

Correspondence.

Discoloration of Brick Walls.

To the Editor of the Scientific American :

In your issue of the 7th inst. there is an article entitled "Discoloration of Brick Walls," stating that the substance is magnesian sulphate. Previous to this I had seen similar statements in the *Popular Science Monthly*.

Having an opportunity to examine a building exceedingly disfigured, I have arrived at a different conclusion.

The Memorial Church in this place, erected by George Peabody in memory of his mother, is a massive brick structure built of solid walls, *i. e.*, without air space. After standing a few years, the structure became quite unsightly because of a white deposit covering almost its entire surface. Various were the conjectures as to the nature of this powder; the various "sidewalk committees" voting "nem. con." to be salt-peter from the clay; but alas! they were not able to explain how the same could withstand the fiery furnace of the kiln, like the Bible heroes.

A man skilled in cleaning buildings was therefore summoned from Boston, and at the expense of many hundreds of dollars he dressed the entire surface with dilute acid hydrochloric, with lasting results.

As there was a great amount of the substance in all the recesses of the brick work and on the scaffolds of the tower, I attempted a solution of the mystery, with the following results:

The salt dissolved readily in distilled water, making a nearly clear solution, with a slight sediment of carbonate of lime. The solution gave a mixed color to the flame of a lamp. I decided it to be both potassa and soda. Placed on a sheet of mica and exposed to the blow pipe flame it merely gave out its water of crystallization; as steam there was no characteristic odor, as of arsenic.

A weak solution of tartaric acid gave an effervescent reaction, and pure tartaric acid caused the evolution of a large amount of CO₂, as proved by conducting it into lime water. There was no precipitate in tube after this.

From these rude experiments, conducted by a country doctor with apparatus necessarily limited to the requirements of urinary analysis, I came to the conclusion that in this case the powder is an impure carbonate of potash and soda. I forward you some by mail, and if you deem it of any importance I should like your opinion in some future number of your issue, which always is a welcome visitor to my house.

RALPH C. HUSE, M.D.

Georgetown, Mass., July 6, 1883.

DECISIONS RELATING TO PATENTS.

SUPREME COURT OF THE UNITED STATES.

MANNING *et al.*, APPELLANT, *v.* THE CAPE ANN ISINGLASS AND GLUE COMPANY *et al.*

Appeal from the Circuit Court of the United States for the District of Massachusetts.

Letters patent No. 134,690, for an improvement in the manufacture of isinglass from fish sounds, issued to the assignees, of the inventor, James Manning, January 7, 1873, declared invalid by reason of a public use of the invention for more than two years before the patent was applied for.

Where an inventor allowed to two persons the unrestricted use of his invention without injunction of secrecy or other condition, such use *Held* to constitute a public use.

Where through a series of years a machine and process were used without material change in either, such use *Held* not to have been experimental.

It is the policy of the patent laws to forbid the issue of a patent for an invention which has been in public use before the application therefor. The statute of 1836 (5 Stats. 117, sec. 6) did not allow the issue of a patent when the invention had been in public use or on sale for any period, however short, with the consent or allowance of the inventor; and the statute of 1870 (Rev. Stats. sec. 4,886) does not allow the issue when the invention had been in public use for more than two years prior to the application, either with or without the consent or allowance of the inventor.

U. S. CIRCUIT COURT.—SOUTHERN DISTRICT OF NEW YORK.

ZEUN *et al.* *v.* KALDENBERG.

A patent for a hand mirror in which an elastic cushion or packing is interposed between the glass and the back of the frame to press the glass against the beveled rim of the frame, infringed by one in which the packing, although it performs an additional office by being located outside the periphery, extends beneath the edge of the glass sufficiently to press the glass against the upper rim.

BY THE COMMISSIONER OF PATENTS.

HALL *v.* JOHNSON.—IMPROVEMENT IN NIPPERS.

Where two persons independently make the same invention, the inquiry in an interference proceeding is who made the invention first; but where two persons claim to have first originated the ideas embodied in a particular machine, the question is which of said persons shall be considered entitled to the invention.

He who first produces a device is entitled to be considered the inventor thereof, unless it be shown that another person was first to conceive of the invention and was using due diligence in completing it, or was the first to suggest to the one who first produced the device all of its parts, so that in

producing it he was simply carrying out the suggestions of another.

Mere suggestions, even if they point toward a result, are not sufficient to entitle one making them to be considered the inventor. In order that he may claim the benefit of what another does, the suggestion must leave nothing for the mechanic to do but to work out what has been suggested.

Combinations may be made up of parts entirely new or entirely old, or part new and part old; but if the parts when brought together so coact as to produce a new and beneficial result, the party so bringing them together has made an invention, and is entitled, if he makes claim thereto, to a patent therefor. If new elements are added to an imperfect combination, and if by the addition of such new elements the combination is made perfect and operative, the person who adds such elements is entitled to claim the new combination.

The addition to an old form of nippers of a prong and notch connection between the hand levers and a projection or lip over the spring is a patentable improvement, and in an interference between two parties claiming to have suggested this improvement the question is which of the parties added to the old instrument these devices, which rendered it complete and operative.

The officer of a company in whose works a certain improvement was originated and perfected cannot be considered the originator or inventor of the same. In order that an employer may claim the benefit of improvements made by an employe, the employe must be specially employed to assist in carrying out an invention conceived by the employer.

Whether such company has not an implied license from the inventor to use the invention, from the fact that such inventor did not assert his right thereto while in its employ, is a question for the courts and not for the commissioner.

BY THE COMMISSIONER OF PATENTS.

GILL *v.* SCOTT.—PRINTING PRESS.

He who uses reasonable diligence and first reduces an invention to practice, embodying it in practical form, must be regarded as the first inventor, and entitled to a patent as against one who, although prior in time in making it, by negligence allows it to remain unknown.

Where inventors withhold their inventions and confer no benefits upon the public there is no reason why protection should be afforded them if other and more diligent inventors produce the same thing and do confer such benefits.

The rule is well established that an applicant cannot have a patent for that which has been patented to another unless he shall make out such a case as would defeat that patent.

London's New Gas Main.

While the citizens of New York have during the past two years been subjected to the greatest inconvenience and discomfort, both summer and winter, by the laying of steam and other pipes through their streets, and the most hearty grumbling has been indulged in, and the most opprobrious epithets have been bestowed, not only upon the corporations which have been the efficient cause of all the trouble, but upon the city government for permitting such atrocious liberties to be taken with their streets, it is a matter of some consolation to be reminded that London has for the past few months been subjected to similar annoyance.

The largest gas main in the world is now being laid through the very heart of that city. The diameter of the main is 6 feet, and the entire length of the main with its branches is already 23 miles. Each section of pipe is 12 feet long. The pipe is laid at a depth of from ten to fifteen feet below the surface of the ground. The analogy, however, between the work done in the two cities ceases with the discomfort caused to the citizens of each, for in London, in spite of the depth at which the main must be laid, and the immense size of the pipe, from 12 to 120 yards of main is laid per day, and three squads of 100 men each are employed in the work. When the work reached Trafalgar Square, in order that traffic at that important point might not be impeded a tunnel 40 feet long was driven under the square and the main was laid at a depth of 25 feet. The necessity of laying the main at such a depth at this point was due to the fact that a large number of sewers, mains, and telegraph and electric pipes were met with, and this proved to be the only effective and satisfactory method of avoiding them.

Starch from Sugar.

Every one knows nowadays that we can make sugar (one kind at least) out of starch, but as yet we are no more able to reverse the operation than we are to combine carbonic acid with water or alcohol to make sugar.

Bohm's experiments go to show that in the plant both operations take place, *viz.*, making sugar from carbonic acid and the conversion of this sugar into starch, the chlorophyll granules being the agent that aids in this change under sunlight.

Sea Weeds and Land Weeds.

London papers say that "the secretary to the Royal Botanic Society recently tried the novel experiment of planting sea weeds in ordinary earth. It would naturally be supposed that these 'flowers of the ocean' would not flourish away from their native element; but this is not the case, most of the specimens planted having grown admirably in soil which is constantly kept in a moist condition." The result is both curious and suggestive, and worthy of trial this side of the ocean.

How to Protect Fruit from Insects.

Fruit and forest trees, shrubbery, vines, and flowers have been more infested with bugs and worms this year in this part of the country than for a long time, and gardeners are put to their wits' end to know how to get rid of their enemy.

The advice given below is selected from the writings of experienced horticulturists, and *Forest, Forge, and Farm* recommends the trial of some of the remedies.

"Oils of all kinds are deadly to most insects. Kerosene can only be used by diluting with water. To mix oils with water, first combine them with milk, then dilute, as desired, with water. Sour beer and molasses attract moths, spread on boards placed in the orchards or on trunks of trees. Paris green is very effectual when it can be well applied; one pound mixed with twenty-five pounds of flour or plaster is sufficiently strong. Of London purple use only one part by weight to fifty parts of flour or plaster. The common ground beetles, the lace winged flies, and the well known 'lady bugs,' are old friends of the horticulturist, and should be protected. As regards the noxious insects, the codling moth ranks, for destructiveness, nearly at the top of the list. Paper or cloth bands are used, applied every ten days through spring and early summer, and in connection with the use of a proper wash. The apple tree borers, of which there are several kinds, are enemies of the apple, the quince, and some other trees. When observed, cut the larvæ out with a knife and place a sheet of tarred roofing felt about the collar of the trees to prevent further ravages. Dustings of lime are effectual with the cherry and pear slugs, abundant in moist regions, such as about Puget Sound. The plum curculio, which is not here yet, but is perhaps on the way, is an enemy that at present cannot be conquered. There is no remedy known except the jarring process, to commence as soon as the fruit sets, and jar the tree three times a week for a month. This shakes off the curculio bitten fruit, and it should be gathered up and destroyed. The steel blue beetle known as the grape flea beetle nips the vine in the bud; the larvæ feed on the leaves in the summer. The beetles are jarred off the vines in the early morning, over an inverted umbrella or lime is used; for the larvæ, alum water. One ounce of alum to a gallon of warm water destroys the strawberry worm; so does white hellebore. Hand picking is about the only remedy for the gooseberry fruit worm. The currant borer is troublesome. Cut out and burn all infected branches. Do the same with the raspberry twig girdler."

The Stars as Seen in Egypt.

At a recent meeting of the Royal Astronomical Society, Professor C. Pritchard gave an account of his recent expedition to Cairo, and of the work on which he has for the last two years been engaged, *viz.*, the measurement of the magnitude of the stars visible to the naked eye from the pole to the equator, including at present all those brighter than the fifth magnitude. This work is now complete. He found that, at Oxford, Laplace's law of alteration of a star's light as measured in magnitude—according to the secant of the star's zenith distance—did not hold good for zenith distances exceeding 65°, and that for stars at lower altitudes the alterations in apparent magnitude were conflicting and not satisfactory. For the purpose of accurately investigating the effect of atmospheric extinction of light under better circumstances, he chose the climate of Upper Egypt, where the atmosphere is uniform and stable, as the proper locality for repeating the Oxford observations, and rendering the research complete. A duplicate set of instruments was at Oxford in charge of the senior assistant, who observed the same stars with Professor Pritchard at Cairo. The results of both sets of observations are embodied in the formulæ:

Atmospheric absorption

At Cairo = 0.187 × Sec. Z.D. in magnitude.

At Oxford = 0.253 × Sec. Z.D. in magnitude.

Thus the whole effect of the atmosphere at Cairo is to diminish the brightness of stars seen in the zenith by about two-tenths of a magnitude, and at Oxford by about one-fourth of a magnitude. At an altitude of about 30°, the stars at Cairo will be brighter than in England by about one-fifth of a magnitude, and consequently many more faint stars are just visible at Cairo than can be seen at Oxford.

American Association for Advancement of Science.

The thirty-second meeting of the American Association for the Advancement of Science will be held at Minneapolis, Minn., beginning August 15th, and closing Aug. 21 next. Professor C. A. Young, of Princeton, will preside. Information regarding transportation may be obtained by addressing Thomas Lowry, Esq., Minneapolis, Minn. All matters relating to membership, the presentation of papers, and business to come before the meeting will be attended to by F. W. Putnam, permanent secretary, who may be addressed at Salem, Mass., up to August 8, and afterward, up to the close of the meeting, August 21, at the Nicollet House, Minneapolis, Minn.

THE Florida Ship Canal Company has, it is stated, been organized at Washington, with £5,200,000 subscribed capital, to construct a canal across Florida, deep enough for the largest ships, between the St. John's and Suwanee rivers. Work is to be commenced in September next.