(No Model.)

T. W. CREES.

PRESS FOR SHAPING AND ORNAMENTING HOLLOW METAL ARTICLES.

No. 465,836. Patented Dec. 29, 1891.

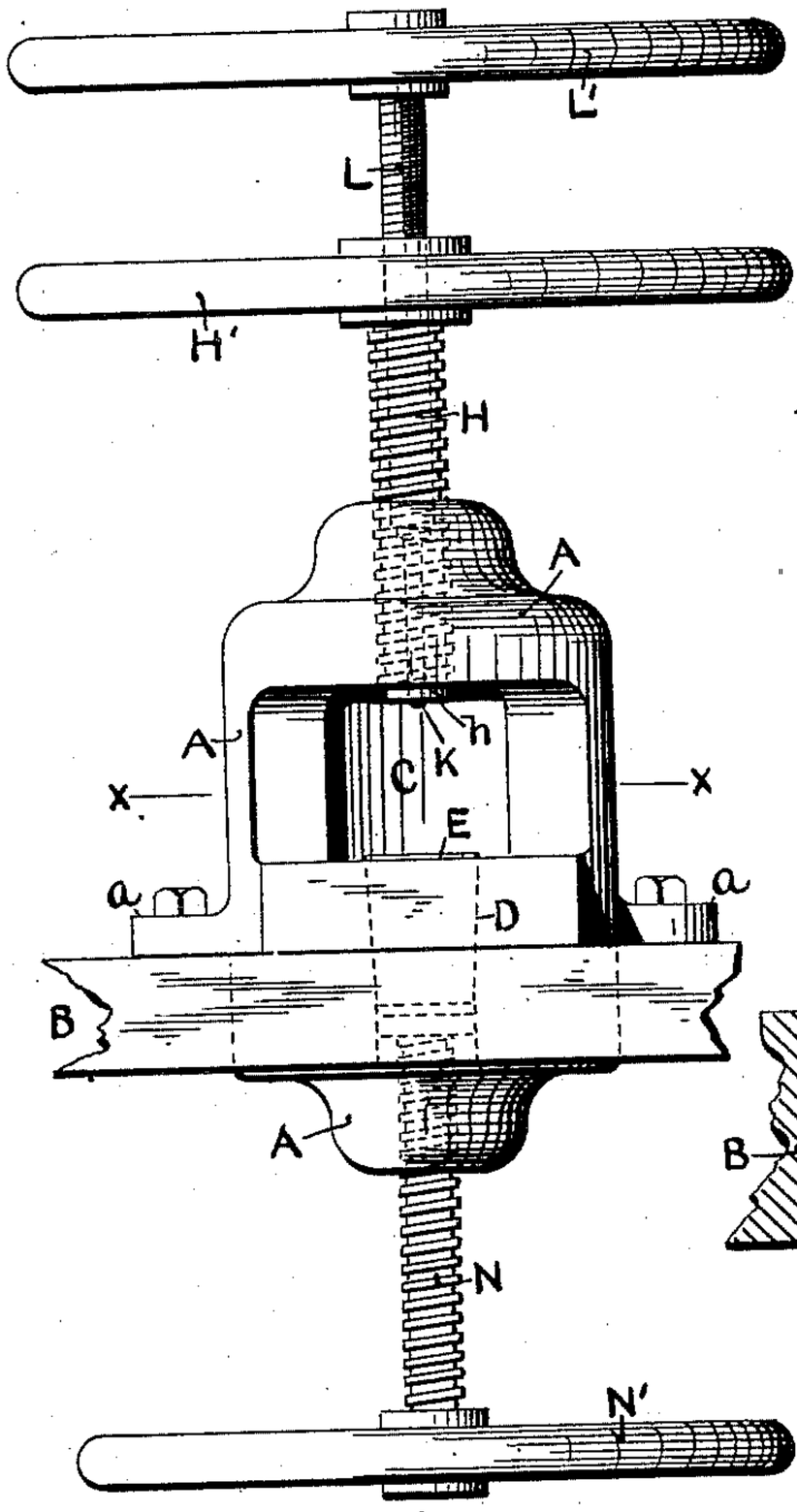

FIG. 1.

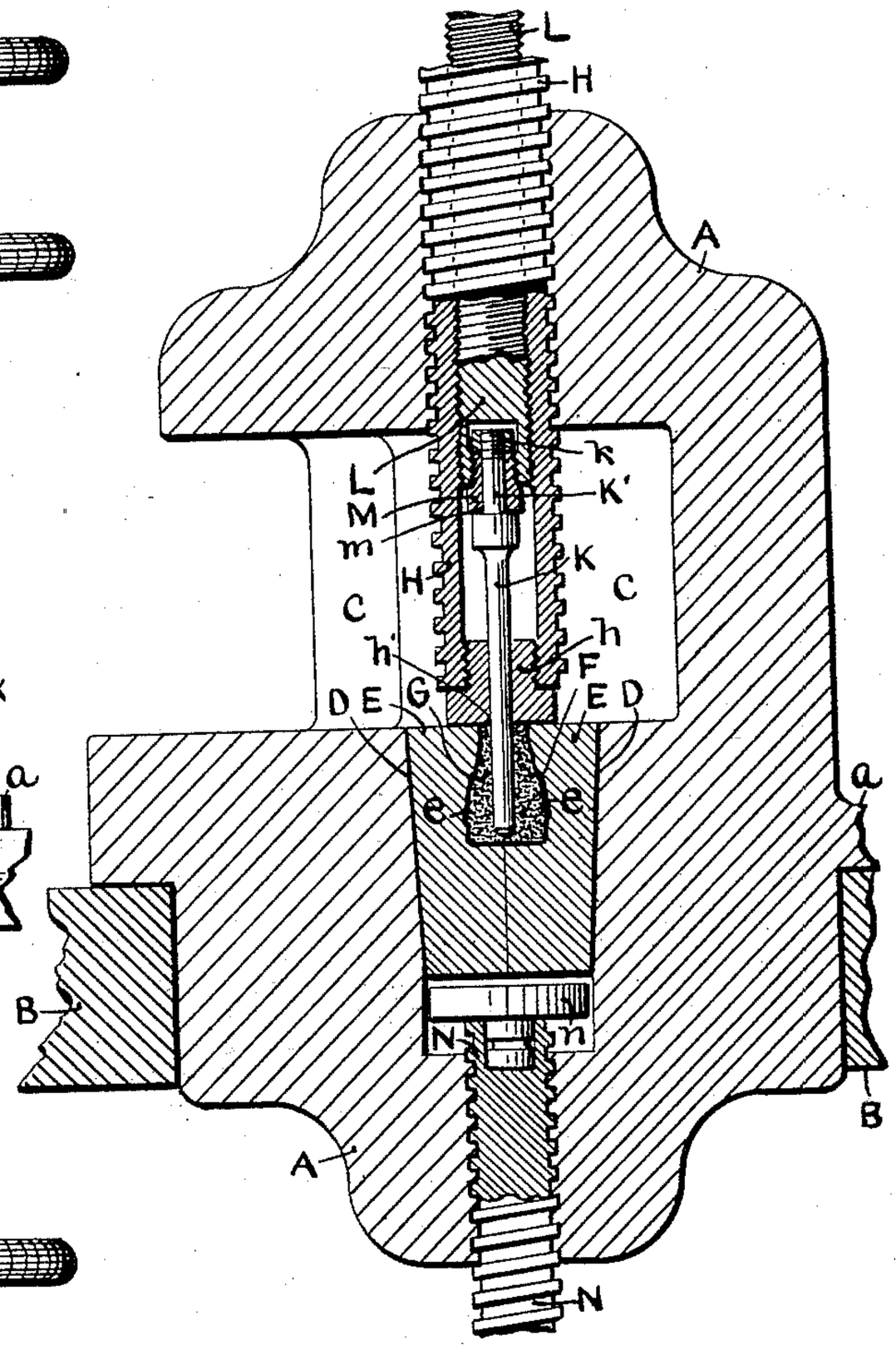

FIG. 3.

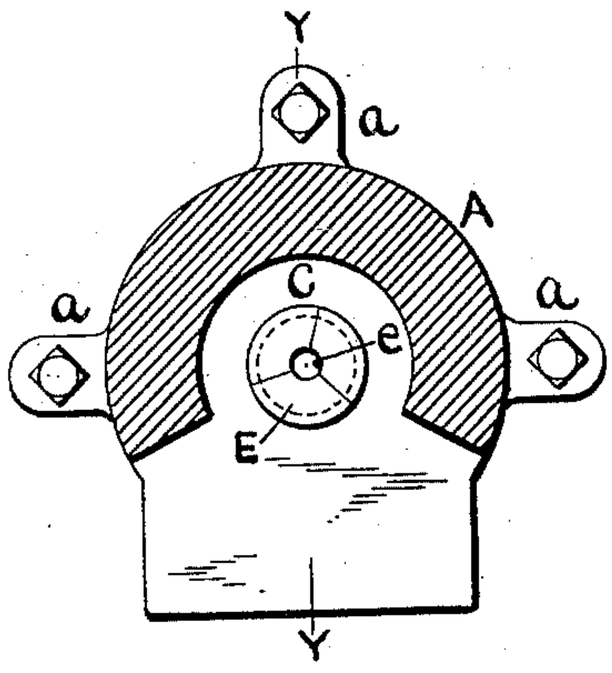

FIG. 2.

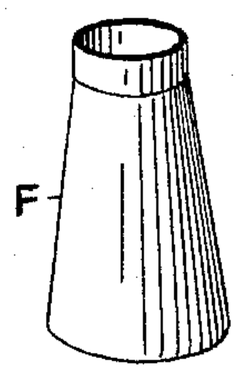

FIG. 4.

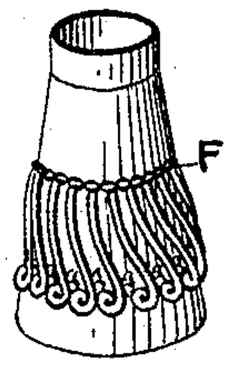

FIG. 5.

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UNITED STATES PATENT OFFICE.

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PRESS FOR SHAPING AND ORNAMENTING HOLLOW METAL ARTICLES.

SPECIFICATION forming part of Letters Patent No. 465,836, dated December 29, 1891.

Application filed October 19, 1891. Serial No. 409,189. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WALTER CREES, a subject of Her Majesty the Queen of Great Britain and Ireland, residing at Birmingham, county of Warwick, England, have invented a new and useful Improvement in Presses for Shaping and Ornamenting Hollow Metal Articles; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a description thereof.

This invention relates to a press for shaping and ornamenting, either in relief or intaglio, hollow articles of metal—such, for instance, as cane-heads, cream-pitchers, sugar-bowls, and a large variety of manufactures in gold, silver, &c., which are made of thin or sheet metal.

The invention consists in certain features of construction and arrangement, hereinafter described and claimed.

In the drawings, Figure 1 represents a face or front view of a press embodying the invention. Fig. 2 shows a horizontal section of the same on line X X of Fig. 1. Fig. 3 represents, on a much larger scale, a transverse section of the press on line Y Y of Fig. 2. Fig. 4 shows in perspective, on a still larger scale, a plain metal cane-head prior to being operated upon by the press. Fig. 5 shows the same after it has been ornamented in relief or given its final shape by the press.

The press consists of a body A, which may be mounted on suitable legs or may be furnished with ears *a*, through which bolts or screws can pass to secure the press to a bench or platform, as B. This body is provided with a cavity C, opening from the front, and below this cavity is arranged a cavity D, circular in outline, by preference, and tapering, so as to be smaller at the bottom than at the top. The cavity D is intended to receive a die E, made, by preference, in the shape of the frustum of a cone and in two or more parts, three being shown in Fig. 2. On the interior of the die E is cut the mold or cavity *e*, that is to give the shape and ornament to the hollow metal article to be made, the said mold or cavity *e* being open at the top.

The article F to be made (say a cane-head) is in any preferred and proper manner first given its general shape, as shown in Fig. 4. Its interior is then properly packed or filled with some suitable material or substance G, Fig. 3, having the proper density and capacity for displacement—such, for instance, as gutta-percha. The article is then placed in the die-mold *e* and the die is passed into the cavity C and lowered into the cavity D, where it will rest, substantially as shown in Fig. 1.

For seating the die E in the cavity D, and thereby bringing the die parts into as close a relation as possible and holding them so, suitable means are employed, such as a screw H, to the upper end of which a wheel H′ is secured, the screw being threaded through the upper portion of the body of the press. When the screw H is lowered sufficiently, the die E will be forced tightly into the cavity D, and the lower end or part *h* of the screw (the face of which end is parallel with the upper surface of the die and of the proper size or area) will close and seal the upper end or mouth of the mold or cavity *e*, as shown in Fig. 3, and thereby prevent the escape of any of the packing G during the subsequent operation. The article F is forced to conform to the mold *e*, and its shape and ornamentation thereby determined by the displacement of the packing or filling G. This displacement is secured by the descent into the packing of a plunger K, which is of a proper size to enter the article F and works in the longitudinal axis of the screw H through a closely-fitting hole *h′* in the lower end of said screw. The plunger K is mounted on the lower end of a screw L, which is threaded into the screw H and has a wheel L′ at its upper end. Preferably the plunger K is swiveled on the screw L, so as not to rotate with the screw when the plunger is in engagement with the packing G, and this swivel connection may be secured by passing the upper end K′ of the plunger through a hole *m* in a block M and rotatively securing the plunger to the block by a nut or fastening *k*, then securing the block M to the screw L, as by screwing the block into the screw, as shown in Fig. 3. For economy of time both the screws H and L may be made to descend together from the position shown in Fig. 1 and holding the same relation as shown in said figure. When the screw H has seated the die

and sealed the mouth of the mold *e*, the screw L is made to descend still farther, thereby forcing the plunger K into the packing G and displacing it laterally or radially and causing the article F to take the shape and ornamentation of the mold *e*. The plunger is withdrawn by raising the screw L, when both the screws H and L are raised to the position shown in Fig. 1.

For starting the die E out of the cavity D and raising the die so that it may be grasped and removed from the press, suitable means are employed, such as a screw H, having a wheel N′ on its lower end and threaded through the lower portion of the body of the press, and preferably supplied with a plate *n*, Fig. 3, swiveled to its upper end. The screw N also furnishes a convenient means for lowering the die into the cavity D, as will be readily understood. When the die has been raised by the screw N, it is removed from the press, opened, and the article F, completed, as shown in Fig. 5, for instance, is taken from the die. The filling or packing G is then removed from the article and may be used again.

My improved press is very efficient in action, and by its use articles of the character described can be shaped and ornamented with great accuracy and success.

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

1. The combination, with the press-body having a tapering die-supporting cavity, of a screw in alignment with said cavity for seating the die therein and sealing the mouth of the die-mold, a plunger working through said screw, and a lever attached to the plunger for reciprocating the same, substantially as and for the purposes specified.

2. The combination, with the press-body having a tapering die-supporting cavity, of a screw in alignment with said cavity for seating the die therein and sealing the mouth of the die-mold, a plunger working through said screw, a screw attached to the plunger for reciprocating the same, and a screw in alignment with the die-cavity for starting the die and raising it from said cavity, substantially as set forth.

3. The combination, with the press-body having a tapering die-supporting cavity, of a screw in alignment with said cavity for seating the die therein and sealing the mouth of the die-mold, a plunger working through said screw, and a screw swiveled to the plunger for reciprocating the same, substantially as forth.

4. The combination, with the press-body having a cavity C and a tapering die-cavity D, leading out of the cavity C, of a screw H, threaded through the upper portion of the press-body, in alignment with the cavity D for seating the die and sealing the mouth of the die-mold, a screw L, threaded into the screw H and having upon its lower end a plunger K, and a screw N for raising the die from the die-cavity, substantially as set forth.

THOMAS WALTER CREES.

Witnesses:
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