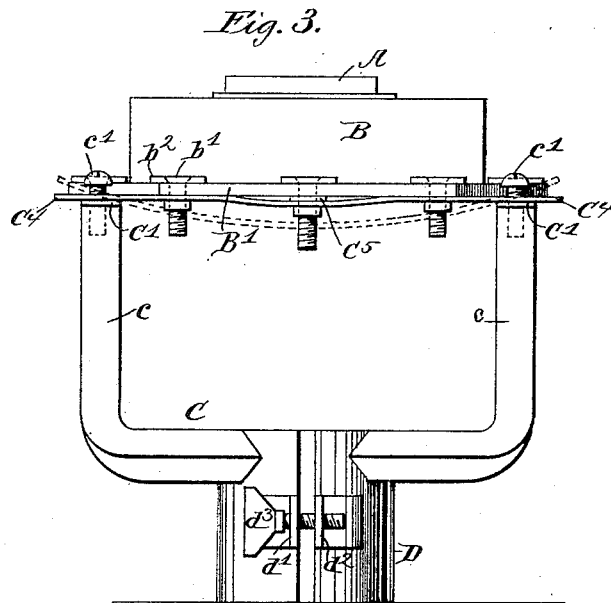
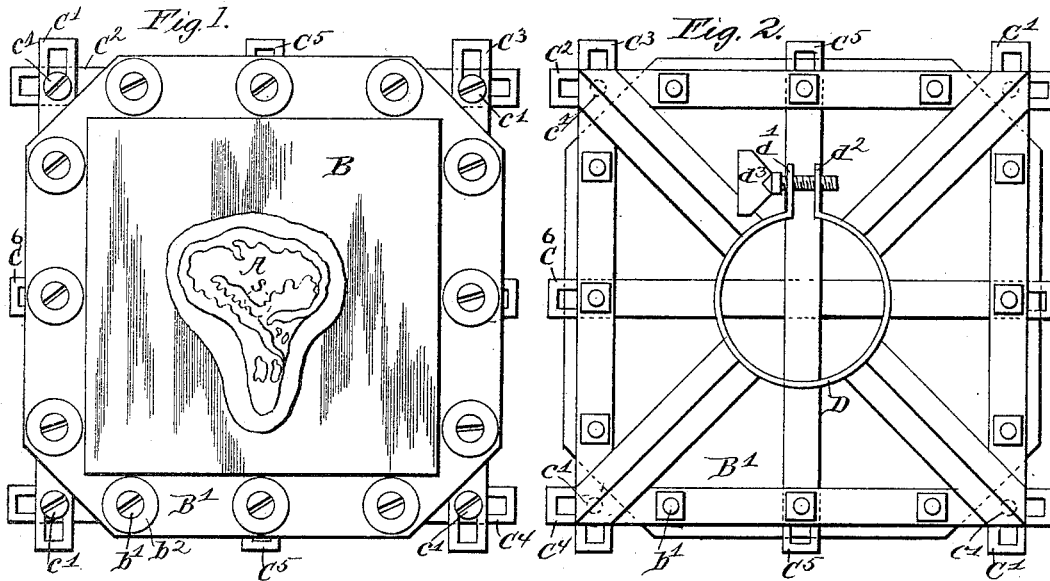


(No Model.)

T. HARPER.
TYPE FOR PRINTING LAMP SHADES.

No. 453,770.

Patented June 9, 1891.



Witnesses
C. R. Simpson
Wm. W. Shiff

Inventor
Thomas Harper
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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.

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
5 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.

10 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.

15 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
20 is a side view of the same.

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

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

B² 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
30 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 B² may be secured to the sheet B' throughout its entire back surface or only at one or more points,
35 as may be preferred. I deem it advantageous to fasten the printing-surface A' to the support B² only at the center, as then it and the support B² will be more free to adapt themselves to the surfaces to be printed. The
40 printing-surfaces may be secured to the support B² 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' C² C³ C⁴ of sheet metal.
50 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 C⁹. The screws c' do not clamp the strips C' C² C³ C⁴ to the arms c, but
55 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
60 by screws b' to the strips C' C² C³ C⁴. As here shown, the heads of the screws b' fit in countersunk holes in washers or plates b², which bear against the top of the sheet B', and have nuts applied to their lower ends
65 beneath the strips C' C² C³ C⁴. It will be seen that the arms c of the holder C⁹ extend to the points where the strips C' C² C³ C⁴ intersect.

C⁵ C⁶ designate two metallic strips, which
70 cross each other opposite the center of the support B² 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
75 screws secure the strips C⁵ C⁶ to the strips C' C² C³ C⁴, but form a loose connection between the same, so that all the strips will be free to bend, and the strips C⁵ C⁶ will be free to slide
80 lengthwise relatively to the others.

The holder C⁹ is provided with a socket D, which is provided with lugs d' d², and a screw d³, 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
85 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
90 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
95 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.
100

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 por-
tions, a holder having arms c, and screws pass-
5 ing through the slots of said strips and enter-
ing 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,
10 a number of resilient strips of metal C' C² C³
C⁴ and longitudinally slotted at the end por-
tions, a holder having arms c, screws passing
through the slots of said strips and entering

the arms of said holder, and other spring-
strips C³ C⁶, crossing each other opposite the 15
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 20
York and State of New York, this 12th day
of May, A. D. 1890.

THOMAS HARPER.

Witnesses:

ANTHONY GREF,
S. O. EDMONDS.