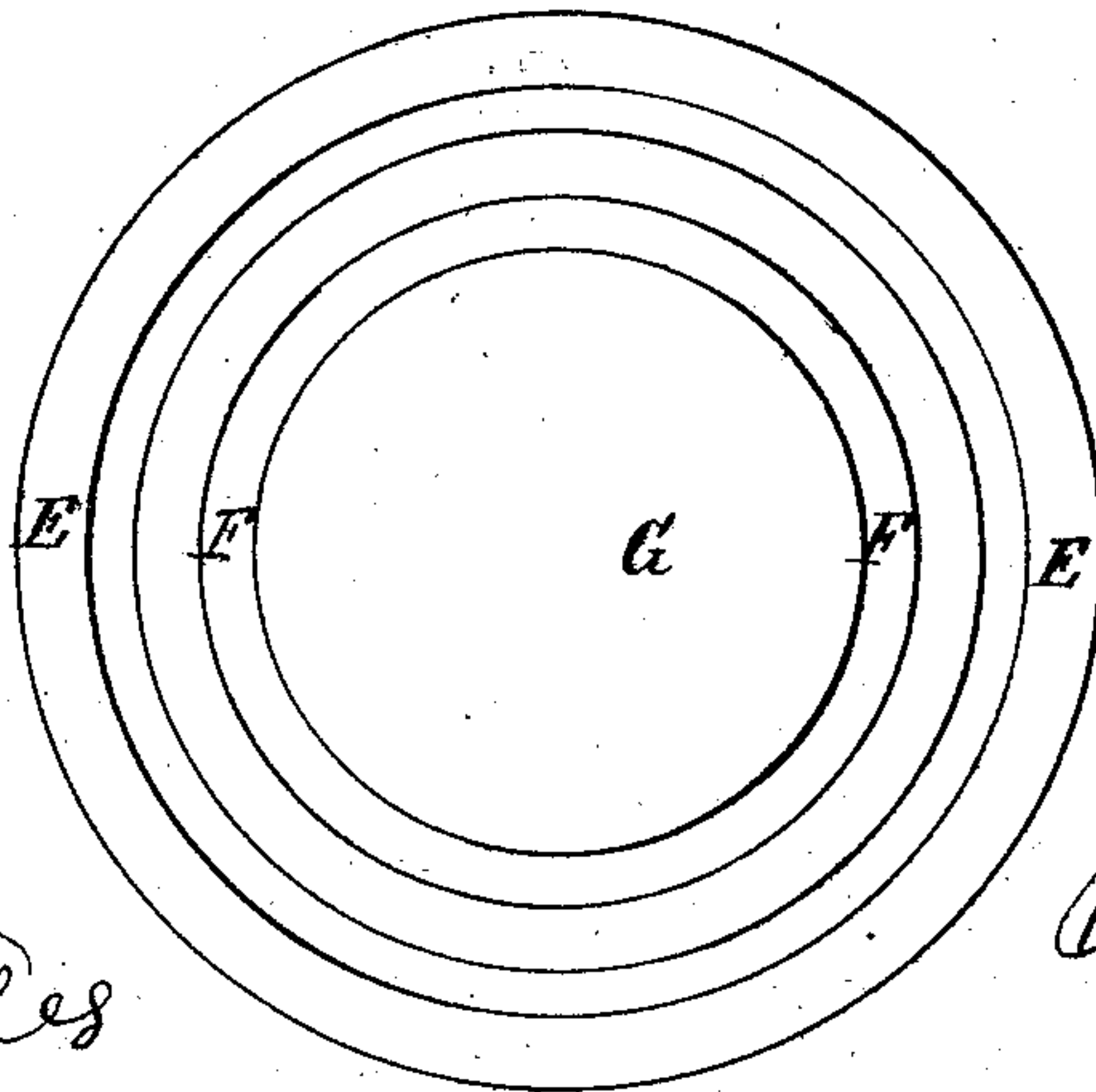


Fig. 4.



*Witnesses;
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UNITED STATES PATENT OFFICE.

WM. M. BOOTH AND JAS. H. MILLS, OF BUFFALO, NEW YORK.

IMPROVEMENT IN DIES FOR STAMPING OR PRESSING SHEET METAL.

Specification forming part of Letters Patent No. 15,278, dated July 8, 1856.

To all whom it may concern:

Be it known that we, WILLIAM M. BOOTH and JAMES H. MILLS, of the city of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Mode of Constructing Dies for Stamping or Forming Sheet Metal, of which the following description, illustrated by the accompanying drawings and references, is sufficiently clear and comprehensive to enable others of competent skill to make and use our invention.

The nature of our improvement relates to a mode of constructing the die, both upper and lower, in the working-surfaces of which certain parts are made movable—as, for instance, the center portion of one and a different portion of the other, or so that the solid part of one shall strike or bear upon the movable part of the other. The movable parts are made by means of springs or their equivalent, (otherwise a lever or weight,) to rise in the lower or descend in the upper to a line, or nearly so, with the outer or working surfaces of the dies, the design or object of which movable parts is to afford support to and cover as much surface of the blank or disk as can be, and also present as nearly two uniform or plane surfaces to receive the blank to be operated upon as the particular form or depth of the die will admit. The blank is placed upon the face of the lower die. The upper die is forced upon it, either by a press or a drop-fall. The movable parts, resting upon springs, recede until they find their bearing in the solid part of the die, thus constantly affording support to the sheet metal until the impression or form of the die is given; and when thus forced together become, as it were, two solid dies, and effect with a single blow or operation what in the ordinary method of stamping with a solid die and a succession of forces requires a dozen (less or more) operations.

Figure 1 is a view of the bottom of the upper or male die. Fig. 2 is a vertical section of the same cut through the center and through the screws upon its opposite sides. Fig. 3 is a like view of the lower or female die, and Fig. 4 is a plan of the same.

A, Figs. 1 and 2, is the body of the upper

die. It is grooved and formed upon the under side or face in any desired manner to correspond with the form of the metal to be pressed, with a circular channel, *c*, for the purpose of receiving the circular ring B, which may also receive upon its lower surface any required shape to give the requisite stamp upon the metal. This ring is supported by the screws C C, held down by the springs D D, but permitted to rise to the depth of the channel when the die is brought down by the yielding of the springs.

E is the stationary or female die. It has grooves cut within it, as represented, to correspond with the upper or male die, and corresponding with the form required to be given to the metal to be pressed or stamped. The circular ring F rests upon the wings *e*, three of which are formed upon the periphery of the circular movable bed-piece G, set within the die E. These wings *e* are set at right angles with said periphery, and, sliding within the slots *a*, prevent the part G from turning. This movable bed-piece G is supported upon the top of a circular key, H, resting upon a helical spring, I, which is kept within its circular opening in the bottom of the die E by the stop or button J. This bed-piece G is thus made to raise and support the metal until pressed down by the action of the upper die. F, resting upon G, of course is pressed down with it. The dies being thus formed and prepared, as above set forth, the process of stamping or pressing the metal is performed in the usual manner and with less time, labor, or expense than in the ordinary way.

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

Pressing, stamping, or forming metals by the upper and lower dies, A and E, or their equivalent, the said dies having movable parts B and G, supported by springs or their equivalents, the whole being constructed and operated in the manner herein set forth.

WILLIAM M. BOOTH.
JAMES H. MILLS.

Witnesses:

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B. TOLES.