(No Model.)

J. BROWNING.

THIMBLE DIE.

No. 441,822. Patented Dec. 2, 1890.

FIG. 2.

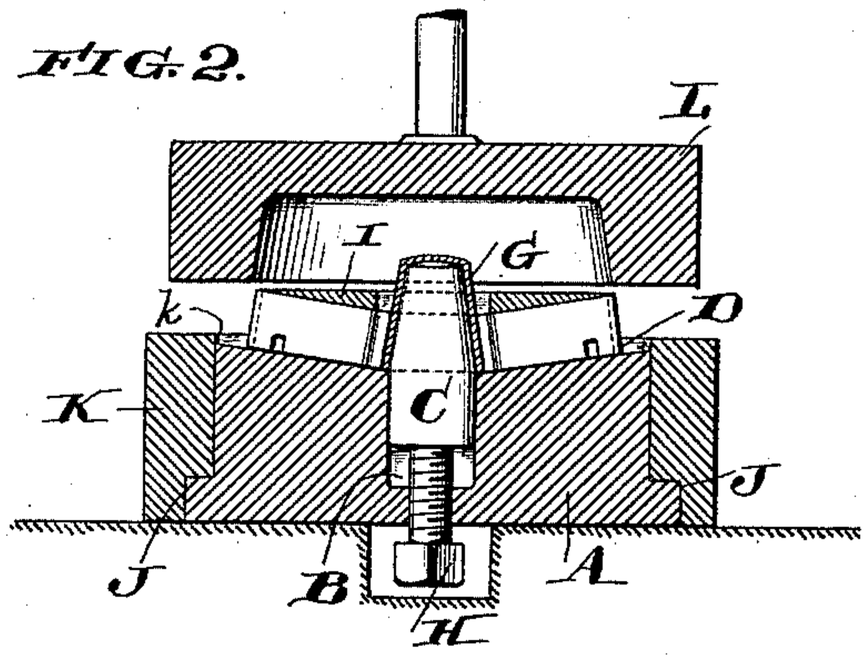


FIG. 1.

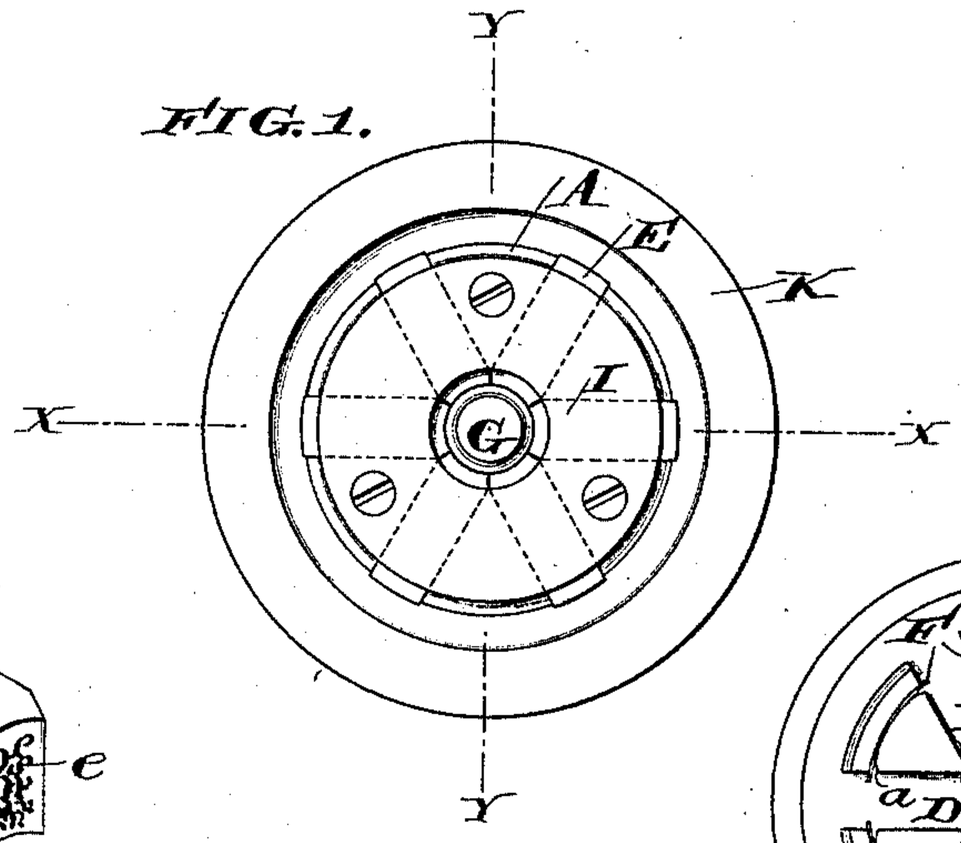


FIG. 5.

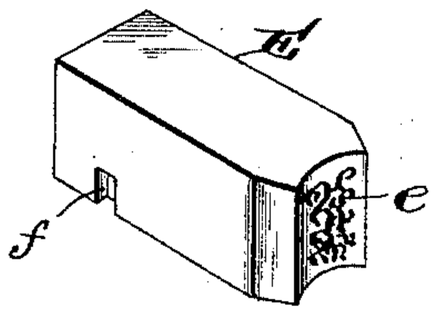


FIG. 4.

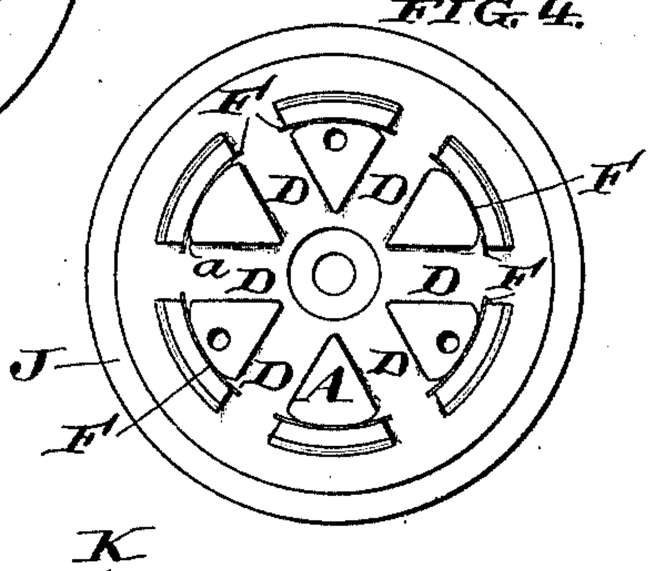
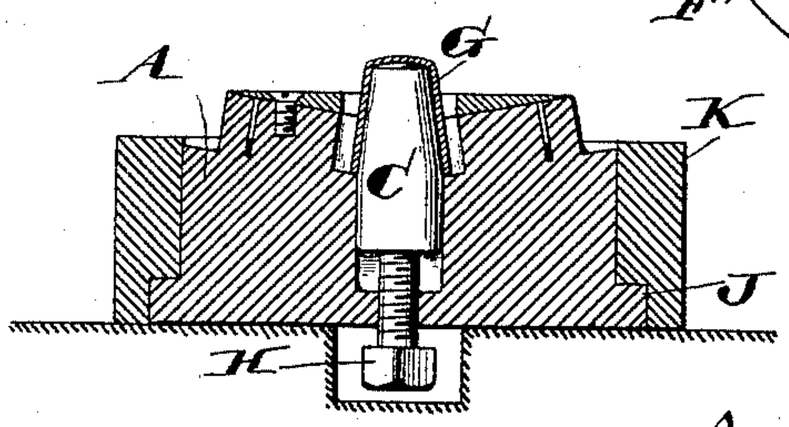


FIG. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH BROWNING, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SIMONS, BROTHER & CO., OF SAME PLACE.

THIMBLE-DIE.

SPECIFICATION forming part of Letters Patent No. 441,822, dated December 2, 1890.

Application filed April 2, 1890. Serial No. 346,253. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BROWNING, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Thimble-Dies, of which the following is a specification.

My invention has reference to dies for thimbles, &c.; and it consists of certain improvements, which are fully set forth in the following specification, and shown in the accompanying drawings, which form a part thereof.

The object of my invention is to more perfectly and simply accomplish the embossing or ornamentation of a thimble or similar article.

One of the difficulties presented in the embossing of thimbles is that the rim or portion to be embossed presents an inclined surface to the dies, so that it has been difficult to obtain an even pressure of the die upon the metal.

In carrying out my invention I employ a suitable spindle for supporting the thimble or other object, and a series of movable dies supported upon an inclined surface, so as to bring their die-surfaces parallel to the surface to be ornamented or embossed. By means of suitable pressure devices these dies are pressed against the thimble to impart the ornamentation thereto.

In the drawings, Figure 1 is a plan view of my improved thimble-die with the cap removed. Fig. 2 is a sectional side elevation of the same on the line *x x* of Fig. 1, including the cap. Fig. 3 is a sectional elevation upon the line *y y* of Fig. 1. Fig. 4 is a plan view of the die-support having its top plate removed, and Fig. 5 is a perspective view of one of the dies.

A is a die-support having a central opening B for the spindle or thimble support C. Radiating from this central opening upon the surface of the die-support A are a series of grooves D, inclining downward toward the spindle C. The inclination of these grooves is the same as the inclination of the side of the spindle or the surface of the metal to be embossed.

E are a number of die-blocks or movable dies provided with the embossing or die surfaces *e*. These dies E are adapted to be received in the inclined grooves D, and to be moved therein so as to press the die-surfaces *e* in contact with the metal to be embossed.

F are springs carried by the die-block A for the purpose of withdrawing the die-blocks E from contact with the metal after the ornamentation has been imparted to it. I do not limit myself to any particular form or arrangement of these springs, though I prefer the construction illustrated in Figs. 3, 4, and 5, in which flat metal springs F are employed fitted in grooves *a* in the body of the die-block between the successive inclined grooves D D, with the ends of the springs projecting a slight distance into the grooves. These projecting ends extend into recesses or notches *f* on each side of the die-blocks E. The tension of these springs F normally holds the die-blocks E out of operation, but when the pressure is applied to force the die-blocks upon the metal the springs are compressed, and the moment the pressure is removed the force of the spring withdraws the die-blocks from contact with the surface. It will be observed, however, that the amount of this motion is very slight, being merely sufficient to allow the removal of the thimble G from the supporting-spindle C.

H is an adjusting-screw by which the spindle C may be raised or lowered in the die-support A.

I is a plate fitting over the top of the die-block A to prevent the die-blocks E becoming displaced in the grooves D. The block A is made with an annular shoulder J.

K is a ring fitting about the die-block A and resting upon the shoulder J, projecting a slight distance above the upper inclined surface, so as to form a slight annular shoulder *k*, which acts as a stop for the die-blocks E and prevents them being accidentally removed from the grooves D.

L is a cap having an inner annular inclined surface, the inclination of which corresponds to the inclination of the inclined grooves D, so that it will act evenly upon the inclined ends of the die-blocks E. This cap is operated by

suitable pressure devices or by hand, so that its inclined surface will press against the projecting ends of the die-blocks E and impart to the die-blocks a pressure against the surface of the metal to be ornamented or embossed. It will be seen that this pressure will be evenly exerted and that the die-surfaces *e* will act directly and evenly on all parts of the metal with which they come in contact. When the cap L is removed, the springs F move the die-blocks back sufficiently to allow the thimble G to be removed from the spindle that it may be replaced by another and the operation repeated. It is apparent that the die-blocks E may be replaced, when desired, by others having different die-surfaces *e*.

While I prefer the details of construction which are here shown, I do not limit my invention thereto, as it is apparent that they may be modified in various ways without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an ornamenting or embossing die, the combination of a central support for the object to be ornamented or embossed, an inclined supporting-surface about said central support, embossing-dies carried by said inclined supporting-surface and movable thereon, and means to move said dies upon said inclined surface and force their ends against the object to be embossed.

2. In an ornamenting or embossing die, the combination of a central support for the object to be ornamented or embossed, having an inclined surface, an inclined supporting-surface about said central support, the inclination of which is equal to the inclination of the surface of said central support, embossing-dies carried by said inclined supporting-surface and movable thereon, and means to move said dies upon said inclined surface and force their ends against the object to be embossed.

3. In an ornamenting or embossing die, the combination of a central support for the object to be ornamented or embossed, an inclined supporting-surface about said central support, embossing-dies carried by said inclined supporting-surface and movable thereon, and a cap having an inner inclined annular face adapted to press upon the outer ends of said dies, the inclination of said annular face being equal to the inclination of the inclined supporting-surface.

4. In an ornamenting or embossing die, the combination of a central support for the object to be ornamented or embossed, an inclined supporting-surface about said central support, embossing-dies carried by said inclined supporting-surface and movable thereon, means to move said dies upon said inclined surface and force their ends against the object to be embossed, and springs to return said embossing-dies to their normal positions when the pressure is removed.

5. The combination of a die having a central support, a series of grooves radiating from said central support and having their lower surfaces inclined, a series of dies carried by said grooves, and means to move said dies toward the central support.

6. The combination of the support A, having the inclined grooves D, the spindle C, the dies E, supported by the grooves D, and having notches *f*, the springs F, having their ends projecting into the notches *f*, and the cap L.

7. The combination of the support A, having the inclined grooves D, the support or spindle C, the ring K, encircling the support A and forming the annular shoulder *k*, the dies E, and cap L.

8. The combination of the support A, having the inclined grooves D, the support or spindle C, the ring K, encircling the support A and forming the annular shoulder *k*, the dies E, plate I, and cap L.

In testimony of which invention I have hereunto set my hand.

JOSEPH BROWNING.

Witnesses:

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