

Correspondence.

Occupations for the Old.

To the Editor of the Scientific American:

While not yet to be considered old, perhaps, I have derived much pleasure in the pursuit of an occupation which may suit some of those more advanced in life, and serve such as both a pastime and the means of revenue as well.

To such I would say, procure a Fleetwood or other good scroll saw, using either a water motor or electricity, if foot power be objectionable; obtain some patterns, fancy woods, a few tools, and many pretty and useful articles can be made. With water power it is easy to cut through several thicknesses of woods tacked together.

J. HARMANUS FISHER.

Baltimore, Md., Feb. 18, 1892.

German Labor Stations for Tramps.

There is in the February number of the *Forum* an explanation of the practical results of the celebrated German labor colonies for the abolition of tramps, by Prof. F. G. Peabody, of Harvard, who, during his residence in Germany, where he now is, has studied the system on the ground. Germany was the worst tramp-afflicted country in the world before work stations were established at intervals of half a day's journey. It is assumed that the tramp will earn his food and lodging in a half day's work. In the morning, therefore, he may travel with the assurance of reaching another station, where in the afternoon he must work.

If he presents himself after 2 P. M. he gets no further help. Each wanderer must carry with him a ticket on which is stamped the name of his last station and the date of his reception there. Thus when the network of these stations extends throughout Germany, all excuse for wandering beggars seems to be removed and a positive treatment of friendly aid as well as a negative treatment of refusal at one's door is applied. In the year 1890 there were 1,957 such stations, in which 1,662,606 breakfasts, 972,490 dinners, and 1,871,591 suppers were provided. There were, in the same year, 364 resting places with 12,600 beds, providing in the year 2,223,000 lodgings.

Prof. Peabody explains that it was at first feared that they might be tempted to stay too long in so good a refuge, and a maximum term of two years was fixed; but, in fact, a great proportion of such men cannot bear the restraint for any considerable period. It is estimated that in the years 1887-1889, 7.7 per cent (913) of the colonists left within a week, 4.3 per cent (507) within a fortnight, 23.7 per cent within a month, and 41 per cent within two months. Of all who left the colony, 20.8 per cent had obtained definite occupation; 60.4 per cent left at their own desire, and may be assumed to have renewed their tramp life; 5.5 per cent had remained the entire term of two years; 4.4 per cent were dismissed for misconduct; and 2 per cent were transferred to hospitals for treatment. Finally, 2 per cent ran away. Of 5,556 colonists in 1888, 3,617, or 65 per cent, were at a colony for the first time; and 1,939, or 35 per cent, were at a colony at the least for a second visit. Of these, 8.2 per cent were there for the third time, 2.8 per cent for the fourth time, 1.2 per cent for the fifth time, and 0.05 per cent for the sixth time.

Practical Electrical Mechanics.

The Elektron Manufacturing Company, Springfield, Mass., in connecting with the trade school of the city, has undertaken a work to educate mechanics to work on electrical machinery. The company has agreed to take each year a certain number of selected students and give them the benefit of working in its shops on actual productive work. Each student is expected to work three days in each week in the shops and spend the other three days in studies, a special course having been arranged for them in connection with the high school of the city, which is an institution of a very high grade. The course covers three years, which amounts to one and a half years of study and one and a half years of shop work. The students do not receive any compensation for their work, but the company agrees to give them the opportunity to learn all branches of the machinist's trade so far as they may be learned in the work of the shops.

The officers of the trade school have the privilege of visiting the shops at any reasonable time, and of giving the boys such advice and instruction as seems to them wise, but in almost every respect they are obliged to conform strictly to the regular factory rules governing all employes, and they work during the same hours.

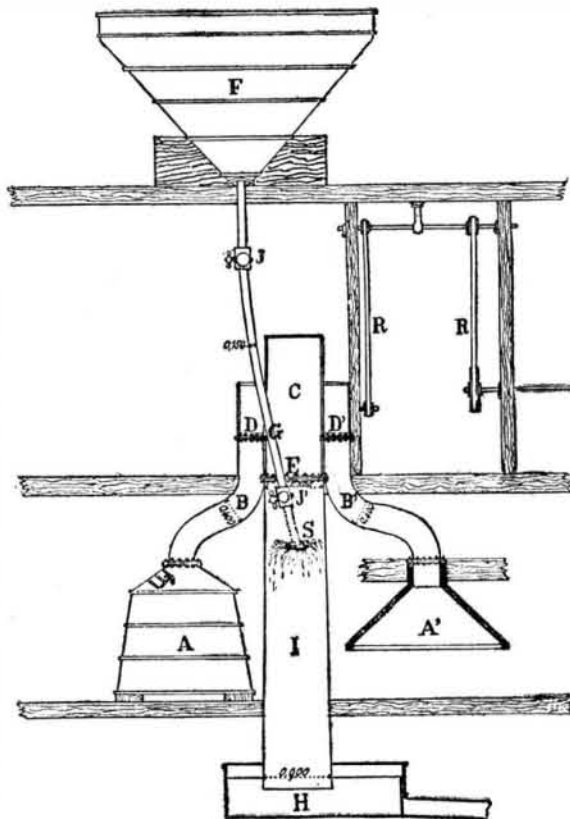
Stevens Institute, Hoboken.

The board of trustees of the institute is now a body of nine members, as follows, the first five being newly elected members: Mr. Andrew Carnegie, of Pittsburg, Pa.; Mr. Charles MacDonald, C.E., of New York; Chancellor Alex. T. McGill, of New Jersey; Col. Edwin A. Stevens, of New Jersey; Mr. Alex. C. Humphreys, M.E., of New Jersey; Mrs. M. B. Stevens, Mr. S. B. Dod, President Henry Morton, Ph.D., and Mr. Wm. Kent, M.E.

DESTRUCTION OF EMANATIONS OF ALL KINDS WITHOUT THE USE OF CHEMICALS.

If there is any matter rigorously governed by French legislation, it is that of dangerous, unhealthful, or offensive establishments. We well know, in fact, the numerous formalities that the law imposes before giving authority to found such establishments, and what measures of precaution and prudence it exacts from those who own workshops or factories.

All the countries of Europe, moreover, have, as regards this, a legislation nearly conformable to our own. As well known, French legislation arranges dangerous, unhealthful, or offensive establishments in three classes. Those of the first class must necessarily be isolated from private habitations, and it is for the local authorities to designate the place where such establishments may be located. Those of the second class are establishments whose remoteness from dwelling houses is not rigorously insisted upon, but the installation of which, nevertheless, must not be permitted until it has been ascertained that the operations to be carried on therein will be performed in such a way as not to incommode the landlords of the neighborhood nor do them any injury. As for the establishments embraced in the third class, they are such as may remain without inconvenience near dwellings, the danger or accidents that their formation presents not being grave enough to cause their removal from the interior of cities. So these latter establishments are distinguished from those of the first and second classes in that they have not necessarily to be relegated to a distance, and in that they are not submitted, when



APPARATUS FOR THE DESTRUCTION OF UNWHOLE-SOME EMANATIONS FROM FACTORIES.

they are in the midst of habitations, to so severe measures of precaution and to so complicated forms of instruction. Now, it is very detrimental to a manufacturer to be obliged, in order to conform to the prescriptions of the law, to remove his works to the exterior of the city, or far away from habitations; and such removal, indeed, is often attended with the ruin of the industry, and consequently that of the manufacturer. The means of transportation are more difficult and costly, the distance from railway stations obliging the manufacturer to maintain a large amount of rolling stock, and this in every respect appreciably increases the figure of his general expenses. For establishments that can be erected in the midst of cities, the law prescribes measures of precaution which are often very costly. For example, those of building inclosing walls, of leading the fire into long chimney flues, of burning the smoke in the furnaces, etc.

Consequently, an invention that would suppress the inconveniences that cause such or such an industry to be ranged in such or such a class rather than in such another, and that would thus permit, in rendering the exploitation of such industry innocuous or less dangerous, of arranging it in the second or third class, although it was previously arranged in the first, would render a signal service to all manufacturers whose interest it is to remain in a city or to locate themselves near dwellings and relieve themselves from all the police regulations which so disagreeably interfere with the free exercise of such industries. Thus, for example, the works for the preparation of hogs' bristles by all processes of fermentation are, by an order of the 27th of May, 1888, arranged in the first class of unhealthful establishments, on account of the bad odors produced by such preparation. An invention that would cause the disappearance of such offensive odors

would thereby suppress the reason for this industry being arranged in the first class, and would thus permit of works being established in the very midst of a city.

As regards unhealthful establishments, an endeavor has already been made to overcome the inconveniences that they present, but without any success until recently. The system proposed by Mr. De Pindray, and which we are about to describe, seems to combine in itself the proper conditions for suppressing the deleterious emanations that escape, despite all precautions, from certain manufactories.

In the accompanying figure is represented the arrangement employed by the inventor of this process for carrying off the emanations produced either in the melting of fat or the scouring of metals. The boiler, A, in which the fat is melted, is connected by a pipe, B, with the ventilator, C. The vitiated air of the works is removed by this ventilator by means of the suction pipe, B, terminating in a funnel, A'. The gases forced into the central pipe, I, are mixed with water derived from a reservoir above. This water, distributed in the form of a shower, forces the gas to the purifier, H, at the lower part of the works, and the mixture is thence led to the sewer, or to a well sunk in pervious ground, by a subterranean conduit.

This invention is no longer in the domain of pure theory. Two applications have thus far been made of it, one at Cambrai, in the metal scouring works directed by Mr. Dupont-Grezeaux, where the process has given very good results; for, since it has been in use, the works, which were on the point of being closed on account of the deleterious emanations that were produced, have been running without any danger to the health of the public.

The other experiment was made in an establishment situated in the city of Cateau. Numerous complaints had been made on the subject of the emanations given off from this establishment, which is occupied in the trying out of fat. The owner of the works, Mr. Gerard, addressed himself to Mr. De Pindray, who installed his apparatus therein. A resolution of the Municipal Council (session of November 20, 1888) declared that, owing to the improvement very ably introduced by Mr. De Pindray into the melting of fat in Mr. Gerard's works, no unwholesome odor was perceptible, and that the works no longer offered any danger to public health.

This process, based upon purely mechanical means, is much superior to all processes based upon chemical agents; in fact, on employing a physical process, the expense is reduced in very great proportions, for it embraces only the cost of keeping in repair. The apparatus have no need of any surveillance, and no manipulations have to be performed that are sometimes dangerous.—*Le Genie Civil*.

New Coins.

Recently the mints of the United States commenced the re-coining of the subsidiary silver—the half dollar, the quarter, and the dime. Artistically, says *Electrical Progress*, they are very much superior to all former issues, and will compare favorably with any coins of the world. As new dies had to be made for this coinage, it may be interesting to refer to them. When the die for a new coin is engraved, it is done with great care and expense. It is used only to make an impression on what is called a hub, which of course is the reverse of the die, when the hub is used only to stamp the working dies, which become a fac-simile of the master die. In coinage these working dies alone are used, and as a matter of course soon become deteriorated. Thus the master die can remain doing very little hard service. As an example, the coinage of the more than 400,000,000 silver dollars which have been made since 1878 are exact duplicates from one master die. On the commencement of this coinage there was some experimenting and some variation in about \$1,000,000. Since then all have been alike except in date. These dies and hubs are all made of choice steel.

In regard to the weight of the new coins, it may be interesting to recall the fact that we reduced the amount of pure silver in these coins in 1853. This was done in order to save them from the melting pot and exportation, as they were more valuable than gold and met this fate to the great inconvenience of our people. The half dollar was reduced in weight fourteen and a quarter grains, the quarter and the dime in a corresponding ratio. In 1873, in order to assimilate these coins to the full legal tender silver used in France and to popularize the French metric system, the weight of the half dollar was increased nine-tenths of a grain, or as expressed in our laws to twelve and a half grammes, and the quarter and dime were increased in the same proportion. Thus these coins are at present legal French weights.

The half dollar	12½ grammes.
The quarter dollar	6¼ "
The dime	2½ "

Thus a French kilogramme equals eighty-four half dollars. In 1874 the French metric system was legalized by Congress, the sole authority intrusted with this power.