

B. HUFNAGEL.
PHOTOGRAPHIC BATH.

Fig. 1.

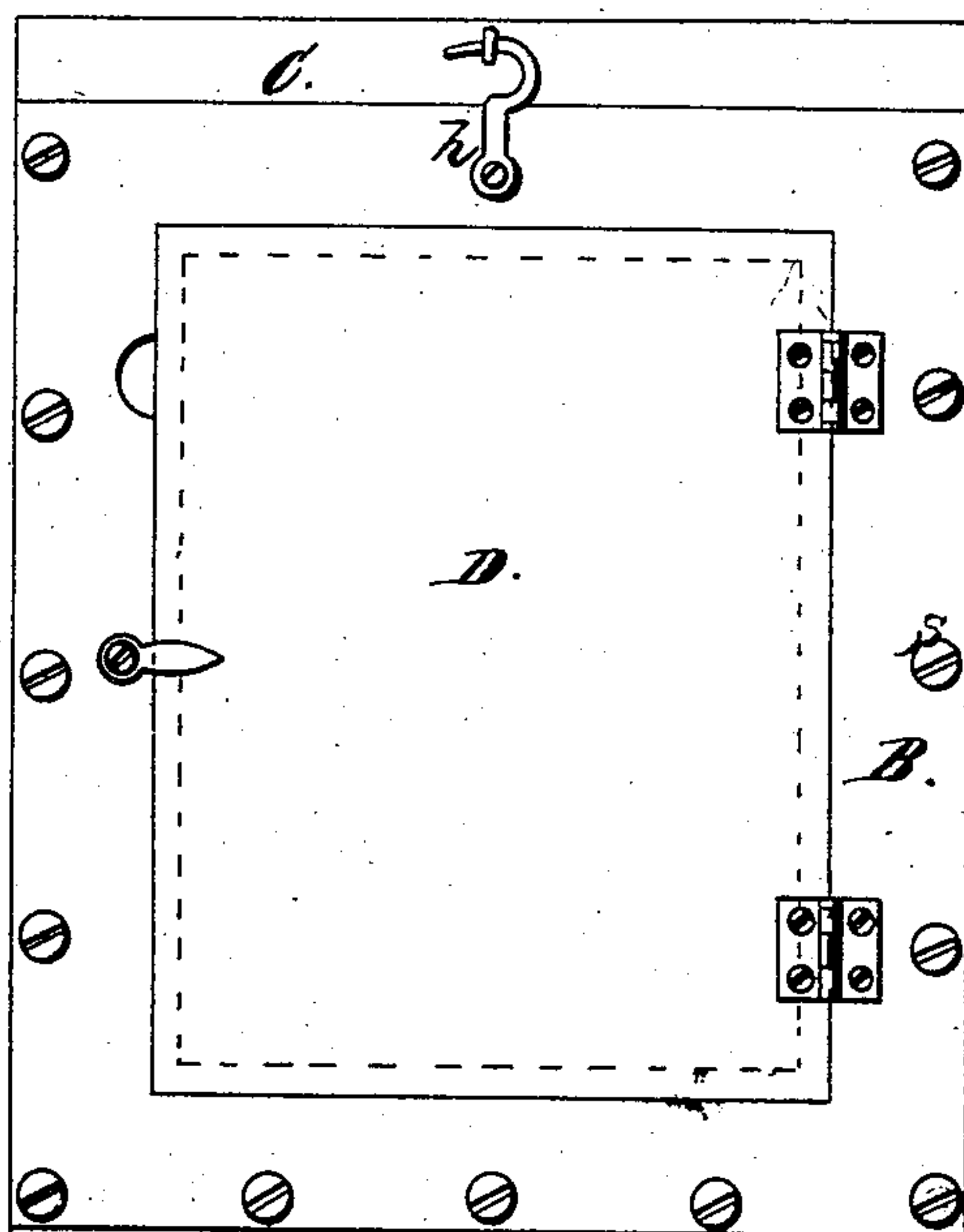


Fig. 2.

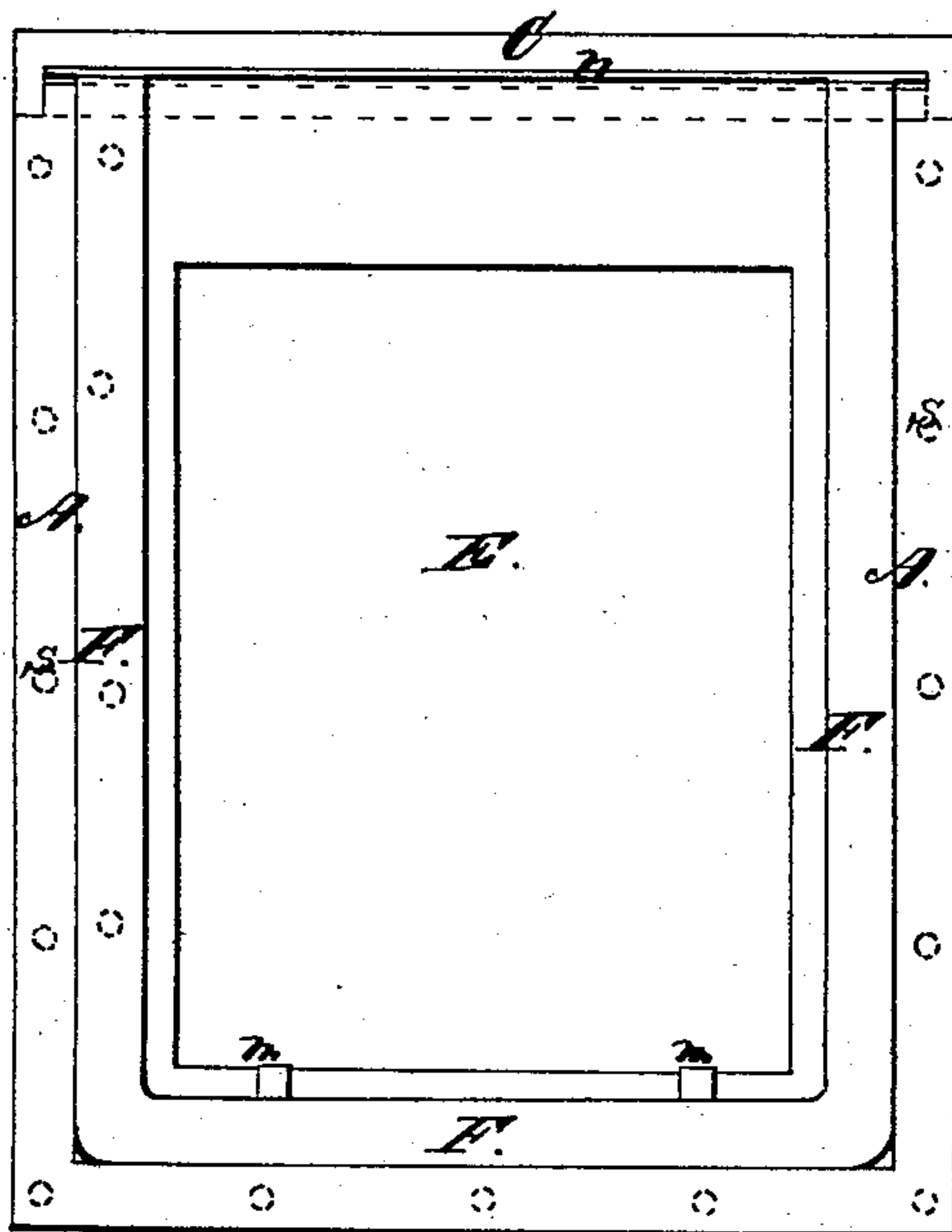
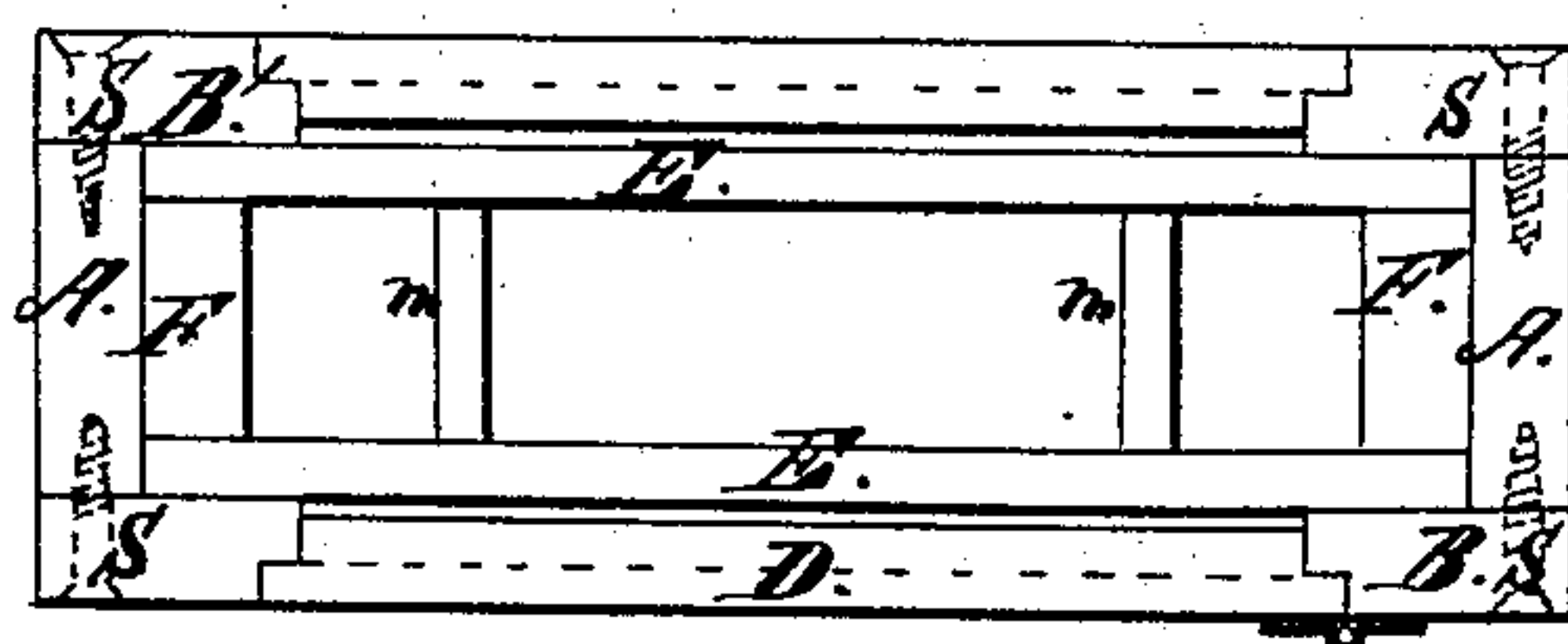


Fig. 3.



UNITED STATES PATENT OFFICE.

BERNHARD HUFNAGEL, OF NEW YORK, N. Y.

PHOTOGRAPHIC BATH.

Specification forming part of Letters Patent No. 21,679, dated October 5, 1858; Reissued November 13, 1860, No. 1,074.

To all whom it may concern:

Be it known that I, BERNHARD HUFNAGEL, of New York, in the county and State of New York, have invented a new and Improved Silver-Bath for Photographic and Ambrotype Purposes; and I hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure I represents an outside view. Fig. II a cross section and Fig. III a horizontal section of my improved silver bath.

The nature of my improvement consists in the construction of silver baths principally of the largest size, which shall require the smallest quantity of solution of silver, and at the same time preserve said solution from all foreign action so as to be able to use the same a great number of times until the silver is all absorbed.

A is the inside frame to which the front and back sides (B B') are fastened by means of screws (s), so as to form a close tight box. C, is a cover turning on hinges and fitting tight over the ends of said box and secured by a small staple hook (h). The front side B is arranged with a door D to be able to see the inside of the box, and so arranged as to close perfectly tight, and not to admit any light to the inside of the box when closed.

E, E, are two pieces of plate glass fitted to the inside of the box. F, is a piece (or it may be severela pieces) of vulcanized india-rubber fitting tight between the glasses. The cover of the box is on the inside lined with a thin sheet of india rubber (n) to prevent any detrimental action of the solution upon the wooden part of the box. m, m, are small india rubber pieces fastened to the bottom piece of the photograph or ambrotype plates to rest on.

In constructing and putting together this silver bath the thickness of two plate glasses, E, E, and of the india rubber, F, is made, according to the size of the bath, from $\frac{1}{8}$ of an inch to half an inch more in thickness

than the inside of the box measures, and is then as much pressed together by means of the screws, s, whereby a perfectly tight joint is obtained between the sides of the india rubber and the plate glass.

I am aware that silver baths have been made of gutta percha, china and different other materials, either cast in one piece or made out of several pieces, and connected together in different manner. The objections to all these plans are that they take too great a quantity of the solution of silver, thereby increasing considerably the expense, and that most of the materials, and principally where cement is used, are more or less affected by the silver, and likewise act again upon the solution of silver, thereby producing impurities in the bath, which are detrimental to the pictures, which are placed into the bath.

By my improved construction, I am able to see at any time if the silver bath is clear and pure, without emptying the solution into a glass bottle, as is the case by most other constructions, and as no kind of cement is used to produce a perfectly tight box, the same may at any time be easily taken apart and cleaned, besides the great advantage of requiring only a very small quantity of the solution to fill the bath and as neither the glass nor the vulcanized india rubber are affected by the silver, and likewise produce no bad effect upon the solution, I can use the same longer than is at present the case, without refiltering the same.

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

The construction of a silver bath for photographic and ambrotype purposes made out of two plates of glass with india rubber between and fastened together between wooden or other frame work in the manner described and for the purpose substantially as specified.

BERNHARD HUFNAGEL.

Witnesses:

JAMES F. AITKIN,
FEODOR W. RUDIGEE.