(No Model.)

T. HARPER.

TYPE FOR PRINTING LAMP SHADES.

No. 453,770. Patented June 9, 1891.

Fig. 1.

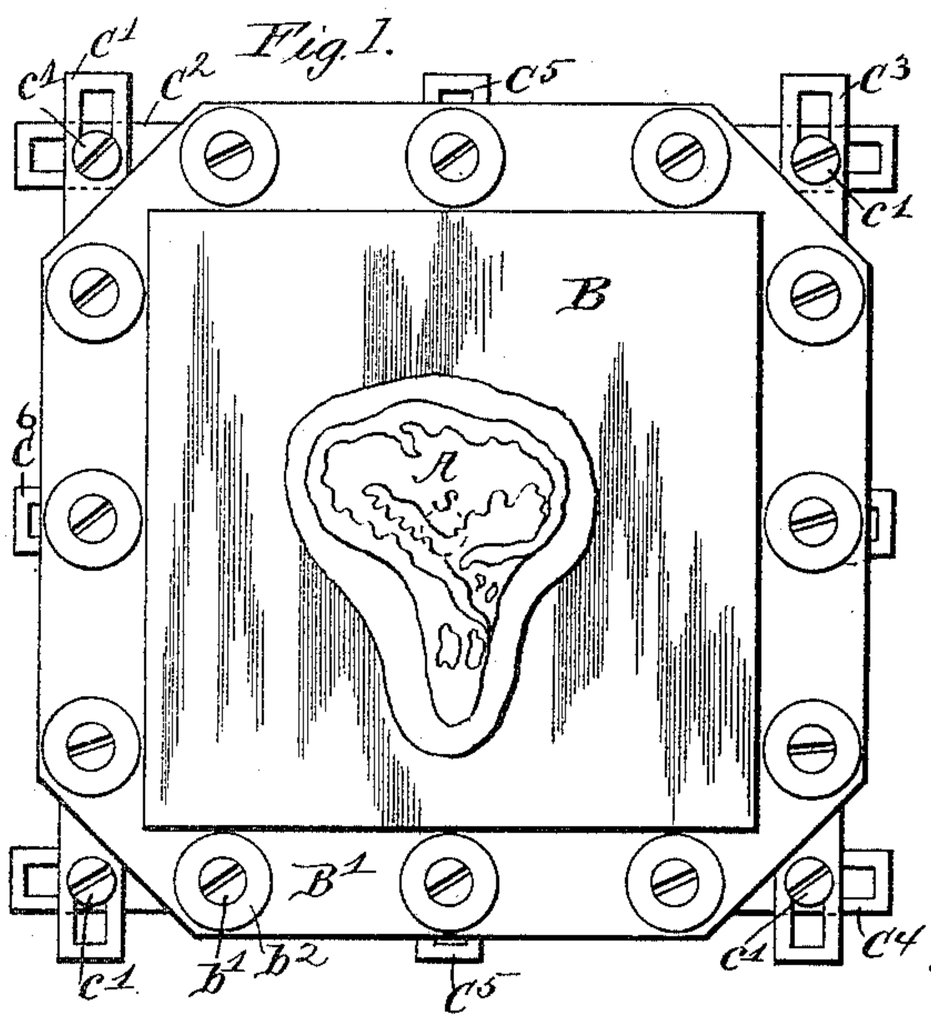


Fig. 2.

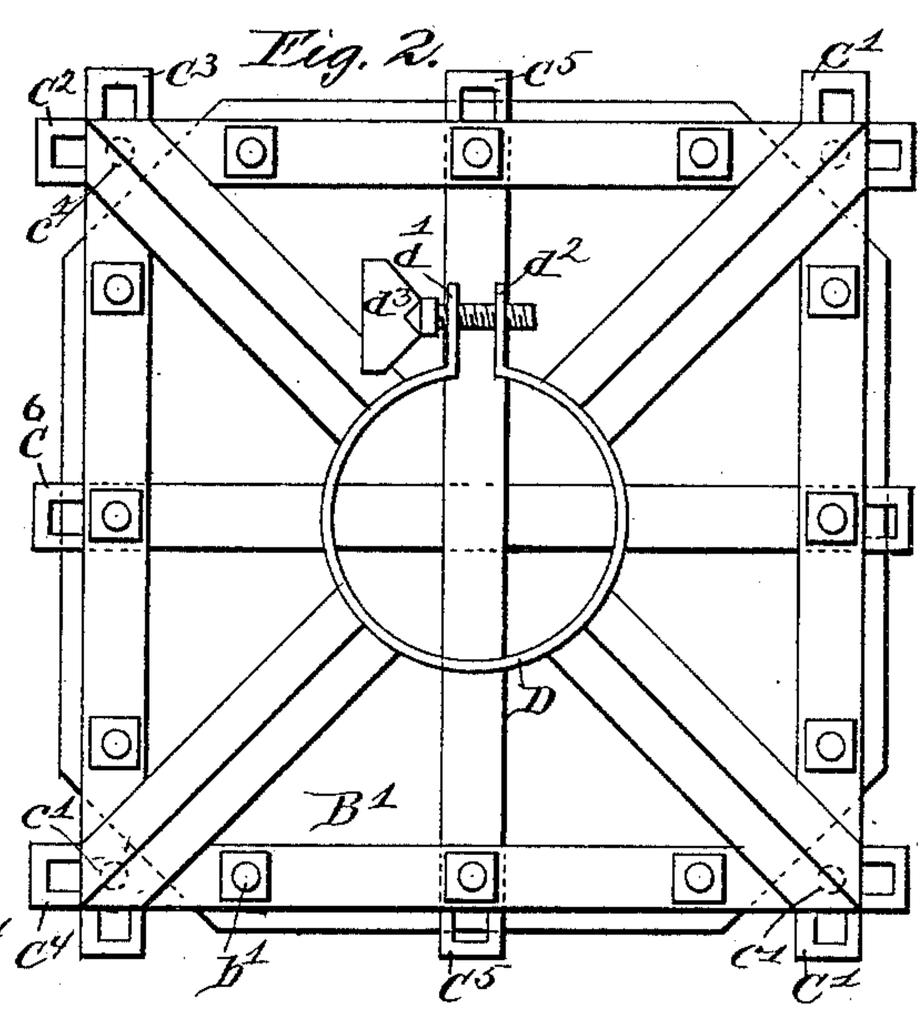
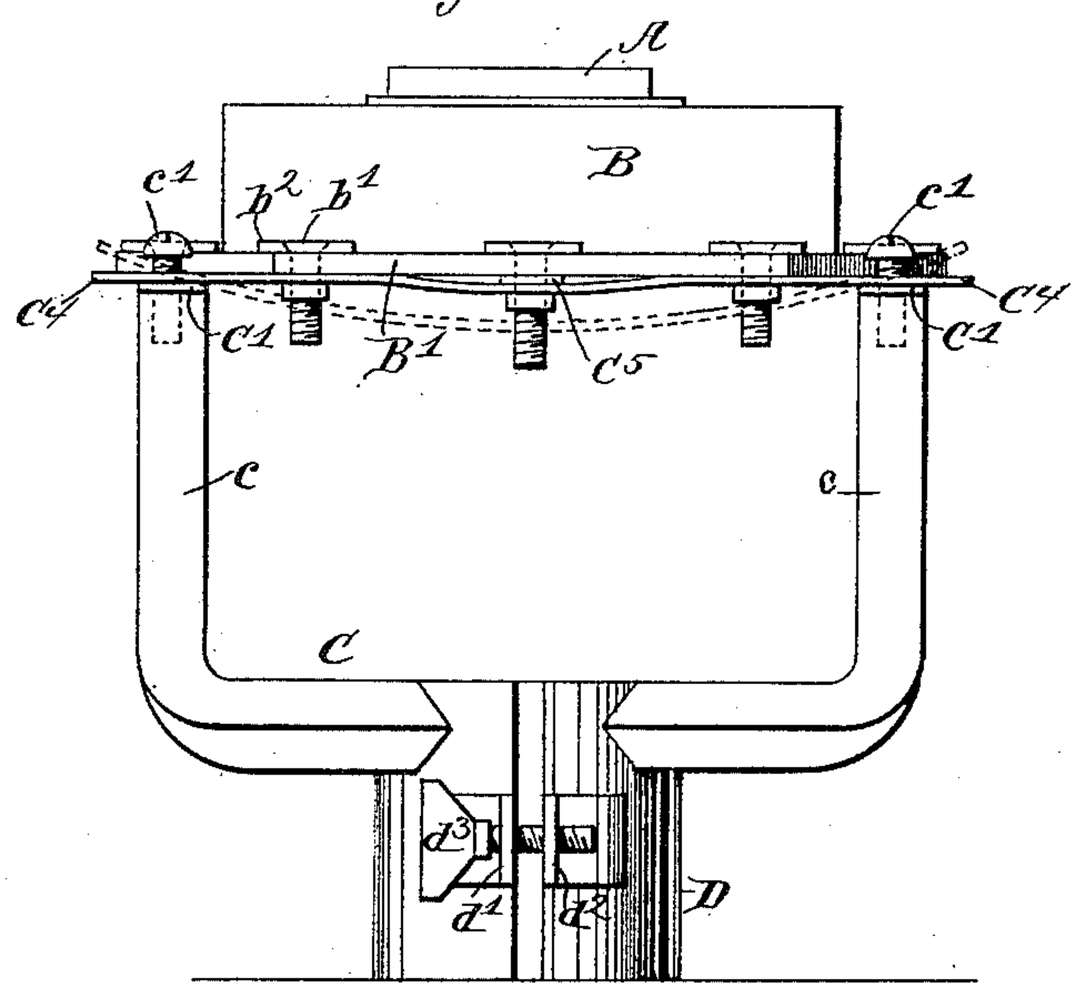


Fig. 3.



Witnesses
C. R. Ingman
Wm. M. Iliff.

Inventor
Thomas Harper
By his Attorney
Edwin H. Brown

UNITED STATES PATENT OFFICE.

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

TYPE FOR PRINTING LAMP-SHADES.

SPECIFICATION forming part of Letters Patent No. 453,770, dated June 9, 1891.

Application filed August 20, 1890. Serial No. 362,496. (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 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 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 back view thereof. Fig. 3 is a side view of the same.

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

Referring by letter to the accompanying drawings, A′ designates the printing-surface of a type. It will preferably be made of rubber or rubber cloth.

B^2 designates a support for the printing-surface, consisting of a mass of yielding composition—such, for example, as that employed for the surfaces of the inking-rollers in printing-presses—composed of glue, glycerine, and molasses. This composition, as shown, is made in the form of a block, which is fastened at the back to a sheet B′ of india-rubber, rubber cloth, or like elastic material. The composition forming the support B^2 may be secured to the sheet B′ throughout its entire back surface or only at one or more points, as may be preferred. I deem it advantageous to fasten the printing-surface A′ to the support B^2 only at the center, as then it and the support B^2 will be more free to adapt themselves to the surfaces to be printed. The printing-surfaces may be secured to the support B^2 and the latter to the sheet B′ by means of any suitable cement, as at *s*′, Fig. 4. The sheet B′ is shown as secured to a frame composed of strips C′ C^2 C^3 C^4 of sheet metal. The end portions of these strips cross each other and are longitudinally slotted. Through their slots pass screws *c*′, which engage with tapped holes in the ends of the arms *c*, comprised in a holder C^9. The screws *c*′ do not clamp the strips C′ C^2 C^3 C^4 to the arms *c*, but leave them loose, so that they can slide longitudinally and also bend to allow the sheet B′ to bend, so as to conform more or less to the convexity of surfaces upon which printing is to be done. The sheet B′ is fastened by screws *b*′ to the strips C′ C^2 C^3 C^4. As here shown, the heads of the screws *b*′ fit in countersunk holes in washers or plates b^2, which bear against the top of the sheet B′, and have nuts applied to their lower ends beneath the strips C′ C^2 C^3 C^4. It will be seen that the arms *c* of the holder C^9 extend to the points where the strips C′ C^2 C^3 C^4 intersect.

C^5 C^6 designate two metallic strips, which cross each other opposite the center of the support B^2 and have longitudinally-slotted extremities, which receive those screws *b*′ which are at the centers of the sides of the sheet B′. The nuts which are applied to these screws secure the strips C^5 C^6 to the strips C′ C^2 C^3 C^4, but form a loose connection between the same, so that all the strips will be free to bend, and the strips C^5 C^6 will be free to slide lengthwise relatively to the others.

The holder C^9 is provided with a socket D, which is provided with lugs *d*′ d^2, and a screw d^3, whereby the socket may be tightened and loosened at pleasure.

The type just described will have its printing-surface normally flat, and yet is of such construction that said surface may bend in all directions to conform to a convex article.

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

1. A type having a printing-surface, a sheet of flexible material with which it is connected, and a number of resilient strips of metal connected to said sheet, substantially as specified.

2. A type having a printing-surface, a sheet of flexible material with which it is connected, a number of resilient strips of metal connected to said sheet, and a holder having arms with which such strips are connected, substantially as specified.

3. A type having a printing-surface, a sheet

of flexible material with which it is connected, a number of resilient strips of metal C′ C² C³ C⁴ and longitudinally slotted at the end portions, a holder having arms *c*, and screws passing through the slots of said strips and entering the arms of said holder, substantially as specified.

4. A type having a printing-surface, a sheet of flexible material with which it is connected, a number of resilient strips of metal C′ C² C³ C⁴ and longitudinally slotted at the end portions, a holder having arms *c*, screws passing through the slots of said strips and entering the arms of said holder, and other spring-strips C⁵ C⁶, crossing each other opposite the center of the said sheet, having slotted end portions, and screws passing through these slotted end portions and connected with the strips C′ C² C³ C⁴, 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.