(No Model.)

F. E. IVES.

Method of Producing Impressions in Lines or Stipple from Photographic Negatives.

No. 237,664. **Patented Feb. 8, 1881.**

Fig. 1.

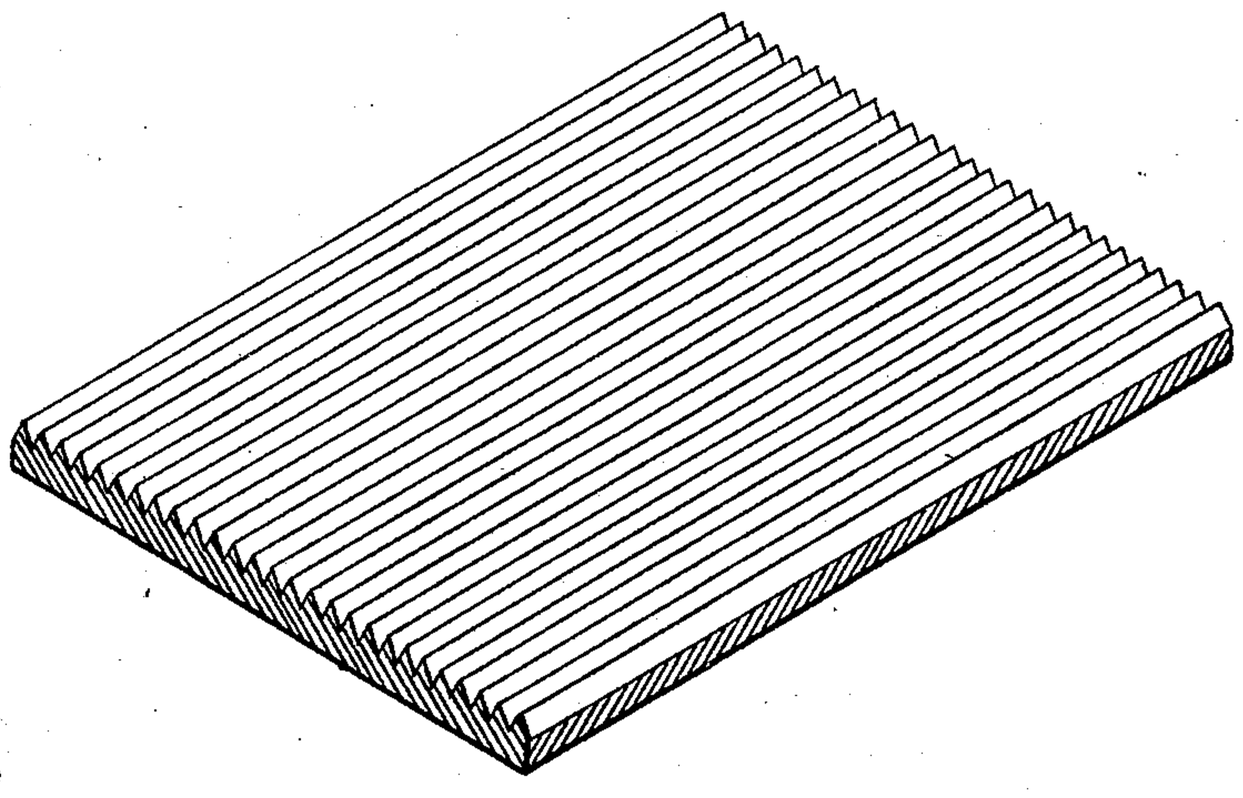
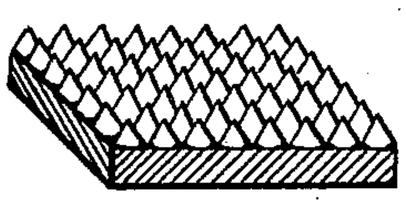


Fig. 2.



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UNITED STATES PATENT OFFICE.

FREDERIC E. IVES, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF PRODUCING IMPRESSIONS IN LINE OR STIPPLE FROM PHOTOGRAPHIC NEGATIVES.

SPECIFICATION forming part of Letters Patent No. 237,664, dated February 8, 1881.

Application filed August 9, 1880. (No specimens.)

To all whom it may concern:

Be it known that I, FREDERIC E. IVES, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented a new and useful Improvement in the Method of Producing Impressions in Line or Stipple from Photographic Negatives, of which the following is a specification.

The object of my invention is to produce from a photograph from nature or artists' work a print or engraving which shall represent, in pure line or stipple, the "body shades" of the original, and this object I attain in the following manner:

I first take an ordinary photographic negative of the object to be reproduced—say, for instance, a portrait—and by the aid of this negative produce by any of the well-known methods a relief-plate of the same character as that employed in the Woodburytype process—that is, any relief in which the variations of light and shadow in the negative are represented by variations in the thickness of the relief. I then prepare printing-paper of a suitable thickness by corrugating its surface in straight or curved lines, as illustrated in the exaggerated perspective view, Figure 1, or by forming on the surface a series of raised dots, as illustrated in the exaggerated sectional view, Fig. 2. These raised lines or dots may be formed on the surface of the paper by passing the latter beneath a pressure-roller having a surface of the required pattern, or subjecting the paper to pressure beneath a platen with the necessary impression-plate. The gelatine relief-plate is then inked in the usual manner, and after it has been suitably "backed" an impression is produced on the prepared paper, preferably by passing the paper, with the gelatine plate and its backing, between a pair of rollers under a uniform pressure. As the paper will take the ink only where it is pressed against the gelatine relief, it will receive no ink in the high lights, where the relief is thin, a little where the relief is thick enough to just press against the top of the lines or dots on the paper, more where the pressure flattens the lines somewhat, and an even black coating where the relief is thick enough to entirely flatten out the lines or points. The result will be a surface covered with lines or dots of ink, the thickness or size of which will depend upon the thickness of the gelatine relief which has been pressed against that part. These lines or dots will represent the body shades of the original. In short, the thickness of the inked lines or dots is regulated by the thickness of the gelatine relief which is pressed against the raised lines or dots upon the paper. From the impression or print thus produced a photo-electrotype or photo-engraving with a line or stipple effect can be produced in any of the well-known ways, and such engraving, owing to the fact that it is in line or stipple, may be used for printing in the same form with type or wood engravings or electrotypes or other surface printing-plate.

Impressions produced as above described on paper with raised lines or raised dots may also be used as media for obtaining reproductions by photolithography.

I do not desire to claim, broadly, the use of paper or other surface having raised lines or dots in the production of printing-surfaces; but

I claim as my invention—

1. The mode herein described of producing an impression in pure line or stipple from a photograph from nature or artists' work, said mode consisting in first making a photographic negative of the object, producing a relief-plate therefrom, as described, and then producing an impression in printers' ink by impressing the said relief-plate against a surface of raised lines or dots, substantially as described.

2. The mode herein described of producing photo-relief printing-plates—that is, by first making a negative of the object to be produced, then making a relief-plate therefrom, as described, then producing an impression in printers' ink by impressing the said relief-plate against a surface of raised lines or dots, and finally producing a photo engraving or electrotype from said impression, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRED. E. IVES.

Witnesses:

HENRY HOWSON, Jr.,

HUBERT HOWSON.