

Correspondence.

An Invention Wanted.

To the Editor of the SCIENTIFIC AMERICAN:

In this country there is great need among the stockmen for some effectual way to burn fire guards. I myself want to burn fifty miles of fire guard this coming season. Now the grass in this country is usually very short, and when an attempt is made to burn guards by means of torch and oil or by dragging a rope which has been soaked in oil and then set on fire, the result is usually not satisfactory. What we need is something that can be drawn over the ground that will burn the grass little or big, for a width of from eight to ten feet, whether the wind is favorable for such work or not. If such a thing could be devised which would not cost too much, I believe a large number could be sold in this country, as I have heard many stockmen say they would like to have their entire stock ranges surrounded with a properly burned fire guard. A man here has built a machine for this purpose which sets the grass on fire by means of gasoline gas, and trailing behind are steel brushes to put out the fire. This, I understand, is quite a success, but it costs so much no one will buy one. Now, my idea is to have merely the best possible device to set the grass on fire to a width of say eight feet, and depend on men to follow it and put out the fire if it spreads beyond the limits desired. As an idea of what would meet our needs, I will say the man who can make the points or ends of every tooth in an old horse hay rake a flame of fire can find a good market for his device among the stockmen here, who want to burn fire guards around their stock ranges. A. K. PRESCOTT.

Helena, Mont., January 26, 1901.

The New Protected Cruisers of the "St. Louis" Class.

To the Editor of the SCIENTIFIC AMERICAN:

In your issue of December 22, page 393, there is an article on the new semi-armored cruisers of the "St. Louis" class. Undoubtedly the design embodies many excellent features, but it would seem that they are rather inferior to some other cruisers of the same size. So many cruisers are now built with ample protection of 6-inch Krupp armor, against which the 6-inch rifle is quite powerless at ordinary ranges, that the new cruisers would certainly be at a great disadvantage in an engagement. The displacement is somewhat greater than that of the "Brooklyn," the speed, armor protection, and bunker capacity about the same; but the armament is certainly inferior. What advantages, then, do the new cruisers possess to offset their inferiority—for inferior they certainly are—to the "Brooklyn"?

Of course, the 6-inch rifle is far more powerful than the 5-inch, the rifle carried on the "Brooklyn;" but 14 6-inch rifles are assuredly not as powerful an armament as 8 8-inch and 12 5-inch guns.

Comparing them with foreign cruisers we observe the Japanese armored cruiser "Asama," recently completed at Elswick. This admirable vessel has the same displacement as our new cruisers of the "St. Louis" class; the same speed, the same bunker capacity; but far exceeds them in armor protection and armament. She carries a complete water-line belt of 7-inch armor, an upper belt 5 inches thick, casemates 6 inches, and turrets 8 inches thick; and an armament of 4 8-inch rapid-firers, and 14 6-inch rapid-firers; while our cruisers rely upon a partial 4-inch belt amidships, an upper belt of 4 inches, and a main armament of only 14 6-inch rapid-firers. The only item wherein our cruisers are superior is in the secondary battery; but this certainly cannot offset their other discrepancies.

Comparing them with other foreign-built vessels, for instance, the new Italian cruisers of 8,000 tons, or the "Esmeralda" of the Chilean navy, we find even greater discrepancies. The new Italian boats are to steam 20 knots an hour, are well protected with 6-inch armor, and carry an overwhelming battery of 12 8-inch rapid-firers—almost as many 8-inch as our vessels carry 6-inch. The "Esmeralda" carries, if my memory serves me right, 2 8-inch rapid-firers and 16 6-inch rapid-firers. Certainly this is enormously superior to our cruisers. But the latter may not after all be so overwhelmingly superior as it appears to be on paper, for I think that it is frequently charged that the "Esmeralda" is one of the "show vessels" built by the Armstrongs, and that many essential features have been sacrificed to secure the abnormally large battery.

Although our boats possess many good features, on the whole they are certainly inferior to the "Asama," the Italian cruisers, or even our own "Brooklyn."

It may be said that they are only intended for protected cruisers and not for armored vessels. But one is forced to ask what is the advantage of building a protected cruiser, inferior in speed, coal capacity, and armament to armored cruisers of the same or even smaller size. Certainly it would be far more sensible to give them more armor, speed, and armament, and

call them regular armored cruisers. If the "Brooklyn" is classed as an armored cruiser, certainly the "St. Louis" should be, for the latter carries considerably more armor than the former. So I think I am justified in the view that I have taken of them, i. e., as armored cruisers.

A similar criticism, viz., that of carrying too weak an armament, may be made on the armored cruisers of the "California" class. On a displacement of 13,800 tons—4,000 tons more than the "Asama"—the only superior feature is a bunker capacity, greater by 500 tons. It seems to me that an armament of 8 8-inch and 14 6-inch, 4 8-inch and 14 6-inch respectively, and a speed of 23 knots, would be far more suitable for our new cruisers.

The vessels of our navy have always been noted for their powerful batteries; but it would seem that we are not keeping up to the standard set by our early boats, and even by our new battleships of the "Georgia" and "Rhode Island" classes in that regard.

Possibly those of your readers who, like myself, are interested in naval matters, would like to know what reasons exist for giving our cruisers inferior armaments in spite of their great size.

Pacific Grove, Cal.

GEORGE HOOLE.

[Our next issue will contain another letter on this subject, and Admiral Hichborn's reply to the questions raised in these two communications.—Ed.]

Automobile News.

The public vehicles of the Parisian Cab Company have been withdrawn from use. The maintenance of the vehicles was excessive, costing \$3 a day, and as the charging station was three miles from the Opera, where the main stand of the cabs was located, there remained only a capacity of 22 miles in the batteries.

A resident of Bangor, Me., has invented a self-propelled sled which he has called an "automosled," says The Electrical Review. When completed the machine will be 10 feet long, 3 feet high, and 4 feet wide.

A collapsible bucket for automobiles is made by a Boston firm. It is made of rubber, and is provided with a strainer so that water can be taken from any source. It proved very useful for automobiles, as it can be folded up and carried under the seat cushion.

The new Back Bay automobile omnibuses are proving very successful. They stop wherever signaled, irrespective of street corners, which is much appreciated by the lady patrons. They can be signaled from the house windows, and thus the necessity of crossing the street is avoided. In the five hours of the first experimental day one vehicle carried over 70 passengers, and the three carried 175.

The automobile season at Nice will present a number of interesting events. The "Grande Semaine," the week of automobile fetes, will commence on March 25 and last until April 1. Besides the events included in this programme, a number of races will be held under the direction of the Automobile Club of Nice; no less than seven cups have been offered to the club by different persons, and great preparations are now being made for the races. These events, in the order of their dates, are as follows: The Luiski cup, January 21, for road wagons, will be run from Cagnes to St. Victor, over a hilly road. The De Bary cup, January 27; this will be run in two stages, the indication of the route is reserved until the time of starting. The Brunetta d'Usseax cup, March 25. The Baron Arthur de Rothschild cup will be run on the 12th of March over the route from Nice to Turbie. It is for large machines only, for at least four persons, weighing (voyagers included) over 3,300 pounds. The starting point will be at the foot of the slope of the route from Genoa to Nice (altitude 0) beyond the junction with the Turin road, and the end will be at a distance of 5.4 miles, at an altitude of 1,600 feet, thus requiring some hill climbing. The engagements will be received up to the 9th of March by the Automobile Club of Nice. The machine making the best time will gain the cup, and the second best will receive a silver medal offered by the club. A full set of rules has been published. The next event is the race for the Lebaudy cup, March 17, for carriages weighing over 990 pounds. It will start from Cannes, following the route Frejus, Hyères, Cuers, Le Luc, Frejus, Cannes. The rules for the Baron Henri de Rothschild cup have also been published. The race is fixed for the 28th of March, and is open to all vehicles weighing more than 1,320 pounds and carrying two persons. It is a speed race, and will be held on the cemented racetrack of the Promenade des Anglais; the distance will be 0.6 mile (1 kilometer). Only the machines making the distance in less than one minute will be counted. This is a challenge cup, and will be competed for each year at the same period. Engagements will be received by the club until March 27. The last event of the series is the Nice cup, March 31. This is the second year for this cup; it was won last year by M. Pinson.

Electrical Notes.

Old horse cars are being used for curious purposes. In Chicago one of the old cars has been mounted on a scow and transformed into a houseboat.

Telephones are to be added to the fire alarm boxes of London. The firemen will carry receivers in their pockets, and the handle of the alarm box will be made into a transmitter.

The Ostend boat, "Princess Clementine," went ashore January 19, in a fog. She sent word by wire less telegraphy to Ostend for assistance, which was promptly sent. She was floated off at high water, and arrived safely at her destination.

It is said that Benson Bidwell, of Hartford, will bring suit in many of the United States district courts against electric railroad corporations for the infringements of patents. He claims that fifteen years ago he evolved a system of applying electricity to trolley car propulsion identical with the system now in use, and that he has never received any royalties for his patent.

A fast trolley car is being tested in Philadelphia. It takes newspapers in the early morning to Chestnut Hill, 14¾ miles away. It runs at a rate of 35 miles an hour, including a stop at least every three-quarters of a mile. Occasionally it has run a mile in a minute and an eighth, and it has made the entire distance in twenty-five minutes, including stops, which is the same time as the express trains make for the same distance. It maintains its schedule time regularly, but on one occasion it was late ten minutes, owing to the wreck of a hay wagon which was on the road. It is an experiment made by the Union Traction Company to test the maintenance of high speed and the evenness of schedule time. Every trip is carefully watched by experts—the state of the metal, the thermometrical and barometrical conditions being noted, as well as the humidity and fog at the various stations. Automatic instruments for recording the speed, etc., are arranged on the back platform. The weight of the car, newspapers and four persons occupying it is 10½ tons.

According to Prof. J. A. Fleming, of the University College, London, Marconi has accomplished a remarkable performance with his wireless telegraphic system. The experiment was carried out between the two stations, Poole on the English coast, and St. Catherine's on the coast of the Isle of Wight, a distance of about thirty miles. Instructions were given to the operators at the St. Catherine's station to dispatch simultaneously two different messages to Poole. At the latter station two receivers corresponding to the transmitters at St. Catherine's were placed in position upon independent aerial wires, and without the slightest delay or mistake the two messages were received at Poole simultaneously upon the respective receivers. Marconi then superimposed the two receivers at his station at Poole, and connected them to a single wire about forty feet in length, which he attached to the mast. Two other messages were then transmitted from St. Catherine's station as before, only in this instance one message was dispatched in the English language, and the other in French. There being only one receiving wire at Poole connected with two receivers, it would be naturally expected that the received messages would result in a mixture of English and French words. Instead of this, however, when the tape machine rolled out its record at the Poole station, it was discovered that two messages were printed thereon, one in English, and the other in French.

The Baldwin Polar Expedition.

Evelyn B. Baldwin sailed for the United States January 26, having practically completed his arrangements for his coming Arctic expedition. He chartered the steamer "Frithjof," of Christiania, which was used by the Swedish Polar Expedition last year. The "Frithjof" will leave Christiania about January 20, taking to Franz Josef Land the equipment and provisions for the expedition. The steamer "America," which Mr. Baldwin bought at Dundee, will proceed to some point off the north coast of Russia, for the purpose of taking on dogs and supplies. The "America" will proceed thence to the designated point off Franz Josef Land where the "Frithjof" is expected to meet her.

Pure Helium.

Prof. Dewar, in a recent lecture before the Royal Institution, expressed his disappointment that the experiments in the laboratory of the institution had failed to produce pure helium. He said that he longed to find a rich man generous enough to supply funds necessary for the discovery of pure helium; the expenditure would be very great. It is said that his discovery would enable the realization of Lord Kelvin's idea that a temperature within five degrees of absolute zero can be reached. He also said that he did not know why the reaching of absolute zero should be regarded as hypothetical.