Feb. 21, 1933. P. H. W. WERNER 1,898,798

ART OF PHOTO-ENGRAVING

Filed March 22, 1932

Fig. 1.

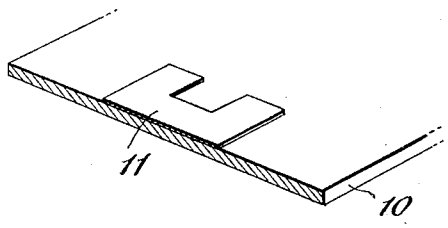


Fig. 2.

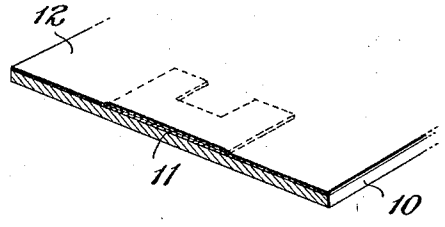


Fig. 3.

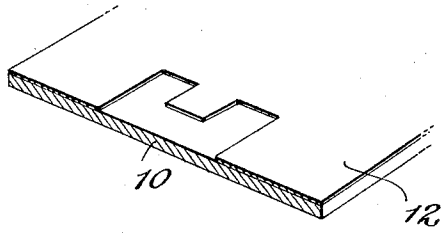


Fig. 4.

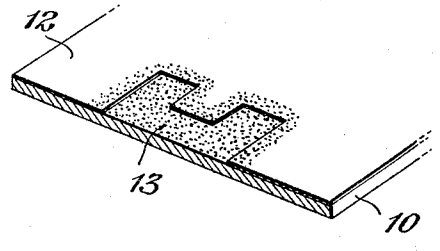
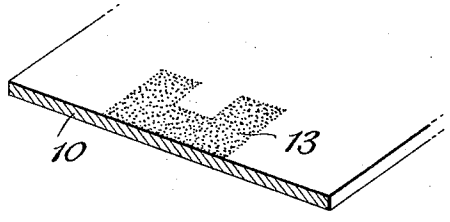


Fig. 5.



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UNITED STATES PATENT OFFICE

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ART OF PHOTO-ENGRAVING

Application filed March 22, 1932. Serial No. 600,573.

My present invention relates to an improvement in the art of photo-engraving, and more particularly to a novel and improved method of preparing a metal print for the Ben Day process.

An important field of utility for the Ben Day process is on line cuts whereon portions of the same are to be stippled, screened or shaded. These line cuts come to the Ben Day department as a print on metal, usually a zinc plate, and it is the province of the Ben Day operator to prepare this metal print preparatory to laying the desired tint thereon.

Since, in line cut work, the tint is to be laid on only certain or predetermined portions of the plate, those areas which are not to be tinted must be stopped out or protected. This protecting operation has heretofore been done by a step called gamboging, or gumming out. By this method the Ben Day operator heretofore has been required to paint the background which is to be protected, with gamboge, leaving plain or untreated the subject or surface to be treated. This has meant that the operator must paint up to and around the subject or surface to be tinted, and in the vast majority of instances this step requires the services of a skilled operator or artist, consumes considerable time and labor, and necessarily adds to the expense of this type of work.

After the background has been gamboged, the tinting film, properly inked, is laid on the metal print and the tint transferred to the metal print by rubbing with a stylus, roller, or the like. Thereupon the film is removed from the plate, the inked impression thereof remaining on the exposed metal, on those parts, subjects or surfaces which are to be tinted in the completed picture, and necessarily over at least a portion of the back ground. On washing the plate in warm water, the gamboge, being soluble in water, is removed, together with the excess tint thereon, leaving the tint only on those surfaces to be shaded, where it constitutes a resist in the etching.

The metal print is then dusted with a powder known as topping powder, having an affinity for the ink of the tint, which is then burned in preparatory to the etching operation.

It will thus be understood and appreciated, from the foregoing, that heretofore it has been the background and other surfaces surrounding the surface or subject to be tinted which have been treated preparatory to the Ben Day process.

An important object of my present invention resides in the fact that I treat, primarily, the surface to be tinted, and only incidentally treat the background and other surfaces not to be treated by the Ben Day process.

In carrying out my present novel process I have discovered that by painting the surface to be ultimately tinted, rather than the surfaces surrounding said surface to be tinted, I am enabled to produce better results in but a fraction of the time heretofore required, resulting in a saving in time, labor, and money, in addition to greatly simplifying the work of the Ben Day operators.

My novel process is illustrated conventionally in the accompanying drawing, wherein Figures 1 to 5 indicate the successive steps of the process.

In practicing my novel process, I paint the surface of the plate 10 to be tinted with a solution 11 susceptible to substantially instantaneous removal by a solvent, such as gasolene, benzol, or the like. This is illustrated in Figure 1 of the drawing. I find that a solution having as a base lithographic tusche, constitutes a satisfactory primary coating for this purpose, since it is quick drying and readily removable by a solvent, tusche being well known in the art as being of the same nature as lithographic drawing or painting material and one variant thereof being made by melting together wax, 2 parts; mutton tallow, 2 parts; soap, 6 parts; shellac, 3 parts; and lampblack, 1 part.

As soon as the coating 11 on the surface to be tinted has dried, which is a matter of but a few moments, I then subject the entire print, both background and the already coated portion to the treatment with a secondary solution 12, not readily removable

from the metal plate by a solvent except where such second coating overlays the primary coat. This is illustrated in Figure 2 of the drawing.

The application of the secondary coat may be accomplished by simply soaking a swab, such as cotton batting, with a suitable solution, and wiping the same across the surface of the metal print, requiring but an instant's time for this step. This secondary coat is dried, and I then subject the print to a swabbing operation with a swab soaked with a suitable solvent, such as gasolene. The action of said solvent, during said swabbing, will remove both the primary and secondary coats 11 and 12 from those surfaces which are to be tinted, as illustrated in Figure 3 of the drawing, but will not normally remove the second coat from those surfaces which were not first treated with the primary coat. I find that a satisfactory solution for the secondary coat may be made by dissolving and thoroughly mixing in one and one-half pints of water one commercial stick of licorice, fifteen to twenty drops of glycerine, and one tablespoon full of kalsomine, the licorice constituting the base of the solution, the glycerine functioning to cause the solution to adhere to the plate, and the kalsomine affording the desired opaque coloring matter. It will be understood and appreciated, of course, that in both the primary and secondary solutions I am not limited to the particular ingredients mentioned, these being simply for illustrative purposes, and the only requirements for these coatings being that the primary coat should be readily removable by a solvent, and the secondary coat shall not be readily removable by solvent except where it is laid on the primary coat, but shall be readily removable by warm water, for example.

As soon as the metal print is again dry, the Ben Day film 13 is applied and the tint thereof transferred to the metal print, as illustrated by the stippling in Figure 4 of the drawing. The plate is then washed in warm water, which will dissolve and remove the secondary coating 12 and the excess tint carried thereby, as illustrated in Figure 5. Thereupon the print is dusted in the usual manner with a topping powder, said topping powder is burned in, and the plate is then etched.

A subject or picture which has been treated according to my invention has clean-cut outlines and other beneficial aspects of appearance not ordinarily capable of accomplishment by the prior gamboging method, and these results are achieved in but a fraction of the time required for the proper carrying out of the said gamboge method. By my novel method the field of utility of the Ben Day method of photo-engraving is considerably broadened in scope, enabling the Ben Day method to be utilized in subjects heretofore considered unfeasible because of the time, labor and expense of preparing such subjects for tinting.

I believe that the steps herein described in preparing metal prints for the reception of the Ben Day tints are novel, and have therefore claimed said steps broadly in this application.

My invention is further described and defined in the form of the claim as follows:

The method of preparing tinted lithographic prints which comprises applying to the portion of the surface to be tinted a coating which is readily removable with a solvent, then applying to the other portions of the surface and also to at least the marginal portions of the first applied coating a coating which by a solvent is readily removable with the first applied coating where it overlies the same but which is not readily removable by the solvent from the print where it directly contacts therewith, subjecting the coatings to a solvent to remove the first coating and such of the second coating as may be superimposed thereon while allowing the second coating, where it directly contacts with the print, to remain on the print, applying tinting material to the print so as to completely tint the exposed surface thereof, and removing the remaining part of the second coating and such of the tinting material as may be carried thereby.

In testimony whereof, I have signed my name to this specification.

PAUL H. W. WERNER.