

W. V. BRIGHAM.

Process of Producing Combination Negatives.
No. 240,374. Patented April 19, 1881.

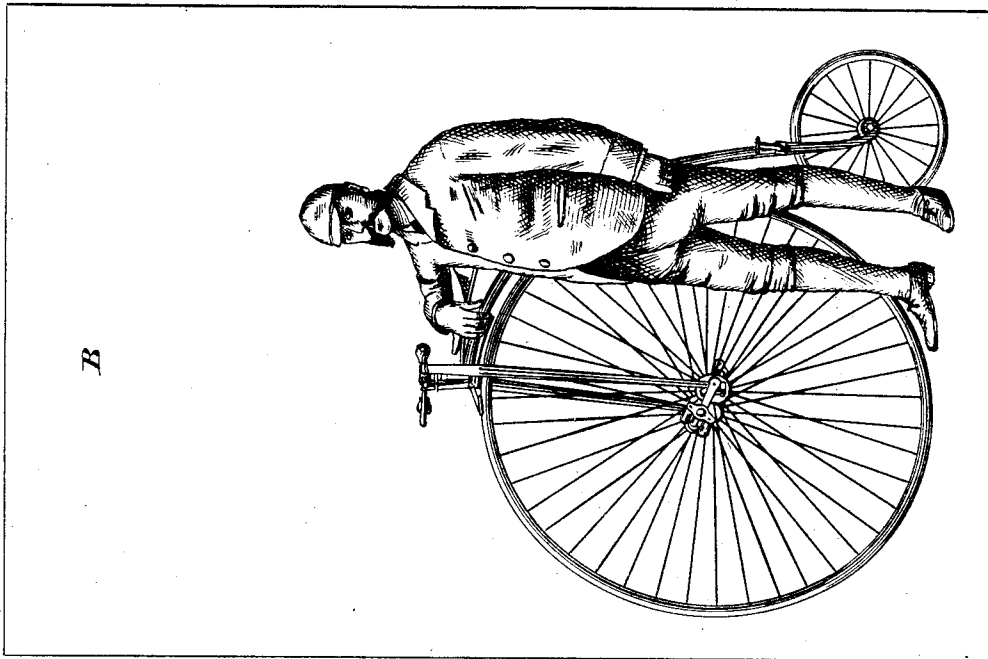


Fig. 2.

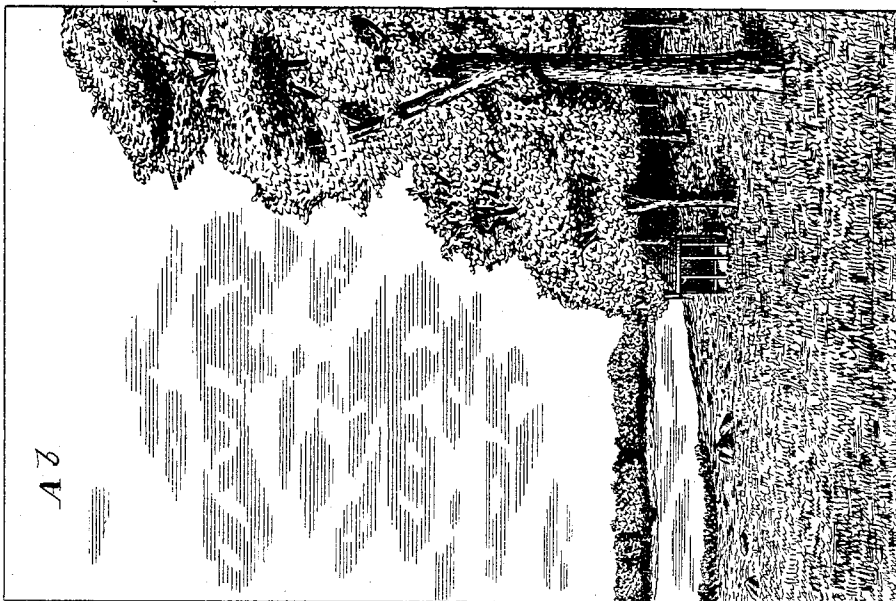


Fig. 1.

Witnesses:

Walter C. Wardwell.
E. L. Molineux

Inventor:

Wm. V. Brigham,
By Charles E. Pratt,
Atty.

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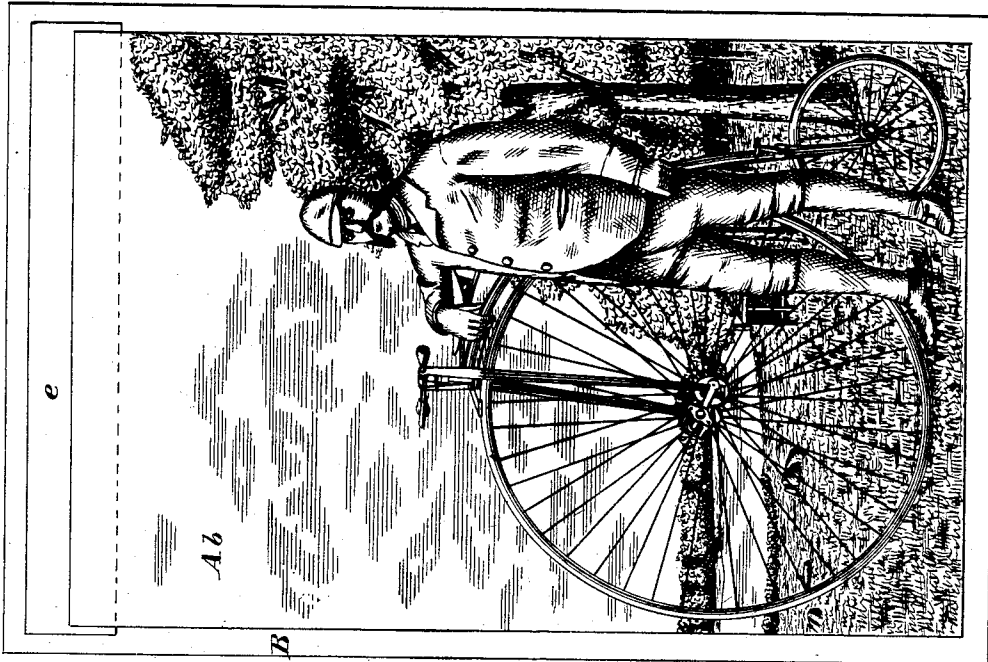


Fig. 4.

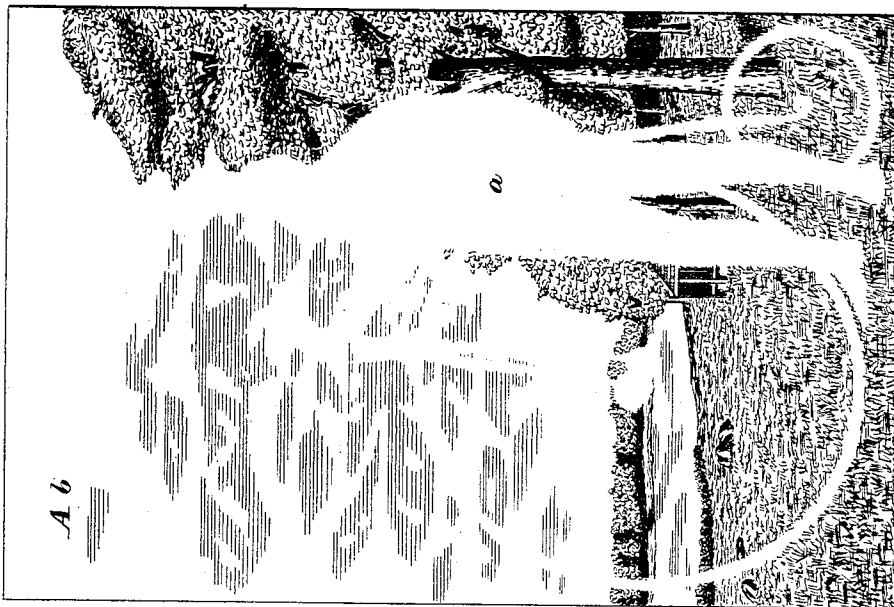


Fig. 3.

Fig. 6.

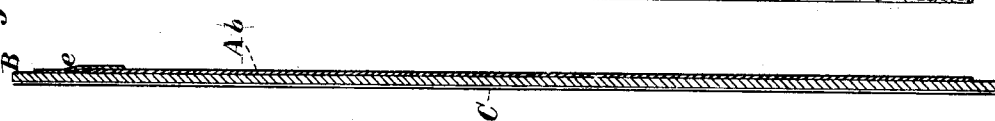


Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM V. BRIGHAM, OF NEWTON, MASSACHUSETTS.

PROCESS OF PRODUCING COMBINATION NEGATIVES.

SPECIFICATION forming part of Letters Patent No. 240,374, dated April 19, 1881.

Application filed February 16, 1880. (Specimens.)

To all whom it may concern:

Be it known that I, WILLIAM VALENTINE BRIGHAM, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the Process of Producing Combination Negatives, of which the following is a specification.

My invention relates to the production of photographs by a combination of two or more negatives and a process of preparation and manipulation, so as to overcome difficulties and produce results not heretofore accomplished.

In the attempts heretofore made to combine and use two or more negatives in printing photographs much difficulty has been found in making the background or secondary negative, and also in its use, as it had to be removed from the glass on which it was made to a film of collodion, which is too delicate for practical use, and the method of manipulation or process attempted has been such as rendered the picture produced indistinct and confused, or else with a broken or interrupted, patchy look.

My invention consists in the formation of a negative-film adapted to the manner of printing referred to, and composed of or prepared with gelatinous matter, in combination with collodion, and so constructed that while they possess sufficient tenacity to admit of their being handled with the greatest freedom, they also allow, in the act of printing, free access of light without material diffusion.

My invention consists, furthermore, in the special mode of using the said negative-film, whereby results are produced never before obtained, and possessing many valuable qualities, the nature of which will appear from the following description.

Having selected the scene desired as the background of the picture to be produced, the negative of it is produced in the ordinary way on perfectly clean glass, (not albumenized,) the edges of which have been coated with rubber cement to prevent the slipping of the film. I then place the negative in a horizontal position and pour over it a solution of gelatine of the consistency of one part gelatine to eight parts water, containing sugar or saccha-

rine matter or glycerine, for the purpose of imparting pliancy to the resultant film. When this becomes thoroughly dry I apply a coating of collodion or other water-proof varnish by pouring it over the surface of the gelatine and draining off the excess; and I allow the collodion to become perfectly dry before removing the film from the glass, which I do in the following manner: I first make an incision through the coating to the glass around the margin of the sheet, inside of the coating of rubber cement, when, by lifting one corner, the whole is easily removed, the negative, the gelatine, and the collodion cohering and forming one film.

With respect to the composition of the tissue compound, it will be understood by chemists that it may be varied, without materially affecting the result, by the addition or substitution of other organic matters analogous to gelatine—such as gum-arabic, albumen, dextrine, &c.—and one or more of these may be employed occasionally to modify the character of the tissue compound; but I generally prefer to make it as described. This negative-film may be used, kept, or carried anywhere and for any length of time, as an original single negative for printing from alone, or may be used for combination printing, as I will now explain.

Let it be desired, for instance, to produce a photograph of a man standing in a scene embracing the pond in Boston Common. A negative is first made of the scene chosen for the background, and this is made up into a negative-film, as above described. Another negative is then made of the man to be represented, which may be taken in any studio in any city, at any time, by any artist, in the same way as usual, taking care to use a plain dark screen of substantially non-actinic color back of the sitter, so as to secure a definite outline of the figure. This negative, where several independent figures are desired, should be transferred on another film; but for simplicity where only one figure is taken it may remain on the glass in the ordinary manner. I then place this last or portrait negative upon the retouching-frame, and the first or background negative over and upon it, with the picture or face side uppermost, and move it around until

the figure appears in a suitable position in the background scene, when it is fastened to the glass or portrait negative by affixing strips of gummed paper at the edges. I then, while the negatives are in this position, with the light passing up through, take a sharp knife or other suitable instrument and remove, by scraping, cutting, or otherwise, all that portion of the background-negative from the film where it covers the portrait, with care to leave the outline exact and fitting—an operation which is easily performed. The two negatives are now combined, and may be used as one practically, and when the picture is printed it has all the appearance of the man standing on the ground near the pond in the scene supposed, but with this advantage over the same thing taken on the spot, that the portrait is as good as can be taken under the most favorable circumstances, and greatly superior to any taken out-of-doors.

It is evident that by this process the tourist would be enabled to obtain a photograph of himself in any or all the different places he has visited; or a group may be obtained with perfect likenesses of the individuals, as each can be taken in focus.

To illustrate the methods of manipulation and construction, reference is made to the accompanying drawings, in which—

Figure 1 represents a background-negative film, *A b*, as first finished; Fig. 2, a portrait-negative, *B*, with definite outline of a person; Fig. 3, the background-negative film *A b* after it has been placed in the retouching-frame, covered on *B* in position, and that part of the negative removed which is over the portrait, leaving a blank transparent outline-space, as at *a*; and Fig. 4 shows the sensitized paper *C*, the background-negative film *A b*, and the paper strip *e*, holding *A b* and *B* in position, all in the order and position which I adopt as the best in using them for combination printing. These parts, of course, are held in a printing-frame and exposed as in ordinary photographic printing. Fig. 5 shows the sensitized paper *C*, the portrait-negative *B*, the background-negative *A b*, and the strip *e* in longitudinal section; and Fig. 6 shows a cross-section through a negative-film, the toughened gelatine being represented at *g*, the negative or impression bearing coating at *f*, and the collodion or protective coating at *h*.

I am aware that negatives have been used for backgrounds in combination printing transferred to gelatine films; but they were liable to become brittle in cold weather, and, if prepared with glycerine or analogous substance, would absorb moisture from the atmosphere in warm weather to such an extent as to cause them, in inexperienced hands, to stick to the upper negative, thereby causing serious damage; or, if made thick enough to prevent this, they separated the upper negative so far from the sensitized paper that the consequent diffusion of light rendered the results entirely unsatisfactory, causing the portrait to have

the appearance of being out of focus. I am also aware that negatives have been used in a similar manner transferred to collodion films; but these were so thin and fragile that they required to be handled with the utmost delicacy, and are therefore but little used, although an article greatly needed by photographers. But my invention combines both the gelatine hygroscopic compound and collodion films, presenting a negative with a collodion surface on either side, and therefore entirely insusceptible to atmospheric influences, the film of toughened gelatine being imprisoned between and thereby removed from the influence of the atmosphere, rendering the whole film as tough as silk and suitable in every way for the purpose described.

I claim as new and of my invention—

1. A compound negative film or plate consisting of a thin, transparent, pliant, gelatinous film covered on one side with a collodion film bearing a photographic image, and on the other side with a film of collodion or other transparent water-proof varnish, the whole combined and arranged for operation substantially as and for the purposes set forth.

2. The described process of making a negative-plate for photographic printing by first taking a negative in the ordinary way on glass not albumenized, covering it with a film of gelatine and sugar in solution, drying the same, and covering that with a coating of collodion or other transparent water-proof varnish, and stripping the resultant combined film off entire, substantially as described.

3. The described process of making a compound negative-plate for use in photographic printing by taking a negative of a background scene on glass without albumen, covering that negative with a solution of gelatine and sugar, covering this latter with a film of collodion or other water-proof varnish, stripping this composite film from the glass, then taking another negative, in the ordinary way, on glass or other transparent substance, placing this latter negative-plate with the former in a retouching-frame, and removing that part of the negative-surface of the former covered by and corresponding with the figure taken upon the latter and intended to be reproduced, then placing the two negative-plates together so that the former or background negative shall rest with its back or collodion side against the right or negative side of the latter plate, and fastening the two together, substantially as herein set forth.

4. The method of photo-printing by means of a compound negative or two or more negative-plates, substantially such as hereinbefore described, superposed, which consists in mounting one such negative upon a thin transparent film of gelatine and sugar, placing this plate or film over another negative taken on a transparent plate, and removing a part of the former negative corresponding with the outline of the figure on the latter plate, and then placing the former plate with its right

side downward upon a sensitized surface and
superposing the second negative-plate, also
with its right side downward, upon the former
plate, so that the figure on the second
5 negative-plate shall correspond with the outline
of the blank space in the former plate from
which part of the negative has been removed,
and so that the negatives do not over-

lap each other, confining the plates in this position,
and finally exposing the whole to the 10 light,
substantially as hereinbefore set forth.

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Witnesses:

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