by means of side screws or bolts the area of the inlet to the down pipe may be increased or diminished, so as to regulate the speed of the water past the end of the air pipes, and then fixed at the most efficient working point. At the bottom of the down-flow pipe is an upright cone which turns the course of the water towards the circumference of the receiver, thus facilitating the escape of the air from the water, while round the circumference, to turn the course of the water back towards the centre, as indicated by arrows, is a deflecting apron under which any air then in the water is caught and conveyed through a small pipe to the main body of air in the receiver.

The whole system is fully protected by patents and is controlled by a joint stock company, and charter applied for under the title of the "Taylor Hydraulic Air Compressing Co., Ltd.," with a capital of 5_{500} , ooo, and headquarters at 183 St. James St., Montreal. The gentlemen composing the company, hefore finally acquiring the rights, submitted the models of different sizes to Prof. John T. Nicolson, Professor of Mechanical Engineering and Thermodynamics of McGill College, who submitted them to one hundred and nineteen tests, extending over a period of six weeks, and concluded his report to these gentlemen with these words:—

"I must admit that any prejudices or doubts I may have had (some of which I expressed in conversation) regarding the feasibility of the undertaking, have now completely disappeared, and I entertain a most favorable opinion of the merits of Mr. Taylor's system."

THOSE receiving a sample copy of this number, and intending to subscribe, should forward their names at once in order to get the coming volume complete.

DURING the last twenty years the number of iron foundries and machine shops has greatly increased in India, and the country is less dependent on Europe for general ironwork. The following is a list of such structures of iron and steel as are built in India: Coasting and river steamers, launches, barges, steam boilers, bridges, tanks, piers and jetties, sluice gates, buildings, engines, steam pumps, turbines, sugarcrushing machinery, oil mills, cotton, hay and other presses, and grinding mills. The railway companies build their own rolling stock, but they import the wheels, axles, tires, and other iron work; rails also are imported, as are also steel sleepers, which are much in vogue in place of timber. Bolt, chain, and rivet making are not yet known as separate industries. Wire working is a steadily-increasing industry, being readily taken up by the natives. Locks, of fairly good quality, are made in Bombay and Calcutta, but none of the manufacturers appear to possess a key-cutting machine, or a good set of machine tools Machine tools are made, but in small quantity, most of the tools being imported. Textile machinery is entirely made in Agricultural implements are in small de-England. mand, on account of the poverty and ignorance of the cultivators. India possesses only one glass factory conducted on European methods, and this is in Calcutta. There are a few smaller glass factories, but when they do not use broken imported glass, they turn out goods of an inferior quality. Good glass materials are to be found in India, and a factory for the manufacture of soda-water bottles alone would, according to American Consul Sommer, of Bombay, find occupation for a large number of operatives. Window glass is now

largely used throughout India, where only shutters were used before. It is obtained principally from Belgium. In brick and tile-making there are few factories having the appliances for making bricks by machinery. The tiles most in use are of native design and manufacture. A tube of clay is spun by hand on a very simple wheel made of wood and balanced and loaded with clay. It turns on a peg, and having been set in motion, it revolves long enough for the operation. The tube, which is tapering in form and about four feet long by about four and a half inches wide, is split by a piece of string into halves, which, when dried and burned, become the country tiles of India. One layer with edges up and one layer with edges down is what is termed a single tiling. No fastenings are used, there being only one support at the eaves of the roof to prevent them from slipping off. In large towns the European pattern of tile is coming into vogue. The greatest number of European tile factories in India are in Malabar and South Canara, where water carriage along the coast affords a cheap means of transportation. The factories are closed during the rainy season. Oil has been expressed for many centuries by the ghance, a mortar, having a revolving pestle driven by hand or bull-, k power. The residual cake contains a large quantity of oil and is used as food for cattle. This mill is still in general use, excepting where Europeans have a hand in the production, European machinery, of course, giving better results. Until six or seven years ago vegetable oils were almost exclusively used for every kind of lubrication in India. At first mineral oils made a bad impression, but this was soon removed. Ghee, a clarified butter used by the natives, is adulterated with vegetable oils and animal fats.

THE tenth annual convention of the National Electric Light Association, which took place at Cleveland, Ohio, on the 19th, 20th and 21st of February, as might be expected, proved a very interesting event, and was a great success from start to finish. A notable feature was the presence of three great pioneers of electric lighting, Brush, Houston and Thomson, and one of the most interesting parts of the convention was the address delivered by Mr. Brush. Among the papers read and discussed were "The Storage of Energy Essential to the Economy of Working in Central Stations," by N. W. Perry; "A New Method of Measuring Illumination," by Prof. Houston and A. E. Kennedy; "The Correct Method of Protecting Electric Currents," by W. E. Harrington; "Large Arc Dynamo," by C. N. Black; "How to Light Large Cities," (topic); "The Monocyclic System," by Louis Bell; "Practical Demonstration of Protecting Lines from Lightning," by W. A. Wurtz; "Arc Carbons and the Rating of Arc Lamps," by L. B. Marks. The new president of the Association is C. H. Wilmerding, general superintendent of the Chicago Arc, Light and Power Co. Among the visitors from Canada present at the convention were A. J. Corriveau, of the Montreal Park and Island Railway Co., and J. A. Kammerer, of the Royal Electric Co., Montreal.

PILE DRIVING.

Major Henry A. Gray, C.E., Toronto, commenting on H. F. Perley's valuable paper on "The Resistance of Piles," referred to in our February number, says that recently quite an improvement has been made in the method of driving piles.