

## Brief, but Interesting.

AN instrument is being perfected for fighting against fires by means of gases.

THE "penny-in-the-slot" gas meter is coming into very considerable use in large towns in England.

A GOOD cement for iron and stone is a mixture of sulphur, iron, silicic acid and aluminum. It should be applied in a molten condition.

A SHEET of iron is in existence, measuring 8 inches by  $5\frac{1}{2}$  inches, which weighs 16 grains, and the thickness of which is  $\frac{1}{100}$  of an inch.

THE roofing of the dome of the new observatory at Greenwich, England, will be a new departure; it is to be composed of papier mache.

A PROCESS has been invented for keeping iron free from rust by means of a coating of permanent magnetic oxide produced by volatilisation.

A NEW glass for thermometers is being manufactured, which is said to be unaffected by heat up to  $1000^{\circ}$ . Ordinary glass tends to become soft at  $750^{\circ}$ .

AN Italian genius claims to use the electric battery with success in cases of chronic lead poisoning, basing this result upon the fact that electricity promotes assimilation.

MACHINES are now in use which can "bottom" four hundred pairs of shoes in one day. Formerly, three pairs of bottoms for each workman was considered a fair speed.

SOME locomotive drivers' ears are said to be so acute from long training that they can instantly detect when a bolt becomes loose, even though the engine may be moving at full speed.

FACTORIES are being started in the United States for the manufacture of mortar by machinery. It is found to be more thoroughly mixed, to be easier to work and not so liable to blister as the hand-made article.

A SUBSTITUTE for leather has been discovered, which is said to be similar to leather in everything except that it is much more supple. This material, which is called "flexus fibra," is composed largely of flax.

A FRENCHMAN has invented a new method of coating metal sheets with paint for roofing purposes. It consists in cementing cloth to the sheets, washing the latter with spirits of turpentine and then applying the paint.

A SILVER-BRONZE alloy is being manufactured as a substitute for German silver. It is composed of about two-thirds copper, with zinc, silicon, aluminum and manganese in proportion. It is useful chiefly for sheet, rod, and wire purposes.

THE duration of wooden sleepers varies according to the number of trains; it increases with the number of sleepers per mile, it is more in cold than hot countries; it is less on inclines; it may be reduced by one-third or more on curves of small radius; finally, it varies with the species of wood.

THE following rule will determine the number of tons of rail required to lay a mile of track: Multiply the weight per yard by 11 and divide by 7. For example: Take a 70-pound rail; 70 multiplied by 11 equals 770, which, divided by 7, gives 110, the number of tons (of 2,240 pounds each) required to the mile.

IN London, Eng., there was recently discovered the apparatus by means of which Franklin produced an electric light sufficient for reading purposes. The current was generated from a large cylinder of glass, which was rubbed by brushes with silk covers, and the light made its appearance between a ball and a metallic point.

IT has been found that a square foot of iron plate one-eighth of an inch thick weighs almost five pounds; a square foot of  $\frac{1}{4}$ -inch iron, then, will weigh 10 pounds; and going upon this as a basis, we can say that the area of any sheet iron (or plate iron) in square feet multiplied by the thickness in one-eighths and multiplied by five, will give the weight of the piece.

CARRIAGES are now being built for moving by steam along ordinary roads without rails. One is a wagon about 16 feet long, weighing 6,000 pounds and holding twenty persons, it will have a speed of between 10 and 20 miles per hour, and is estimated to cost for running one cent per hour for engine power, and ten cents per gallon for gasoline, ten gallons being the estimated allowance required for one day.

AN improved form of boiler tube has been patented, from which, owing to its specially adapted shape, greater efficiency is said to be obtained. According to one arrangement, says the *Industrial World*, the parts of the tubes which are adjacent to the tube plates are made less in diameter along the horizontal centre line than along the vertical centre line, the body of the tubes being circular, as well as the ends which are inserted into the tube plates. The parts of the tubes which are not round can be made of any convenient form, such as that of the figure 8 with a flame passage on either side. Indentations may be made, according to a modification, at any convenient distance apart, arranged alternately on either side of the tube. These improvements, it is stated, are intended to remedy the tendency of the tubes to leak, and the greater space obtained between those parts of the tubes where the steam is most rapidly generated facilitates the ascent of the globules of steam.

THE Pepper Axle Works, Guelph, Ont., have just turned out two axles, weighing 500 lbs. each, for McArthur Bros., Chesley, Ont. They are to be used in a truck for removing houses.

THE merits of the Eno Steam Generator are gradually becoming known among engineers and steam users. The company, whose offices are at 35 Richmond street west, Toronto, have received many testimonials of high value from skilled engineers. Among many others, George Yorke, engineer of the Osgoode Hall, after testing the generator put in that institution, wrote the company:—"I have great pleasure in announcing that the two steam generators, placed on our boilers at Osgoode Hall on February 16th, 1891, worked well and gave every satisfaction until May 23rd, when we closed down for the season. They not only more than fulfilled all you claimed for them, but we are able to do with the two boilers the same work we required three to do previous to their attachment. They are also extremely useful in cleansing boilers of scale and dirt." Later on, Mr. Yorke reported:—"They are giving perfect satisfaction, and we confirm the statement made July 10th, 1891. They have had no attention, nor have they given us any trouble in the least since they were put in."

## Personal.

JOHN SHAVER, foreman of the Watrous engine works, Brantford, Ont., died suddenly of heart disease.

F. G. MITCHELL, of London, Ont. has been appointed an inspector for the Boiler Insurance and Inspection Company, Toronto.

ENGINEER THORNE, of the Government steamer "Curlew," has resigned, having obtained a good position with a St. John, N. B., firm.

BERT C. LEE has been appointed electrical engineer for the Ottawa Street Railway Company. Mr. Lee was born in China, but has been for some years in the United States.

PROVINCIAL ENGINEER MURPHY has gone to Chicago, where he will read a paper before the engineering congress assembled there, on "The Use of Concrete in Foundations."—*Halifax Herald*.

D. POTTINGER, chief superintendent of the I.C.R., Mechanical Supt. Brown, Chief Engineer Archibald and wife, and General Storekeeper Cooke, of Moncton, visited the World's Fair last month.

MR. J. O'C MIGNAULT, civil engineer, arrived in Montreal on August 31st, from Lake Simcoe, en route for River du Lievre, where he is engaged on hydrographic surveys of different places above Buckingham.

J. B. MORFORD has been reappointed superintendent of the Canadian division of the Michigan Central Railway, with offices at St. Thomas. O. F. Jordan, late superintendent, has been transferred to the Jackson division.

ADOLPHE DAVIS, superintendent of waterworks, Montreal, met with an accident the other day, his buggy having come into collision with an unmanageable horse. Mr. Davis was knocked out, his foot trampled upon, and he himself dragged along about thirty yards, receiving several bad contusions.

WILLIAM PORTEOUS, the well-known architect, died at Montreal on August 28th, at the age of 82. Besides superintending the construction and placing of the lock gates of the Williamsburg and Cornwall canals, he designed many churches, woolen and cotton mills, and was the inventor of an improved system of hanging lock gates.