

Correspondence.

Lightning in City and Country.

To the Editor of the Scientific American:

Can you or any of your readers inform me if thunder storms are less severe in our large cities than in the open country? By that I mean fewer earthstrokes, and of less volume.

I was led to this observation from reading in the SUPPLEMENT of February 4, 1888, of the protection afforded the summit of Ventoux, which has not been struck since the installation of the Melsens apparatus.

What that accomplishes on a small scale, it seems to me the miles of gas and water mains underground, railroad tracks on the surface, and telegraph and telephone wires overhead, to say nothing of the continuous tin roofs and lightning rods, should accomplish on a large one, in a city, but I have never seen a comparison.

There is a story going the rounds of the lay press that a building with a slate roof has never been struck by lightning. If it has happened, some one of your readers will surely know.

T. H. S.

Germantown, Pa.

[While it is hard to obtain such comparative statistics, it is not impossible that some of our readers may possess them. The extensive grounding and many gas lamps and fixtures in a city should be an element of safety.—ED.]

Discovery of Comet Brooks of 1888.

To the Editor of the Scientific American:

I have the honor to announce my discovery of a new comet early last evening—August 7—in the northwestern heavens.

Its approximate position at discovery was right ascension 10 hours 5 minutes, declination north 44 degrees 30 minutes, which brings it quite near to the star Lambda Ursæ Majoris. The comet is moving in an easterly direction, at the rate of one degree daily. It has quite a large head and a broad, short tail, which, rather singularly, appears to be pointing toward the sun.

I thought at one time I should have a repetition of my experience with the comet of December 26, 1885 (which many of your readers will recall), in which, to complete my observations, I had to remove the telescope from its stand, carry it around the house, and rest it over the front fence. This last comet was quite near the horizon when discovered, and soon settled down behind the top of a pear tree, but, fortunately, the telescope revealed it among the interstices of the leaves and branches. In this way I was able to finish my observations, telegraphically announce my discovery, and it was cabled to Europe the same night. Otherwise that pear tree would certainly have had to come down—and it was loaded with fine fruit, too.

WILLIAM R. BROOKS.

Smith Observatory, Geneva, N. Y., August 8, 1888.

Carbolic Acid in Small Pox.

The experience of Dr. A. Montefuso in a recent epidemic of small pox in Naples indicates that carbolic acid is capable of yielding excellent results in the treatment of this disease. Its use as an ointment did not prove especially beneficial, but, according to the *Bulletin gen. de Therapeutique*, April 15, 1888, doses of from fifteen to thirty grains (daily?) in about eight fluid ounces of water, for adults, led to a decided and usually permanent fall in temperature, with diminution in the frequency of the pulse and improvement in its force.

Montefuso came to the conclusion, from his experience, that carbolic acid is the only remedy which has a real influence upon the eruption in variola. He found it to limit the extent and the duration of the eruption, although he does not claim for it an abortive action. When used at the beginning of an attack, the pocks are often seen to become wrinkled and to dry up in a few days, without involvement of the subcutaneous connective tissue. When suppuration has already begun, the effect on the eruption is not so obvious, but the effect on the constitutional condition is manifest.

Montefuso did not observe any disturbance of the gastro-intestinal canal, or—except in one case—of the genito-urinary apparatus, from the doses he used and recommends. The only contra-indication to the administration of carbolic acid in small pox which he mentions is marked nervous manifestations.

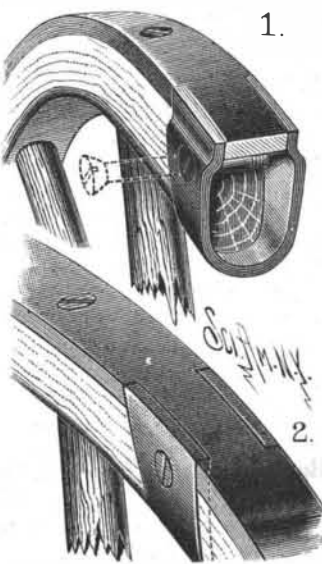
If the observations just cited have been carefully made, they certainly justify testing the value of this remedy further. It is not the first time it has been proposed, but Montefuso's experience is one of the most encouraging with which we are acquainted. It will not be forgotten that the treatment of small pox nowadays is largely symptomatic, and that the fatality of the disease under any treatment is much less than it was formerly, but any remedy which has a decided influence upon the fever and the development of the eruption would be a valuable addition to the physician's armamentarium.—*Med. and Surg. Reporter*.

An Electric Indicator for Lightning Rods.

A new instrument for recording when a lightning conductor has acted is now being brought out by Messrs. Hoyer & Glahn, of Schonebeck. Briefly described, this instrument consists of a galvanometer with a long magnetized needle pivoted on a horizontal axis, and kept horizontal by a small weight. Below the needle is a soft iron core surrounded by a solenoid, which is coupled as a shunt between two points of the lightning conductor; and if this core becomes excited, one or the other end of the magnet is attracted, and remains attached by virtue of its own permanent magnetism. The inventors thus hope that the instruments will indicate not only through which conductor a lightning discharge has passed, but also the direction of the discharge, whether up or down. Instruments would be fixed on the various lightning conductors, and by mere inspection of them after each thunder storm it would be easy to see which of the conductors are most likely to be chosen by the lightning, and should therefore receive the most attention to keep in good order. Four of these instruments have now been fixed in Munich, in order to test whether the theory advanced by the inventors is borne out by practical experience.

AN IMPROVED FELLY-CLIP.

A simple and inexpensive clip for holding the tires to the fellys of vehicle wheels is illustrated herewith, and has been patented by Messrs. James Higgins and John Sullivan, of Grand Rapids, Mich. The clip is preferably stamped or formed of steel about one-eighth of an inch thick, made narrower at the central part, where it clasps the inner rounded edge of the felly, and gradually widened toward both ends, which are let into notches or recesses formed in opposite edges of the wheel tire, so as to be about flush with the outer face of the tire. The clip plate may either be fitted to the outer faces of the felly, and be bent inward rather sharply at both ends to enter the opposite side edges of the tire, as shown in Fig. 1, or it may be let flush into the felly, as shown in Fig. 2, the extremities of the clip entering the edge notches of the tire, the dovetailed or overlapping fit of the flaring ends of the clip plates on the end parts of the recesses of the wheel tire locking the tire closely to the outer edges of the felly sections, and increasing the strength and durability of the wheel.



HIGGINS AND SULLIVAN'S
FELLY-CLIP.

Transatlantic Electrical Litigation.

Two important cases have recently been decided in the English law courts, which may perhaps come to have an important influence upon the future of electrical lighting in that country, and which may possibly be not without some ultimate effect upon similar interests upon this side of the Atlantic. The first of these, in respect to priority of the date of judgment, related to the patent of Gaulard & Gibbs for the distribution of electricity by alternating generators and converters. The circumstances attending the institution of this action, which was on a petition for the repeal of the patent, appear to have been somewhat peculiar. It seems that a corporation known as Sir Coutts Lindsay & Co., working an installation having its central station at the Grosvenor Gallery, in London, originally equipped their system with the Gaulard & Gibbs appliances, having the converters arranged in series on the line. This was done under a contract, whereby the patentees were to be paid a stipulated royalty for every electrical horse power installed. After the plant had been some time in operation, it was placed by the company in charge of an electrician named Ferranti, who subsequently reorganized the plant, placing the converters in parallel and substituting, in part at least, new converters of his own design. A dispute, which in time arose concerning the matter of royalties, led to a cancellation of the contract and a refusal on the part of the licensees to pay further royalties. As a result of this, an action for infringement was commenced by the patentees, while at about the same time Ferranti obtained leave to bring a cross action for the repeal of the patent. This proceeding appears to have given rise to considerable comment, inasmuch as the real plaintiffs in the case were Sir Coutts Lindsay & Co.; but since the payment of licenses under the patent estopped them from denying its validity, the action was ostensibly brought by an employe. The patent act expressly enumerates, among those who are disqualified to bring such an action, the patentee of a subsequent and sub-

ordinate patent. This disqualification was, however, got over by obtaining a special leave from the attorney-general to bring the action; a circumstance which has caused much comment, and indeed reminds us, in more ways than one, of the initiatory proceedings which occurred in connection with the late Pan-Electric scandal in our own country. However, the case was tried in court and judgment given annulling the patent. An analysis of the reasons upon which the decision of the court is founded shows that the invention was admitted to be a most useful and meritorious one, and that its novelty was not necessarily impeached by any or all the numerous printed publications and paper patents put in by the defense for the purpose of showing it to have been old. The real difficulty was found in the vagueness and insufficiency of the patentees' specification, which failed to distinguish with sufficient clearness between what the patentees had done and that which was public property. We understand that the case is to be appealed, and it would seem as if there were at least an even chance of a decision favorable to the patentees. Whatever may be the ultimate fate of the British patent, it can have no legal bearing upon the status of the American patent for the Gaulard-Gibbs invention.

The opinion of Justice Kay in the Edison lamp case cannot but be regarded as an exceedingly able one, both by reason of the extent and accuracy of the knowledge of the state of the art displayed in it and of the unerring instinct by which the real issues of the case have been grasped and dealt with. The Edison-Swan Company went into court with a very strong presumption in their favor, arising, of course, from the circumstance that both the patents sued on, Edison's for the incandescent lamp and Sawyer & Man's method of treating filaments by heat in the presence of a hydrocarbon (known in England as the Chesebrough patent), had been twice sustained in an action brought against Woodhouse & Rawson. But the suit just terminated appears to have been defended with far more boldness, vigor, and ability than the others, the efforts of the defendants being mainly directed to establish the inaccuracy and insufficiency of the specification and to the inadmissibility of the broad claim in view of the prior knowledge of the art, as evidenced by the work of Swan, Lane-Fox, and other early laborers in the field. Beginning with a masterly analysis of the state of the art and of the voluminous testimony presented on both sides—and it must be confessed, in the main, exceedingly well presented—the justice reaches the conclusion that the Edison patent is invalid, first, because he aims at an exclusive monopoly of all incandescent lamps with carbon filaments, a claim which the justice says "is far too wide, considering how little Edison had actually invented;" second, because the lamp described in the specification never became or could become a commercially successful one; and third, because the carbon described could not be made without much previous experimentation. There are other objections stated, but we have enumerated the leading ones. The justice also remarked that if the same materials had been before the judges in the earlier case, he believed they would have reached his conclusion.

A careful examination of these cases has but served to confirm our first impression, that the adverse result in both was due to precisely the same cause, viz., the utter failure of the solicitors who prepared the specifications to comprehend wherein the real invention consisted, and so to differentiate it properly from the prior work of others. Each ignorantly sought to claim the whole art, instead of the particular step in advance which had really been made, and in thus grasping at a shadow the substance has been lost.

In the same judgment, the Sawyer-Man or Chesebrough patent, which is controlled in Great Britain by the Edison-Swan Company, and in the United States by the Consolidated Company, was fortunate enough to have its novelty and validity emphatically reaffirmed. We imagine it will be found somewhat difficult to compete successfully in the production of incandescent lamps without the employment of the hydrocarbon treatment, and hence the position of the Edison-Swan Company would seem to be a sufficiently secure one, notwithstanding the adverse result with the Edison patent. The British law does not permit the sale within the realm of goods made by a patented process, even though the process be worked outside the jurisdiction, and hence the holders of the Chesebrough patent are secured against foreign as well as home competition. It has been asserted, apparently by authority, that whatever result attended litigation in England respecting a patent, "ergo, a like result must follow in this country." It is hardly necessary to point out to the intelligent reader that this is a little doubtful, to say the least.—*The Electrical Engineer*.

LATENT HEAT OF EVAPORATION OF WATER.—Regnault's experiments were made at temperatures above 0°, and he obtained a formula which led to the value 607 units of heat, the latent heat of evaporation at 0°. Dr. Dieterici by the use of an ice calorimeter has made a direct determination of this constant, and has obtained the value 596.4 thermal units at 0°.—*Nature*.