

**ELECTRICAL PROGRESS IN BRIEF.**

Two California inventors have devised a toll-collecting apparatus for telephones. It consists of the usual coin-in-the-slot device, with the addition of a clock-work apparatus that automatically cuts out the telephone when the time for the talk has expired.

The compound winding of dynamos is now public property in Great Britain, suits having been finally settled by the court. The English Brush company claimed the sole right to this winding by virtue of the famous Brush patent of Nov. 16, 1878.

The span of the telephone wire over the River Dart, connecting Dartmouth with the trunk lines between Torquay and Plymouth is 2,400 feet. The wires are of siliceous bronze, 17 in number. They were erected in May, 1889, and are said to still maintain their integrity. It is the longest span in England.

Arc lamps run by continuous currents require no reflectors, while those run by alternating current do. The reason is, that, with continuous currents, the upper carbon forms a crater which reflects the light, while in alternating currents, both carbons become pointed, and throw the light in all directions,—thus necessitating the reflectors.

The Agricultural and Mechanical College of Alabama, located at Auburn, claims to be first to utilize electricity in the ginning of cotton. A generator in the college dynamo-room was connected by a 300-foot wire with the motor at the station farm, and when things were in readiness the latter was started up and did the work of a 10-horse engine, which was formerly used for this purpose.

A series of experiments, says nature, made by Prof. Aloi on *Lactuca Scariola*, maize, wheat, tobacco and beans, indicate that atmospheric electricity exercises a beneficial influence on vegetation; that the electricity of the soil has a similar influence on the germination of seeds, and that the less luxuriant vegetation of plants which grow in the neighborhood of trees is in great part due to the diminution of temperature.

Some interesting experiments on the influence of steam on magnets are reported from Europe, which show that magnets lose from 26 to 67 per cent. of their power after continuous heating in steam. If, however, the magnets are re-magnetized and again exposed to the action of steam the loss of magnetic power is very slight. In view of this, repeated steaming and magnetizing is recommended as a good means of securing permanent magnetism in pieces of hard steel.

A new alloy recently produced in Germany has been named "Manganin." It is composed of manganese, copper and nickel. Its most remarkable quality is that its electrical resistance decreases in the higher temperatures,—affording the only instance known in which a metal becomes a better conductor with the increase of temperature. Its specific resistance is reported higher than that of other German silver alloys, while it is very soft and pliable, and is well adapted to undergo the process of wire-drawing.

A windmill has recently been erected in the east end of London, and is intended to be used for driving a dynamo for generating electricity. The windmill is of the Halliday type, and is fitted with a device for regulating the speed. Thus, if it happens to go too fast the vanes are tilted end on to the wind. The dynamo, which is of special construction, has an output of 40 amperes at 80 volts, and works in connection with accumulators for storing the electricity. The mill drives two millstones and an elevator in addition to the dynamo.

The reported invention of Carl Hering, the electrician, of a device to prevent caterpillars from crawling up trees is timely. The scheme is simply to run alternate wires of copper and zinc around the trunk of the tree, at a distance of about half an inch apart. When Mr. Caterpillar starts in his ascent, he strikes the copper wire, poses his little nose over it, and continues. Half an inch further up his forward feet strike the zinc wire, while his body is still in contact with the copper, and immediately there is an electric current through his body. With a howl of pain, Mr. Caterpillar drops to the ground, or—if the current be strong enough—remains a prisoner until he dries up and blows away.

The emission by electric glow lamps of a golden-yellow, and arc lamps a bluish-white, light is not owing especially to electricity. The difference arises from the degree of temperature to which the carbon pencils and filaments are subjected. The thickness of the carbon pencils used in arc lamps offers so great a resistance to the electric current that a white heat, that is about 2,000 deg. Celsius, is required to bring them to the illuminating point. The thin carbon filaments of the glow lamp, on the other hand, necessitate a red-heat only—namely, about 1,600 deg. Hence the dissimilarity of the colors of the lights; the difference being further accentuated by bluish rays emitted by the burnt carbonic oxide at the white-heat temperature.

One of the recent medical applications of electricity is in the treatment of deafness. The apparatus for this purpose comprises a battery, a belt, an electrode supporter on the belt and shaped to rest on the ear, and connections between the electrode and the battery. This provides a convenient and efficient mode of receiving the current, which can be applied in finely graduated strength.—Superintendent Johnson, of the Deaf and Dumb Institute at Indianapolis, Ind., is reported as having found in a series of experiments that the phonograph concentrates the sound at the drum of the ear in such a way that many of the pupils, otherwise deaf, are thus enabled to hear. Out of 56 boys and girls, only three girls were unable to hear anything at all, while 40 could hear music, and 26 could distinguish spoken words.

A nailless horse-shoe, that is fastened to the hoof with a clasp, is coming into use in Paris.

The island on which is built the Eddy-stone Lighthouse is supposed to be the smallest inhabited island in the world. At low water it is 30 feet in diameter, while at high water the base of the lighthouse completely covers it.

Of Waterloo veterans France has eight left. There are two who took part in the retreat from Moscow, and altogether there are now living eighteen or twenty of Napoleon's veterans, of whom several are centenarians.

**EXTRAORDINARY TALE OF THE SEA.**

**Adventures On a Desolate Island.**

The Pacific Steam Navigation Company's steamer Sorato, which arrived in the Mersey on Thursday, brought home the crew of the ship Crown, of Italy, a vessel of 1500 tons. She left Liverpool on the 10th October last year for San Francisco, and from the very outset of her voyage seemed destined to peril and adventure. For thirteen days she was compelled to seek shelter at Holyhead, being wind bound. On leaving here all went well until the Straits of Lame were reached, where some dangerous rocks abound. Compassed by wind and current the vessel unfortunately struck on one of these rocks, and her position rapidly became a dangerous one. The ship showed signs of becoming a total wreck, and the master, Capt. Greenbank, saw that the only hope of saving life was by taking to the boats. These were promptly lowered, and the whole crew, consisting of 25 hands, as well as

THE CAPTAIN'S WIFE and daughter, were taken from the wreck. It is all the more touching that the night on which these men were in this unenviable position was Christmas Eve. After passing a considerable portion of the day in the small boats, the shipwrecked party sighted New Year's Island. On their approach thither they saw a number of sea lions in the water, but they soon disappeared. The island afforded very little comfort, there being no accommodation whatever, and the party had to content themselves with lying all night on the stones of the beach, sleep under such conditions being out of the question. At five o'clock in the morning they left again in the boats, and made for St. John's Point, Staten Island. Here for a considerable time the men remained, suffering great privation in regard to food, as well as having to put up with little or no accommodation. The natives of the island did all in their power for

THE UNFORTUNATE STRANGERS, but their good nature was somewhat limited by the want of means, there being very little food on the island. For a whole month or more they were without bread, and the only article of sustenance they had at all was a small quantity of goat or mutton, which was dealt out daily; and as there were but five sheep and seven goats the amount that fell to the lot of each was necessarily very small. As time wore on the men became in a very weak and exhausted condition owing to want of food, and had to have recourse to searching on the shore for such shell fish as might be found to satisfy the cravings of hunger. As for drink they had coffee in the island but no sugar, so to satisfy their thirst they gathered wild strawberries, which, when stewed, served as a substitute for tea. Their condition was, however, rendered more tolerable when, after about a month's stay in the place, they hailed a passing ship, the *Glanas*, and obtained from her about 400 lbs of bread, a cask of flour, a cask of beef, and one of pork, as well as a quantity of tea and sugar. These articles were placed under lock and key, and doled out each day until a more permanent form of relief was obtained. An English man of war was seen passing the island, and three hearty cheers which were sent up by the

SHIPWRECKED SAILORS were the means of attracting those on board H.M.S. *Cleopatra*. Finding the sad plight of their fellow-countrymen, the man-of-war's men brought provisions ashore, and promised to return in two days for the purpose of taking them away from such an undesirable place of abode. Accordingly two days afterwards they were taken aboard the *Cleopatra*, and conveyed to the Falkland Islands, where she was obliged to leave them, though in more comfortable circumstances than those in which they were found. From the Falkland Islands the Crown of Italy's men, who by this time might worthily be called the heroes of extraordinary adventures both by land and sea, were taken up by a German trader bound for Monte Video, in which place they were safely landed. At this point a number of the men, tired of the vicissitudes they had endured for such a long time, set out for Buenos Ayres with the intention of looking for ships. Nine of the crew, however, contented themselves with staying at the Sailors' Home in Monte Video, and remained there two days. Eventually, on the representation of the English Consul, these men were taken on board the steamer *Sorato*, en route for Liverpool, the captain only remaining behind that he might attend the inquiry which was to be held touching the loss of his ship.

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