F. ACHERT.

STIPPLE GRAIN METAL PLATE FOR THE GRAPHIC ARTS.

APPLICATION FILED APR. 11, 1910.

993,938.

Patented May 30, 1911.

Fig. 1.

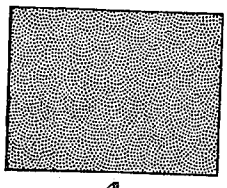


Fig. 2.

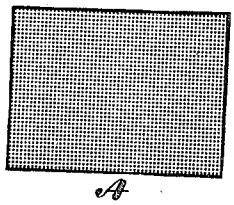


Fig. 3.

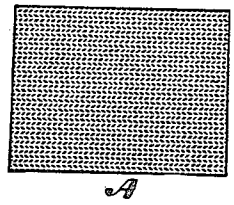


Fig. 4.

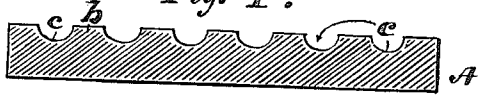
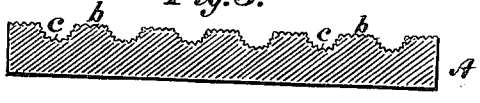


Fig. 5.



WITNESSES:

A. L. Tildesley

J. M. Stone

INVENTOR.

Frederick Achert,

BY

Lewis M. Hoes.

ATTORNEY.

UNITED STATES PATENT OFFICE.

FREDERICK ACHERT, OF CINCINNATI, OHIO.

STIPPLE-GRAIN METAL PLATE FOR THE GRAPHIC ARTS.

993,938. Specification of Letters Patent. Patented May 30, 1911.

Application filed April 11, 1910. Serial No. 554,662.

To all whom it may concern:

Be it known that I, FREDERICK ACHERT, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Stipple-Grain Metal Plates for the Graphic Arts, of which the following is a specification.

My invention consists in what may be termed a "standardized" plate as an article of manufacture for use in the graphic arts, that is to say: a plate which has on its surface a systemized "stipple grain" composed of stipple dots of any shape, or lines, or curves or any combination thereof, forming a high level, each minute stipple surface, of whatever figure, being insulated by relatively deep depressions. The material of the plate may be zinc, aluminum or any other metal finishing to a light colored, unpolished surface; and the grain thereon may be produced by the action of acids or by stamping, pressing, rolling, machine ruling or planing; so that, when completed, it may receive on the stippled surface drawings made by crayons or other suitable pigments and serve as a basis for the production of original plates by chemical or photographic manipulation in the graphic trades by lithographers, etchers, process engravers, etc.

My invention is illustrated in the accompanying drawings, in which—

Figures 1, 2 and 3 illustrate the systemized character of arrangement of the insulated stipple points or figures in three different forms of illustration:—Fig. 1 showing dots in combined systems or groups with individual arrangement on straight and curved lines, merging the groups in different relations; Fig. 2 showing a system of square stipples arranged in straight lines crossing at right angles; and Fig. 3, a system of short, straight lines in diagonal relations in echelon. These three patterns are given as examples only, and any other systemized arrangement, or any other shape of dots or lines, all may be used. Fig. 4 is a much enlarged section through a series of contiguous stipple surfaces, showing the general plane surface formed by the stipples, with depressions between; and Fig. 5 is a similar enlarged section showing the condition of the surface when subjected to the final or finishing treatment, and ready for the reception of the drawing.

Referring now to the drawings: the plate A is first brought to a true plane working surface, and by any suitable means is given a stippled surface according to the design selected (as indicated in part by Figs. 1, 2 and 3) by depressing or removing the material between and around the portions *b*, leaving each such portion of the original surface surrounded by depressions or ditches *c*. If a drawing were now made on the general raised surface, the drawing point or crayon would slide over the smooth surfaces of the raised stipple pattern, and the particles of the drawing pigment would tend to deposit on and adhere to the sides of the stipple projection, instead of the surface, where wanted, and the resulting effect upon the work produced would be inferior and disappointing. I therefore produce, over the entire surface, a minute, almost microscopic "tooth" or grain,—as it were a grain-upon-a-grain,—roughening the stipple surfaces or tips sufficiently to take and retain the material of the drawing pencil upon such surfaces, and prevent the same from reaching the depressed surfaces; thus producing shadings made up of the systemized stipple-grain figures. The resulting effect is to produce a clear, sharp, and perfectly shaded drawing, which, when treated by the usual means to finish the plate, for use of the printer or lithographer, is retained in all its desirable characteristics in the resulting original or printing plate. The stipple grained plate thus attained, is novel in the art; and the work produced thereon and therefrom is characterized by decided superiority in tone, clearness and finish—due to the ease and fidelity with which the character-pattern of the systemized stipple surface, finished with the "tooth" grain of the stipple-points or surfaces coöperate with the skill of the artist in presenting a perfect result of his efforts.

I am aware that the idea of a metallic stipple-grained plate for use of engravers, zinc-etchers, lithographers and printing-plate makers in general, is not broadly new; but from long practical experience in the graphic arts, I am also aware that previous efforts to realize satisfactory results have not been successful, and that the grain surfaces on zinc, aluminum and other metal plates heretofore used, which are of an irregular surface,—the high points being of many different sizes and shapes,—have been very objectionable to the artists and illus-

trating operators, and have only been used and tolerated in default of an improved grain-surface. By giving the metal the artificial grain as herein indicated, by systematic arrangement and combination of stippled points or lines constituting in the aggregate a level surface, with "toothed" surfaces for the adherence of the drawing pigment, I have overcome the difficulty and completely solved the problem, and am able to produce cheaply a plate having all the advantages growing out of substitution of metal for stone, and, in addition thereto produced a product for use by lithographers, etchers, offset-press and letter-press printers, by the use of which, results equal to pen-stipple and stipple-machine work can be attained at a much less cost.

I claim as my invention and desire to secure by Letters Patent of the United States:

1. A metal plate for use in the graphic arts, having a systemized stipple-grain surface, said surface being "toothed" by still finer superimposed grain for holding the drawing pigment.

2. A "standardized" plate for use in the graphic arts as a basis for the drawing and final conversion into an "original" plate, consisting of a plate of metal, having a systemized stipple-grain surface composed of isolated stipple dots of any shape, or lines, or combinations of the same, forming a uniform high level and isolated by intervening depressions, said surface being roughened by a microscopic superimposed grain.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERICK ACHERT.

Witnesses:

LEWIS M. HOSEA,

A. L. TILDESLEY.