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## Aniline Dyes.

There has been at various times much discussion on what may be termed the sanitary aspect of the aniline dyes. Although it may be at first difficult to see in what way the color of an article of costume can possibly affect health, yet the relation of the one to the other is not so remote as might be anticipated. Socks, stockings, and gloves are worn next the skin, and poisonous matters may thus be brought into the system; even the very wear and tear of ordinary costume, in the event of the color not being of a very firmly adherent nature, results in a portion of coloring matter being liberated in the form of a fine dust, and thus inhaled by the lungs. In France, stringent measures have had to be adopted to prevent the artificial coloration of cheap wines with "fuchsine." Recent experiments have now beyond doubt established that aniline dyes, at least, the reds and blues, are in their pure condition comparatively inert, and that the ill effects which have been sometimes attributed to the use of these dyes are traceable, not to the pure coloring matters themselves, but to traces of arsenic which they contained, and which arose from inefficient purification subsequent to manufacture. Enterprising scientists may always be found who are willing to become martyrs, for science or for notoriety, and the present inquiry has had its self-sacrificing hero in the form of Herr Seidler, of Riga, who administered to himself three quarters of a grain of aniline red every morning, for a period of five weeks, without any ill effects. When it is pointed out that a single grain of aniline red is said to be sufficient to impart a good pink color to fif-

teen gallons of alcohol, it would be necessary to drink an enormous quantity of artificially colored wine in order to equal a single morning performance of Herr Seidler. So far the question is practically settled, the only remaining difficulty being our inability to ascertain whether pure or impure coloring material has been used in any purchased article; and it will therefore be better, as a simple matter of precaution, to be on our guard against the indiscriminate use of aniline dyes for coloring purposes.—*Medical Examiner.*

## THE MANUFACTURE OF WALL PAPER.

The use of paper as a covering for walls originated in China. It was introduced in Europe as a substitute for tapestry hangings—whence the term paper hangings—by the French. At the present time, owing to the improvements which have been effected in printing, and the wide range of colors open to the artist designer, it offers probably the cheapest and most ornate means of mural decoration.

The blank paper is received by the manufacturer in the long rolls made by the Fourdiner machine, and weighing from 80 to 85 lbs. to the roll. It varies in quality according to the printing and finishing which it is to receive—weighing 9, 10, 12, and 14 ounces to the length of eight yards, which constitutes the usual length of the roll as sold at retail. The first process undergone is termed

### "GROUNDING,"

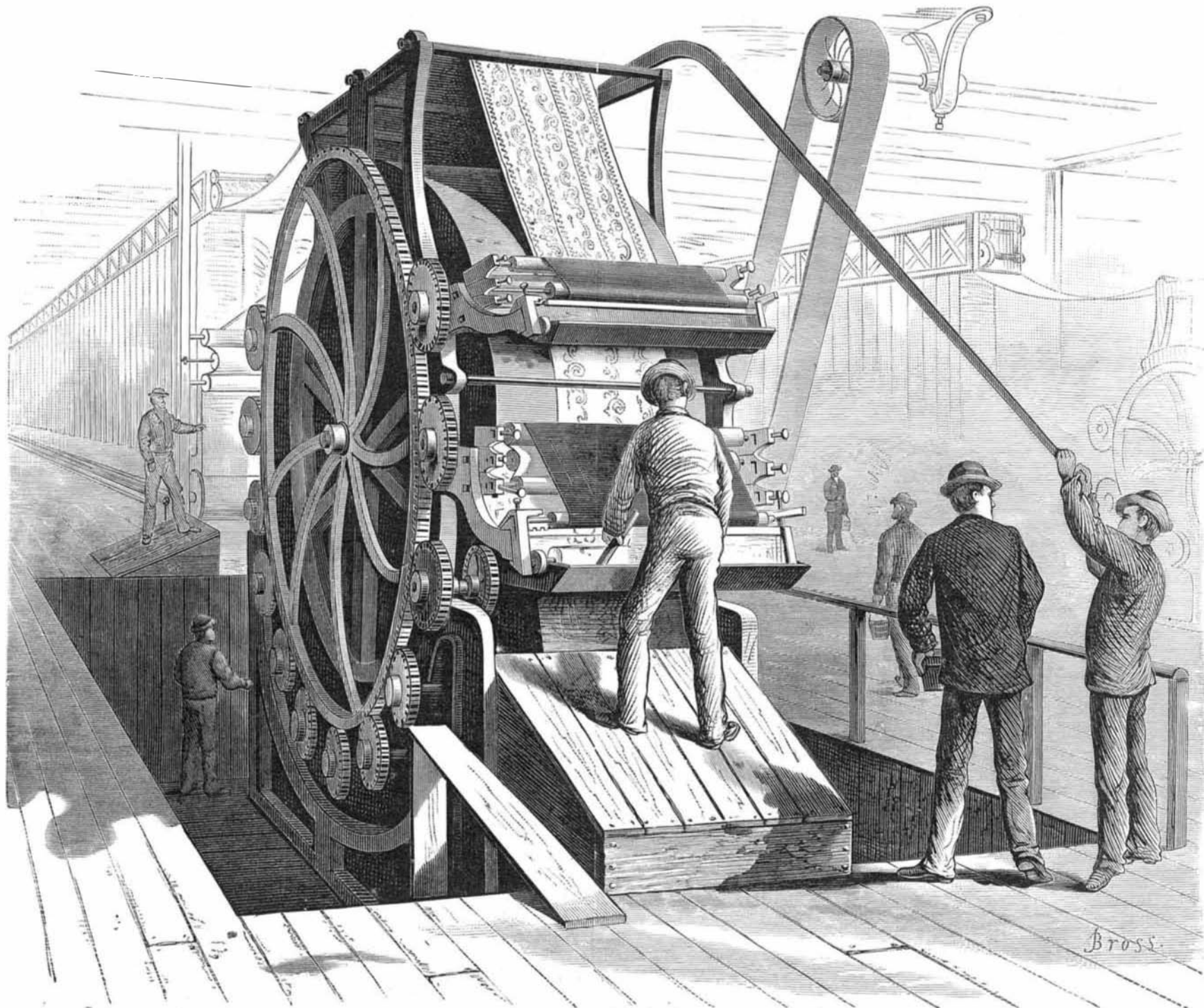
and the object is to give the paper the requisite body to enable it to receive the colored pattern. The grounding ma-

chine is represented in Fig. 1. While passing over a roller the paper is covered with a mixture of so-called Jersey clay, which contains some 18 per cent of alumina, glue, and water, and if the surface is to be finally polished—or satin finished—a percentage of lard oil is added. After the mixture is applied it is evenly distributed over the paper, first by two reciprocating brushes, then by a rotating brush roller, and lastly by two brushes like the first. It then is conducted up between endless belts across which sticks are laid, and over which sticks the paper is suspended in festoons. The sticks are so placed that a length of paper measuring just four yards hangs between any two. The belts are kept in constant motion, and the paper is thus conducted along the loft, which measures some 160 feet in length. Steam coils are placed beneath the belts, and a temperature of 120° maintained. About nine minutes are occupied by any one festoon of paper in making the journey from grounding machine to the point where it is again made into a roll, and during this period it becomes thoroughly dried. Frequently coloring matter is mixed with the ground paint, and the paper is thus given a flat tint, which forms a background for the pattern, or which is left unaltered when the paper is meant to be perfectly plain and to resemble paint or kalsomine when attached to the wall.

### IMPRINTING THE PATTERN BY BLOCKS

is done in two ways, either by the block or old process, or by the roller or improved process. In either case each color entering into the design must be printed separately,

[Continued on page 226.]



THE MANUFACTURE OF WALL PAPER.—THE PRINTING MACHINE.