

It is the "choke damp" of the miner, and though always present in minute quantities in the atmosphere, it becomes dangerous when in excess. On the score of health alone the introduction of electric light ought to be hastened as much as possible, nor should it be only the luxury of the rich, as a famous electrician, recently deceased, proclaimed it, but the necessity of the poor. When purity and brightness are most needed, there purity and brightness should first come.

Efficiency of Labor.

Mr. J. S. Jeans, Secretary of the Lynn and Essex Institute, in the course of a lecture on the Comparative Efficiency and Earnings of Labor at Home and Abroad, given at a meeting of the Statistics' Society, stated that in all the leading industries of the world, England held a position superior to that held by any other important industrial nation both in regard to the extent of its manufactures, and in regard to the individual efficiency of the workers engaged therein. The author gave statistics relating to the cotton trade. In reference to the mining industries, tables were given in which it appeared that the largest industrial annual output of iron ore was obtained in Sweden, which was followed, first by the United Kingdom, next by France, and next by Germany; while in regard to coal, the greatest average productiveness was found in the United States, which was followed, next in order, by the United Kingdom, Nova Scotia, and New South Wales. Statistics were 84 per cent. higher than in Great Britain, which again were 50 per cent. above France, and 58 per cent. higher than Germany. The third section of the paper deals with the increase of wages in different countries within recent years, and stated that in ten of the leading industries of the world the average increase between 1850 and 1883 was, in England, 40 per cent., a figure not identical with that ascertained to have been the percentage of increase in the wages of working classes of the United States between 1860 and 1883. In France, statistics collected by the Government showed that between 1850 and 1880 the average increase of wages in twenty-three leading industries was 30 per cent. in Paris, and 65 per cent. in the provinces. The comparative cost of living in different countries was also dealt with at some length, the conclusion being that there were grounds for believing that it was not less tolerable in our own than in other countries for those who labored for their daily bread.—(London, Machinery Market.)

A Mechanical Tramp.

There is the office of a well known machinist in the city, who, when he drew my attention to a model in wood of a complex piece of machinery, said, "There," said he, "is a pocket-knife made by a tramping mechanical who has had the run of my shop for a number of weeks, but has not turned up now for several days." "What's become of him?" I asked. "Well, probably he's started on a tramp to some other maybe a nearer point."

"Perhaps New Orleans," I suggested.

"No, if he went there he would see a working model of this machine, and for that reason will steer clear of the World's Fair."

"Ought to be styled a crank," I said with some asperity.

"I wouldn't make any difference to him what he was called. Why, sir, that chap has tramped all over a half dozen countries of South America, lived from hand to mouth, and never asked a favor of anyone except when, as happened to be the case here in Minneapolis this fall, he has perfected his ideas and wishes to make a model. He is an inventor, a skilful workman, and in any first-class establishment would draw the highest wages. This last summer he had been tramping in the Lake Superior country, and called one day at my place—after walking from Duluth—with a request that I would give him a job. I didn't want a man at the time, but to his offer to work full hours for his board, coupled with an uncommon earnestness of manner that sort of captivated me, I could make no effective resistance. He went to work, for a time giving regular attention to the regular work of the shop. Soon, however, he took to whittling wood and seemed utterly unable to apply himself to anything else. By degrees he laid away a number of pieces, all of which were evidently designed with an object in view, and one day I found him setting up a model for a machine. And there it is; from it a working model has been made and sent with the Minnesota exhibits to New Orleans. One day my erratic friend failed to drop in as usual, and upon inquiry at his boarding place I ascertained that he had settled up and silently departed, leaving nothing behind him save an old clay pipe!"—From *Chats in the Workshop*, in *Wood and Iron*.

Water-Marking.

Water-marks have been found bearing date as early as 1301, but little appears to have been recorded of the improvements effected in the process of manufacture. Blanchet Freres & Kleber, a paper-making firm well known in France, and whose mills are situated at Rives, in the department of Isere, applied on the 13th of February for an English patent for an invention, the object of which is to provide means for the production in cylinder machines of papers presenting shaded water-marks, such as are employed for bank-notes, etc. From the specification, which has only just appeared, we learn that this result is obtained by providing the paper-making cylinders with goffered cloths or cloths presenting designs capable of producing water-marks presenting effects of light and shade in every gradation, so that the stuff is molded in the same manner as in the production of hand-made paper without any distortion of the mark, contrary to the method usually followed of imprinting the water-mark by pressure applied to the wet pulp. The cylinder is constructed of a number of carved brass segments in the form of gratings, the bars of which, in cross sections, taper toward the exterior and extend in a direction concentric with the cylinder, being combined with smaller bars arranged parallel with its axis. Instead of the

felt used to receive the paper from the making cylinder, a wire cloth is employed, and the couch roller is replaced by a very elastic india-rubber couch roller, perforated with holes, running parallel with its axis.

Paper with shaded water-marks manufactured with this machine would be liable to be injured by the drying cylinders provided in ordinary cylinder machines. In order to obviate this, the cloth, after passing over the troughs and being acted upon by a roller on the upper side, is drawn over copper plates placed above sheet-metal boxes heated by steam. A fan is arranged between the plates to drive off the vapor. At the extremity of the machine farthest from the couch roller, the cloth is carried round a perforated drum in which works a fan; underneath this fan a motor and pressing roller elevates the cloth on its return to the couch. A brush revolving at the side of the perforated drum detaches the sheets and facilitates their delivery, and a scraper acts upon the cloth behind this brush. The returning cloth is conducted under and over rollers, and through a trough filled with water, wherein it is washed, and is also brought in contact with revolving brushes, which remove any fragments of pulp that may still adhere to it. Although it is best to employ the drying apparatus described, it is not absolutely essential.—*Paper Trade Review*.

Recent Legal Decisions.

CORPORATIONS—LIABILITY OF DIRECTORS.—Where the directors of a corporation under an arrangement with each other issue the bonds of the corporation and then purchase them and sell them on their own private account so as to realize a profit, they will be held to account for that profit to the creditors or stockholders of the corporation according to the decision of the Kentucky Court of Appeals, in the case of *Widrig et al. vs. The Newport Street Railway Company*, decided on the 8th inst.

COMMON CARRIER—MEASURE OF DAMAGES.—The case of *The Pacific Express Company vs. Darnell*, decided recently by the Supreme Court of Texas, arose out of a suit against the appellant for failure to promptly transport a piece of machinery. The plaintiff sought to introduce proof that the company's agent was informed that his entire mill would be idle until the piece of machinery was delivered, and was given to understand the reasonable and probable result of a delay to promptly deliver the same, but these facts not having been set forth in the declaration, the court held that proof of them could not be given, and that lost profits could not be recovered as damages.

MUNICIPAL BONDS—TAXATION.—The case of *Cole vs. The City of La Grange*, decided by the Supreme Court of the United States on the 5th inst., arose out of a suit brought to recover upon the interest coupons of certain bonds issued by the city of La Grange as a donation to the La Grange Iron & Steel Company. The Supreme Court, affirming the decision of the Circuit Court for the Eastern District of Missouri, held that the general grant or legislative power in the constitution of a state does not authorize the legislature, in the exercise either of the right of eminent domain or of that of taxation,