

(No Model.)

2 Sheets—Sheet 1.

T. HARPER.

TYPE FOR PRINTING LAMP SHADES AND ANALOGOUS ARTICLES.

No. 453,772.

Patented June 9, 1891.

Fig. 1

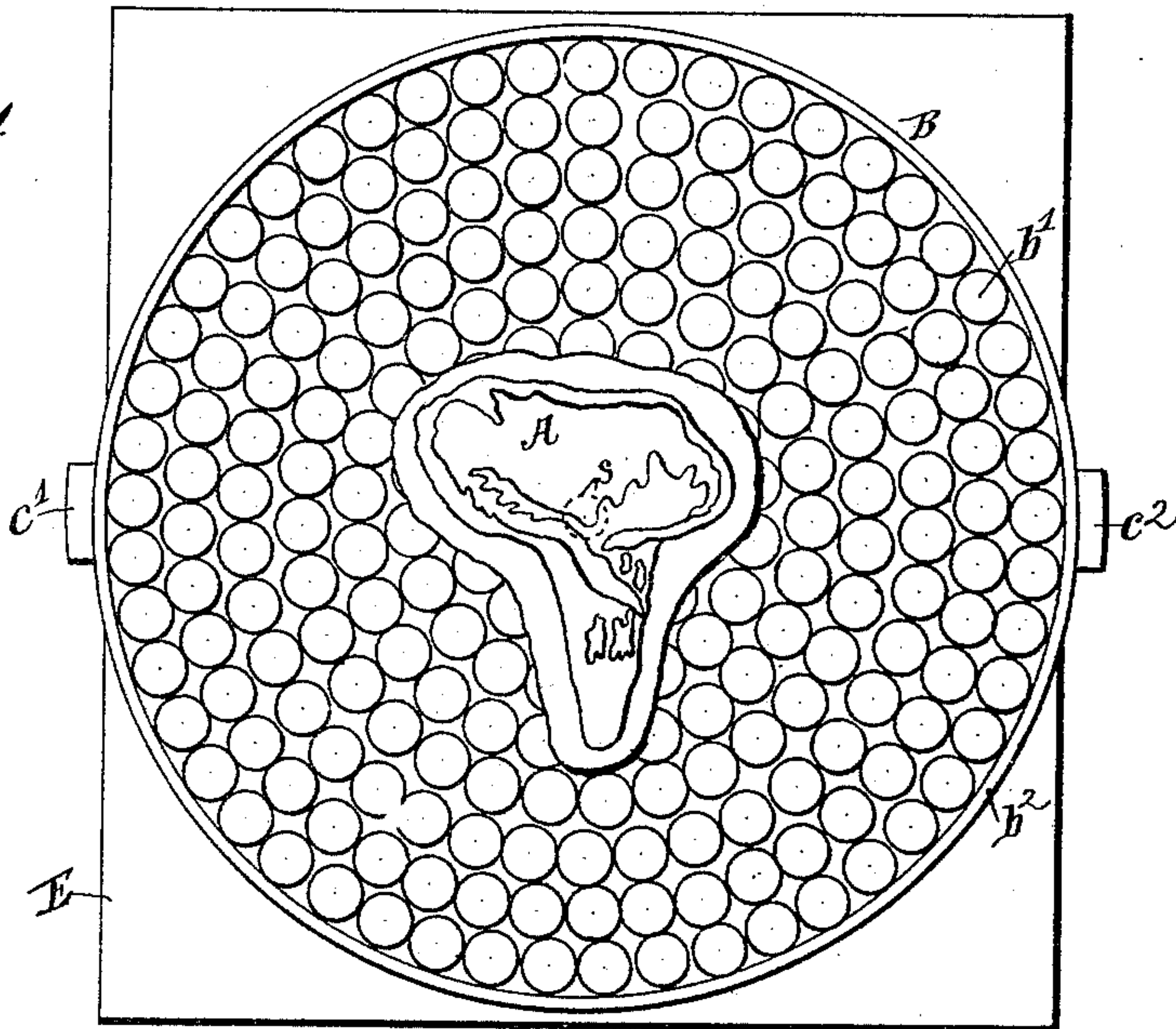


Fig. 2

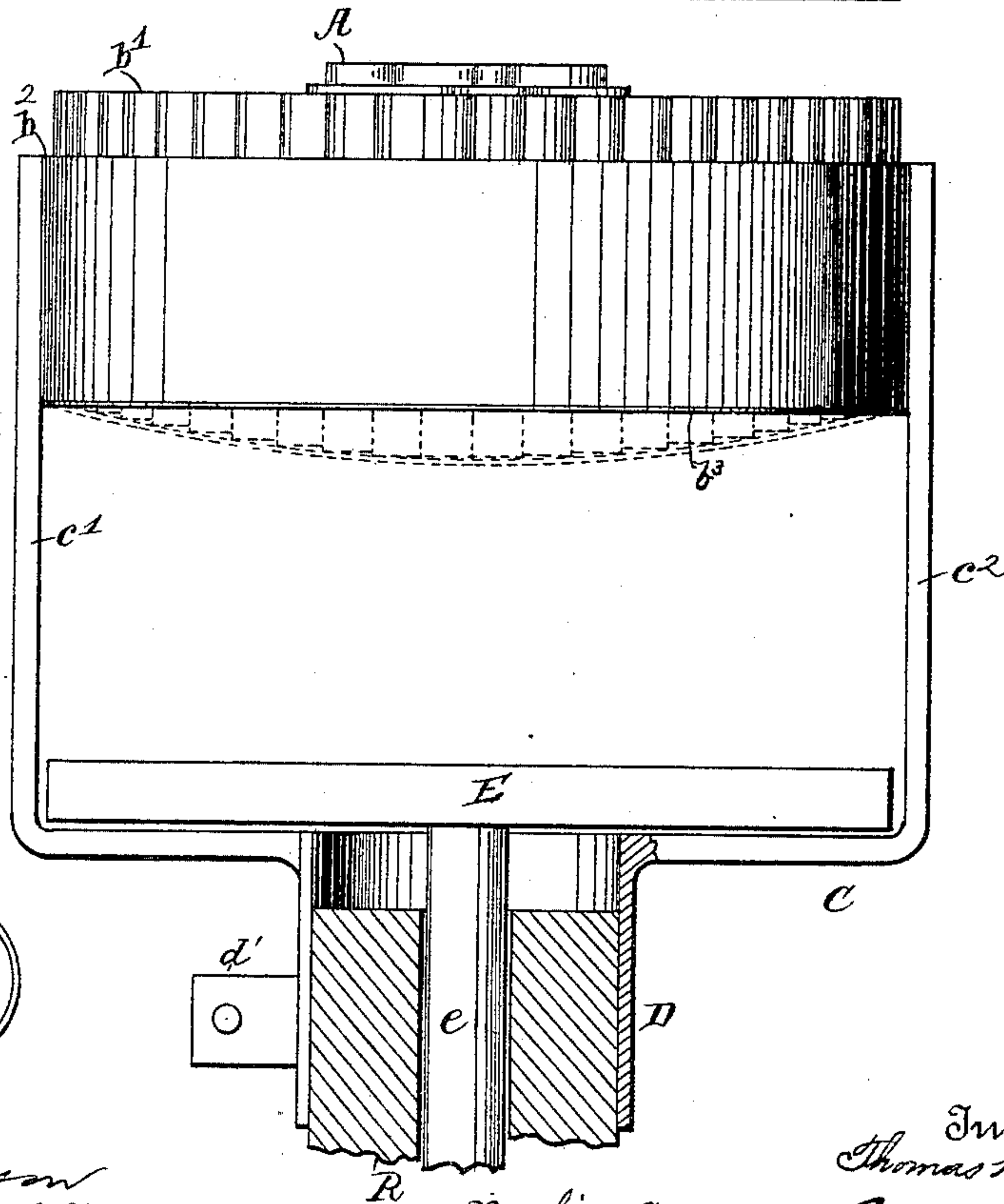
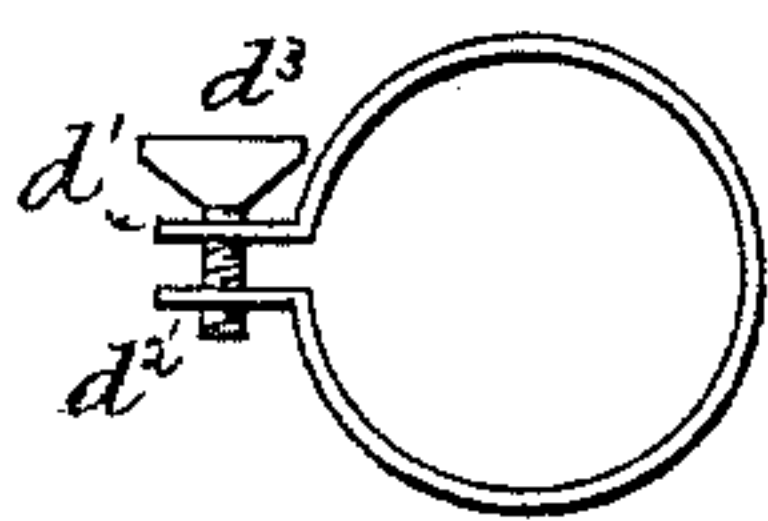


Fig. 3.



Witnesses

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Wm. M. Pliff

Inventor  
Thomas Harper  
By his Attorney  
Edwin H. Brown

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Fig. 4

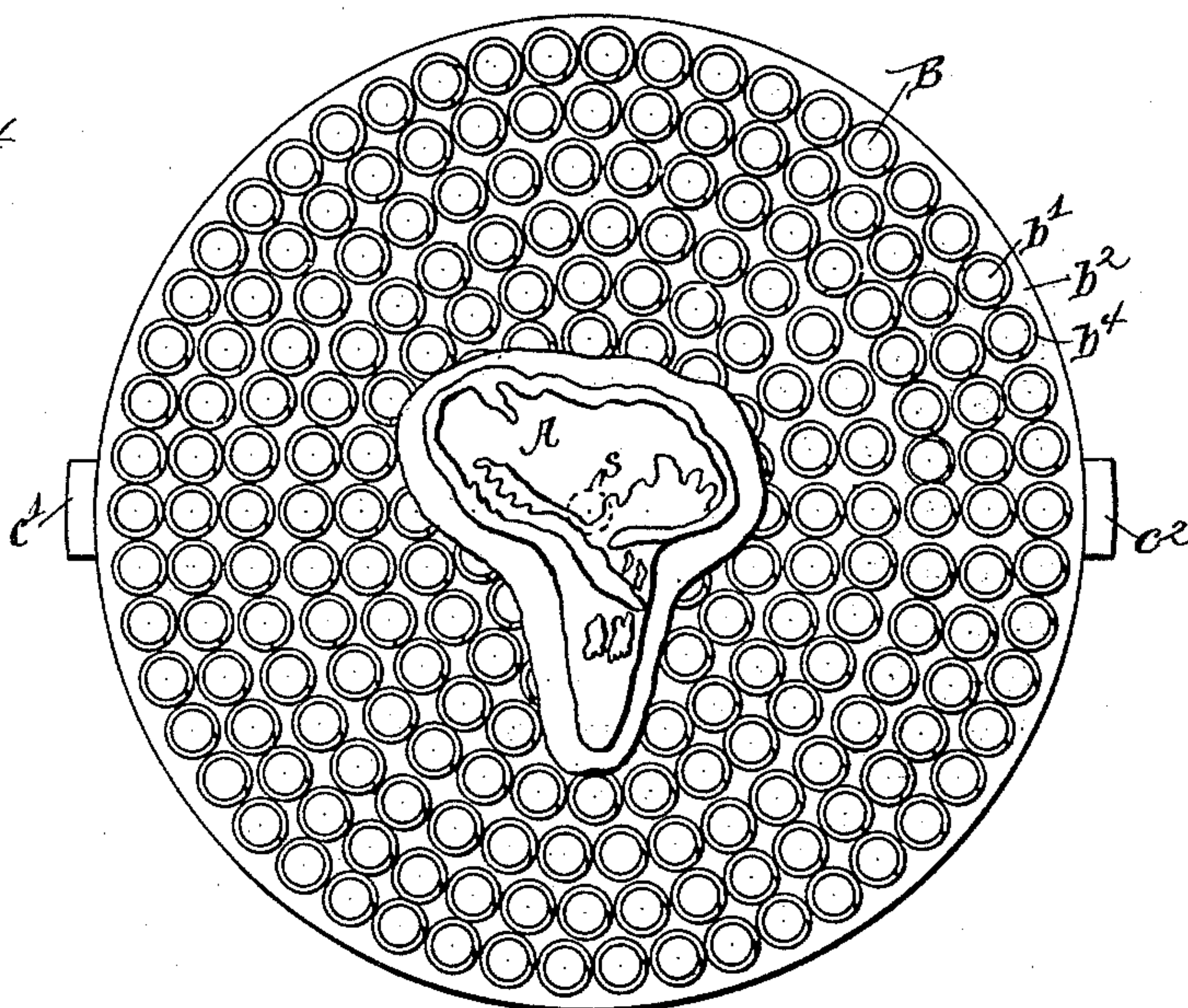
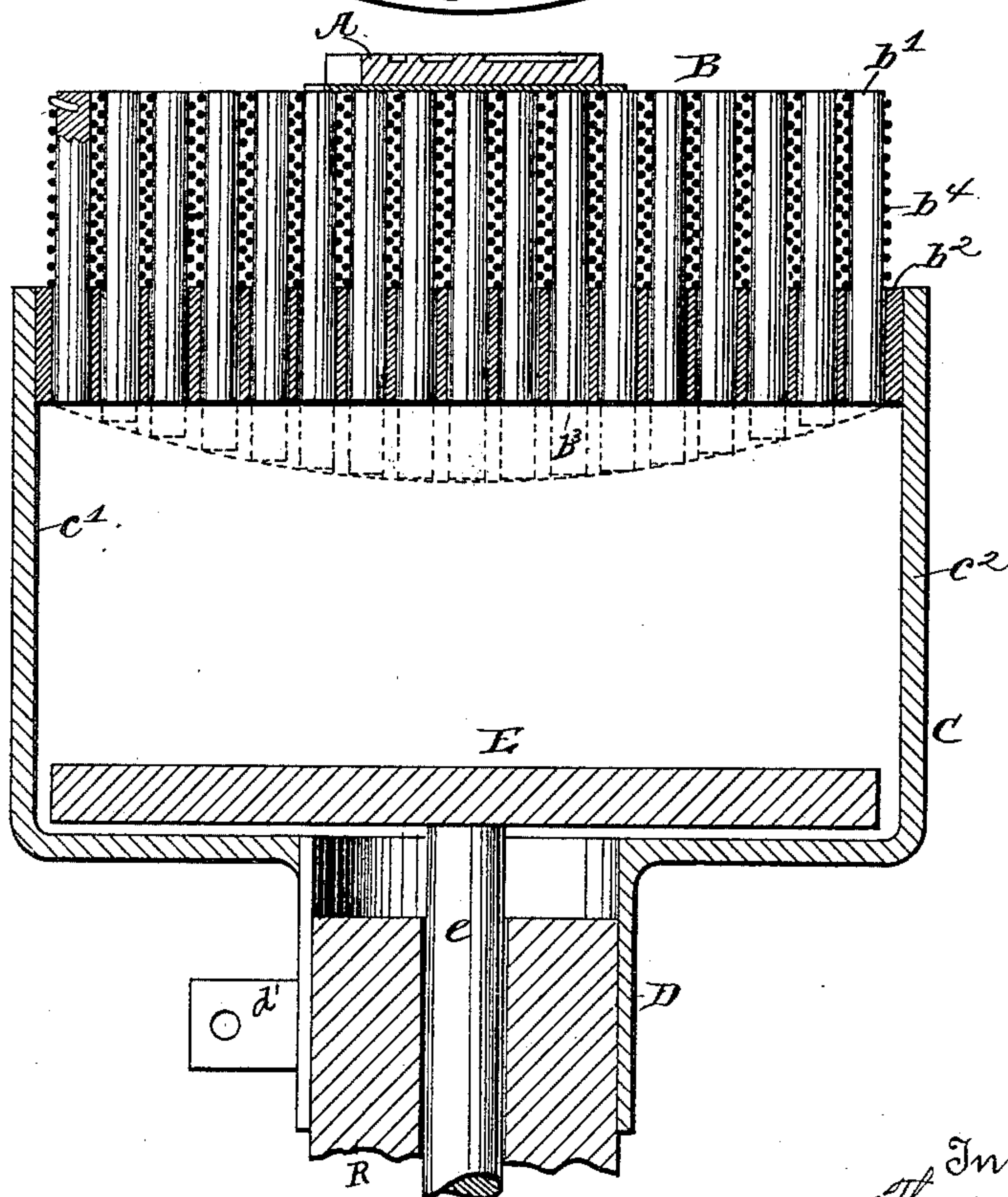


Fig. 5



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# UNITED STATES PATENT OFFICE.

THOMAS HARPER, OF WESTCHESTER, ASSIGNOR TO JOHN HARPER, OF  
BROOKLYN, NEW YORK.

TYPE FOR PRINTING LAMP-SHADES AND ANALOGOUS ARTICLES.

SPECIFICATION forming part of Letters Patent No. 453,772, dated June 9, 1891.

Application filed August 20, 1890. Serial No. 362,498. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS HARPER, a citizen of the United States, and a resident of Westchester, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Type for Printing Lamp-Shades and Analogous Articles, of which the following is a specification.

The object of my improvement is to provide a simple and inexpensive type which will present a substantially flat surface for inking and will yield to adapt itself to the convexity of a lamp-shade or like article.

I will describe a type embodying my improvement, and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a face view of a type embodying my improvement. Fig. 2 is a sectional side view of the same. Fig. 3 is an end view of a socket comprised in the type, and this view is made to a smaller scale than Figs. 1 and 2. Fig. 4 is a front view of a type of modified construction. Fig. 5 is a sectional side view of the type illustrated in Fig. 5.

Similar letters of reference designate corresponding parts in all the figures.

I will first describe the example of the improvement illustrated by Figs. 1 and 2.

A designates a printing-surface made of sheet-rubber, rubber cloth, or analogous material, cut to a shape to represent some article or thing.

B designates a support consisting of a number of round pins or cylinders  $b'$ , fitted together in close contact within a case  $b^2$ , which may be made of sheet metal. These pins or cylinders may advantageously be made of wood. At the rear or inner ends they are fastened by cement or otherwise to a sheet of rubber, rubber cloth, or like material  $b^3$ , which at the edge is secured to the rear edge of the case  $b^2$ . This sheet forms a spring. Normally the pins or cylinders will occupy parallel positions, and the printing-surface will consequently be flat. In this condition it can be properly inked. When pressed against a convex article—such as a lamp-shade—the pins or cylinders will be free to yield independently to allow of the printing-surface adapting itself to the convexity of the article.

Hence this type is capable of producing imprints upon convex surfaces.

The case  $b^2$  is shown as of vertical form and as secured to arms  $c' c^2$ , forming part of a holder C, which comprises a socket D of cylindrical form having a longitudinal opening and provided adjacent to the opening with lugs  $d' d^2$ , which may be drawn together by means of a screw  $d^3$ , which passes loosely through the lug  $d'$  and engages with a tapped hole in the lug  $d^2$ . The socket is intended to fit a movable arm R in a press.

In order to insure the flattening out of the printing-surface, a plate or follower E may be combined with the holder C and support B. This holder, as shown, is of rectangular form, fits between the arms  $c' c^2$ , and is supported by a shank  $e$ , which passes into a longitudinal cavity in the arm R. This plate is intended to be moved upward or outward into contact with the sheet  $b^3$ , preliminarily to the inking of the printing-press, and upon contacting with said sheet it will bring the ends of the pins or cylinders  $b'$  into the same plane, if they should have previously occupied any different relation.

The printing-surface A will preferably be fastened only to the center pin or cylinder  $b'$ . It may be fastened thereto by cement, as at s.

Turning now to Figs. 4 and 5, it will be seen that the printing-surface A is similar to the one in the first-described example of my improvement, and that the support B for the printing-surface consists of a number of pins or cylinders  $b'$  fitted in a case  $b^2$ . In this example of my improvement the pins or cylinders are not, however, arranged in contact with each other, but the case  $b^2$  is provided with a number of cavities, and the pins or cylinders are fitted in these cavities so loosely as to be free to slide lengthwise therein. Across the back of the case  $b^2$  a sheet of rubber, rubber cloth or like material  $b^3$  is extended. This at the edges is fastened to the back of the case. The rear or inner ends of the pins or cylinders rest against this sheet, and may be secured thereto by cement or otherwise. In front of the case  $b^2$  the pins or cylinders are surrounded by helical springs  $b^4$ , which at one end bear against the front or outer side of the case  $b^2$ , and at the other end



are secured to the pins or cylinders—as, for instance, by being driven into the latter. The pins or cylinders cannot be moved inward without compressing these springs. When-  
 5 ever the pressure upon the outer ends of the pins or cylinders is relaxed, the springs will serve to readjust the pins or cylinders to their normal position. The case  $b^2$  is secured to arms  $c' c^2$ , forming part of a holder C, which  
 10 is provided with a socket D, like that described in connection with the first example of my improvement.

Preferably the printing-surface will be secured merely to the center pin. Cement ap-  
 15 plied, as at s, may serve to secure it in place.

A follower E may be combined with the holder C and support B, as in the other example of my improvement.

It will be seen that the support B is much  
 20 larger than the printing-surface A. This is to render the employment of larger printing-surfaces possible.

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

25 1. A type having a printing-surface and a support therefor, composed of longitudinally-moving pins or cylinders, substantially as specified.

30 2. A type having a printing-surface and a support therefor, composed of longitudinally-moving pins or cylinders fitting within a case, substantially as specified.

3. A type having a printing-surface and a support therefor, composed of longitudinally-moving pins or cylinders fitting within a case, 35 and a yielding material arranged across the rear or inner ends of said pins or cylinders, substantially as specified.

4. A type having a printing-surface and a support therefor, composed of longitudinally- 40 moving pins or cylinders fitting within a case, and springs, one for each pin or cylinder, for holding them normally in parallel positions, substantially as specified.

5. A type having a printing-surface and a 45 support therefor, composed of longitudinally-moving pins or cylinders fitting within a case, springs surrounding said pins or cylinders, and a sheet of material extended across the inner or rear ends of said pins or cylinders, 50 substantially as specified.

6. A type having a printing-surface and a support therefor, composed of longitudinally- 55 moving pins or cylinders fitting within a case, and a plate or follower arranged adjacent to the rear or inner ends of the pins or cylinders, substantially as specified.

Signed at New York, in the county of New York and State of New York, this 12th day of May, A. D. 1890.

THOMAS HARPER.

Witnesses:

ANTHONY GREF,  
 S. O. EDMONDS.