

(No Model.)

J. A. BISBEE.

METHOD OF TREATING PHOTOGRAPHIC NEGATIVES.

No. 538,814.

Patented May 7, 1895.

Fig. 1.

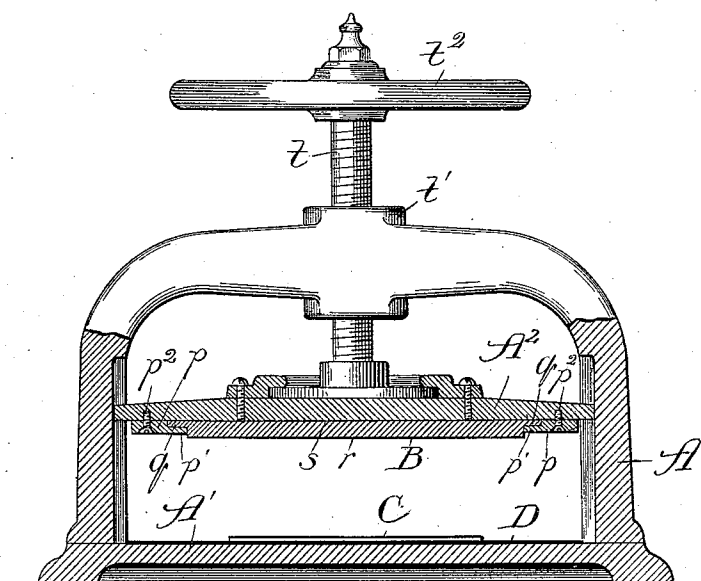
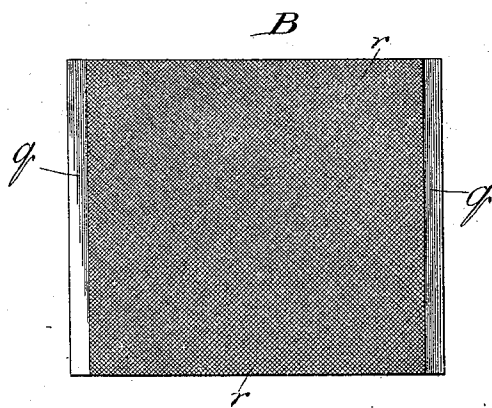


Fig. 2.



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METHOD OF TREATING PHOTOGRAPHIC NEGATIVES.

SPECIFICATION forming part of Letters Patent No. 538,814, dated May 7, 1895.

Application filed July 13, 1894. Serial No. 517,460. (No specimens.)

To all whom it may concern:

Be it known that I, JULIAN A. BISBEE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Method of Treating Photographic Negatives, of which the following is a specification.

My invention relates to a new and improved method of treating photographic negatives; and my object is to provide a method of treating negatives, more especially of the class wherein the view is taken upon a plate provided with a coating of sensitized gelatin, or upon a sheet or strip of sensitized film.

In the practice of my invention the film or coating is developed in any suitable manner, and the negative picture fixed, and my method is employed either to stop out hard lines in the face or blemishes on the skin of a portrait negative, or it may be employed to change a plain negative, after it has been developed, into a half-tone negative.

To this end my invention consists in first moistening the developed film, to soften it, and then forming thereon, simultaneously, by pressure, multiple indentations. In the practice of my method I prefer to employ a plate of comparatively hard material provided on its surface with numerous lines, straight or otherwise, and parallel with each other, giving to the surface a file-like character. The lines may be in series crossing each other, and producing a more or less fine mesh, or they may be dots either promiscuous or in lines crossing each other and forming dotted lines. The plate having the file-like surface may be fastened to or laid upon or constitute the bed of a press; or it may be laid upon, fastened to or constitute the platen of a press; and the negative plate is prepared, by softening the film throughout, or only certain parts, as desired, with moisture, and it is then laid between the bed and platen of the press with the film side next the file-like surface, whereby, when the press is operated, the file-like surface is pressed against the film to indent such part of the film as has been softened. In this manner the film may be provided with numerous surface indentations which go only part way through the film, or the indentations may be completely through the film. Moistening

of the film causes it to swell to, say, twice its thickness, and the pressure of the file-like surface causes the ridges or points of the latter to indent themselves in the film. When the plate is dried again, the film, where it has been softened, contracts to its original thickness and regains its original hardness of surface. The impression of the file-like surface left in the film produces thereon semi-transparent lines or dots, through which the light will pass more readily than through the surrounding parts in the printing operation.

Before the film is softened and worked upon by the file-like surface, as described, it presents a smooth surface or coating of even density or transparency throughout; and when any part thereof is pressed upon by the file-like surface the film beneath the ridges or points is thinned out or pressed aside, leaving but a small quantity or thickness of film upon the plate or sheet where the points or ridges have engaged the film, and at these points the light will pass more readily through than at other parts of the film. The result of printing from the negative is the production of numerous dark lines or dots somewhat like those seen in an ordinary half-tone photo-engraving.

My invention is particularly useful and desirable in preparing negative plates for half-tone photo-engraving work. Hitherto the negative from which the final print upon the engraving-plate was made was usually the result of several operations. In other words, the view was first photographed, the negative thereof developed and then printed, after which a new negative was made therefrom by photographing the copied picture through lined screens. This operation has usually been performed with the old wet-plate process and requires not only a great deal of time, but also skill of a high order on the part of the operator. The negative taken from the first print through lined screens is necessarily somewhat dim and the very fact of photographing through an interposed screen tends to dim or flatten out the negative and the print taken therefrom. By my improved method the half-tone negative effect may be produced by moistening and thereby softening the film of the original negative and impressing it

throughout with a file-like surface, the ridges or points of which penetrate through the film. In printing from the negative, thus prepared, upon the sensitized surface of a copper or other plate, the lines or dots produced by the passage of the light through the negative plate or sheet, where the film has been pressed aside, will be particularly black and clear. The light having full play through the negative at the lines or dots where the gelatine is displaced, renders the sensitive coating of the printing surface more quickly and effectively insoluble, and the etching process which follows is thus rendered more easy to carry out, and is caused to give better results.

In the accompanying drawings, Figure 1 shows, partly in section and partly in elevation, a press which may be employed in carrying out my method; and Fig. 2, a plate or die provided with a file-like surface.

A is a press which may be of any suitable form having a bed A' and movable platen A^2 . The platen is raised and lowered by means of a screw t working through the bearing t' and operated by a hand-wheel h . B is a plate, preferably of hardened steel, having a base s and face r parallel with each other. At opposite edges the plate is recessed to present shoulders or tongues q . On the under side of the platen A^2 are clips $p p$ having projecting shoulders $p' p'$ adapted to engage the shoulders q of the plate. The clips are held to the platen by means of screws p^2 , and when tightened by the screws against the shoulders q of the plate they hold the latter firmly against the under side of the platen, the face r being in a plane parallel with the surface of the base A' . The surface r of the plate B is provided preferably with two series of lines crossing each other at right-angles. The lines are made with a very sharp and fine tool and should be of equal depth throughout.

C is a negative plate which may be imposed upon a sheet of rubber D spread upon the base A' . The negative plate in ordinary practice would be of glass provided on one side with a sensitized coating upon which the photograph is taken, developed and fixed in any suitable way. The negative is placed upon the sheet D with its sensitized side up, and the film is moistened throughout or at such

places as are to be acted upon by the file-like surface r of the plate B.

In practice when the negative is placed in position the platen is screwed downward to impress the file-like surface r of the plate B against the film surface of the negative C, and the pressure is regulated to indent the file-like surface the proper distance into the moistened film. The result is as before explained.

It is to be understood that the file-like surface r may consist of lines running in one direction only, either straight, curved or wavy; or they may be dots or of any other form which will give to the surface r the desired file-like characteristics.

It is to be understood that I do not confine my invention to the use of the apparatus shown and described, because my invention may be carried out with mechanism variously modified. For example, it may be found desirable in practice to employ a press which will register the degree of pressure exerted by the die or plate B against the film of the negative; and there are undoubtedly many ways, besides those herein suggested, for impressing the film with a file-like surface to produce the desired result.

What I claim as new, and desire to secure by Letters Patent, is—

1. The method of treating a photographic negative, which consists in first moistening the film, to soften it, and then forming therein simultaneously, by pressure, multiple uniform and parallel indentations, substantially as described.

2. The method of treating a photographic negative, which consists in first moistening the film, to soften it, and then forming therein simultaneously, by pressure, multiple parallel and intersecting indentations, substantially as described.

3. The method of treating a photographic negative, which consists in first moistening the film, to soften it, and then applying thereto, with pressure, a relatively hard file-like surface, substantially as described.

JULIAN A. BISBEE.

In presence of—

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