

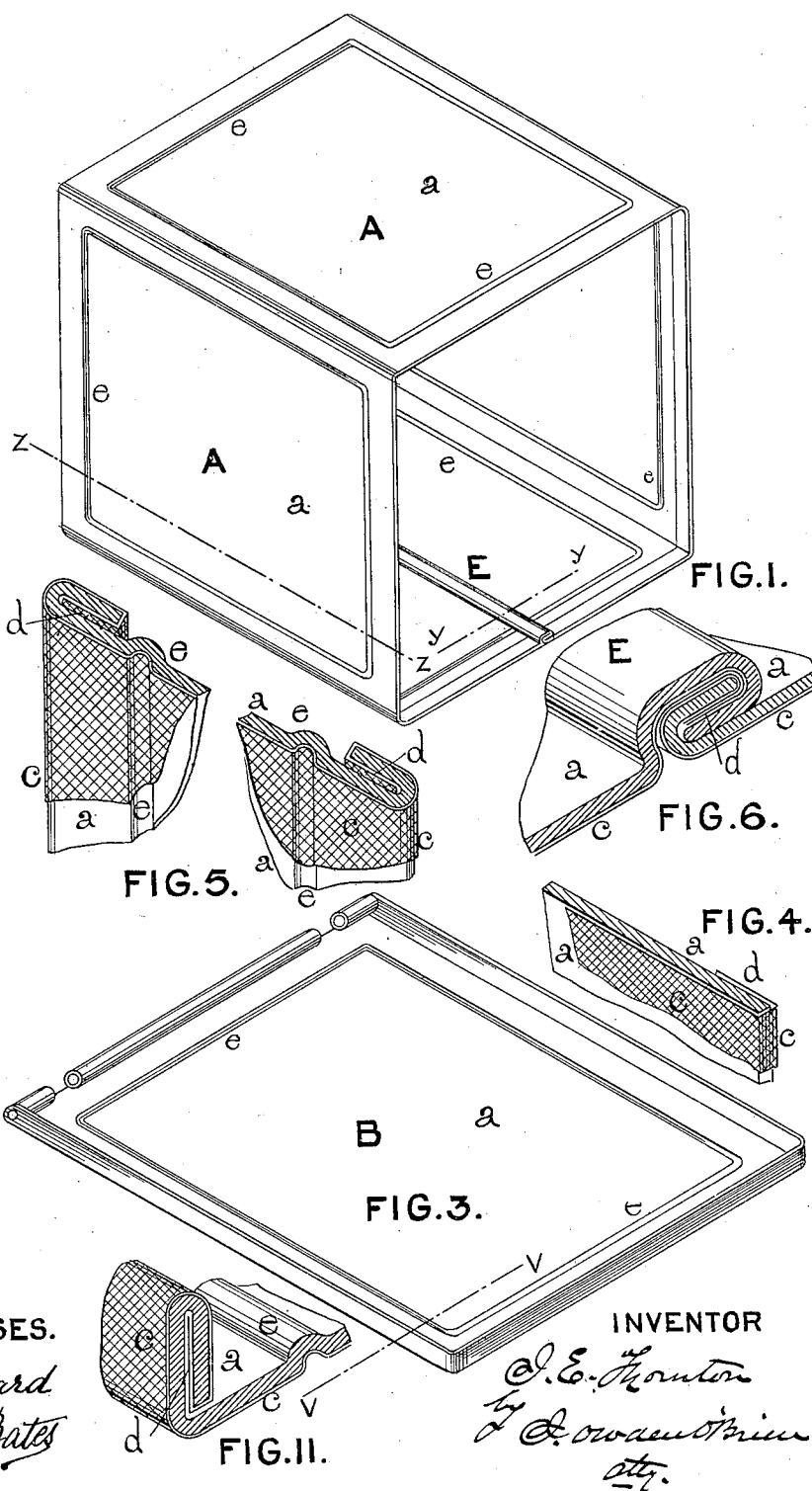
No. 760,584.

PATENTED MAY 24, 1904.

J. E. THORNTON.
PHOTOGRAPHIC CAMERA.
APPLICATION FILED OCT. 16, 1899.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES.

E. Howard
Joseph Bates

INVENTOR

J. E. Thornton
By J. E. Thornton
att.

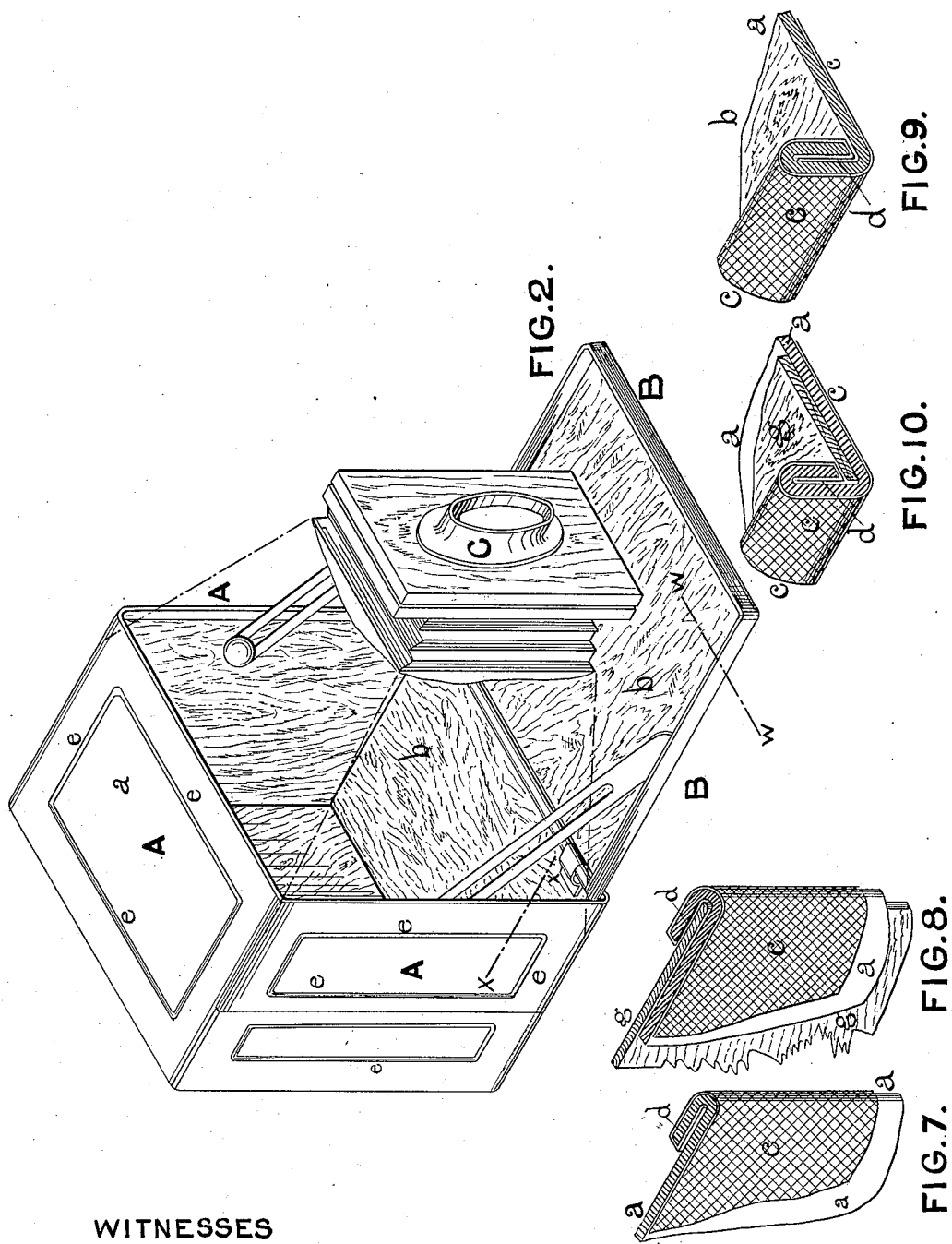
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Joseph Bates

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J. E. Thornton
L. S. Sawin
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UNITED STATES PATENT OFFICE.

JOHN EDWARD THORNTON, OF MANCHESTER, ENGLAND.

PHOTOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 760,584, dated May 24, 1904.

Application filed October 16, 1899. Serial No. 733,788. (No model.)

To all whom it may concern:

Be it known that I, JOHN EDWARD THORNTON, a subject of the Queen of Great Britain, residing at Manchester, in the county of Lancaster, England, (whose postal address is Worsley Mills, Hulme, Manchester, aforesaid,) have invented certain new and useful Improvements in Photographic Cameras, of which the following is a specification.

The object of this invention is to provide an improved construction of metal or part-metal cameras whereby cheapness and accuracy can be combined with a high-class and better finish than hitherto.

The invention will be fully described with reference to the accompanying drawings.

Figure 1 is a perspective view of rectangular case to form a box-camera; Fig. 2, a perspective view of folding camera opened with part of bellows cut away; Fig. 3, a perspective view of base-board of camera; Fig. 4, an enlarged section showing relative positions of metal sheet and leather cover in the blank; Fig. 5, an enlarged section on line *z z*, Fig. 1, showing turned-over edges of the metal and stiffening ribs or grooves; Fig. 6, an enlarged section on line *y y*, Fig. 1, showing method of jointing the two edges of the metal; Fig. 7, an enlarged section on line *w w*, Fig. 2; Fig. 8, a similar section showing a modification; Fig. 9, an enlarged section on line *w w*, Fig. 2; Fig. 10, a similar section showing a modification; Fig. 11, an enlarged section on line *v v*, Fig. 3, showing the method of forming and stiffening the edge of the lid or cover.

All the rigid parts of the camera I make from aluminium sheets stamped out by a press or other means to the desired shapes. Thus the body or case A, the front or lid B, the lens carrier or support C are all stamped from or made of sheet-aluminium *a*. The aluminium sheet is rolled or formed in the usual way and is preferably on one surface printed, coated, or enameled with a covering composition *b* to exactly represent in appearance mahogany or other wood. It is then stamped to the desired shapes for the different parts of the camera and the blank is covered on the plain side with leather, paper, cloth, or similar flexible material *c*. The covering leather,

paper, or cloth *c* is cut a little larger than the corresponding aluminium metal blank, the edges *d* of the cover extending or overhanging beyond the edges of the blank all round.

The flexible covering *c* is secured to the aluminium blank *a* by any suitable adhesive material applied all over the surface or to the edges only, as desired. The overhanging edges *d* of the flexible covering *c* are turned over onto the opposite side of the aluminium blank *a*, as shown in Fig. 4. The edges of the covered aluminium blank *a* are next turned over upon themselves and upon the flexible cover *c* to produce a rim of double thickness along each edge for the purpose of giving stiffness and rigidity to the article. By this construction comparatively thin aluminium sheet can be used, while obtaining great strength and rigidity at the edges. The flexible cover *c*, of leather or other material, is by the same operation turned over into the interior and is there gripped between the two surfaces of the aluminium. It thereby presents a complete cover or finish to the edges and is also perfectly secured in position. Paste or adhesive material may in some cases be dispensed with between the cover *c* and the aluminium *a*, the cover being alone secured by the gripping of its overhanging and overturned edges *d* by the metal. The turning over of the aluminium *a* and cover *c* together to stiffen the edges stretches the leather tightly on the metal and presents a very good finish. In this way an aluminium blank *a* has been formed, covered with leather or other flexible material *c*, preferably manufactured to resemble or look like leather, and it is now only necessary to shape or bend this into proper form for the various parts of the camera and to secure the joints finely together to complete the finished article. This operation is done by the aid of formers, dies, jigs, or other suitable means, such as are well known and understood. The jointing may be done in various ways, according to the shape of the blank and of the finished article. For instance, in making a camera-body of elongated box form open at the two ends, as in Fig. 1, the joint or seam E would be produced

either by hooking the adjacent edges into each other and then clenching them together, or a lap-joint, riveted, screwed, or otherwise secured, may be used instead. These ordinary methods are well understood. The box or other article is afterward ornamented at the corners, joints, and other desired places by heated press-tools or other convenient means.

In order to stiffen the body A, base-board B, front C, box, or other part of a camera, I form indented or raised stiffening-ribs *e* by pressing in suitable dies. This may be done either before or after the metal has been bent into shape.

In some styles of cameras it is desirable to make certain parts—such as the inside of the body A, the inside of the base-board B, and the front or lens-carrier C—look like polished mahogany. This may be done by printing, enameling, or coloring the surface of the metal or by covering same with paper or other similar flexible material made to imitate or resemble the grain of the mahogany or by covering with or inserting a thin veneer *g* or layer of polished mahogany or other ornamental wood, as in Figs. 8 and 10. The enamel or printing will preferably be applied to the aluminium sheets before being cut or shaped, but, if so desired, may be after being cut or shaped. The metal being first leather-covered, the finished effect will be that of a piece of polished mahogany covered with leather on the opposite side and having a narrow border of leather round the edges of the polished sides. If desired that the turned-over edges shall be flush with the polished surface of the veneer, the latter may be rabbeted round the edges for metal to fit into. The whole is clenched in a press to complete. It produces a cheap and yet first-class finished result, and warping and bending are entirely prevented. It is desirable to back the veneer with cloth or paper to prevent splitting. This backing also serves the purpose of enabling the veneer to be attached to the metal more securely by means of the paste.

I find it sometimes advantageous to cover the metal blank with paper pasted on before applying the leather. Thin paper enables better attachment to be obtained between metal and leather.

Cameras manufactured on the lines herein described have all the appearance of first-class leather-covered wooden cameras, while they are more cheaply produced, much lighter in weight, sufficiently strong for their purpose, and will stand rougher usage.

I am well aware that camera-bodies have been made of sheet metal with a cloth or leather cover, and I make no claim therefor.

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

1. A photographic camera comprising in its construction three layers or folds of material, an aluminium sheet with extended edges, a

flexible outer covering adhering thereto, an inner covering of polished wood, the extended edges of the aluminium sheet being rolled over to embrace the outer and inner coverings, and grip and hold them in position and completely obscure the metal, substantially as described.

2. A photographic camera comprising in its construction a sheet of aluminium with in-turned edges, an outer covering of leather adhering thereto extended edges thereto, an inner covering in imitation of polished wood, the extended edges of leather covering being turned over the edges of the aluminium sheet, and the edge of the aluminium sheet turned over to embrace and secure the coverings and obscure the edge of the metal substantially as described.

3. A photographic camera comprising in its construction a sheet of aluminium, and a sheet of leather, the edges of the leather extending beyond the aluminium and turned around and covering over the edges of the aluminium and the edges of the aluminium sheet turned back again over upon the leather and clamping and securing the leather in the fold formed thereby, substantially as described.

4. A camera-body constructed of three layers of material comprising an outer flexible cover with edges extending beyond the other, an intermediate sheet of aluminium and an inner covering in imitation of wood having the edges of the several layers turned over upon one another to secure the structure in its desired form and to protect the edges, substantially as described.

5. In the body A and base-board B of a photographic camera constructed of three layers of material, the combination with an outer flexible covering with extended edges, an inner covering, and a sheet of aluminium extended beyond the inner covering of the extended edges *d* to the flexible covering turned around the edges of the aluminium and the extended edges of the aluminium sheet turned over upon the flexible cover to strengthen the structure and clamp the covering material in position substantially as described.

6. In a photographic camera constructed of three layers of material, the combination with a sheet of aluminium, an outer cover of leather, and an inner cover of wood, of extended edges *d* to the leather turned around the edges of the aluminium and inner covering to make a fourth layer, and extended edges to the aluminium turned over upon the inner covering and upon the edges of the leather making a fifth layer, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN EDWARD THORNTON.

Witnesses:

J. OWDEN O'BRIEN,
JOSEPH BATES.