

No. 654,421.

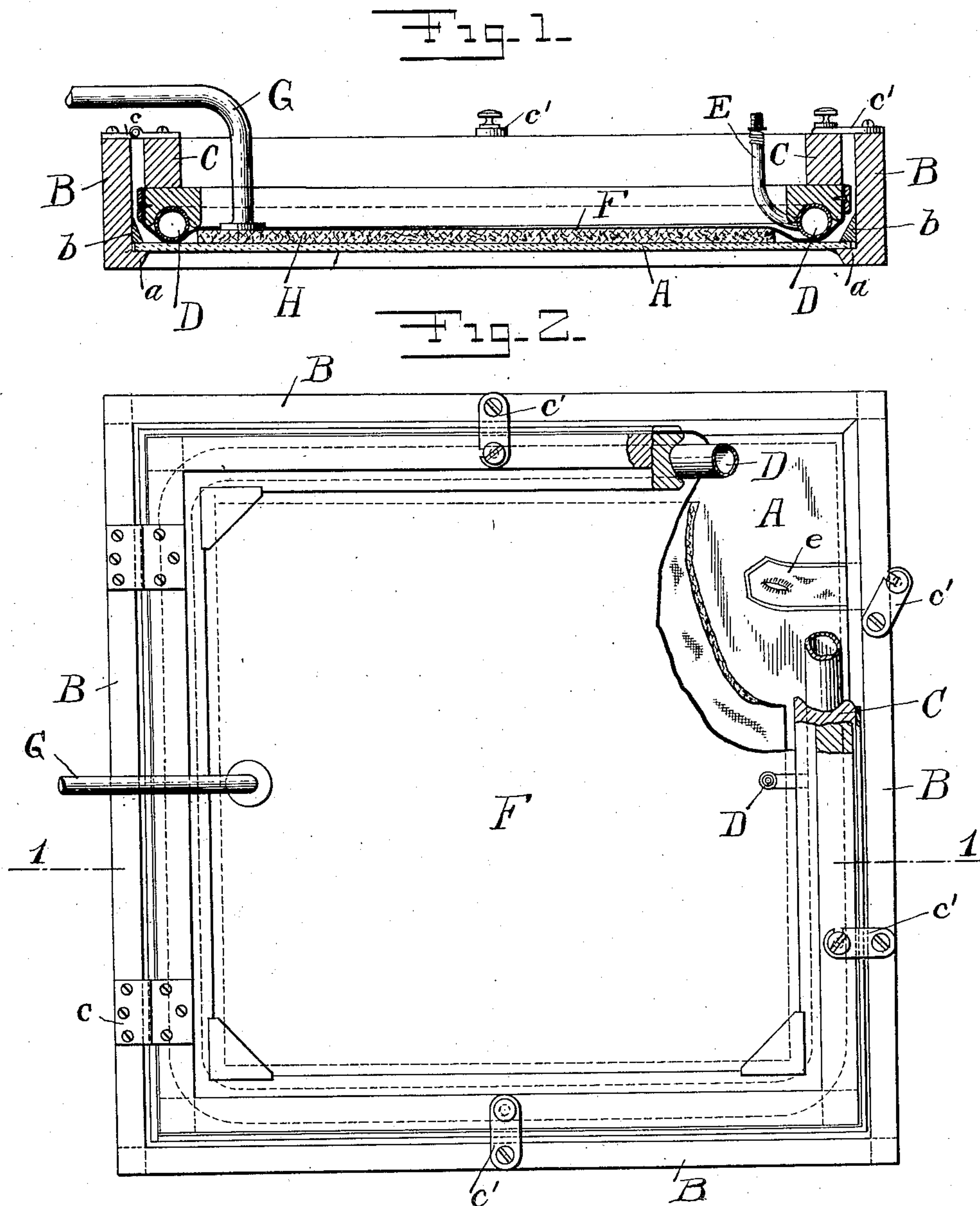
Patented July 24, 1900.

E. G. SOLTSMANN.  
PHOTOGRAPHIC PRINTING FRAME.

(Application filed May 4, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.

*F. N. Roehrich*  
*M. H. Lyon.*

Inventor:

*Edward G. Soltmann,*  
by *Alfred A. Fausch*  
Attorney.

No. 654,421.

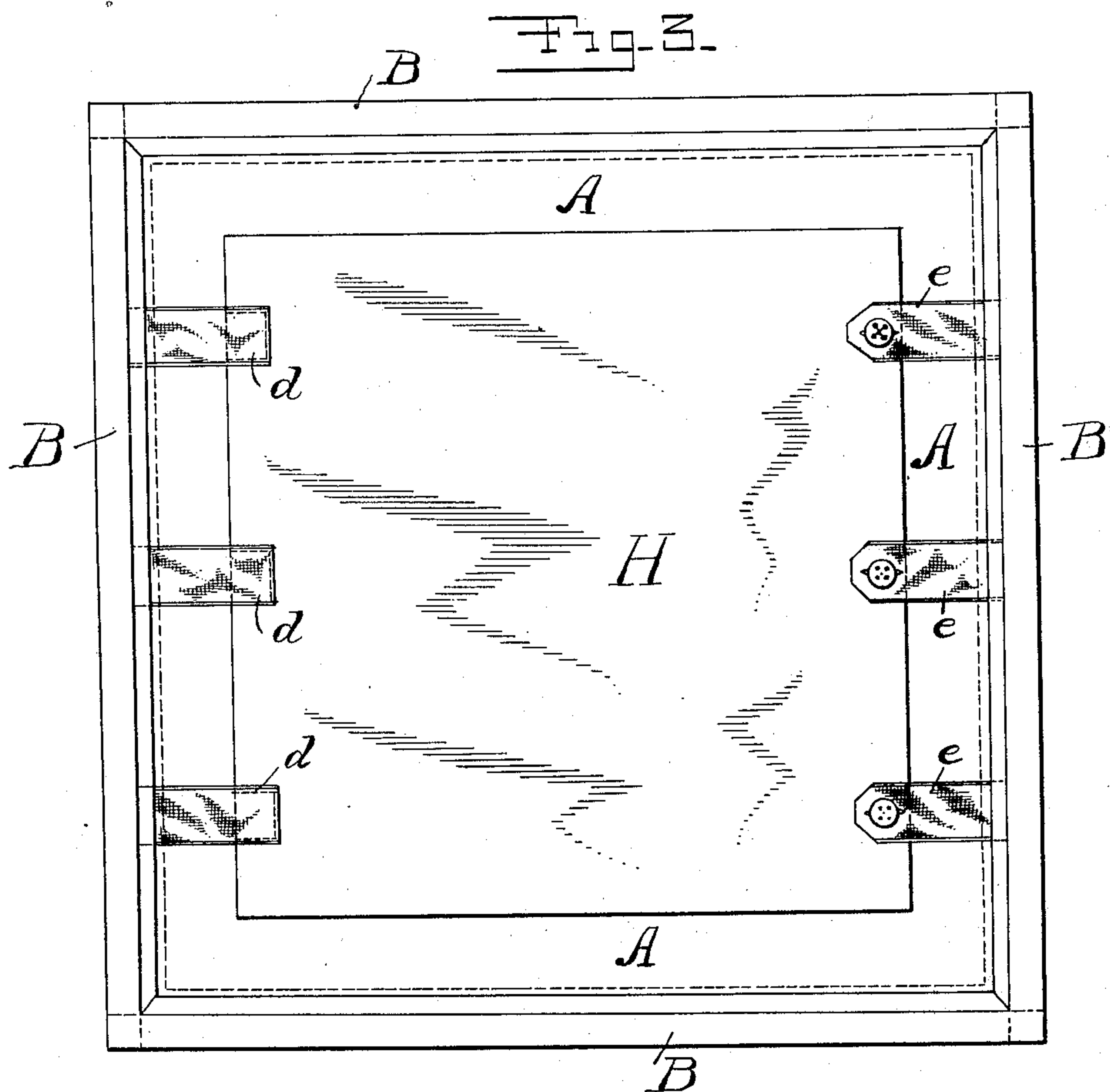
Patented July 24, 1900.

E. G. SOLTSMANN.  
PHOTOGRAPHIC PRINTING FRAME.

(Application filed May 4, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.

*F. N. Roehrich*  
*M. H. Lyon*

Inventor.

*Edward G. Soltmann.*  
*by A. A. A. A. A. A.*

Attorney.



# UNITED STATES PATENT OFFICE.

EDWARD G. SOLTSMANN, OF NEW YORK, N. Y.

## PHOTOGRAPHIC-PRINTING FRAME.

SPECIFICATION forming part of Letters Patent No. 654,421, dated July 24, 1900.

Application filed May 4, 1900. Serial No. 15,460. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD G. SOLTSMANN, a citizen of the United States of America, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Sun-Printing Apparatus, of which the following is a specification.

My invention relates to that class of sun-photographic-printing apparatus wherein the sheet bearing the drawing or negative and the sensitive paper to be printed or photographed upon may be forced uniformly against each other by means of atmospheric pressure.

My invention consists, essentially, in combining with the supporting-frame and its transparent plate a secondary frame provided with an air-impervious flexible cover attached thereto and with a continuous air-tight flexible tube placed between said frame and the flexible sheet and means for exhausting air from under the said cover, whereby the drawing and negative and the sensitive paper are forced against the transparent plate with uniform and heavy pressure and an air-tight seal is effected by the pressure of the tube on the cover.

My invention also consists in certain other features and details of construction, as hereinafter described in connection with the accompanying drawings, in which—

Figure 1 represents a transverse section on the line 1 1, Fig. 2, of my improved sun-photographic-printing apparatus with the parts in their proper positions when the frame is ready for printing. Fig. 2 is a plan of the same, partly broken away to more clearly show the construction. Fig. 3 is a plan of the frame with the flexible cover, its support, and connecting parts removed.

Similar letters of reference designate corresponding parts throughout the several views of the drawings.

Referring to the drawings, the letter A designates the glass plate or transparent fabric of the apparatus, and B is its supporting-frame, said glass or transparent fabric being held in the frame B by the shoulder *a* and interior bead *b*.

C is a secondary or inner frame hinged to the top edge of one side of the frame A, as at *cc*, and adapted when closed within the frame

A to be held therein by buttons *c'*, pivoted to the other sides of said frame. The lower surface of the inner frame C has a continuous convex depression, in which rests a continuous flexible air-tight tube D, extending around all four sides of the frame C.

E is a pipe connecting with the tube D and adapted for connection with an air pump or compressor of any usual form for inflating the tube from time to time, as may be found necessary.

To the bottom of the secondary frame C is attached a sheet F, made of rubber or other flexible material impervious to air, said sheet extending under the continuous tube D and is pressed against the plate A by said tube when the secondary frame is closed within the frame A.

G is an exhaust-tube extending through the sheet or cover F, its air-inlet being at the bottom of said sheet.

H is a sheet of felt or other porous or pliable material inserted between the glass A and rubber sheet F and within the area inclosed by the tube D when the frame C is closed. This sheet H is secured to one side of the frame B by thin flexible hinges *d*, Fig. 3, and on the other side by thin flaps *e*, secured to the opposite side of said frame and adapted to be buttoned to the sheet H, so as to hold it in place. These flaps permit a corner or a slight portion of the sheet H and similar portions of the drawing or negative and sensitive paper to be lifted to observe the condition of the print without danger of changing the relative positions of the two latter. When very heavy and large sheets H are used, one or more of these flaps may be dispensed with without materially decreasing the effectiveness of the frame.

The manner of using my improved apparatus is as follows: The drawing or negative and sensitive paper are inserted in the usual manner between the glass A and the pliable sheet H, which is then buttoned to the flaps *e*. The frame C, with the cover F, is then closed and fastened by the buttons *c'*. Tube E having been previously inflated by means of any appropriate compressor—a bicycle-pump, for example—effects an air-tight closure between the cover F and plate A when the secondary frame is closed. The air below



said cover and between it and the plate A is then exhausted through the pipe G, the air passing through the porous pliable sheet H, whereupon the atmospheric pressure above said cover will force the same with a uniform and heavy pressure against the pliable sheet H, forcing it and the sensitive paper in a similar manner against the drawing. The apparatus is then ready to put in the sun for printing.

It will be readily understood that when the secondary frame C is turned down into the main frame A and locked therein by the button c' the continuous pneumatic tube D will force the impervious sheet F tightly against the plate A, so as to prevent air passing into the space between said sheet and the glass.

From the above it will be seen that my invention provides not only a very practical and simple means for giving extreme and uniform pressure to the drawing or negative and sensitive paper by the use of atmospheric pressure without danger of breaking the glass, but also provides means whereby air may be readily excluded from between the glass or transparent fabric and its impervious flexible cover.

What I claim as new is—

1. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame adapted to be secured to the main frame, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, and an air-impervious flexible sheet secured to the secondary frame and extending beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, substantially as described.

2. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame adapted to be secured to the main frame, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, an air-impervious flexible sheet secured to the secondary frame and extending

beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, and a porous, pliable sheet placed between the glass or transparent fabric and the impervious sheet, substantially as described.

3. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame hinged to the supporting-frame, means for locking the two frames together, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, an air-impervious flexible sheet secured to the secondary frame and extending beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, and a porous, pliable sheet placed between the glass or transparent fabric and the impervious sheet, substantially as described.

4. In a sun-printing apparatus, the combination with the glass or transparent fabric and its supporting-frame, of a secondary frame hinged to the supporting-frame, means for locking the two frames together, a continuous, flexible pneumatic tube extending around the bottom of said secondary frame, an air-impervious flexible sheet secured to the secondary frame and extending beneath said tube; whereby the tube is caused to press the flexible sheet against the glass or transparent fabric to form an air-tight joint, a porous, pliable sheet placed between the glass or transparent fabric and the impervious sheet, flexible hinges connecting one side of said pliable sheet with the supporting-frame, and flaps secured to the opposite side of said frame and adapted to be secured to the adjacent side of the sheet, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD G. SOLTSMANN.

Witnesses:

EUGENIE P. HENDRICKSON,  
A. FABER DU FAUR, Jr.