

SCIENTIFIC AND PRACTICAL.

ADVANTAGES OF BRONZE PISTONS.

Design and Work states that the Lords of the Admiralty have ordered the Columbus now in course of construction at Portsmouth, to be fitted with a manganese bronze propeller in place of the one of gun metal originally ordered. This decision has been arrived at after a series of comparative experiments made with the two metals in the presence of Mr. Farquharson, of the Admiralty, at the works of Messrs. Massey, Sons & Field, the contractors for the engines.

STRENGTH OF BRONZES

In a paper lately read before the American Society of Civil Engineers, Professor R. H. Thurston describes a new bronze alloy of maximum strength. The properties of this alloy were ascertained by Professor Thurston in the course of his examination in the mechanical laboratory of the Stevens Institute of Technology of a series of thirty-six alloys of copper, tin and zinc, in which the proportions of the copper were varied from 10 to 80 per cent.

SOUNDS IN THE TELEPHONE.

Having remarked that telephones transmit along with speech sounds of an unknown origin, the author has undertaken experiments in order to find out if the causes of these sounds are not those which oppose telephonic communication at great distances. To eliminate all possible sources of error, the following arrangement was adopted. A line of twenty meters was laid on the floor of several rooms, all the doors of communication being closed.

cause may occasion such trouble, since these lines are formed of pieces of iron wire connected to each other and to the stretchers by means of wires of less perfect, which are in a state of constant agitation. But this cause of failure may be removed by soldering the wires instead of tying them. Unfortunately there is another cause, the currents due to the influence of the vibrations themselves. To verify this hypothesis, the author placed in the circuit, at the end opposite the telephones, a rod of iron 1.50 meters in length, and connected to the system by supple conductors. This rod was struck sometimes transversely and sometimes longitudinally by a hammer. The sounds occasioned by the blows were distinctly reproduced by the telephones with their peculiar characters.

SCIENTIFIC PROGRESS IN BRITISH SHIPBUILDING

British shipbuilding has made more advances during the last half century, according to the Westminster Review, than in the thousand years preceding it. Seventy years ago the science of naval architecture had no home in England, forty years ago it had no official recognition, and was but little studied by the great majority of British shipbuilders.

NOVELTY IN SAFETY-LAMPS.

At the recent meeting of the members of the South Wales Institute of Engineers an interesting paper "On Patent Safety-Lamps and the Prevention of Explosions in Collieries" was read by Mr. William Crossley, M.I.M.E. The constant and increasing number of explosions in mines, consequent loss of life, damage to property, and their attendant evils, has, he says, been to him the subject of much thought and consideration, resulting in the working out of a form of safety-lamp which will, he feels confident, ensure the attainment of the objects desired, and at the same time increase the lighting power.

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lamp. This high luminosity can be safely assumed with this lamp, because it is possible to reduce the temperature of the escaping gases to any required extent by increasing the quantity of air forced through. Many explosions have taken place—notably that at the Rhodda Valley, with a loss of 178 lives—through the opening of the Davy lamp to produce more light, and he has, he says, in his lamp secured the maximum light-giving power. The additional cost consequent upon the introduction of his lamp in place of the ordinary safety-lamp would be from £500 to £800, but this sum forms only a comparatively small item in the large expenditure necessary in a colliery of any importance.—London Mining Journal

GYMNASTICS AS A CURE OF DISEASE.

Physical vigor is the basis of all moral and bodily welfare, and a chief condition of permanent health. Like manly strength and female purity, gymnastics and temperance should go hand in hand. An effeminate man is half sick; without the stimulus of physical exercise, the complex organism of the human body is liable to disorders which abstinence and chastity can only partly counteract. By increasing the action of the circulatory system, athletic sports promote the elimination of effete matter and quicken all the vital processes till languor and dyspepsia disappear like rust from a busy ploughshare.

THE RIVERS, STREAMS AND CREEKS BILL.

The following is the text of report of the late Minister of Justice recommending the disallowance of an Ontario Act of last session:— "Application for the disallowance of this Act has been made by Mr. Peter McLaren, of the town of Perth, lumber manufacturer, on the ground in effect that the Act in question deprives him of vested private rights without compensation, and practically reverses the decision of the Court of Chancery in a case brought by him against Mr. Caldwell, whereby Mr. McLaren's exclusive right to the use of improvements erected by him or those through whom he claims on certain streams in the Province of Ontario was established by a decree of the court.

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MISCELLANEOUS.

TELEGRAPH LINES IN THE NORTH WEST

Mr R. S. Tupper, inspector of Government telegraph lines, has returned to the city from an official trip to the Rocky Mountains.

The St. Paul Pioneer Press contains the following information concerning his movements:—

Mr R. S. Tupper, inspector of telegraph lines for the Government of Canada, who has just returned from one of his expeditions across British territory to the Rocky Mountains, gives some interesting descriptions of that almost unknown region of the great North West. The Dominion Government operates a line of telegraph entirely distinct from that of the Canadian Pacific Railway. From Thunder Bay to Winnipeg the lines coincide; but from that point to the Rocky Mountains they diverge, and the public line serves the double purpose of effective communication, and of keeping up a communication with the districts settled, but not having the advantages of railroads. This line is already constructed to Edmonton, a point 925 miles from Winnipeg. Mr. Tupper is very enthusiastic upon the merits of the vast country which he believes is designated to be the future garden of America.

He attempted to float his logs down Mr. McLaren's stream, and through his improvements. To prevent his doing so, the lumber company referred to was instituted, and a decree was made declaring Mr. McLaren's exclusive right to the use of the stream and improvements, and restraining Mr. Caldwell from floating his logs down the same.

That case has been appealed to the Court of Appeal. The effect of the Act now under consideration must necessarily be to reverse the decision of this court.

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RAILWAY MEETING AT LANCASTER.

Lancaster, 30th.—The meeting of the Directors of the Canada and Atlantic Railway took place this afternoon. Present—K. McGillivray, President; A. McNabb and W. O. Perley, Vice-Presidents; Mayor Mackintosh, J. R. Booth, R. S. McDonald, Hon. D. A. Macdonald, O. O. Noble, A. O. Helmer, P. Kennedy, J. A. McArthur, Duncan A. McDonald, J. Fraser. The Directors absent were Messrs. J. S. Castleman and John Rankin.

PURE SHORTHORNS.

At a meeting of cattle-breeders of Toronto, held on Monday, the following resolutions were adopted:—"Whereas the breeding of pure shorthorns has become an interest of Canada, and whereas such interest would be best advanced through an organization of breeders, and whereas it is desirable that a public record of pedigrees of shorthorns should be kept, having a standard not lower than that adopted in the United States and England, therefore resolved, that in the opinion of this meeting such organization should be formed with as little delay as possible, having for its object the publication of a herd-book, and for any other purpose deemed in the interest of breeders of shorthorns; second, that in order to carry out the above view, the chairman and secretary of this meeting be instructed to issue a circular calling a larger meeting at the Walker House on Thursday, June 2nd, at 11 a.m., of breeders who may be favourable to the formation of such society, to consider the best means to be adopted in order to carry out the object."