

EXAMINER'S REPORT

1. Phenolphthalein

2. Caustic Potash

UNITED STATES PATENT OFFICE.

Ammonia
to develop

OTTO MEYER, OF NEW YORK, N. Y.

PROCESS OF PRODUCING SURPRISE PICTURES.

SPECIFICATION forming part of Letters Patent No. 456,047, dated July 14, 1891.

Application filed February 19, 1891. Serial No. 382,107. (No specimens.)

To all whom it may concern:

Be it known that I, OTTO MEYER, a citizen of the United States, residing at New York, in the county and State of New York, have
 5 invented new and useful Improvements in Processes for Producing Surprise Pictures, of which the following is a specification.

This invention relates to the production of pictures or the representation of various ob-
 10 jects on paper, wood, stone, or other suitable materials by first drawing the lines thereof on the paper or other material with a colorless liquid or substance, or practically colorless, so that the lines drawn with it are prac-
 15 tically invisible, and then developing them by applying thereto another liquid or substance by means of which the lines are made visible to the eye. It relates also to the production of changes of color in paper or other
 20 materials by substantially the same means.

In carrying out my invention I dissolve phenolphthalein in alcohol, and with this solution draw with a small brush a figure on paper, which figure becomes invisible as soon
 25 as the alcohol has evaporated. I then bring a solution of caustic potash into an atomizer, and by directing the spray from the atomizer on the invisible figure it will suddenly be developed in red color. The solution of phenolphthalein in alcohol may be of variable
 30 proportions. A concentrated solution is of a slightly brown color, and while figures drawn with it on white paper are somewhat visible they are very strikingly developed on the application of the potash. For certain purposes I add to the solution of phenolphthalein other
 35 substances, such as sugar or mucilage—as, for instance, when I wish to write words or sentences in the ordinary way with a pen. For the purpose of printing I prepare a paste
 40 containing phenolphthalein by means of starch or other suitable material; but the starch or other material must of course not contain any alkali, as some commercial starch does. In-
 45 stead of using phenolphthalein I can take coroline or any other of the substances which are used in chemistry as indicators for the alkaline reaction.

For the development of the figures any al-
 50 kali or substance of alkaline reaction like soda or ammonia may be used, and instead of an atomizer any other suitable means of

development may be used. For instance, the paper which has been marked or treated with the phenolphthalein or equivalent solution may
 55 be pressed upon another paper which is saturated with alkali and somewhat moistened. If ammonia is taken as the alkali to be used, the developed figures will fade away at the rate at which the ammonia evaporates. Am-
 60 monia may be used also in its gaseous form and without the aid of an atomizer. The figures will, for instance, appear if the paper to be treated is placed into a bottle which contains a sponge or filtering-paper moistened
 65 with ammonia, or if it is placed into a glass case or bottle into which some ammonia-gas is forced. I take, for instance, a hollow india-rubber ball connected with a tube and introduce a small quantity of concentrated
 70 ammonia into the ball. If I place the tube into the mouth of a bottle which contains some white paper which has been marked with the said solution of phenolphthalein or coroline, or other equivalent material, and
 75 press the ball, a certain quantity of ammonia-gas will be forced into the bottle and will develop on the said paper the figures marked thereon with said solution.

In the same manner as I develop invisible
 80 figures or words on paper or other substances so treated with the phenolphthalein or coroline solution I can produce a change of color of artificial flowers, or leaves, or other articles. I take, for instance, a white paper rose, satu-
 85 rated with a solution of phenolphthalein or coroline, and having put it into a bottle I force some ammonia-gas into the bottle and thereby the color of the rose becomes red. When the ammonia has evaporated, the rose
 90 becomes white again.

The paper or material to which the phenolphthalein or its equivalents is applied must be clean and free from alkalies when the said solution is applied to it.

The order in which the solutions are applied is not material in practicing my invention, as the alkaline solution can be first applied and used in delineating or marking the paper or other material, and afterward the
 100 other solution can be used.

The lines and pictures after they are developed and made visible can be made invisible again by applying to them an acid.

I am aware that a solution of platina magnesium cyanide has been combined with a medium such as gelatine, shellac, or gum, and applied to the object, which is subsequently developed by breathing or blowing thereupon, as in English Patent No. 6,730 of 1887; but such does not constitute my invention.

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

1. The process for producing lines, words, and figures on paper or any other suitable material, which consists in drawing, writing, or printing them with solutions of phenolphthalein, coroline, or any other indicator of alkaline reaction, and subsequently subjecting

the same to the reaction of an alkali to develop the lines, words, or figures, substantially as described.

2. The process of producing or changing the color of artificial flowers or other articles, which consists in saturating the same with phenolphthalein, coroline, or other indicator of alkaline reaction, and then applying thereto an alkali, substantially as described.

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

OTTO MEYER.

Witnesses:

J. VAN SANTVOORD,
E. F. KASTENHUBER.