

No. 775,747.

PATENTED NOV. 22, 1904.

E. DOBERENZ.
PROCESS OF PRODUCING INVISIBLE PICTURES.

APPLICATION FILED MAY 2, 1904.

NO MODEL.

Fig 1

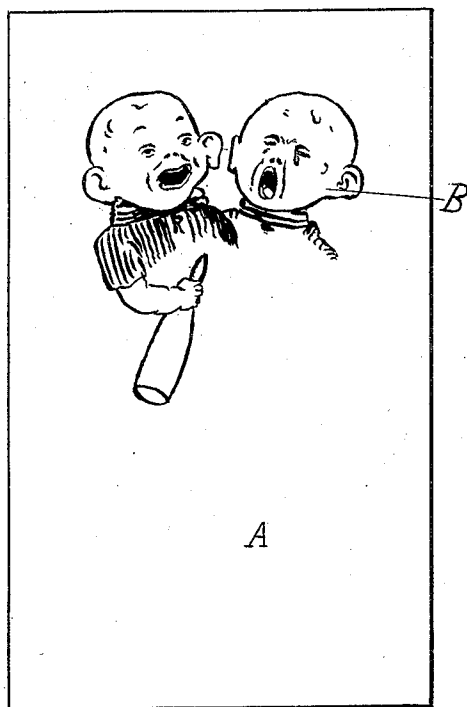


Fig 2.

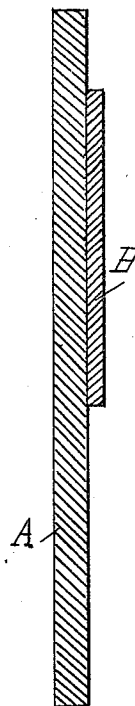


Fig 3.

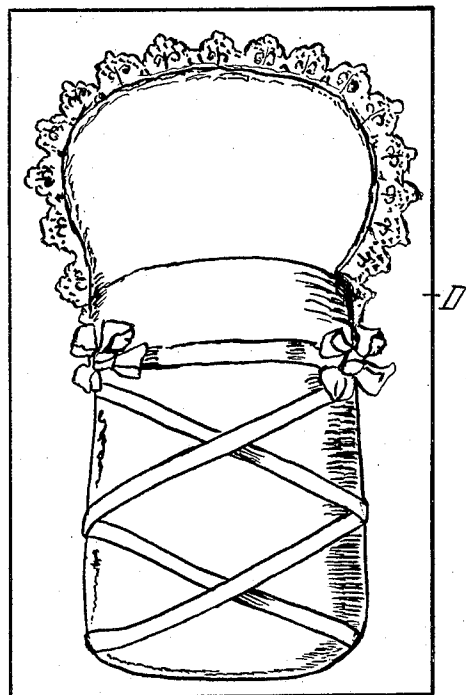
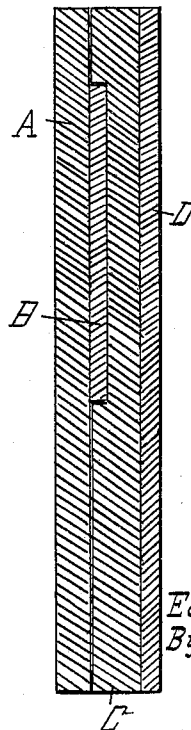


Fig 4.



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UNITED STATES PATENT OFFICE.

EDMUND DOBERENZ, OF LEIPZIG-REUDNITZ, GERMANY.

PROCESS OF PRODUCING INVISIBLE PICTURES.

SPECIFICATION forming part of Letters Patent No. 775,747, dated November 22, 1904.

Application filed May 2, 1904. Serial No. 205,943. (No specimens.)

To all whom it may concern:

Be it known that I, EDMUND DOBERENZ, a subject of the King of Saxony, residing at Leipzig-Reudnitz, Germany, have invented new and useful Improvements in Processes of Producing Invisible Pictures, of which the following is a specification.

It is known that invisible pictures are produced by placing the drawing prepared in copying color upon thin paper and securing the latter to another paper which is opaque or non-transparent. When the thin paper is then moistened, the drawing passes through the same. This process, however, can only be applied to very coarse drawings, as delicate effects cannot be thus copied through the paper. According to this invention this defect is to be overcome by producing the picture in copying color on any kind of paper and providing the same with a coating of dry color. By the expression "dry color" is understood metallic or earth colors—such as zinc-white, subsulfate of baryta, and the like—either pure or provided with coloring means. By the expression "copying color" or "copyable color" is understood colors which are soluble in water. The moisture is intended to dissolve these colors to such an extent that they can penetrate through the overlying color layer. If, for example, a picture of one or more colors is produced on carton by drawing or print in copying colors, the same can be used for the present, proceeding only when the covering coat of color is applied dry over the colored drawing. Should the covering color layer be applied moist to the color print, the latter would at once become visible, as the copyable colors would become effective by the moisture. Consequently it is necessary to apply the covering layer in dry state to the drawing. As known, this is done by employing a foil or metal leaf or paper provided with a uniform layer of chalk-like color and the like. This color layer can be transferred to another color layer by laying the foil or paper onto its color face and passing the same under a hot stamp or presser. At those points at which the hot stamp comes into action the color layer is transferred to the underlying sheet. This method is also to be employed for the purpose

of this invention. Such a colored paper is laid upon the colored drawing. At those points where the stamp presses the foil the color layer is transferred onto the underlying paper and the drawing thus covered with a dry layer or color. Thereby the colored picture is made invisible. If such a picture is to be again brought to view, it is merely necessary to expose the paper to moisture. No matter whether the paper is exposed to moist air or whether a moist body is laid onto the paper or whether the paper is dipped into water the picture appears each time as soon as the dry color layer has become moist. At the same moment the copying quality of the color comes into operation and the picture gradually appears through the superposed dry color layer and becomes continually more distinct, or, expressing the procedure in different manner, it may be stated as follows: The dry color is to be applied as a uniform layer to the picture of copying color. This application is accomplished by the use of a so-called "transfer-foil," which is a sheet of paper or a thin skin of any material provided with a uniform layer of this dry color. This layer of dry color is applied to the transfer-sheet in moist condition by a brush or in other known manner. When the layer on the transfer-sheet has become dry; the transfer-sheet, with the dried color layer, is laid onto the picture of copying color, which latter is to be made invisible. By the application of a warm impression-stamp the dry color layer is transferred or printed onto the picture to be covered—that is, the color layer is transferred from the so-called "foil" or "transfer-sheet" onto the respective picture-sheet or sheet carrying the copying-color picture. The picture of copying color thus rendered invisible or covered by a dry color layer is rendered visible by exposing the color layer to moist air or otherwise suitably moistening this color layer. This color layer first becomes moist, and as the moisture penetrates so far that the picture of copying color also becomes moist, all lines of the copying-color picture in the color in which they were applied gradually appear through the dry color or covering layer, and the underlying picture or picture of copy-

ing color becomes visible. Of course such a picture can also be produced on other material than paper—that is, fabric, wood, and the like—and treated in like manner, or in place of a picture written characters can be applied. Should it be desired to make the picture entirely invisible, paper must be chosen having the quality of opaqueness or of hiding the underlying picture, or the invisibility can be attained by applying a dark background to the covering layer previous to printing.

As regards the physical properties of the dry color, the same are unimportant, except that such colors should not be affected by moisture. If colors are chosen which are unaffected by the light or atmosphere, the pictures after exposure to moisture can be exposed or displayed without being affected. This, however, may not at all times be a matter of consequence. In case of cheap pictures or such as are to serve as children's toys or for amusement or temporary purposes it is immaterial if the colors bleach or are affected by atmospheric influence.

The invention is illustrated in the annexed drawings, in which—

Figure 1 shows a face view of a sheet or card with the first impression. Fig. 2 is a section of Fig. 1. Fig. 3 shows a face view of a sheet or card ready for the market. Fig. 4 is a section of Fig. 3.

For the sake of clearness the thicknesses are shown exaggerated in Figs. 2 and 4.

The sheet or card is indicated at A. The letter B indicates the impression. The impression B on surface A has been rendered invisible by applying a layer C of dry color over this impression. On this layer C there is the impression D. In the section the layer D is shown as a separate layer, although this layer in practice coincides, or practically so, with the layer C. If this card is exposed to

moisture, the impression or layer B appears through the layer C and is made visible together with the layer D.

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

1. A method for producing invisible pictures which consists in producing a picture, script or the like by means of copying color and applying to this copying-color picture a coating of dry color for the purpose of covering up the copying-color picture while allowing such last-named picture to be brought to view by moistening.

2. As a new article of manufacture an invisible-picture script or the like consisting of copying color provided with a layer of dry-color coating.

3. A method for producing invisible pictures which consists in producing a picture, script or the like upon opaque paper or material by means of copying color and providing the copying-color picture with a coating of dry color for the purpose of covering the copying-color picture and at the same time allowing this copying-color picture to be brought to view by simply moistening with water.

4. A method of producing invisible pictures which consists in producing a picture, script or the like in copying color on carton or other substance by drawing, printing or other means and applying thereto a covering coat of color in dry state from a foil or other material by means of a hot stamp or presser.

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

EDMUND DOBERENZ.

Witnesses:

JULIUS RABE,
RUDOLPH FRICKE.