

A New Process for the Reproduction of Press Plates.

THE CELLULOID PROCESS VS. THE STEREO AND ELECTRO PROCESSES.

A new and ingenious application of the material called celluloid to the formation of clichés for multiplying plates of engravings and type comes to us from France. Celluloid, as perhaps few of our readers may be aware, is a hard, tough, elastic, and transparent substance formed of camphor and gun cotton. At a temperature of 250° Fahr. it becomes plastic and malleable. The inventor, M. Jannin, could have had little idea of what a revolution he would be the means of creating in the several departments of electro and stereotyping, and, in fact, in the printing office. Some of the English printing and paper trade journals are in ecstasies over the new discovery, and are consequently full of descriptions of the process. We subjoin the one given by the *British and Colonial Printer and Stationer*:

MAKING THE MOULD.

The ingredients for the mould are yellow oxide of lead and glycerine, which form a cement, named after the inventor, "Jannin's Cement." This, when properly mixed, forms a semi-fluid paste, which has to be applied to the surface of the block, or form of type. It is necessary to provide against the formation of air bubbles, or the cast will be imperfect. The first coating of cement is "backed up" by a stouter one, until the proper degree of thickness is obtained. A special gauge is provided for this purpose. It should be stated that the glycerine used in preparing the cement, and causing it to dry quickly, has no action whatever on the blocks which are being reproduced. The glycerine is not in any danger of being absorbed, and the fluid paste does not penetrate the interstices of the wood. Hence, defects will not be repeated, or magnified as they are by the usual electrotyping process, and however sharp the lines of the cut may be, a true cast is taken, without the danger of swelling or warping the original.

The thickness of the cement varies from one-eighth to three-sixteenths of an inch.

RAPIDITY OF MANIPULATION.

The time required for the setting of the cement varies, according to temperature. At an ordinary degree of heat, as when wood blocks are being operated upon, the cement sets in from

twelve to twenty minutes. Artificial heat may, however, be used, when, for instance, it is required to reproduce steel or copper plates, or even ordinary type. In that case, three or four minutes only are necessary for the setting of the cement. The temperature need not exceed 120° Fahrenheit. When that heat is maintained, the chemical action is complete.

REMOVING THE MATRIX.

When the matrix or mould has to be lifted off the block, some of the peculiar advantages of the new material are at once appreciated. The firmness and rigidity of the mould facilitates its manipulation, and bring out the finest lines in the cast. The test of a magnifying glass reveals no imperfection.

PREPARING THE PLATE.

A matrix—having been prepared with no more difficulty than is experienced in the ordinary way—is placed with its face upward on the lower bed of a powerful press. On this matrix a sheet of celluloid, about 3-16ths of an inch thick, is laid, and the platen of the press is brought down. In order to make the celluloid impressionable, it is necessary to heat it to about 240° Fahrenheit. When this is done the material may be pressed into the finest lines of a matrix. The final pressure is given by means of a special arrangement of the hydraulic press. This hot pressing process lasts about two or three minutes, after which the bed and platen of the press are cooled by a current of cold water. The pressure, however, is not completely removed until the celluloid has been thoroughly cooled, and has recovered its original hardness. The plate may now be easily removed from the matrix, and is, of course, a perfect fac-simile; even the most minute lines of the original plate being reproduced.

The application of the cement to the original block or form, as well as that of the celluloid to the matrix, does not involve the use of any intermediary compound. This is an important advantage, as those who are acquainted with the ordinary electrotyping process will quickly realize.

In the old process, the two coats of black lead, which are necessary—the first, to keep the bees'-wax or gutta-percha from adhering to the engraved surface, and the second, being laid on the matrix to promote the deposition of the copper—are found to fill up, to some extent,