J. B. DAVID.

PHOTOGRAPHIC APPARATUS.

No. 180,704. Patented Aug. 8, 1876.

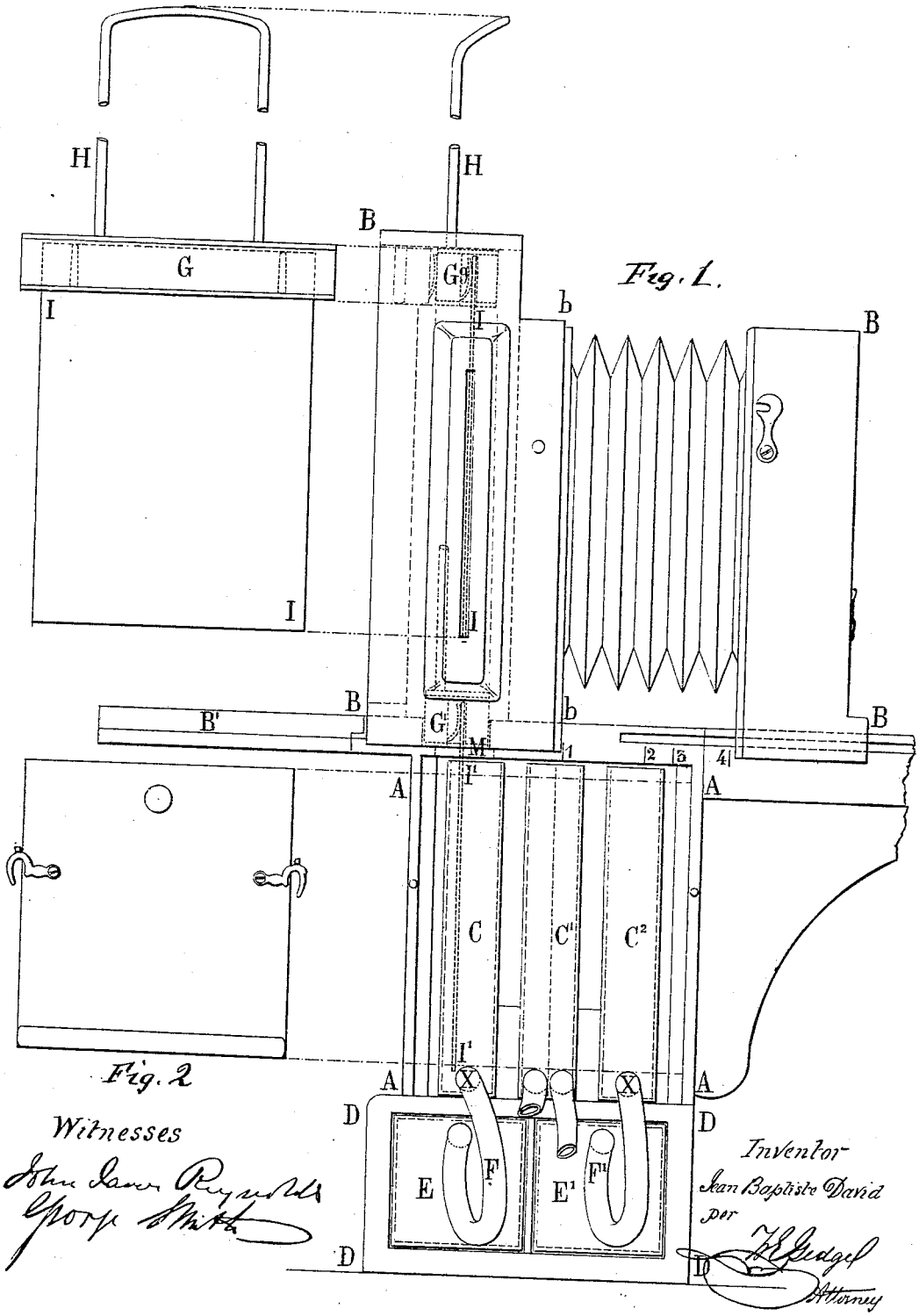

Fig. 1.

Fig. 2

Witnesses

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JEAN BAPTISTE DAVID, OF PARIS, FRANCE.

IMPROVEMENT IN PHOTOGRAPHIC APPARATUS.

Specification forming part of Letters Patent No. **180,704**, dated August 8, 1876; application filed November 22, 1875.

To all whom it may concern:

Be it known that I, JEAN BAPTISTE DAVID, of Paris, in the Department of the Seine and Republic of France, have invented Improvements in Photographic Apparatus, of which the following is a specification:

The photographic apparatus of my invention includes all that is necessary to the production of the negative. It is, in short, the ordinary apparatus, but provided with a camera-obscura in which the operator can submit the plate or negative to the different preparatory washing and fixing baths which are necessary to its completion.

It need scarcely be observed that the above-mentioned operations must take place sheltered from the light, and that they are generally performed by the operator in a dark room, the negative being taken out of the apparatus to be submitted to these operations.

With my apparatus, these operations can be performed on the spot, in front of the object to be reproduced and without taking out the negative, which is sheltered from all light, although the operator is himself in broad daylight, thus permitting the operator to take conveniently, by the wet processes, views which could not hitherto be taken by these processes for want of an ordinary camera-obscura on the spot.

The apparatus combines, in a comparatively limited space, not only the camera-obscura supplied with the necessary gutta-percha basins or bowls, but also a supply of the liquids which are to fill them.

My apparatus is illustrated in detail in Figure 1 of the accompanying sheet of drawing, which is a side elevation of an apparatus embodying my invention, Fig. 2 being a front view of negative-holder, shown detached.

The dark laboratory or camera-obscura A A A A is placed under the photographic apparatus, of which it forms a part. It contains three basins—the first, C, for the bath of nitrate of silver; the second, C^1, divided into two compartments for the bath of sulphate of iron and a water-bath; the third, C^2, for the bath of hyposulphate.

In the box D D D D are two closed receivers, E and E′, in connection with the basins C and C^2 by the tubes F F′. They contain the nitrate of silver and the hyposulphate.

The place which the plate or negative is to occupy with regard to the lens having been determined by the help of another plate of rough glass, as is usually done, the latter is taken out and the former substituted, in the following manner: Its upper edge is fixed in the groove *g* of a piece, G, where it is held between springs and one of the sides of the said groove. This nipper or clamp G, carrying the plate I I, has a double-branched handle, H, and is introduced through the upper part of the apparatus, in the direction indicated by the dotted lines G I I.

The negative being ready for the washings or baths, the lowered door B′ is pushed along grooves against the part B *b* B *b* of the apparatus, moving this part to one or other of the positions indicated by the notches 1 2 3 4, according to the desired bath, so that the negative may be on the same vertical plane with the desired basin. The receivers E E′ will have already been taken out and raised above the level of the basins, a small stopper removed from them to admit the air necessary to the flowing out of the liquids, and a little tap placed at X turned on, when the passage of the liquids from the receivers into their corresponding basins will take place. By reversing the movement, the liquids are afterward returned to their receivers.

There may be as many receivers as there are kinds of baths, the size of the compartment D being correspondingly increased. Supposing the basins to be fixed, and that it is desired to fill them with liquids from independent vials, these liquids are forced out by means of fixed tubes, as shown in basin C^1.

The negative being placed in a vertical plane with the desired basin, it is pushed down at I I′, by pressing upon the handle H, until the clamp G, sliding (but not too easily) in grooves, is lowered to G′, and covers a little trap, M, made in the bottom of the part B *b* B *b* of the apparatus, for the passage of the negative into the camera-obscura. To take the negative out of the camera-obscura, it is of course only necessary to pull the handle H above the apparatus.

To ascertain whether the negative may be

taken out of a bath or not, a ray of light may be thrown upon it by uncovering for an instant a small opening, *m*, closed with yellow glass, made in the cover of the lens, and a similar aperture in the opposite frame. The use of this arrangement is not, however, absolutely required.

I claim as my invention—

1. The combination of the camera-obscura B, laboratory A, and receiver D, constructed and arranged substantially as and for the purpose set forth.

2. The combination, substantially as described, of the basins C C^1 C^2 with the receivers E E′, for the purpose specified.

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Witnesses:

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