

(No Model.)

W. H. GUILLEBAUD.

PROCESS OF MANUFACTURING PHOTO RELIEFS.

No. 247,047.

Patented Sept. 13, 1881.

Fig. 1.

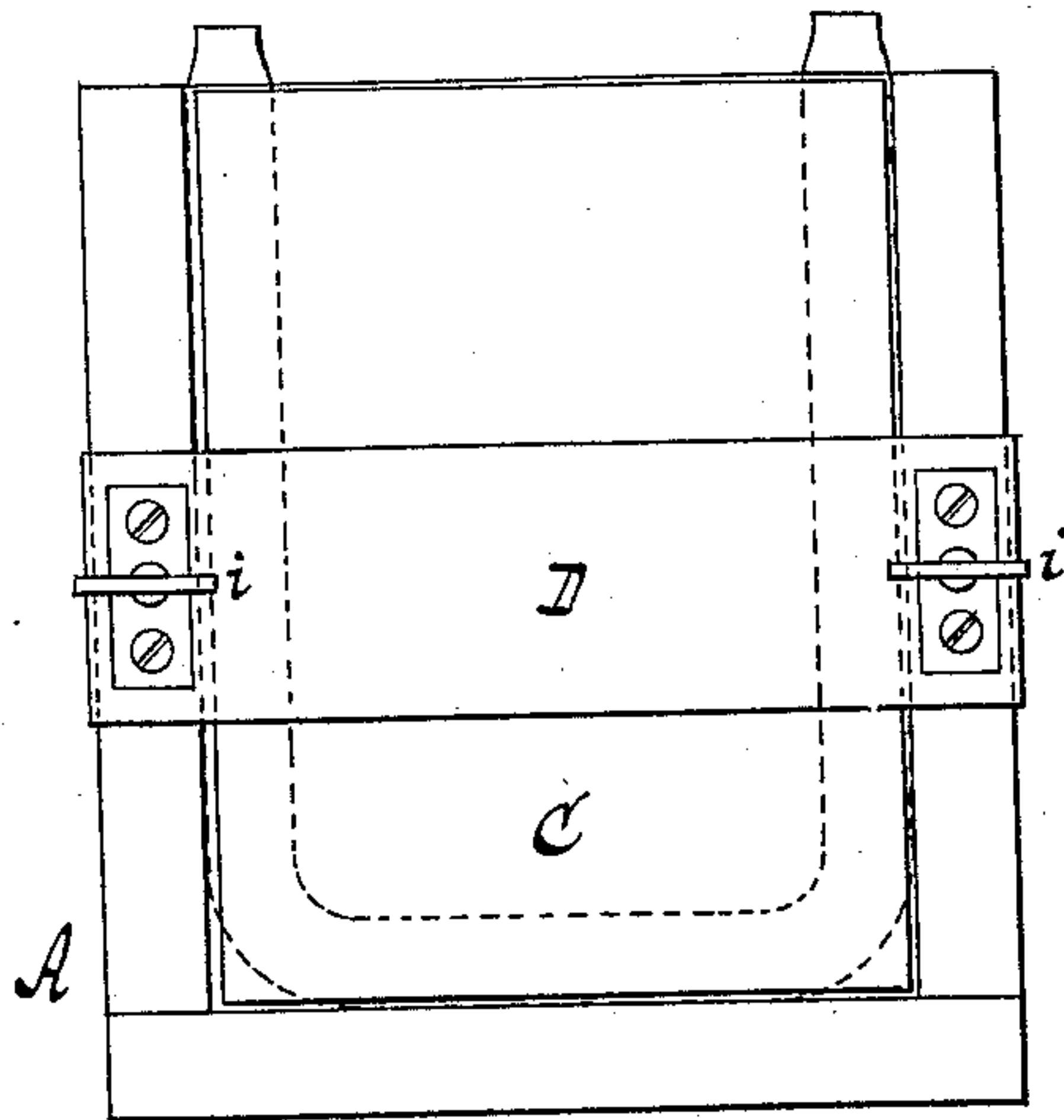


Fig. 2.

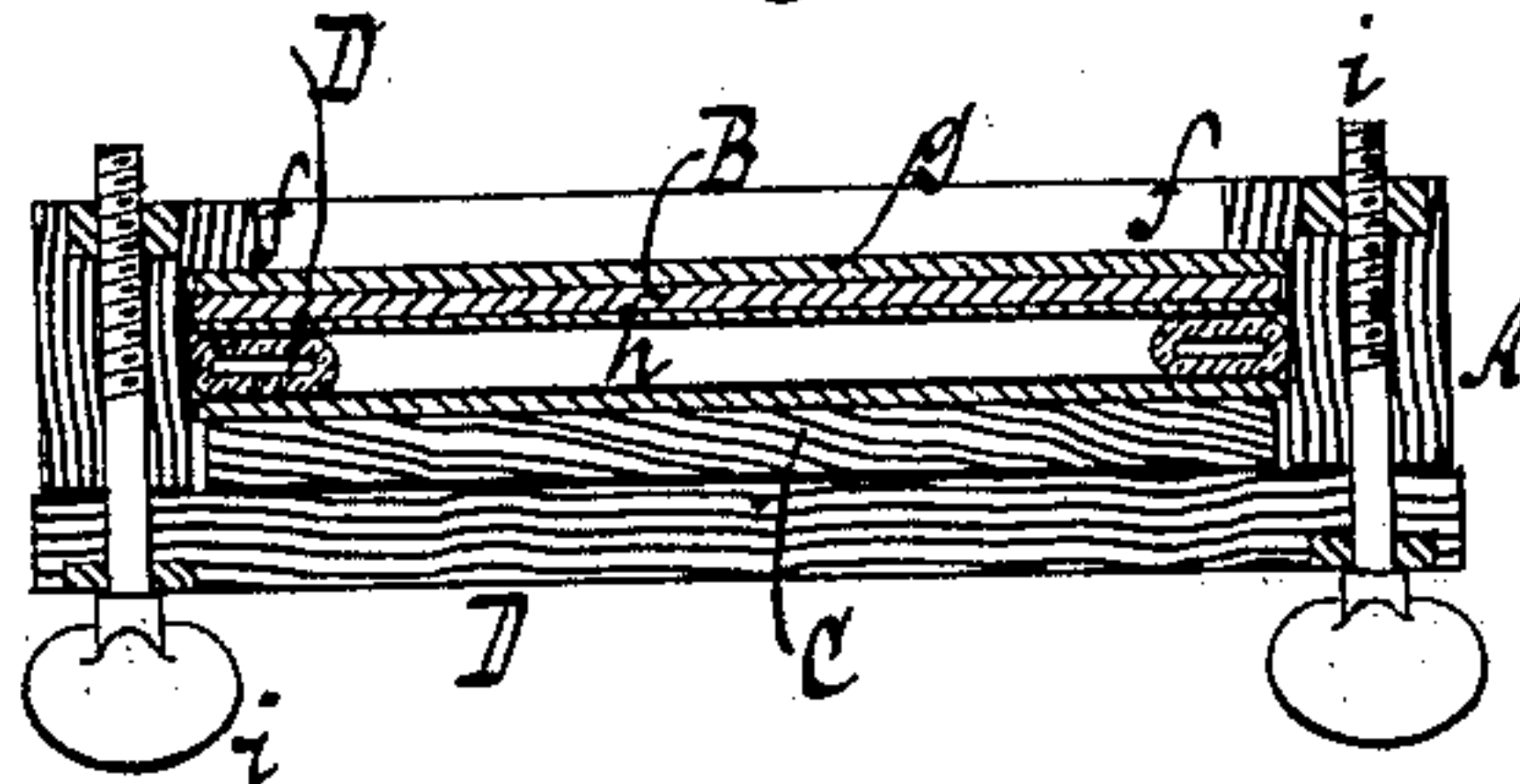
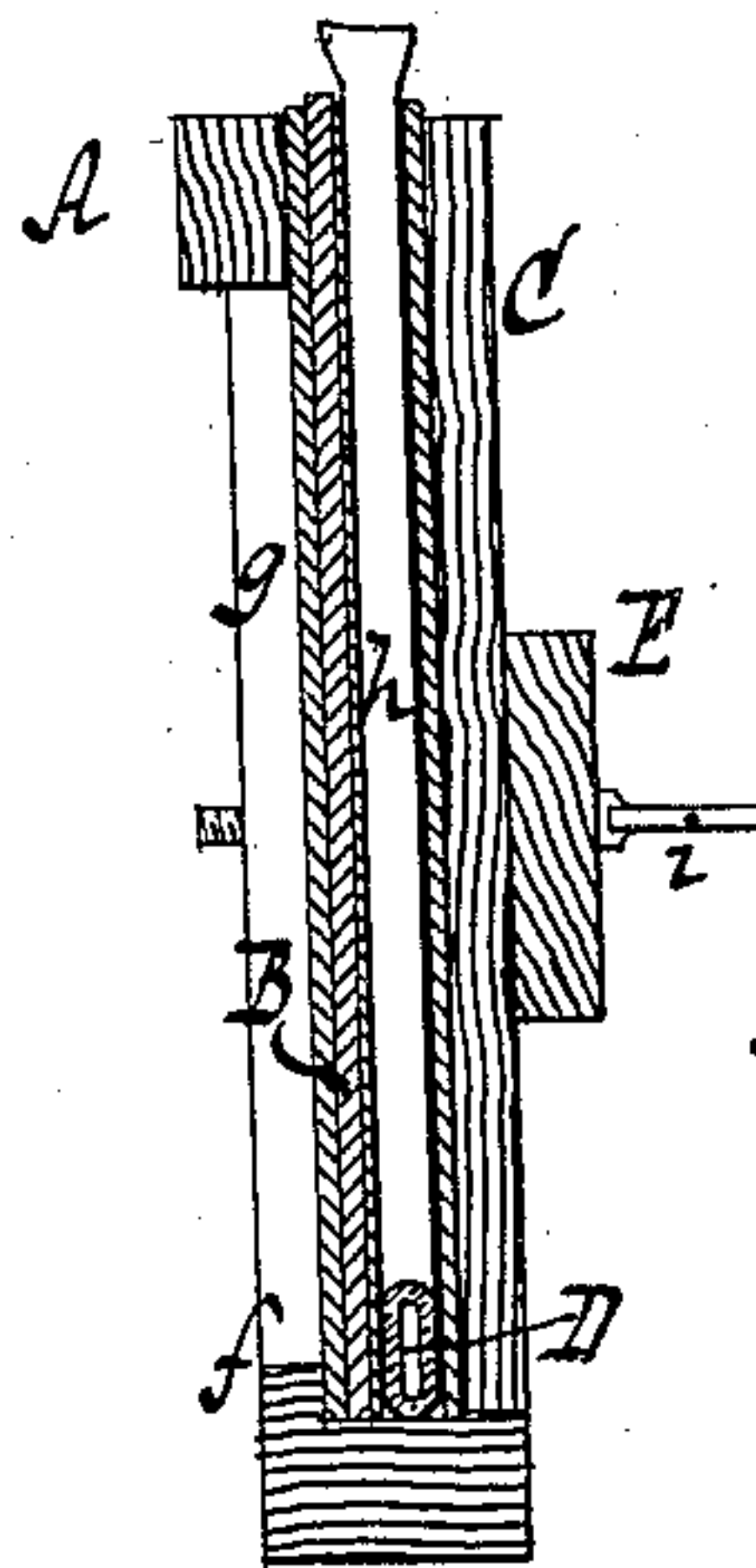


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM H. GUILLEBAUD, OF ORANGE, NEW JERSEY.

PROCESS OF MANUFACTURING PHOTO-RELIEFS.

SPECIFICATION forming part of Letters Patent No. 247,047, dated September 13, 1881.

Application filed July 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GUILLEBAUD, a citizen of Switzerland, residing at Orange, in the county of Essex and State of New Jersey, have invented new and useful Improvements in the Manufacture of Photo-Reliefs, of which the following is a specification.

This invention relates to the manufacture of photo-reliefs, molds, plates, &c., by the actinic action of light upon a sensitized medium through a photo positive or negative or other transparent or translucent picture; and it consists in the process of exposing the sensitized medium by pouring the same in a liquid state into a cell, one side of which is formed by the picture; also, the apparatus used in such process, consisting of a frame open on one side and adapted to receive the picture, a back plate, a cushion interposed between the picture and the back plate, at the edges thereof, forming a variable cell, and a clamp arranged to act on the back plate, as hereinafter more fully set forth.

The apparatus used in carrying out my invention is illustrated in the accompanying drawings, in which Figure 1 represents a back view. Fig. 2 is a cross-section. Fig. 3 is a like section at right angles to Fig. 2.

Similar letters indicate corresponding parts.

The letter A designates the frame, having the picture B fitted therein; C, the back plate; D, the cushion, and E the clamp.

One side of the frame A is left open, and the picture B bears against shoulders *f*, formed on the closed sides of the frame, a supplemental plate, *g*, of ground glass being usually placed in front of the picture, and a piece of mica or other transparency behind it for its protection.

The back plate, C, is fitted into the frame A, and the cushion D is interposed between it and the picture B, at the edges thereof, thus creating a space or cell, *h*, one side of which is formed by the picture.

The cushion D consists of a piece of india-rubber tubing, and, being compressible and expansible, it allows the cell *h* to be varied as to its width.

The clamp E consists of a bar which extends across the back plate, C, and which is connected to opposite sides of the frame A by screws *i*,

so that by the latter the clamp-bar can be forced against the back plate.

In carrying out my invention I employ any of the known mediums used for similar purposes—as, for instance, gelatine or albumen—rendered sensitive to actinic rays of light by the addition of water and bichromate of potash or other materials in suitable proportions. This medium or solution I pour in a liquid state—namely, while it is still warm enough to remain liquid—into the cell *h*, so that it forms a layer of about one-sixteenth of an inch (more or less) in thickness, and I then immediately expose the medium thus confined to the rays of light through the picture, care being taken, however, to keep the whole at a temperature of about 85° Fahrenheit to avoid the hardening of the medium. In exposing the medium the frame is placed in a suitable position to allow the rays of light to fall upon the picture at a right angle thereto.

By the action of light through the transparent or translucent picture upon the sensitized medium the latter is solidified wherever the light strikes it in proportion to the strength of the light, and it is caused to adhere firmly to the transparency placed against the back of the picture, leaving the other or remaining portion of the medium in its liquid state. When the medium has been exposed the required length of time the frame is taken into a dark room, and the unaffected or liquid portion of the medium is poured out of the cell *h* into a proper receptacle, allowing it to be used over again, and then the frame is opened, and the hardened portion of the medium is cleansed from the liquid portion still adhering to it, such hardened portion forming a mold which represents exactly, in various graduations of depth, the various graduations of light and shade in the picture. The said mold is then treated in a similar manner to the molds obtained by the well-known gelatine process.

If the transparency placed behind the picture be a plate of glass or mica, it should be albumenized before it is put to use, in order to cause the medium to adhere thereto. The said transparency, however, may also be composed of ground glass or insoluble gelatine, varnish, or collodion.

The advantage peculiar to my invention is the cheapness of the process, all of the solution or medium not actually composing the mold being saved for further use; also, the
5 great saving of time in preparing and manipulating the plates and solution preparatory to exposure; and, further, the possibility of exposing any suitable liquid medium to the direct rays of the light or sun at a right angle.

10 It should be remarked that the frame herein described is susceptible of various modifications, and I do not wish to be restricted to the use of a frame of any particular construction, the essential feature thereof, however, being the
15 cell, one side of which is adapted to be formed by the picture.

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

1. The within-described process of exposing
20 a sensitized medium in a liquid state to the

actinic action of light through a photo positive or negative or other transparent or translucent picture by pouring such medium in a liquid state into a cell one side of which is
25 formed by the picture.

2. The combination, substantially as hereinbefore set forth, of the frame, open on one side and adapted to receive the transparent or translucent picture, the back plate, the cushion interposed between the picture and the
30 back plate, at the edges thereof, forming a variable cell, and the clamp arranged to act on the back plate.

In testimony whereof I have hereunto set my hand and seal in the presence of two
35 scribing witnesses.

W. H. GUILLEBAUD. [L. S.]

Witnesses:

W. HAUFF,
CHAS. WAHLERS.