

UNITED STATES PATENT OFFICE.

OZIAS DODGE, OF NORWICH, CONNECTICUT.

FILM.

No. 874,885.

Specification of Letters Patent.

Patented Dec. 24, 1907.

Application filed August 30, 1906. Serial No. 332,623.

To all whom it may concern:

Be it known that I, OZIAS DODGE, a citizen of the United States, and a resident of Norwich, in the county of New London and State of Connecticut, have invented an improvement in Films employed in drawing and other artistic and industrial work, and specially employed in making transparent positives and negatives, with or without the use of photography, in making the films.

This invention concerns the steps which precede the making of a printing surface from a drawing or design, original or other.

The objects of my invention are to furnish the best surface on which to execute drawings or designs, semi-opaque, grained or otherwise, as the work may require, such that in the progress of the drawing the work may be erased or changed, and that afterwards the lines may be made immovable upon the surface, and the surface bearing the drawing or design may be easily converted into a transparent support thereof.

Another object of my invention is to provide a film which, when supporting the drawing or design, and rendered transparent, may be applied as a positive direct upon the surface of a photographically coated metal plate to produce a printing surface on the plate, thereby saving several photographic processes.

A further object is to provide a support for the original drawing or design that is flexible in having various surfaces adapted to different kinds of work, that, when converted into a transparent support, can be used for making printing surfaces indefinitely without destruction of the film or harm to it.

Other objects will appear from the hereinafter description.

In drawing upon a white surface with a photographically opaque pencil or ink, and from this drawing, producing by photography, transparent positives or negatives, there are several operations in each of which something of the vital touch of the original is lost, whereas in my process the original is the positive or negative, thereby saving time, expense, and most of all, preserving the slightest touch of the original.

Prior to my invention there was no surface upon a support that is semi-transparent, and that after drawing may be made entirely transparent, bearing the drawing firmly fixed upon its surface.

In Letters Patent of the United States issued to me on a process of producing printing surfaces, No. 758,625, dated May 3rd, 1904, I transfer the drawing from the paper to a copper plate for example, preserving the character of the original drawing, but in that process, and in all processes of transferring the original to the printing surface, such as stone and zinc in lithography, the original is lost, while by the use of my improved film it is in no way injured and can be used indefinitely.

The tracing paper or cloth employed by architects, from which, as a positive or negative, blue-prints are produced, is inapplicable in attaining the objects of my present invention, for no tracing paper or cloth is entirely transparent, and this is necessary in producing the image upon copper. Sheet gelatin and celluloid are objectionable in that they have no grained and semi-transparent surface suitable to draw upon.

I will now describe in detail the preferred way of making my improved semi-transparent film with a grained surface of any desired fineness, and the process of converting it, after the drawing is placed upon it, into a perfectly transparent support for the drawing.

I form the film upon a sheet of plate-glass, having a coarse or fine grained surface corresponding to that desired on the drawing surface of the film. To make this glass surface I take a sheet of plate glass, sprinkle fine sand thereon, and upon it place a level lithographic stone, and with the aid of water, and by revolving the stone upon the surface of the glass, I grind the glass to a sharp tooth or grain of any desired fineness, at will, by graduating the sand. This grained sheet or glass is then washed clean and rubbed with powdered talc and turpentine to prevent the removal of the grain in the further steps. Next gelatin, Nelson's No. 2, is dissolved in water and poured onto the grained glass warm, and allowed to set and dry upon the surface from twenty-four to thirty-six hours. The sheet of gelatin is then peeled off and is found to have a sharp grain, and to be semi-transparent, well adapted to be placed over a drawing to be copied, and is flexible and presents an ideal surface for the artist to work upon. Upon the grained surface of this film the drawing may be made with a pencil, preferably hard red, because such a

pencil is lithographically opaque. The drawing may be erased at will, or scratched out, as may be done with a lithographic stone, or it may be worked with a brush or with pen and ink, or as a mezzo-tint, up to the step next to be described.

After the drawing is complete, the sheet of gelatin bearing the drawing is flowed over with flexible collodion, which permanently fixes the drawing, and at the same time renders the gelatin support transparent. Both sides of the sheet may be varnished as a protection from moisture and handling. Having thus made the film transparent, and having fixed the photographically opaque lines, I now have a transparent positive which may be applied to a sensitized copper plate, or otherwise used in making accurate and vital reproductions upon suitable surfaces.

In producing an etched plate I place this drawing, thus prepared, in a printing-frame, face to face with a coated copper plate, as in the usual half-tone work, or I use it to build up a plate by the Dodge process heretofore mentioned as patented to me.

When I use the expression "grained film" I mean a homogeneous flexible film, one sur-

face of which has a grain on it, produced either in the manner above indicated or by some other equivalent means.

What I claim and desire to secure by Letters Patent is:

1. A semi-transparent grained film adapted to be rendered transparent.

2. A semi-transparent, grained, gelatin film adapted to receive drawings, which may be rendered permanent by flowing the film with flexible collodion, and adapted to be rendered transparent.

3. A grained film adapted to receive drawings directly upon its surface.

4. A grained film adapted to receive drawings which may be rendered permanent; which film is adapted to be rendered transparent.

5. A grained film adapted to receive drawings and to use as a negative in photography.

In witness whereof, I have hereunto set my hand at Sandwich in the county of Carroll and State of New Hampshire, this 24 day of Aug., 1906.

OZIAS DODGE.

In presence of—

E. M. HEARD,
S. C. TOZZER.