

(No Model.)

H. E. MENDELSSOHN.

MEANS FOR PRODUCING PHOTOGRAPHS RESEMBLING ENGRAVINGS.

No. 550,079.

Patented Nov. 19, 1895.

FIG. 1.

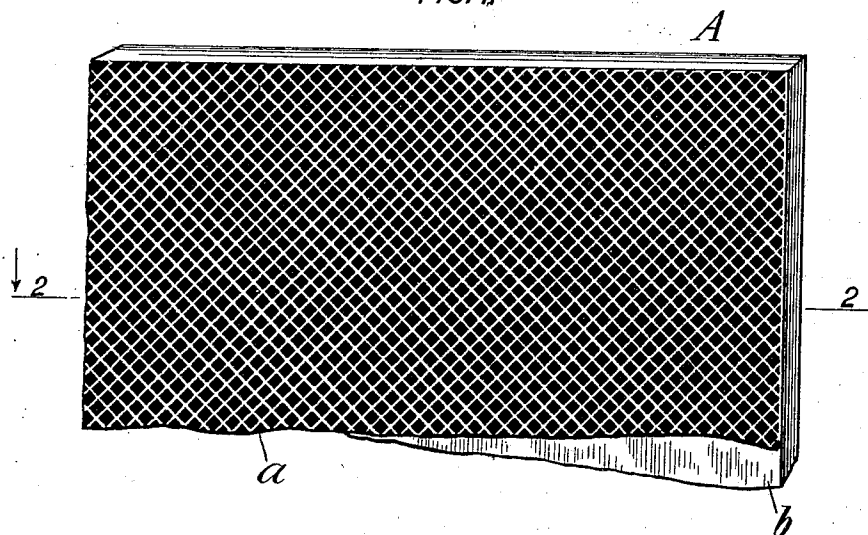
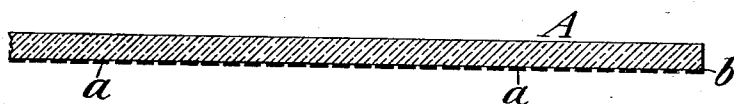


FIG. 2.



Witnesses:

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MEANS FOR PRODUCING PHOTOGRAPHS RESEMBLING ENGRAVINGS.

SPECIFICATION forming part of Letters Patent No. 550,079, dated November 19, 1895.

Application filed June 6, 1895. Serial No. 551,877. (No model.)

To all whom it may concern:

Be it known that I, HERMAN E. MENDELSSOHN, a British subject, residing at New York city, New York, have invented a Means for Producing Photographs Resembling Engravings, of which the following is a specification.

This invention relates to an improvement in photography, and more particularly to means for producing photographs and photo-engravings possessing a novel and striking effect.

By my invention I am enabled to produce photographs and photo-engravings possessing the appearance of high-class engravings—that is to say, the prints will contain the lines, dots, or stipples usually found in engravings, and will, moreover, retain all the half-tones of the original negative. This result is accomplished by forming a compound negative, which consists of an original negative and of a printed gelatinous coating intimately secured thereto, and by printing from such compound negative.

In the accompanying drawings, Figure 1 represents a perspective view of a compound negative formed according to my invention, and Fig. 2 represents a transverse section thereof.

In carrying my invention into effect I proceed as follows:

First. I produce a copy or print on paper from an engraved or etched plate, lithograph, zincograph, or electrotype, containing in negative lines, dots, stipples, or other pattern that usually appears on an engraving. From the copy or print thus obtained a negative is taken in the usual manner.

Second. I also form a mixture composed of about thirty ounces of soft gelatin, twelve ounces of sugar, ninety ounces of water, to which is added after the gelatin is dissolved about one-sixth dram of India ink. This mixture is spread upon a sheet of photographic or any other paper, and after it has thoroughly set it is sensitized by immersion in a bath composed of about three ounces of potassium bichromate, seventy grains of ammonium carbonate, and one hundred ounces of water. The backed and sensitized gelatinous film is thoroughly dried and cut up into proper sizes.

Third. The films formed in the above manner are exposed to light under the negative

containing the lines, dots, or stipples, the exposure being timed preferably by an actinometer. After proper exposure the print is immersed in cold water to become soft.

Fourth. I take an ordinary negative produced in the usual manner, and from which a print containing my novel effect is to be obtained. This negative is coated with a solution composed of about ninety-five parts of turpentin and five parts of rosin, and is allowed to dry.

Fifth. The negative is immersed in cold water and its face is brought into optical contact with the printed gelatinous film. All the water is expelled between the two surfaces by the pressure of a squeegee, and after a few minutes the film will have set and united with the negative. The negative is in this condition placed in a tray containing water which is heated to about 85° to 140° Fahrenheit. After a short time the paper backing will become loosened and may be drawn off. The negative is now washed until all the gelatin which has not been affected by the light, and has consequently remained soluble, is washed away. Those particles of gelatin, however, which have been affected by light, and have thereby been rendered insoluble, will not be affected by the washing and will remain inseparably united with the negative. The result will therefore be a compound negative A, composed of a reticulated translucent, gelatinous coating *a*, containing lines, dots, and stipples, and of an original negative *b*, to which such coating is intimately secured.

Sixth. From this compound negative the pictures are now printed in the ordinary photographic manner on photographic paper or other substance, and will have the appearance of finely-executed engravings. Owing to the exceeding thinness of the film, its reticulated condition, and the fact that it is inseparably united to the negative, none of the details or half-tones of the negative are lost by the transmission of light through the film while printing, and therefore the product will possess a high artistic value.

The process above described is to be practiced when the gelatinous film is to be used shortly after the lines, dots, and stipples have been printed upon it. Such a film when stored would after a time become insoluble

in all its parts, and thus could not be used in the manner described.

In order to produce a permanent printed film, which forms a new article of merchandise and 5 which may be used at any convenient time, I proceed as follows: A backed film containing printed lines, dots, and stipples is formed in the manner already described; but in lieu of being attached to a negative it is attached to 10 a sheet of transfer-paper made as follows: A sheet of smooth white paper of sufficient strength is immersed in a saturated solution composed of about four parts of unbleached shellac, four parts powdered borax, and thirty- 15 five parts hot water. After being removed and dried the paper is rubbed over with a composition consisting of about one part of wax, one part of rosin, and fifty parts of turpentin or benzolin. The gelatinous film is 20 brought into contact with the transfer-paper in a cold-water bath and a squeegee is applied to expel the water and intimately connect the film to the paper. The product is then placed in a hot bath, the backing is re- 25 moved, and the coated paper is washed until the soluble gelatin is washed away, while the insoluble gelatin will remain attached to the transfer-paper. This paper provided with the reticulated insoluble gelatinous coating 30 having the lines, dots, or stipples is now complete and forms a practically imperishable article of merchandise that may be used at any subsequent convenient time. To use this paper I take an ordinary negative, whether 35 produced by the wet or dry process, and coat its film side with a saturated solution of gutta-percha. After the gutta-percha has set, it is coated with a solution composed of about five parts of gelatin, one-half part of chrome-alum 40 solution, and ninety-four and one-half parts of water. The negative thus treated and the film on the transfer-paper are both immersed in cold water and are brought face to face and squeezed into optical contact with each 45 other. When the compound plate thus produced has set and become thoroughly dry, the transfer-paper may be drawn off. The transfer-paper comes off with the slightest pull. This is due to the fact that on drying 50 the waxed paper will contract and pucker up, so that it becomes practically detached. Thus a compound negative is formed which consists of the original negative and of the inseparable reticulated gelatinous coating containing the lines, dots, or stipples. This com- 55 pound negative is therefore a substantial equivalent of the negative produced by my first-described process, and when printed from will produce a picture resembling a high-class engraving. 60

By my invention I may also produce prints containing a variegated pattern. Here part of the print, such as the face, contains the dots, another part, such as the background, 65 contains the lines, and another part, such as the figure or drapery, contains the stipples. To produce this print, I must of course first

obtain a compound negative, which I make in the following manner: Sheets of transfer- 70 paper are first made in the manner described, some containing a gelatinous coating with dots only, others a gelatinous coating with lines only, and others a gelatinous coating with stipples only. The negative is then pre- 75 pared with the gutta-percha solution as described; but in place of coating the entire surface with gelatin and chrome alum I brush such solution only over a certain part of the negative—say the background. After the so- 80 lution is set I place the negative in cold water to soften the part where the gelatin has been applied. I also moisten the film containing the lines only and bring it into contact with the negative in the manner already previously 85 described. When the negative is dry, the transfer-paper is removed and the film containing the lines will thus be attached to that part of the negative only which had been brushed over with the gelatinous solution. In a similar manner a film containing the 90 dots only is attached to the face of the negative, and finally a film containing the stipples only is attached to the figure or drapery of the negative. Thus a compound negative is 95 formed having different patterns on different parts and producing a correspondingly-marked print of fine effect.

By my invention I am thus enabled to form photographic prints resembling finely-executed engravings. The reticulated gelatinous 100 coating adhering intimately to the negative offers practically no resistance to the light, and thus the prints will show the pattern of the superposed film and also the full beauty of the negative, as none of its half-tones will 105 have become obscured or impaired.

What I claim is—

1. A reticulated gelatin film composed of lines, dots, or stipples of insoluble gelatin and secured to a negative, substantially as 110 specified.

2. A compound negative comprising an original negative and, secured thereon, a plurality of opaque gelatinous films having 115 different patterns printed upon them and located adjacent to each other, substantially as described.

3. As a novel article of manufacture, a sheet of transfer paper having secured thereon a discontinuously opaque gelatinous film, 120 the interstices or translucent portions forming the positive of the lines, dots, or stipples, which produce the effect of an engraving, substantially as described.

4. A compound negative consisting of an 125 original negative and, intimately connected therewith, a gelatinous coating marked with lines, dots, or stipples for producing the effect of an engraving, substantially as described.

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Witnesses:

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