

Scientific Museum.

New Kind of Printing.

The following from the "London Journal of the Society of Arts," describes a new discovery by Felix Abate, of Naples, for representing certain objects by printing directly from them:

From the description of the process, it will be remarked—perhaps with some degree of surprise—the excessive sensitiveness of vegetable substances under the joint action of acids and heat, so that an infinitesimal dose of the former, and an instantaneous application of the latter, are sufficient to produce the most striking effect. The process is as follows:—

"Suppose a sheet of veneering wood be the object from which impressions are to be taken: I expose the wood for a few minutes to the cold evaporation of hydrochloric or sulphuric acid, or I slightly wet it with either of these acids diluted, and then wipe the acid well off from the surface. Afterwards it is laid upon a piece of calico or paper, or common wood, and by a stroke of the press an impression is taken, which is, of course, quite invisible; but by exposing this impression, immediately after, to the action of a strong heat, a most perfect and beautiful representation of the printing wood instantaneously appears. In the same way, with the same plate of wood, without any other acid preparation, a number of impressions, about twenty or more, are taken; then, as the acid begins to be exhausted and the impressions faint, the acidification of the plate must be repeated as above, and so on progressively, as the wood is not in the least injured by the working of the process for any number of impressions. All these impressions show a general wood-like tint, most natural for the light-colored woods, such as oak, walnut, maple, &c.; but for other woods that have a peculiar color, such as mahogany, rosewood, &c., the impression must be taken, if a true imitation be required, on a stuff dyed of the light color of the wood.

It must be here remarked, that the impressions, as above made, show an inversion of tints in reference to the original wood, so that the light are dark, and vice versa, which, however, does not interfere with the effect. The reason of it is, that all the varieties of tints which appear in the same wood are the effect of the varying closeness of its fibers in its different parts, so that where the fibers are close, the color is dark, and light where they are loose; but in the above process, as the absorption of the acid is greater in proportion to the looseness of its fibers, the effect must necessarily be the reverse of the above. However, when I wish to produce the true effect of the printing wood, I alter the process as follows: I wet the surface upon which the impression is to be taken with dilute acid, and then I print with the veneering wood previously wetted with diluted liquid ammonia; it is evident that in this case the alkali neutralizing the acid, the effect resulting from the subsequent action of heat will be a true representation of the printing surface.

Such is thermography, or the art of printing by means of heat. Now it is nothing but natural to anticipate in regard to this art, as well as to the other above-described processes for printing directly from objects, that they will afford most important services to the natural, botanical, mineralogical, and anatomical sciences; as it is by their means that the internal structure of bodies is unveiled to the eyes of the philosopher, and the wonders of nature, in their inexhaustible variety are indefinitely multiplied, to be subjected to the investigation and to serve the gratification of mankind.

But the new art will prove not less useful to the decorative arts, particularly in its application to produce imitations of rare and costly woods, as well as of works of art, mosaic and inlaid work, applicable for paper-hangings, or for furniture, in the place of veneering, these imitations being produced at an exceedingly low cost, while they rival in perfection the original objects, enabling those whose means are limited to obtain decorations at once cheap and in good taste.

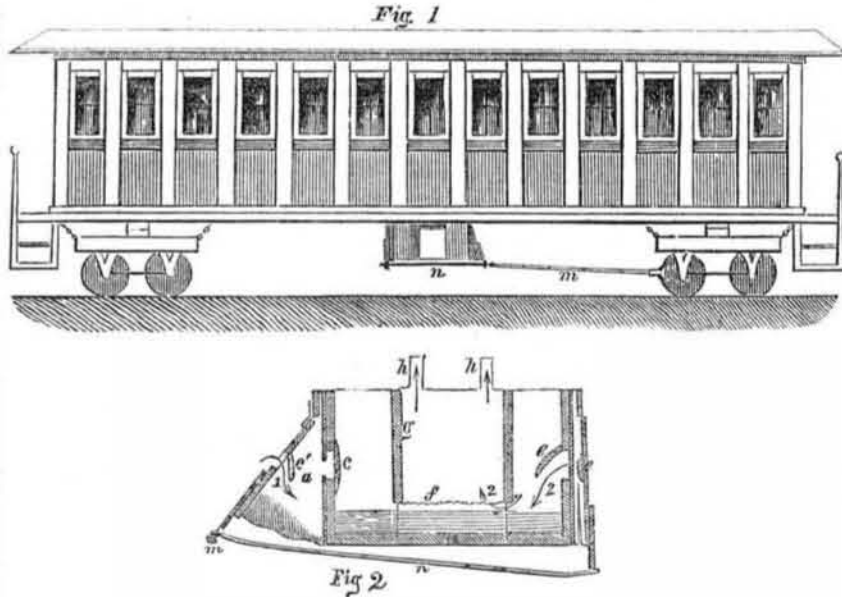
Praise of American Manufactures.

The Maine Mechanics' Fair is to be held in Portland on the 19th of next month, on which occasion quite a number of mechanics from the British Provinces are expected to be present. The "Montreal Pilot," speaking of the affair, says:—

"The Maine Charitable Mechanic Association will hold a Fair and Exhibition at Portland, in September, to which we hope Excursion trains will pass from Montreal. The Portland people patronized our Exhibition last

year, and we should like to reciprocate their visits, and to witness, what is unquestionable, the evidence offered by their mechanics, of skill and invention in the industrial arts. The ingenuity and capacity of the mechanicians in the Eastern States of America is now universally known and admitted. American implements are being very generally adopted in the old country, where their superiority is proved, and we are near enough to the Eastern States to be enabled to profit by such improvements at the earliest possible moment."

VENTILATING RAILROAD CARS.



The accompanying figures illustrate an improvement in ventilating railroad cars, for which a patent was granted to Orrin Newton, and J. A. Crever, on the 14th of last March.—Figure 1 is a side elevation of a railroad car showing a blowing and purifying apparatus underneath. Fig. 2 is a cross section of the blower and purifying cistern, and showing the internal arrangement of the valve and air ways. In this latter figure, the course or direction of the air is indicated by the arrows. Supposing the blower to be taking in a supply of air from the atmosphere, the arrows indicate the course of the current, first into a chamber communicating with the external air, and thence through the vent under valve, *c*, into the chamber, *a*. At the other side, the reverse or collapsing action of the blower is represented by the air passing out of the outside chambers, under the valve, *e*, and through the chamber in which it is placed, and over the upper edge of the side of the water cistern, *f*, and then down near the bottom of the cistern, forcing the water before it until it passes the lower edge of the partition, as shown by the arrows, 2 2. The air then rises through the water into the cistern above, and from thence it passes into the pipes, *h*, and from thence into a continuous horizontal slanting perforated pipe, which runs along the whole length of the car inside, and supplies all parts thereof with cool and pure air, and at the same time distributes it evenly throughout—no unpleasant strong current being produced at any one place. The reverse action of the blower or bellows, to that described, produces the same effects. It will be observed that there are two bellows' actions and these receive a reciprocating motion, so that one is open when the other is closed, thus keeping up a continuous supply of air. The rod, *m*, is connected to a crank or eccentric on the axle of the truck, and the connecting rod, *n*, actuates the two bellows. The water in the cistern must not be so high as to be in danger of being forced back by the action of the blowers into the valve chambers. The proper depth can be maintained by a gauge faucet. The impure water can be run off from the cistern by a pipe inserted in its side near the bottom. Air pipes may be continued along the sides of each car, or between the lining and the car, with wall perforations, to admit the air into the body of the car. Various modifications of the plan may be made without departing from the principle shown in the figures. The claim is "for the combination of the bellows and water cistern

connected with each other, and with the cars by pipes for ventilating the cars." The nature of the invention will therefore be clearly understood by all, and its merits duly estimated.

More information may be obtained by letter, addressed to Orrin Newton, 129 Second Street, Pittsburg, Pa.

Preparation for Stuffing Birds.

MESSRS. EDITORS—In a late number of your valuable paper I noticed an article signed "V." on the preservation of Birds, in which he says you were in error in stating arsenic to be the best preservative known. As regards the receipt he recommends (corrosive sublimate) as being used by Waterton, I would refer to "Swainson's Natural History of Birds," under the above head. In which he says, "I made the following experiment with Mr. Waterton's composition in Brazil: the ants, which swarmed in the room I inhabited at Pernambuco, had committed great devastation among the prepared insects and birds. While preserving one of the latter I cut off a piece of the flesh, and after saturating it with the composition, laid it in the path which led to their holes. The little creatures at first seemed to be somewhat suspicious of its wholesomeness; but after walking about and upon it, and examining it with their antennae, they seemed to pronounce a favorable verdict, for one and all began dragging it away to the entrance of their nests, where it soon disappeared beneath the earthen floor. The experiment was repeated three times, and the same result followed. The mixture had been brought from England, and I had no reason to believe it was defective in the preparation. After this trial I determined on using the arsenic soap, naturally concluding that if ants would devour the soaked flesh of a bird, they would not scruple to attack its skin which could only be washed with the liquor on the inner side."

Arsenic is almost invariably used, and I annex the following receipt:—Camphor, 2½ oz.; Arsenic, powdered, 1 lb.; White Soap, 1 lb.; Salt of Tartar, 6 oz.; Chalk, powdered, 2 oz. AMATEUR.

Cincinnati, August, 1854.

Coach Makers Guide.

In our notice of this excellent and useful work, on page 369, a mistake was made in the name of the residence of C. W. Saladee, the Editor, it read Columbia, it should have been Columbus, Ohio. Those wishing more information respecting this work can obtain it by addressing Mr. Saladee.

LITERARY NOTICES.

APPLICATION OF WROUGHT AND CAST IRON TO BUILDING PURPOSES—This is the title of a work by Fairbairn, C. E., F. R. S., of Manchester, England, who discovered the best form of tube for the Britannia Bridge. It is republished by John Wiley, 167 Broadway, for which he deserves the thanks of all the engineers in our country. It treats of cast-iron beams for supporting floors and presents a history of their application. It also gives the rule for their strength, and an account of the author's experiments. Experiments with wrought iron beams are also presented, and the third chapter is devoted to a consideration of the construction of fire-proof warehouses, and an account of the great Saltaire Mills in England. No engineer can do without this book.

FRUITS THE PROPER FOOD OF MAN—Messrs. Fowlers & Wells, Broadway, this city, have completed and published the above named work of John Smith, edited by Dr. Trail, in a very neat volume. It is a subject which is now engaging no small amount of attention. The great fault with such authors is, they present only one side of the question, and that one most favorable to themselves. This is true with respect to the examples of long-lived fruit eaters here presented. An argument is also attempted to be founded for a fruit diet on the teeth of man, as compared with animals. If this is worth anything, man should not cook his food but live like a beast.

THE THEORY OF COLOR AS APPLIED TO DRAWING—This is an essay on the above subject, by Wm. Minifie, author and publisher, Baltimore, and is designed as an appendix to his excellent book on drawing. It is an able essay, and we must say that such information is much wanted by the majority of draughtsmen; it is a science to which they pay far too little attention.

LECTURE ON THE HUMAN BODY—A lecture on the human body, by John A. Parsons, published by Shepard & Co., Fulton street, this city. The object of the lecturer is to show that the want of fresh air is the cause of most diseases; he describes his own experience, sickness from a confined warm room, a recovery by simple food, and living a great part of the time in the open air.

THE EDINBURGH REVIEW—The last number of this distinguished Review is just issued by its enterprising publishers, Messrs. Leonard Scott & Co., this city. The leading article is on the diplomatic history of the Eastern question. It is candid and thorough. There is also an able article on the Maine Law agitation. It is an excellent number, and well sustains the ancient reputation of this Review.

ILLUSTRATED MAGAZINE OF ART—A new number of this beautiful work by McElrath & Co., 17 Spruce street, this city, has just been issued. The frontispiece is a picture of Washington, taking farewell of his mother. The best engravings in this number are from paintings by Desportes, an old French painter.

RUSSIA AND ENGLAND—This is a very ably written small volume, by John Reynell Morell, and published by Kiker, Thorne, & Co., Fulton street, this city. It presents some curious and very interesting information respecting the Circassian tribes and their conflicts with the Russians.

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