

however, that beyond a certain stage the crystals do not dissolve even in boiling water; the point of saturation is then from 135 to 140 parts of bichromate of ammonia in 100 parts of water.

There remained another indication to be given. Although the bichromates of potash and ammonia are sensibly different from each other as to colour and general appearance (the former being of a more decidedly clear orange tint than the latter, the colour of which approaches rather to brown), it might, nevertheless, be possible that the one should be mistaken for the other. In order to distinguish them, it is only necessary to expose them to the action of heat. The bichromate of potash fuses at a temperature below a red heat, and does not decompose except at an intense heat, whilst the bichromate of ammonia presents the peculiar phenomenon of taking fire and continuing to burn with deflagration, leaving a residue of "sesquioxide of chromium," which presents the appearance of green tea. This residue treated with water will not give it any colouring if the bichromate of ammonia be chemically pure; but it generally gives a slightly yellow liquid, which becomes a bright yellow immediately that any appreciable quantity of bichromate of potash is present.

### Recent Patents.

#### IMPROVEMENTS IN FINISHING PICTURES.

BY A. L. HARDINGE.

A PATENT was recently granted in America for the improvement described in the following specification:—

This invention consists in the employment, in combination with the surfaces of photographic prints, lithographic prints, woodcut prints, engravings, and all kinds of pictures, whether upon paper or other material, of a translucent sheet or film, such as wax, upon which film the inks or pigments used in colouring or finishing the picture are laid. In carrying out my invention I take any ordinary print or picture—as, for example, a photographic print—and upon the face thereof I place a sheet of ordinary white wax, sufficiently thin to be so translucent that, when the wax is in close contact with the picture, the principal outlines thereof can be discerned through the wax. I then carefully press the wax film into close contact with the surface of the picture, either by hard pressure or by means of a roller, or by passing the picture through a roller press or other suitable press. In order to apply the necessary pressure I cover the surface of the wax with fine paper. The application of suitable pressure serves to harden and condense the wax, making an excellent surface for the reception of inks and colours.

The translucent film of wax thus applied will adhere very closely to the surface of the picture, which is then to be finished up by laying upon the film any suitable inks or colours that may be desired for the finishing of the picture, such as oil colours, water colours, India ink, &c.

One of the peculiar advantages of my improvement is that the harsher lines and defects of the picture are more or less covered or softened, while the general effects of the lights and shades are blended and improved. This renders the use of my invention specially advantageous in connection with miniature colouring, as the skilled artist is enabled to preserve completely the original likeness, and yet, with a comparatively small expenditure of time, to produce the most charming and exquisite effects, by stippling and colouring.

The facility with which the background of the picture may be altered, lightened, when too dark, by the application of white colours, or darkened with dark colours when too light, or otherwise artistically changed, will be obvious. Alterations and corrections in the picture may also be readily effected. In case of accidental injury to the surface of the picture, it may be easily repaired and preserved. The border of the translucent film may be embossed with any suitable ornamental composition.

In other examples, where the picture consists of a profile or other naked figure, the semi-translucent material, after being applied upon the surface of the picture, may be traced with a needle or pointed instrument around the form of the profile,

and all of the film except that directly upon the profile may be removed, and the edges of the film then levelled down to the background. In this way the film-covered portion of the picture, when coloured up and finished, will appear to stand out in relief, forming a medallion picture of very beautiful appearance.

In the general use of my improvement the artist is enabled to produce accurate, lifelike colours and effects with a facility which results from no other process with which I am acquainted.

The use of the film herein described serves also to prevent the original picture from fading, and to preserve it from injury, from moisture, and from atmospheric changes.

#### IMPROVEMENTS IN MOUNTING PHOTOGRAPHS AND PICTURES.

BY F. M. B. BERTRAM.

This invention consists in a cheap and ornamental method of mounting pictures. It is described in the specification as follows:—

This invention relates to the mounting of photographic and other pictures, also printed, embossed, and woven patterns and trade advertisements, in a compact, economical, and sightly manner; the object to be attained with respect to the application of the invention to patterns and advertisements being that the article produced to contain the same shall, while it admits of being freely distributed among prospective customers, have an attractive appearance sufficient to excite a careful examination, and be suitable for admission to the pocket; but in the mounting of articles for sale (as photographs) a more costly manufacture of mount may be adopted. To this end a box (say) of paper (or it may be of metal) is formed in imitation of a medallion, with a device stamped upon its outer face. The depth of this box will represent the thickness of the medallion, and for a cover a plate or disc is provided, which carries the obverse of the medallion stamped upon it, and is fitted to sink into the box. The patterns or pictures are mounted upon a band or strip of paper, paper cloth, or other suitable substance, which is folded forwards and backwards, so as to produce a pile that will admit of being enclosed in the box or hollow medallion; when thus folded, a stamp or cutter is applied to the pile, so as to cut off the angles and round the pile, leaving, however, enough of the folds to maintain the connection of the discs thus formed. This band is to receive the devices of whatever kind it is intended to mount, and the ends of the band are connected the one to the bottom and the other to the cover of the box. The box, if made of paper, may be covered with foil or metallic paper, which, being impressed by dies forming the counterparts of the faces of any prize or other medal or coin, will give, at a small cost, a fair representation of such original. The medallion thus produced will, when opened by the curious enquirer, present to view the folded band, which, on being drawn out to its full length, will exhibit the devices contained thereon, whether pictures, advertisements, or patterns. It is not intended to limit the application of the invention to any particular form or character of enclosing case or box, as it will be obvious that hollow imitations of other articles than medallions and coins will serve the purpose of the present invention.

#### PROTECTING THE SURFACE OF PHOTOGRAPHS.

BY F. W. HART.

The following improvement consists in the use of a varnish of albumen, afterwards coagulated by steam or other agency. It is specified as follows:—

This invention consists in protecting the surfaces of lithographs, photo-lithographic prints, placards, plans, maps, and printed surfaces of a like nature, in an economical and effectual manner by means of a coating of albumen applied thereto. Hitherto, such surfaces, when desirable, have been varnished or protected by spirit varnishes or gelatine, but such processes have been subject to several objections; for instance, in the application of spirit varnishes it is necessary that the paper on which the prints or designs are produced or impressed should first be especially non-absorbent to the spirit, and, in addition to this, the application of a spirituous solution or fluid is prejudicial to the health of the operators, and is likewise dangerous to property, owing to its inflammable nature. Again, in the application of gelatine, a surface of metal or glass is first