

C. J. HILLMAN.
 PHOTOGRAPHIC PRINTING DEVICE.
 APPLICATION FILED MAY 16, 1907.

920,138.

Patented May 4, 1909.

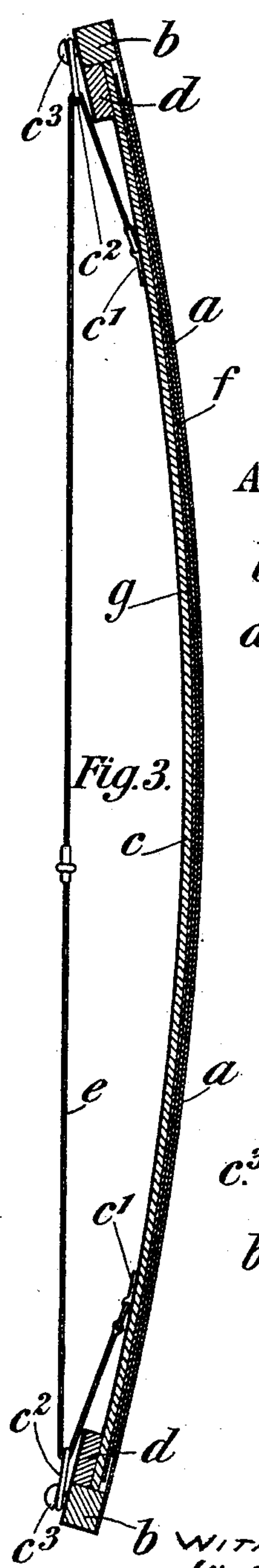


Fig. 3.

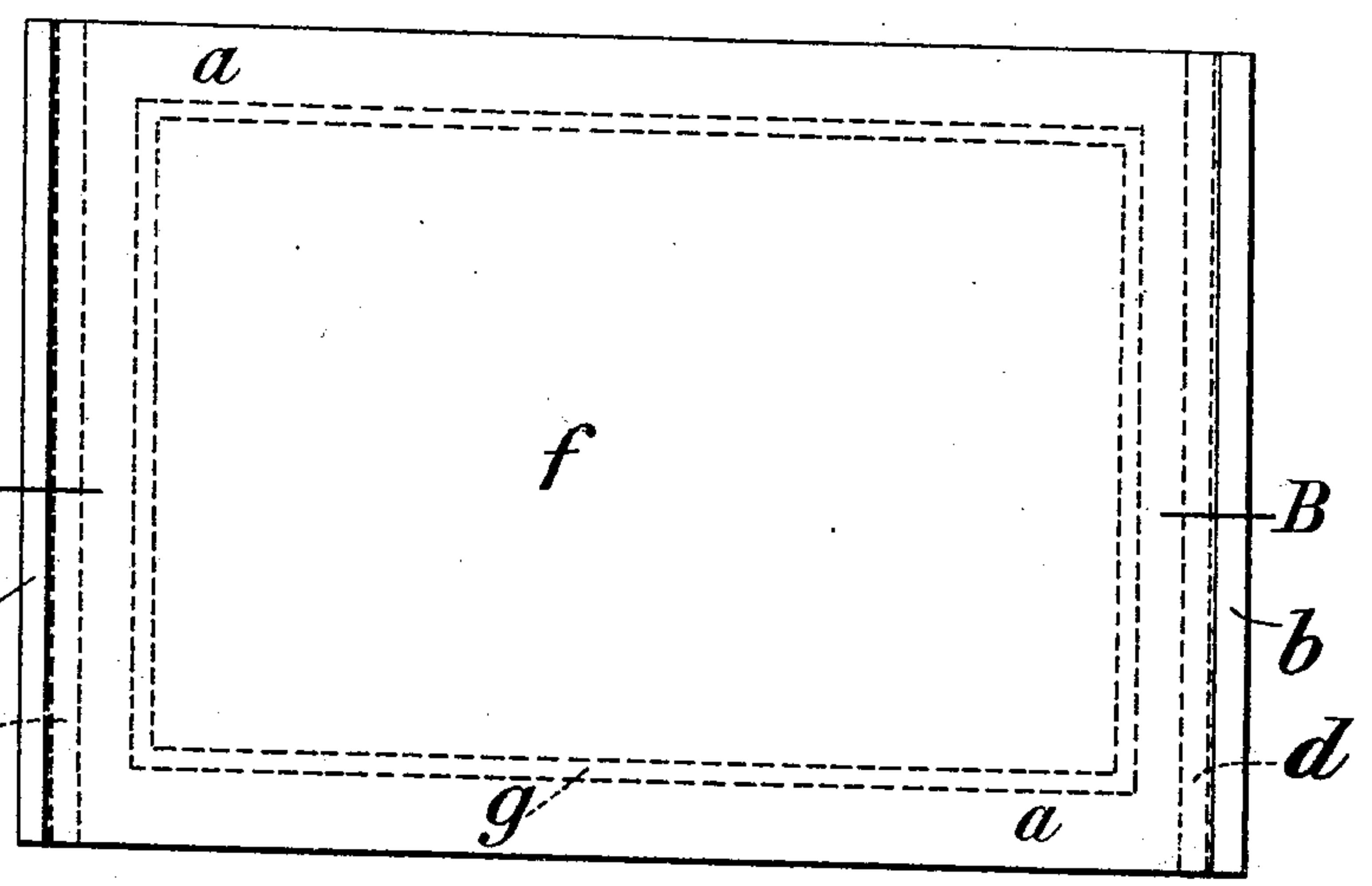


Fig. 1.

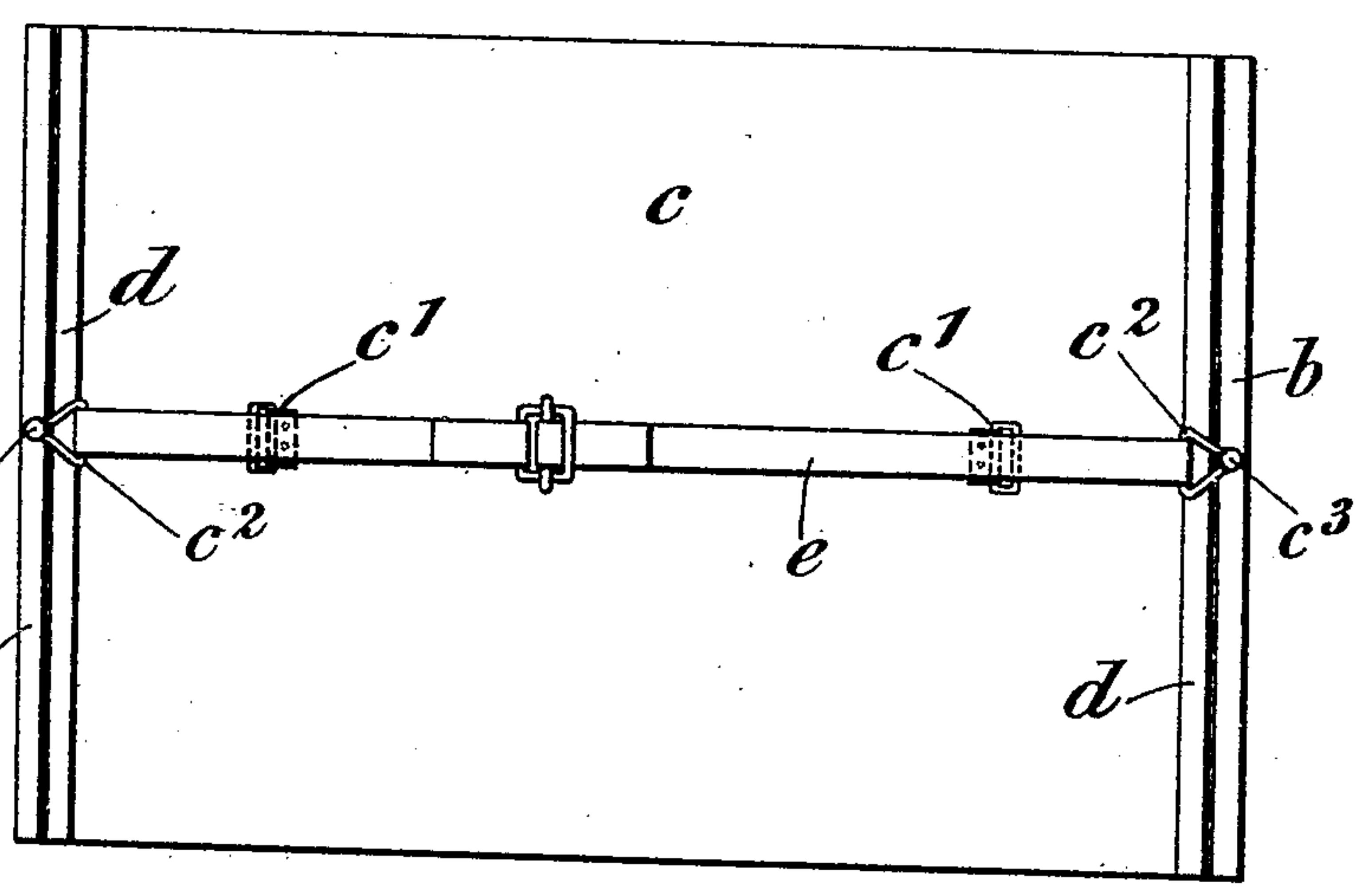
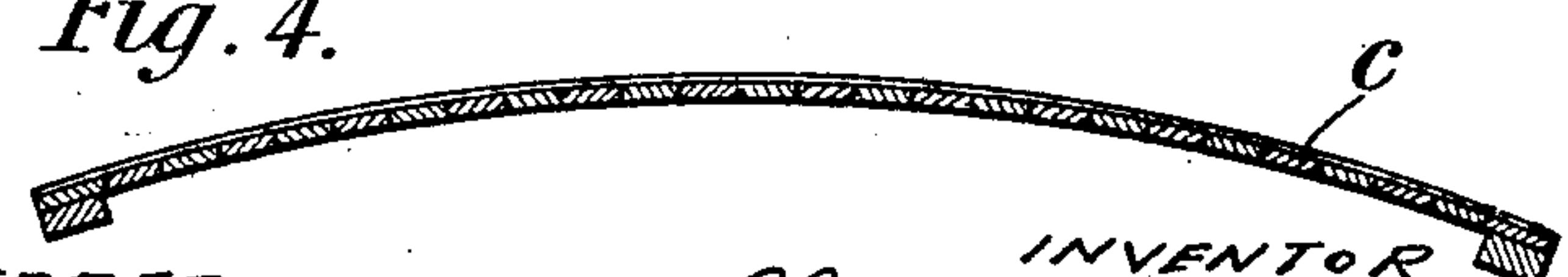


Fig. 2.

Fig. 4.



WITNESSES
 W. P. Burke
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INVENTOR
 Charles Jennings Hillman
 BY [Signature] ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES JENNINGS HILLMAN, OF LONDON, ENGLAND.

PHOTOGRAPHIC-PRINTING DEVICE.

No. 920,138.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed May 16, 1907. Serial No. 373,933.

To all whom it may concern:

Be it known that I, CHARLES JENNINGS HILLMAN, a subject of the King of Great Britain and Ireland, residing at No. 6 Dyer's Buildings, Holborn, in the city of London, England, have invented new and useful Improvements in Photographic-Printing Devices, of which the following is a specification.

10 This invention has reference to a new or improved photographic printing device, particularly applicable for use in duplication of drawings, and it has for its objects the simplification of the device, by reducing its
15 weight (as compared with the apparatus heretofore in use) so as to render it more convenient in manipulation, to lessen the cost of construction, and to obtain increased efficiency in the work produced. For these
20 purposes, according to one arrangement, the device or apparatus consists of two sheets or layers of flexible material, each secured to end strips of pieces of wood or other suitable substance. One of the sheets or layers is
25 transparent, and may be composed of celluloid or other flexible substance capable of transmitting rays of light; the other sheet is composed of millboard metal, wood leather or other suitable material, so that it will
30 maintain an even, regular form when in a curved state. Or where the drawing to be duplicated is on material more or less capable of transmitting light such drawing may, if desired, form the front sheet of the appa-
35 ratus.

When the flexible sheets are placed together and the two ends are drawn toward each other, the apparatus will be caused to assume a bent or curvilinear form, the sheet
40 of millboard or other substance being provided with means whereby the ends are drawn together, with the result that the sheet of millboard is forced toward the transparency the latter being drawn or stretched
45 into close contact therewith, owing to its being on the outer face and at a greater distance from the axis of curvature.

The drawing to be duplicated and the sensitized paper on which such duplication is to
50 be made are placed in position by the two sheets or layers as above, facing the celluloid sheet which is then exposed to the light in the usual manner.

Instead of the backing sheet being com-
55 posed of millboard, metal, leather or other

like substance, it may be composed of a number of transverse pieces of any suitable material, such as wood, articulated together after the manner of a revolving shutter, so that the whole of the parts may be rolled up
60 into small compass and put away when not in use.

In order that the invention may be more clearly understood, reference is made to the accompanying drawings, in which: 75

Figure 1 is a front elevation of the apparatus; Fig. 2 is a back view of the same; Fig. 3 is a longitudinal section to an enlarged scale, through the line A—B of Fig. 1; Fig. 4 is a
70 similar view to a smaller scale of a backing sheet composed of a number of transverse strips of wood or other suitable material articulated together.

Similar letters refer to similar parts throughout the several views. 75

a is a sheet of celluloid or other flexible substance capable of transmitting rays of light. It is secured at each end to a strip or
80 fillet of wood or other suitable rigid substance *b*.

c is the backing sheet composed preferably of millboard, the ends of which are secured to the strips or fillets *d*, the length of the backing sheet and its end pieces being such that it
85 will fit freely within the end pieces *b* of the front sheet *a*.

e is a suitable form of adjustable strap or other suitable stretching device secured to the backing piece *c* in any convenient manner, at or about the points *c*¹, the straps then
90 passing through the loops *c*² secured to each of the end pieces *b* by the studs *c*³. By this means the two ends of the sheets *a* and *c* are drawn toward each other to the required
95 extent, and the sheets thereby caused to assume a bent or curvilinear form, the ends *d* taking a bearing against the end pieces *b*, whereby the transparent sheet *a* is stretched around the backing sheet *c* and brought into
100 intimate contact with it.

The drawing to be duplicated *f*, and the sensitized paper *g* are shown in dotted lines in Fig. 1 of the drawings.

Any suitable method may be adapted for producing the curved form of the apparatus, 105 and in the larger sizes of the device two or more sets of straps or their equivalent may be used with advantage. It is important that in any such devices, the attachment *c*³ to the straps or to the fillets *b* should be so 110

situated and arranged as to prevent the straps or fillets *d* on the backing, forcing *b* outward when the apparatus is curved.

When it is desired to adapt the apparatus
 5 entirely for the purpose of printing by means
 of artificial light the positions of the sheets *a*
 and *c* and of their corresponding end pieces *b*
 and *d* are reversed, that is to say the sheet of
 10 celluloid or the like is shorter than the sheet
 of millboard and its end pieces *b* will come
 within and bear against the end pieces *d*, the
 sheet of celluloid *a* will then form the inner
 side and act as a compression member of the
 curved device.

15 What I claim and desire to secure by Letters Patent of the United States is:—

1. The combination in a photographic printing device of a sheet of flexible material

capable of transmitting rays of light, a flexible backing sheet and an adjustable strap for 20 bending both sheets.

2. A photographic printing device comprising a sheet of transparent flexible material, a projection at each end of the same, a flexible backing sheet, adapted to slidingly 25 fit in the space formed by said projections and lying parallel to the transparent sheet, and means for bending both sheets.

In testimony whereof I have signed my name to this specification in the presence of 30 two subscribing witnesses.

CHARLES JENNINGS HILLMAN.

Witnesses:

A. NUTTING,
 F. L. RAND.