

THE FIELD OF ELECTRICITY

Expert Analysis of the Marconi System of Wireless Telegraphy.

RIVALRY FOR THE ITALIAN'S HONOR

Aluminum Wire Coming Into Use as a Substitute for Copper—Coming Train Light Gas Its Shadow Before.

In the Popular Science Monthly for November, Prof. John Trowbridge of Harvard university discusses the method of communication which is now so closely associated with Marconi's name.

One of the most interesting features of the article in question is its explanation of the function of the vertical wire with which Marconi so greatly enhanced the efficiency of his apparatus.

More, too, at the receiving end, it is not merely the tiny "coherer" that picks up the waves, but the entire piece of wire attached thereto.

Focusing the Waves. When one recognizes that the source from which the waves proceed is not the spark gap alone, but the vertical wire also, he perceives that it is practically impossible to catch and focus them as they radiate from a light source.

The only method of which Prof. Trowbridge can conceive for extending the distance to which messages can be sent by the Marconi system is one that would intensify the shock given to the wire by the spark.

For instance, if a piano string is struck feebly the note which it emits will be audible at only a short distance. But the more vigorously and more about the string the further the sound will travel.

Communication is considered briefly by the Harvard expert. He deems it credible that some day the frequency of the waves will be controlled so that only a receiving instrument attuned to this rate will respond and no other receiver will be sensitive to a given transmitter.

I view of the number of inventors who now claim to have discovered the one perfect method of transmitting signals through space on the wings of the ether, a paper's assertion that "wireless telegraphy is in the air" would seem to be justified.

The coherer practice on which Marconi relies, resembles the steam engine practice of the days when boys worked the valves. The coherer now used depends upon the action of a mechanical tapper, which shakes down the particles of nickel and silver filings within the current of the relay after one signal has passed on and makes the coherer ready to receive the next electrical impulse.

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The agitation which has long reigned in London for an improvement in the telephone service has borne fruit in several ways. Not only has the government decided to establish a system of public telephony, but the existing monopoly and to grant municipalities licenses to establish and work their own exchange systems.

Aluminum is to have its first important trial as a commercial conductor of electricity in the Northwestern elevated road in Chicago. The Record of that city reports twenty miles of inch-and-a-half cables—150,000 pounds of the light-weight silvery stuff—are to be strung along the entire route.

James R. Chapman, the electrical engineer in charge of the new road, says aluminum wire carries electric load just as well as copper would and take less money out of the stockholders' pockets. He said: "After copper, aluminum is the best conductor among the cheaper metals.

CRYSTALLIZATION OF STEEL

Discovery of an Electrical Method of Checking It.

IDEA EVOLVED FROM A TIRED RAZOR

Investigations of an Italian Engineer Lead to Important Results—Why Iron and Steel Become as Brittle as Glass.

Scientific engineers have been much preoccupied with a danger that logically must exist in the sky-scraper. The whole strength and substance of this class of buildings are in the steel and iron framework which forms the skeleton of construction.

The steel in a sky-scraper is exactly in the conditions which are favorable to crystallization. These buildings are of comparatively recent invention and the iron, fortunately, has a catastrophe yet occurred to act as a warning.

Testing Impossible in Sky-Scrapers. In our lofty buildings there can be no testing with a hammer, as the steel is coated with brick or stone. Herein lies the great danger to the "sky-scraper."

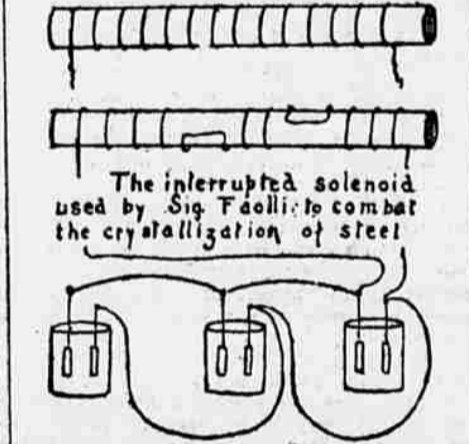


DIAGRAM SHOWING PRINCIPLE OF THE NEW ELECTRICAL TREATMENT OF STEEL.

of the hard metals. All the world learned with shudders of horror the dramatic details of that tragic catastrophe, when on a stormy Christmas eve the Tay bridge opened in its center and a trainful of holiday passengers was precipitated to an awful doom.

An Italian electrical engineer, Signor Emilio Faelli, who made a fortune in this country, and has now returned to his native land to enjoy it, has just made a discovery which is of the utmost interest in the present connection.

What American Engineers Think. William Kent, M. E., associate editor of the Engineering News, was asked for his opinion concerning Signor Faelli's discovery of a method for countering crystallization of steel.

This was done, a Columbia professor, who would not allow his name to be mentioned, however, as that the phenomenon of crystallization was one which was the subject of a great deal of painstaking study on the part of the iron constructors.

WAR AMONG THE DRUGGISTS

Movement on Foot to Force the Out Rate Stores Into Line on Prices.

DEALERS AND MANUFACTURERS COMBINE

Proposed Agreement Will Prevent Manufacturers from Selling Direct to the Dealers and the Wholesalers to Consumers.

There is a movement on foot among Omaha standard drug dealers to force out of business or into line with them all the so-called cut-rate stores, which have been a serious factor in reducing profits ever since they have been in the business.

According to the proposed agreement, the manufacturers are to refuse to sell to retailers and the wholesalers are to sell only to the regular retail trade, leaving out the cut-rate stores.

REVERSE FOR INSURGENTS. Desperate Battle in Colombia for the Control of the Magdalena River.

NEW YORK, Nov. 2.—A dispatch to the Herald from Bogota, Colombia, says: A French steamer arriving at Colon has brought further official details of the important naval engagement between the government forces and the revolutionists on the Magdalena river at Puerto Nacional, on October 24.

Officers of Italian Sennet. ROME, Nov. 2.—The Gazette today publishes a royal decree reappointing Signor Sarano president of the senate and appointing four vice-presidents of that body for the approaching session of Parliament.

So Many People. Have headaches that are due to the over taxed eyes—Eye helps that help and relieve are the kind we have been furnishing—Our optical department is in charge of a competent and practical optician who will examine your eyes free of charge—We guarantee satisfactory work.

THE ALOE & PENFOLD CO., Leading Scientific Opticians, 1408 FARNAM, OMAHA, OPPOSITE PAXTON HOTEL.

Exposition Planos. For a few days you can have a chance at these fine instruments—we say a few days, for there are only a few of the planos and once seen the bargain is so apparent that buyers are hard to take advantage—the same rule holds good on the Midway planos, while the prices we make are very easy—with easier terms yet. These instruments can now be seen at our store room on Douglas street.

A. HOSPE, Music and Art, 1513 Douglas.

Women's Double Soles. This is double sole weather—the woman who has always worn thin turn soles doesn't know what she has missed—ask any woman who is properly fitted to a double sole and she says they are solid comfort—the new swinging last, and also the straighter one, with broad, round toe, all with heavy flexible soles, go toward making up the grandest \$3.50 line of women's wefts you or we have ever seen.

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TO CLEAN MATTING. To make soiled matting look fresh and bright prepare a pailful of warm water with a handful of salt and four tablespoonfuls of Ivory Soap shavings dissolved in it.

A WORD OF WARNING—There are many white soaps, each represented to be "just as good as the Ivory," but the latter is the only one that has the peculiar and remarkable qualities of the genuine. Ask for "Ivory" Soap and insist upon getting it.

put in condition for shipment. Three of these engines have been bought by Sioux City & Burlington Railway company and one by a Chicago party.

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