

(No Model.)

W. V. ESMOND.
PHOTOGRAPHIC DEVELOPING TRAY.

No. 586,962.

Patented July 27, 1897.

Fig. 1.

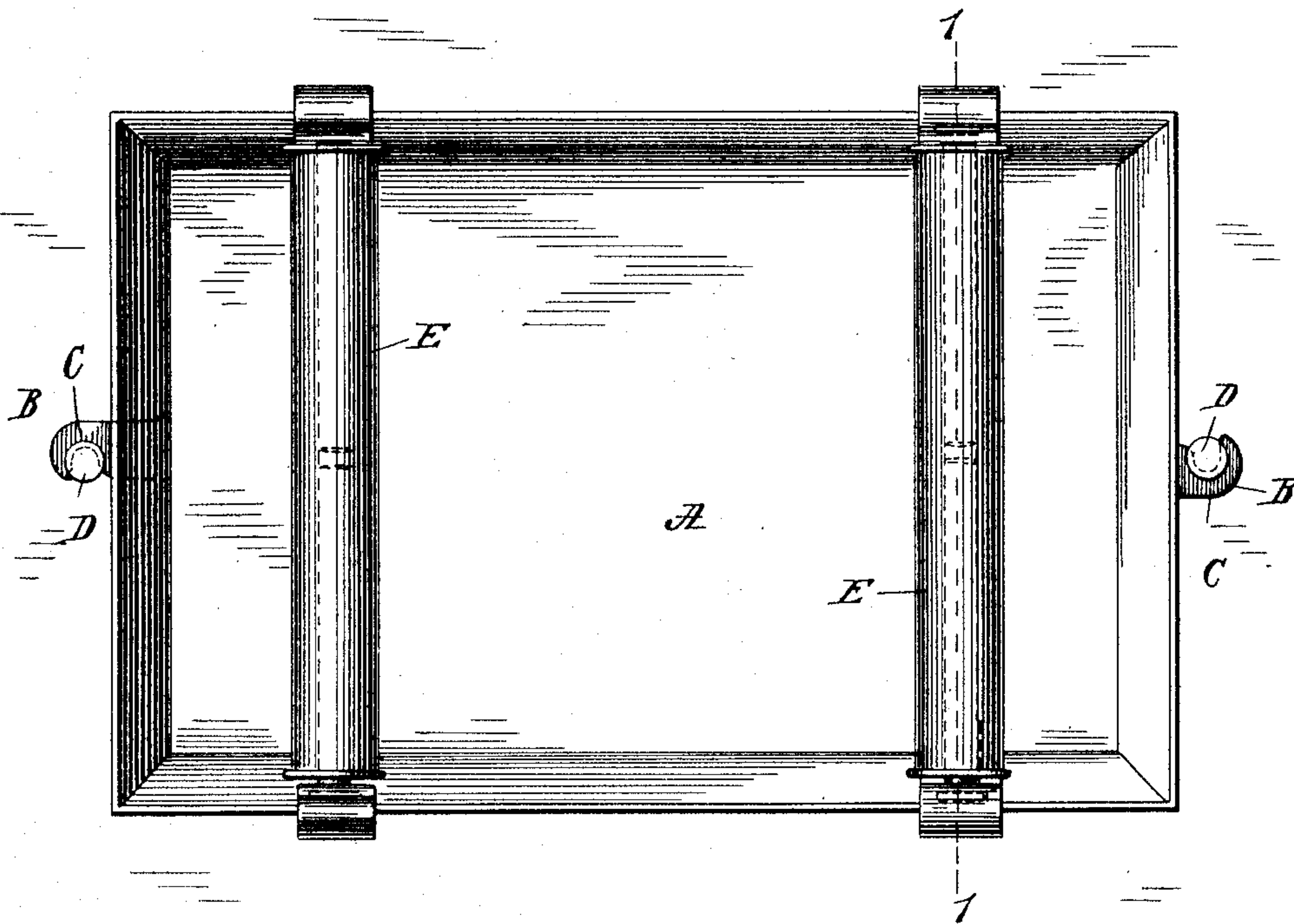
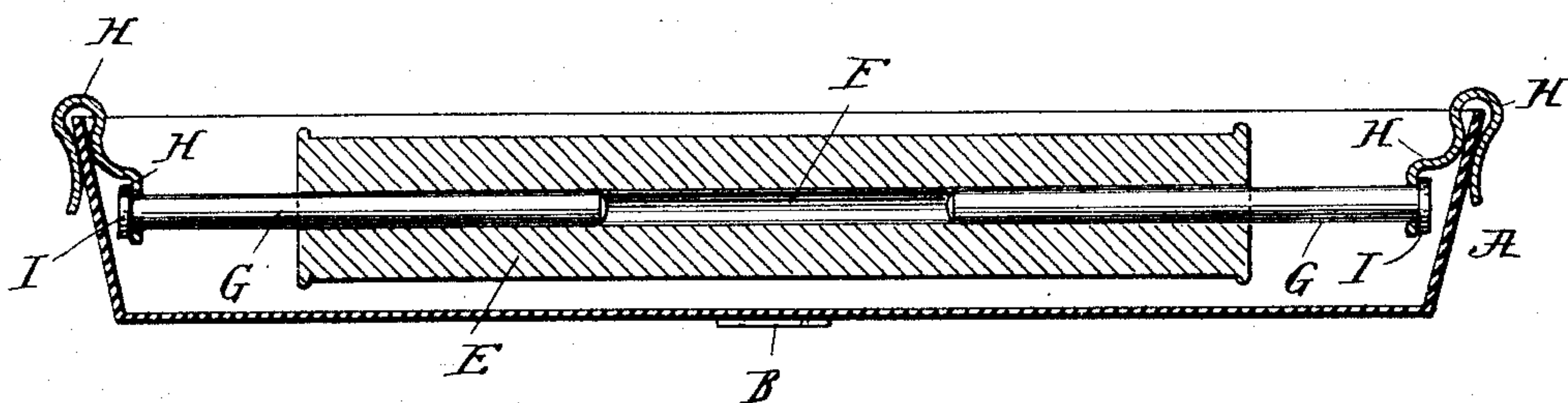


Fig. 2.



Witnesses
Edward C. Rowland.
A. B. Morrison.

William V. Esmond
Inventor
By his Attorney Phillips Abbott.

UNITED STATES PATENT OFFICE.

WILLIAM V. ESMOND, OF NEW YORK, N. Y., ASSIGNOR TO THE E. & H. T. ANTHONY & COMPANY, OF SAME PLACE.

PHOTOGRAPHIC DEVELOPING-TRAY.

SPECIFICATION forming part of Letters Patent No. 586,962, dated July 27, 1897.

Application filed May 12, 1897. Serial No. 636,257. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM V. ESMOND, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Photographers' Developing-Trays, of which the following is a specification.

My invention relates to improvements in photographers' developing-trays; and it consists in supplying the trays with detachably-attached means whereby photographic film in indefinite lengths and of any desired width may be subjected to the action of the developing-bath without the necessity of cutting the film into small pieces for individual pictures; and my invention overcomes the most annoying incident in the development of exposed films in long lengths, because, as is well known, owing to its nature it has a fashion of curling or twisting, so as to be at times almost unmanageable in the photographer's developing-tray.

Referring to the drawings hereof, Figure 1 illustrates a plan view of the invention. Fig. 2 illustrates a vertical sectional view on the line 1 1 of Fig. 1. The scales, however, of the two figures are different, because in Fig. 2 the parts are given a different adjustment from that shown in Fig. 1.

A is a photographer's ordinary developing-tray. It may be made of any desired material.

B B are two clips, one attached at each end of the tray at its bottom. They are preferably small metallic pieces provided with a notch C upon one side, in which the tang of a tack or nail D, which is driven into the photographer's bench or table the proper distance apart, may be received, so that the tray will be held immovably upon the table. Any other suitable devices for holding the trays may be substituted for these clips.

E E are two rollers. They are bored centrally from end to end, as shown at F, (see Fig. 2,) and in each end a metallic spindle G G enters, fitting somewhat snugly, yet with perfect freedom of rotation. The spindles are embraced at or near their ends by the flattened end of springs H H. The spindles, being provided with heads I I, maintain

their engagement with the springs. The springs H H are or may be of the form shown in Fig. 2 and are preferably quite stiff, so that when adjusted upon the sides of the tray their resiliency will be such as to pinch the side of the tray quite hard and thus afford the necessary rigidity to maintain the rollers E E in proper position, and an important feature of the invention is that the rollers are adapted to use with trays of different sizes—that is to say, the axes upon which they turn. In other words, the spindles G G are adjusted relative to the rollers as shown in Fig. 2, in which a large tray is employed in conjunction with a roller intended primarily for a smaller one, all that is necessary being to pull out the spindles G G endwise and attach the springs to the sides of the large tray in the same manner that they are to the sides of the appropriate tray, as shown in Fig. 1, and the device works equally well, so that the photographer is not compelled to buy a set of these rollers of appropriate sizes to match his trays.

The operation is obvious. The end of the film is passed down under one of the rollers, say that at the left-hand end in Fig. 1, thence through the bath and under the second roller, and thence upwardly and out of the tray, and in operation the film is moved from left to right, as desired, and is consequently completely submerged in the bath, the tray being sufficiently full to cause the lower arc, and preferably about the lower half of the roller, to be submerged in it. Upon the completion of the development of the film the photographer can decant the bath, if he desires, and in all ways treat the tray as though it had not these rollers attached to it, because they would be rigidly held in position and no annoyance follow from their presence. If, however, he desires to use the tray for the development of plates or film which has been cut up, then it is a very simple matter to remove the rollers by merely taking hold of the springs and pulling them upwardly and overcoming their grip upon the sides of the tray.

I am aware that submerging rollers and bars have been used in various coating and submerging processes, but never, so far as I know, has a submerging-roller been furnished

with adjustable devices whereby its rotation is assured, and yet it may be conveniently attached to and detached from such a structure as a photographer's tray, the same being
5 likewise adjustable, and consequently adapted to use with trays of different size.

It will be obvious to those who are familiar with this art that modifications may be made in the details of construction without departing from the essentials of the invention. I
10 therefore do not limit myself to the details as described and shown.

I claim—

1. A film-submerging device adapted to application to photographers' trays, comprising
15 a roller journaled in two springs, one at each end, which are constructed and arranged to be detachably attached to the sides of the tray, and to be held thereon by reason of their
20 resiliency, for the purposes set forth.

2. A film-submerging device adapted to be attached to a photographer's tray, comprising two springs, spindles connected with the springs, and a roller bored axially for the reception of the said spindles, for the purposes
25 set forth.

3. In combination with a photographer's developing-tray, one or more submerging rollers or bars located on the interior of the tray and supported at its ends upon removable supports, which are held to the sides of the tray
30 by springs, for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 10th day of May, A. D. 1897.

WILLIAM V. ESMOND.

Witnesses:

E. SIMPSON,

A. B. MORRISON.