

addresses—divided into States and Provinces—and will be found most valuable to those desirous of reaching the members of this profession

"*India as a Field for Industrial Enterprise*;" published by the *Indian Engineer Co* of Calcutta and 28 Victoria street, London, S.W. England. Price, 1s. India, during the last decade or two, made wonderful progress, and the possibilities for still greater progress in the future are gradually becoming better known among European, and especially British capitalists. With each new development, however, the field of possibilities seems to become still more enlarged and more varied in its nature, and it is in order to show forth this multitudinous variety of openings that this interesting little pamphlet has been published. In a country of immense proportions like India, a land containing one-fifth of the whole population of the globe, the first desideratum is, as might be expected, good and cheap transportation. The chief natural arteries of the country are the rivers Indus and Ganges, and it is within comparatively recent years that the railways, which mean so much, and in the future will mean so much more for the proper opening up of India, have been built. The total length of railroads open in May last was 18,554 miles, but it is stated on good authority that India wants 10,000 miles of new railway per year for some years to come. For some time back the yearly average has been only 464 miles, so it will be seen what an immense opportunity presents itself in this field alone. Immediately in connection with transportation facilities comes up for consideration the subject of manufacturing enterprises, and on this matter it is extremely difficult to know where to begin, the requirements being great in so many different directions. Perhaps the most pressing wants, however, are factories for making up jute and cotton goods, and for the manufacture of machines, tools of all kinds, agricultural implements, etc. But for a more detailed and extended review of the possibilities in these various lines, we must refer our readers to the pamphlet itself, which they are sure to find of the greatest interest.

The *Canadian Almanac* for 1895 is to hand, and we must congratulate the publishers, the Copp Clark Co (Ltd.), Toronto, on the improved appearance of their 48th annual issue. The statistical and directory portions of the almanac will be found as usual accurate and up-to-date, but besides these the publishers have been fortunate in securing an article from Dr. J. G. Bourinot, on "Canadian Parliamentary Procedure." The Doctor, who is a world-wide authority on such matters, describes in plain language the work of a session, and tells us how our laws are made. The series of articles on "Defences of Canada" will be found interesting. They comprise "H. M. regular forces in Canada," "H. M. ships on our coasts," "The Royal Military College," "The defences of Esquimaux," and "The fisheries protection service." A timely article on the "Canadian Sault Ste Marie Canal," with a map of the district, will be found of interest. Statistics of all the British colonies and possessions throughout the world are given, with a map of the world, showing British territory shaded. A study of this list shows to what a great and powerful nation we belong.

REVIEW OF THE METAL TRADE.

MONTREAL, Dec. 1st, 1894.

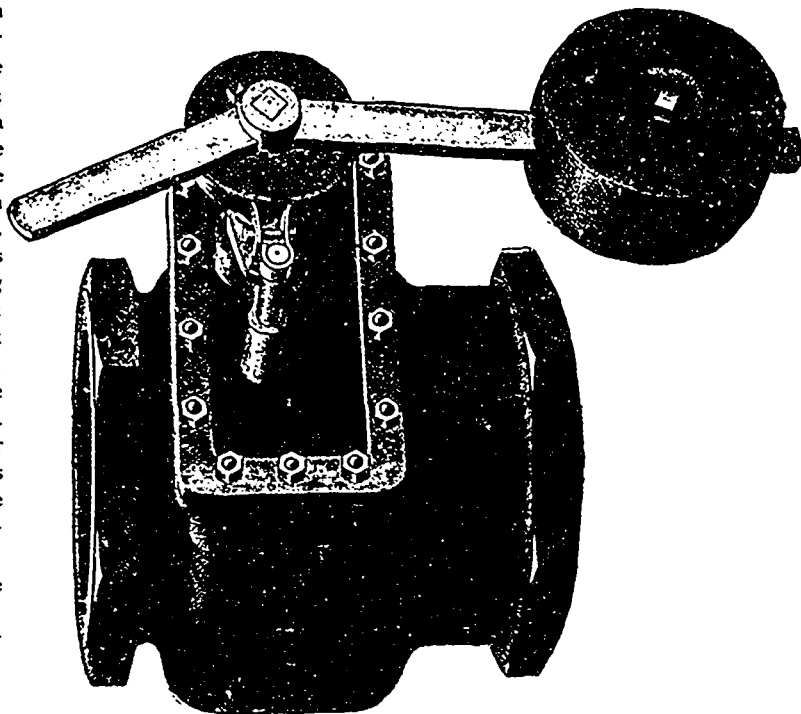
Trade is over for the season, owing to stoppage of inland navigation and increase in freight rates. Things are very quiet in the west, and though there is very little radically wrong with the country, yet dealers simply will not buy. There have been some indications of stiffening in the English markets, but the maintenance of this will of course depend only upon there being a continued demand, and, in face of the state of the American market, it would be idle to prophesy as to this. American goods are being sold very cheaply, including some articles which have not been sold to any extent by the Americans in this country heretofore, such as galvanized iron which they are putting on the western markets in somewhat large quantities. Manufacturers are all complaining of the prices of goods, there being no combination among them at present to keep prices up. Strong efforts will be made to cause a general stiffening at the beginning of the new year, but the result depends entirely on the state of the American market. At present hardware and heavy metal merchants are engaged in taking stock to see how much they have lost during the year. Prices are quoted as follows: Summerlee pig iron, \$21 to 21.50;

Eglinton, \$19; Cambro, \$19. Ferrona, \$17 to 17.50; Siemens, No 1, \$17.25 to 17.50, wrought scrap, No 1, \$14 to 15.00, bar iron, \$1.55 to 1.65. Tin plates, cokes, \$2.85 to 3.00; I. C. charcoal, \$3.35 to 3.50; Canada plates, \$2.05 to 2.15;terne plates, \$3.75 to 6.25, galvanized iron, 4½c to 5½c, as to brand. Orford copper, 9½ to 10½c; ingot tin, 17½ to 18c. Lead at \$2.70 to 2.85, and spelter at \$4.50 to 4.75. Cut nails, \$1.55 to 1.60.

CRANE'S NOISELESS BACK PRESSURE VALVES.

Steam users are well aware of the advantages obtained from using a good, reliable back pressure valve on the exhaust steam pipe, as by this means the exhaust steam from engines or steam pumps can be utilized for the purpose of warming buildings, as a large percentage of the thermal value of the fuel consumed in a boiler is obtained for this purpose, instead of wasting it into the air.

The manufacturers of the valve illustrated herewith claim the following advantages for it.



No objectionable and destructive hammering so peculiar to the common back pressure valve. Simple in construction, having no complicated adjustments, and not liable to get out of order. Constructed with a piston accurately fitted to body of valve, in which it slides freely, and having ports around its sides, the combined area of which are greatly in excess of the exhaust pipe. When pressure is brought against the under side of piston it raises, opening the ports just sufficient to let steam escape, and at the same time maintain the pressure for which it is set. It has no seat; the opening and closing of the valve is regulated entirely by the weight, consequently it will last much longer than old style.

The above noiseless back pressure valve is manufactured by the Crane Company, of Chicago, and is for sale in Canada by Samuel Fisher, 57 St. Sulpice street, Montreal.

SETTING VALVES.

If there is one point in engineering practice that is well established it is that the only sure mode of setting the valves of a steam engine is with the aid of the indicator. No matter how accurately a valve may be adjusted by actual measurement when the cylinder and steam chest are cold, the conditions may be widely different when steam is admitted. Indeed, in the case of an engine attached to a boiler, it is sometimes impossible to adjust the valves so that the engine will work well, except by actual trial when steam is raised in the boiler. There have been cases in which tests with the indicator have shown derangements of valves that were corrected in a few hours, almost doubling the economy of the engines. So far as experience goes it rarely happens that such a test is made without revealing some defects. Even if these are corrected there is no guarantee that they will continue in adjustment for an indefinite period, and hence the importance of having engines tested at frequent intervals. The saving of one pound of water per hour in an engine of 100 horse power, assuming that the boiler evaporates seven pounds of water per pound of coal, and that coal costs \$6 a ton, will effect a saving in the amount expended for fuel of about \$130 a year, and not unfrequently a reduction of 20 times this amount is produced in consequence of a test.—*Locomotive Engineers' Magazine*.