

(No Model.)

W. TROTTER, JR.

LUMINOUS PICTURE, PRINT, &c.

No. 267,284.

Patented Nov. 7, 1882.

Fig. 2.

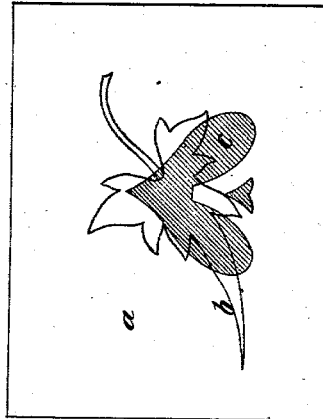


Fig. 1.

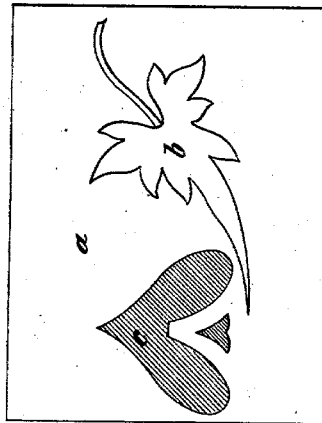
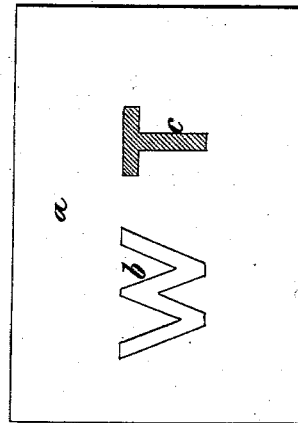


Fig. 3.



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LUMINOUS PICTURE, PRINT, &c.

SPECIFICATION forming part of Letters Patent No. 267,284, dated November 7, 1882.

Application filed April 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM TROTTER, JR., of Oyster Bay, in the county of Queens and State of New York, have invented certain new and useful Improvements in Luminous Pictures, Prints, Inscriptions, and Illustrations, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to painting, printing, inscribing, delineating, or otherwise producing pictures, letters, figures, or designs on surfaces of paper, card-board, cloth, glass, wood, metal, or other material in such manner that
15 they will be invisible, or nearly so, when exposed to incident light, but will appear conspicuously in the dark or when removed from incident light.

The invention consists in a sheet or tablet
20 of paper, cloth, card-board, metal, or other material having upon it two different pictures, figures, designs, or letterings and a surrounding ground, one of the said pictures, figures, designs, or letterings and the ground appearing
25 of the same color when exposed to incident light, but the said figure, picture, design, or lettering being produced in non-luminous material and the ground being produced in luminous or phosphorescent material, or vice
30 versa, and the other of said pictures, figures, designs, or letterings being of a color different from that of the ground, one of said pictures, figures, designs, or letterings being distinctly or conspicuously visible only when exposed to
35 incident light and the other only when removed from incident light. The two pictures, designs, figures, or letterings thus produced may be arranged side by side or superposed one over the other.

40 Figures 1 and 2 are views of cards or tablets, illustrating two different methods of applying or combining two designs produced with the two different sorts of painting or printing material. Fig. 3 is a view of a card or
45 tablet having upon it two printed letters, one of which is supposed to be visible only when exposed to incident light and the other only when removed from incident light.

50 The card or tablet shown in Figs. 1 and 2 may be produced either by taking a piece or tablet of ordinary unprepared card-board or

paper, or a piece of any other suitable material—as cloth, wood, or metal—which has been painted with ordinary paint or otherwise prepared with a ground of non-luminous material;
55 and either painting or printing thereon a figure or design, as *b*, with a luminous paint, composed of sulphide of calcium or other material, which will become phosphorescent after exposure to incident light, or else printing, painting, or
60 delineating the figure or design thereon with a suitable varnish—as mastic or dammar—or with a solution of gum or gelatine, and dusting over the so painted, printed, or delineated figure with luminous sulphide of calcium in
65 powder. Care must, however, be taken that the ground *a* surrounding the figure must be of as nearly as possible the same color or tint as the luminous material which produces the figure or design. In such a card or tablet the
70 figure or design, as *b*, will, under exposure to incident light, be scarcely, if at all, distinguishable from the surrounding ground *a*; but on removal into a dark place after such exposure
75 the figure or design will be luminous and visible, standing out by itself, the ground being invisible.

The above-described effect may be varied by making the ground *a* luminous and the figure or design, as *b*, non-luminous. This may be
80 done by painting the whole surface of the card or tablet with luminous paint and afterward printing, painting, or stenciling upon it the figure or design with an opaque and non-luminous printing-ink or paint of a color re-
85 sembling that of the ground. In case, however, the luminous paint of the ground *a* be sulphide of calcium, the printing-ink or paint used for the figure should not contain lead; but it may be an oxide of zinc, slightly tinted
90 with ocher or other material to match the tint of the sulphide of calcium. The card, sheet, or tablet so constructed is provided with a second design or figure, as at *c*, and this design or figure *c* is of a different color. In
95 case the ground *a* be non-luminous and the figure *b* luminous, the different-colored figure *c* should be produced by printing, painting, or stenciling with non-luminous paint or ink; but in case the ground *a* be luminous and the
100 figure or design *b* non-luminous the different-colored figure *c* should be produced either

with luminous paint or with some thin transparent paint through which the phosphorence of the ground *a* may shine in the dark.

The card, sheet, or tablet produced with the two designs or figures as hereinabove described is protean in its character, one of the figures or designs only being plainly visible under exposure to incident light and the other one only being plainly visible when the card, tablet, or picture is removed from incident light.

The example shown in Fig. 2 only differs from that shown in Fig. 1 and hereinabove described in that the different-colored figure or design, whether luminous or non-luminous, is superposed or partly superposed over that which corresponds in color with the ground instead of the figures or designs being arranged side by side, but the effect is the same. When the figures are partly superposed in this way the different-colored superposed figure *c* should be always printed or painted with a transparent ink or paint through which either the ground *a* or figure or design *b*, whichever is luminous, may shine through the said figure *c* in the dark.

The example shown in Fig. 3 only differs from that shown in Fig. 1 in the substitution of two letters for two figures.

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

1. A sheet or tablet of paper or other material having upon it two different pictures of

different colors, one produced with phosphorescent or luminous material, the other with non-luminous material, and one being of a color resembling that of the surrounding ground or surface of the tablet and the other of a different color, substantially as herein described.

2. A sheet or tablet of paper or other material having upon it two different pictures, figures, designs, or letterings of different colors, one produced in phosphorescent or luminous material and the other in non-luminous material, and having the ground or surface surrounding the said pictures, figures, designs, or letterings of a color resembling that of one of the said pictures, figures, designs, or letterings, the said ground or surface and the figure, picture, design, or lettering of resembling color being one luminous and the other non-luminous, substantially as herein described.

3. A sheet or tablet of paper or other material having upon it two partly-superposed pictures, designs, figures, or letterings, one produced in luminous material of one color and the other in non-luminous material of another color, and one of said colors resembling the color of the ground or surrounding surface of the sheet or tablet, substantially as herein described.

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Witnesses:

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