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INDOOR EXERCISE.

What are the best forms of indoor physical exercise? A careful observer in the gymnasia of the athletic clubs and in the private institutions will scarcely help reaching the conclusion that many young men get more harm than benefit, either because of an injudicious selection of their mode of work or by reason of carrying it beyond a reasonable limit.

The case may be cited of a young man of slim figure, who, by long-continued work with heavy bells in a large and well known gymnasium, could curl and put up 180 pounds. Suddenly he was attacked with what appeared to be rheumatism, but which, later on, proved so serious an injury to the spine that for months he has not been able to do any physical work, and there is reason to believe is permanently disabled.

A curious fact in connection with the class of men who do heavy lifting is that their great muscles seem to be of no service to them except in lifting. Few of them are quick enough to excel in boxing—for of what use is a heavy blow if not quick enough to hit its mark?—and they seem to have little endurance; being unable to bear fatigue, as though the heart and lungs were enfeebled.

Miscellaneous Notes.

Railroad men, especially, will regret that the schiseophone, an electrical instrument invented by a Frenchman for detecting flaws in metal castings and forgings, is not realizing the promises made for it. For in the newer railroad science, though study and ingenuity have found means of greatly lessening danger through broken axles and wheels, through collision and the like, no amount of inspection has sufficed to detect flaws in rails and to prevent rail splitting.

The overhead trolley system of electrical traction is not, so it would seem from report, by any means satisfactory; at least, in its present stage of development. Complaints come from many quarters that it is insufficient and uncertain. Much snow or rain and much leakage have come to be synonymous terms in street railway parlance, and there is another class of physical phenomena, not yet understood, which so seriously impairs the driving power of the motor as to call for large parcels of additional energy from the generating station.

Up to the recent launching of the British battle ship Royal Sovereign, the Italians had possessed the largest war ships, the Italia and her mates, each being credited with a displacement of 13,900 gross tons. The latest addition to the British line has a displacement estimated at 14,150 tons, thus slightly outweighing the rival craft.

is efficacious, for since even the six-inch rifle at short range can pierce the heaviest armor that can be floated, there is a likelihood that shells will break through and explode, unshipping the guns and demoralizing the crew, while in the case of unprotected sides it is likely to cut its way clear through the ship and explode harmlessly in the water.

Notwithstanding the many years the steam boiler has been under observation, there are conditions of steam making which play strange tricks, as indicated by the steam gauge, the pressure, without any discoverable cause, at times increasing 40 or 50 degrees in as many seconds, and not infrequently leading to disaster. In a big electrical lighting station in Philadelphia there has recently occurred a series of mishaps to the boilers extending over a period of twelve or fourteen months, the strongest bolts being inadequate to keep the bends and headers intact.

No one seems willing to undertake the building of the recently designed torpedo chaser, there having been no bids to open on the date fixed. The reason given is that the limit of cost fixed by Congress, to wit, \$350,000, is wholly inadequate, the contract calling for engines of sufficient power to drive the craft 920 knots (about 1,060 statute miles) in 40 hours.

Changes at the Patent Office.

Robert J. Fisher has resigned the position of Assistant Commissioner of Patents to accept an appointment tendered to him as general counsel of the Eastern Railroad Association. He was born in York, Pa., is forty-three years of age, of Quaker descent.

Mr. Fisher entered upon the duties of Assistant Commissioner of Patents April 5, 1889, and has displayed marked executive ability in the performance of his difficult duties, and by his dignified, courteous, impartial service in his judicial work has secured the confidence and high regard of the entire patent bar.

Mr. Nathaniel L. Frothingham, of Massachusetts, the successor of Mr. Fisher, was born in 1856. He entered Harvard at fifteen, graduating in the class of 1875. He attended lectures in Roman law and political economy at the University of Leipsic, Germany, until the fall of 1877, when he returned to this country to enter the Harvard Law School, finishing his course there in three years.

Ammonia Water as a Fire Extinguisher.

Considerable alarm was occasioned at Queensferry, near Hawarden, recently, by a serious explosion and fire at the works of Messrs. J. Turner & Co., chemical manufacturers and tar distillers. A still charged with anthracene oil, 10 tons in quantity, exploded with terrific force, owing to the choking of the worm, and shot a volume of flame skyward that illuminated the district over a wide area, and was visible 10 miles off.