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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. Lifting heavy bells is almost a mania with a large glass of amateurs, though one might search the town in vain to discover a single case of a professional acrobat using a bell of more than one or two pounds weight. Another large class add to bell lifting various other labors of an exhausting nature; heavy work, as it is called, designed to abnormally develop the arm and chest muscles without the adjunct of running and jumping and bar work, which adds so greatly the wanted elasticity. The effect of this heavy work on the vital organs, especially in the case of those not used or bred to violent exercise, is noticeably injurious. Some lose their color and become sallow of visage, some grow pale and take on a tired, overworked expression, while not a few get sprains which force them to lie off for longer or shorter periods.

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 gymasium, 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 that the limit of cost fixed by Congress, to wit, \$350,000, is reason to believe is permanently disabled.

A curious fact in connection with the class of men them are quick enough to excel in boxing-for of what at times to make up for that falling off which almost use is a heavy blow if not quick enough to hit its invariably occurs during the ordinary conditions mark?—and they seem to have little endurance; being of ocean steaming. It is encouraging, however, to unable to bear fatigue, as though the heart and lungs perience observing lads and men training declares runboxing, hand ball, jumping, and single and parallel bar exercise; these, to his mind, being adapted to most naturally develop the body as a whole, and normally develop the exterior muscles, while at the same time benefiting the vital organs.

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, rails and to prevent rail splitting. Hammering was the only known test, a fairly accurate one, it would seem, when the defect was of an exaggerated descripand the blow of the hammer give no recognizable signal. The schiseophone could unerringly do this, had, indeed, accomplished it repeatedly. That is what the first reports of the instrument declared, indicating the defective point, and being corroborated when the rail been an exaggeration.

be had to prevent interruption of service; one of the and he was confirmed the same day. Cleveland, O., electric railways being recently compelled to hire horses to haul their cars on grade till normal conditions again prevailed.

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 a volume of flame skyward that illuminated the disat 14,150 tons, thus slightly outweighing the rival craft. A radical difference exists, however, in the theory of of armor, with steel face and iron back on the comnot any outside protection. At the first blush, it would appear that, in point of endurance, the odds would be largely with the British ship, but first-class naval au thorities are not by any means agreed that side armor in an hour and a half.—Journal of Gas Lighting.

is efficacious, for since even the six-inch rifle at short range can pierce the heaviest armorthat 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. Experts have examined and studied, but without being able to agree upon the cause, and though a coroner's jury, made up of boiler makers and engineers, called to inquire into the cause of an explosion which killed one man and frightfully scalded two others, brought in a verdict against the electrical company, it was unable to explain wherein there had been want of precaution or point out the safeguards required to prevent a similar occurrence.

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 is wholly inadequate, the contract calling for engines of sufficient power to drive the craft 920 knots (about who do heavy lifting is that their great muscles seem 1,060 statute miles) in 40 hours. To average 23 knots to be of no service to them except in lifting. Few of for so long a stretch would require a still higher speed learn that the tubulous boiler men do not regard the were enfeebled. A man who has had thirty years' ex- task as impossible or impracticable, or even as exceeding the powers of American mechanics, hesitating to ning in the open air to be the best of all exercises, mak- accept it only because the promise of reward for sucing it a rule to recommend "all around" work, such as cessful accomplishment is not, to their thinking, commensurable with the chance of failure.

++++ 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 fortythree years of age, of Quaker descent. Mr. Fisher is a graduate of Pennsylvania College and the Albany Law School. He entered the Patent Office in December, 1875, as a third assistant examiner, and gradually rose through all the grades of the examining corps, including the Appeal Board of Examiners-in-Chief.

Mr. Fisher entered upon the duties of Assistant Comno amount of inspection has sufficed to detect flaws in missioner 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 contion, the human ear being sensitive enough to note a fidence and high regard of the entire patent bar. In certain dullness in the sound which the hammer gave, considering and determining the numerous questions but it long since became evident that flaws could exist involved in and constantly arising under the law relating to patents he was peculiarly well adapted. His mechanical turn of mind enabled him to see clearly and readily the relation of parts in the most complicated and intricate machinery.

Mr. Nathaniel L. Frothingham, of Massachusetts, the was broken and examined. This seems now to have 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 The overhead trolley system of electrical traction is at the University of Leipsic, Germany, until the fall of not, so it would seem from report, by any means satis- 1877, when he returned to this country to enter the factory; at least, in its present stage of development. Harvard Law School, finishing his course there in Complaints come from many quarters that it is insuf- three years. He was admitted to the bar of Suffolk ficient and uncertain. Much snow or rain and much County, Mass., and was actively engaged in the pracleakage have come to be synonymous terms in street tice of law until June 15, 1889, when he accepted the railway parlance, and there is another class of physical appointment of law clerk of the Patent Office. Mr. phenomena, not yet understood, which so seriously im- Frothingham is a grandson of the eminent clergyman, pairs the driving power of the motor as to call for large N. L. Frothingham, and a nephew of Rev. O. B. Frothparcels of additional energy from the generating stalingham. The President sent the nomination of Mr. tion. Where this is not forthcoming, outside aid must | Frothingham to the Senate on the 28th of February,

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 trict over a wide area, and was visible 10 miles off. The burning oil scattered itself over the yard and to construction, the British ship having a protective belt the pitch house adjoining, where hundreds of tons of pitch were stored. The pitch ignited, and the conflapound system, the same with a maximum thickness of gration assumed alarming proportions, Luckily, all 18 inches, while the big craft of the Italian fleet have the day men had just left the works, but three who had been left were burned. The Sandycroft Fire Brigade was promptly on the spot, and, by using ammonia water from a 50,000 gallon tank, they subdued the fire