

SCIENTIFIC AND PRACTICAL INFORMATION.

THE COMPANION OF PROCYON.

We noticed some time ago that Struve had discovered, by the aid of the magnificent refractor of the Pulkowa Observatory, a small star near Procyon, which he regarded as being the probable cause of the irregularities of the movements of the latter body. Dr. Andrews has since repeated his calculations regarding the proper motion of Procyon, which appears to be circular, in a period of a little less than forty years, around some invisible center. He does not now definitely conclude that to Struve's star should be ascribed this peculiar movement, but considers that the question will be decided next spring, if the new star is then visible. In such case, Struve's star should be at a considerable distance from the common center of gravity of both bodies, and a mass must be attributed to Procyon equal to eighty times that of our sun, and to his companion, a mass equal to six and two-thirds of the same body.

THE PURIFICATION OF TALLOW AND LARD.

Dr. Dotch states that tallow and lard can be kept from getting rancid by the following process: The tallow or lard is first treated with carbonate of soda in the proportion of 2 pounds of soda to every 1,000 pounds of lard, and is then subjected to a digestion with alum in the following manner: 10 pounds of alum are dissolved in 500 pounds of water, and 1 pound slaked lime added to the solution and boiled. This solution is stirred well with 1,000 pounds of lard at a temperature of 150° or 200° Fah. for about half an hour. The liquor is then separated from the lard, and the lard is treated with the same amount of pure water again. This lard will keep for an exceedingly long time. The fact is that the alumina in the alum applied acts very readily in a disinfecting manner upon those compounds which are liable to give rise to rancidity. The lime is added to the alum in order to render the alumina more active by its giving up some of the acid to the lime. This treatment has also the advantages of restoring the original flavor and of producing a lard of a greater whiteness.

ANILINE COLORS.

Professor Kopp, who has recently made a careful study of the aniline colors at the Vienna Exposition, says that the manufacture of these pigments from coal tar products is making most remarkable progress. Fuchsin, constituted by a salt of rosanilin, is obtained exclusively by the reaction of arsenic acid on commercial aniline. In order to afford an idea of the enormous consumption of this violent poison in the manufacture of fuchsin, it is stated that in Germany alone the same is estimated at 3,300,000 pounds a year. It is only lately that the residues have been treated to regain the arsenic in commercial form. M. Kopp mentions as a novelty a beautiful rose red coloring matter called saffronin, which upon silk is a very brilliant dye.

A NEW TEXTILE PLANT.

The ordinary wood nettle, as is well known to many of our readers, is found in profusion on the Alleghany mountains, often at a level of over 5,000 feet above the sea. A short time since, M. Rozel succeeded in transporting to Europe a number of living specimens of the plant, some of which he dispatched to the Prussian Minister of Agriculture, in order that the value of the weed, if any it had, might be determined. It appears that quite favorable results have been obtained in using the plant for textile purposes, and for such employment it is now attracting considerable attention in Germany. It is known botanically as the *laportea pustulata*, and is perennial. As it is, therefore, unnecessary to sow the seed each year, the plant has in this respect an advantage over hemp or flax, while it is stated to necessitate less labor and expense in preparing the fiber. In a wild state, the nettle attains a height of two or three feet, but we learn that such as has been cultivated in Berlin has already exceeded this limit, and it appears possible that, by care and proper soil, even a still greater altitude may be gained. Experiments thus far made point to the fact that the plant will prove a not unimportant addition to our textile materials.

DECISIONS OF THE COURTS.

United States Circuit Court--District of California.

WATER CLOSET PATENT.—W. SMITH vs. J. O'CONNOR et al.

[In equity.—Before Sawyer, Judge.—Decision September 1, 1873.]

A claim for "a receiver for pan water closets formed and constructed so that the side into which the pan swings for emptying will conform to the shape of the pan, etc., held, on comparing it with the specification, to be a claim not merely for a conformity, but for a conformity attained by specified means, and to be valid.

Held, also, on a like comparison with the specification, that the claim was not too broad.

A patent held not to be void for want of utility in the invention upon its appearing that it possessed certain advantages over others.

Although a third party had conceived of the invention before the plaintiff, and had made some progress toward completing a model, yet, if he then suspended his labors, and before he resumed them, the plaintiff had perfected the invention and had embodied it in a practical working machine, his patent will be sustained.

An invention will not be held forfeited in consequence of its having been on sale more than two years before the application was filed on which the patent is issued, if within the two years the inventor had filed a previous application which described the invention, and was intended to cover it, although it was not specified in the claim in express terms. The second application will be considered a continuation of the first.

Supreme Court--District of Columbia.

PAPER FILE PATENT.—SMITH et al. vs. WOODRUFF.

[In Equity.—Before Humphreys, Justice.—Opinion del. verid Sept. 13, 1873.]

Where two patents have been granted for articles which resemble each other, a presumption arises from the action of the Office that there is such a difference between them that the use of one constitutes no infringement of the patent for the other.

If one paper file holds the paper better than another which is patented, and is driven it out of market, that is *prima facie* evidence that the mechanism is different, and is a new invention, and that the use of it does not violate the patentee's monopoly.

A patented combination may be used without infringing the patent if one of the elements of the combination is omitted, although another is substituted in its place which is new, or performs a substantially different function, or if it was not known as a proper substitute when the patent issued.

Although a bill for restraining the infringement of a patent is dismissed, the plaintiff will be allowed no costs if the rights of the parties are thereby established, and a new invention results to him as well as the public. *W. D. Ely*, attorney for plaintiff. *R. D. Mussey*, attorney for defendant.

United States Circuit Court--Eastern District of Missouri.

TRUSS BRIDGE PATENT.—JAMES V. WESTLAKE vs. M. S. & H. B. CARTER. [Before Trent, Judge.—Decided October 11, 1873.]

It is not sufficient to give notice of special matter of defense in an action upon a patent thirty days before the trial: it must be given thirty days before the first day of the term.

Such notice need not specify the particular portion of the plaintiff's patent to which the evidence applies.

Patents may be given in evidence to show the state of the art without such notice; but printed publications cannot be.

The proceedings in the Patent Office upon the plaintiff's application for the patent are not admissible for the purpose of giving it a different construction.

If the defendant claims that the patent is void for uncertainty, it rests with him to establish the charge.

The patent is not void for want of utility, if the invention possesses it in any measure, however slight.

A combination may be patentable on account of the novelty of the arrangement, although all the elements are old.

A patent for a combination is not infringed unless all the elements enumerated are used, or the equivalents of those which are omitted are substituted for them.

To show that the parts omitted by the defendant from a patented combination are unessential, will not render him liable as an infringer for the use of the rest.

A device is the equivalent of one that is patented if it performs substantially the same function in the same way and produces the same result, though it may be of a different form and bear a different name; and the use of it will be an infringement.

If the defendant has a patent, it is evidence of the opinion of official experts that it does not conflict with the plaintiff's patent, and that in working under it he is guilty of no infringement.

Such evidence will be submitted to the jury; the court will not compare the patents.

If the patentee is engaged in manufacturing the patented article for sale, his damages will be manufacturer's profits.

Verdict for defendants. *M. Kinealy* for plaintiff. *Samuel S. Boyd*, for defendants.

NEW BOOKS AND PUBLICATIONS.

THE OVERLAND MONTHLY for January has, among other interesting papers, an article by Professor George Davidson on the "Abrasion of Our North Western Coast," in which the remarkable table lands or *mesas*, in that portion of the country, are described. As an explanation of the origin of these peculiar formations, the writer thinks we can appeal to the "action of ice moving slowly but surely as a great planing or molding machine. If we accept an ice sheet over the continent, or a part thereof, and an ice belt contiguous to the continental shores, we can readily understand that it moved as a great stream, or, more likely, in currents, from the north." The second of these papers, on "New Zealand," contains some fresh information regarding that little known country. The "Japanese Merchant at Home" and "Summering to the Sierras" are pleasing descriptions, entertaining and readable. The usual selections of poetry, editorial miscellany etc., complete a table of quite varied and interesting contents. Published by John H. Carmany & Co., 409 Washington street, San Francisco, Cal. \$4 a year.

Value of Patents, AND HOW TO OBTAIN THEM.

Practical Hints to Inventors.

PROBABLY no investment of a small sum of money brings a greater return than the expense incurred in obtaining a patent even when the invention is but a small one. Larger inventions are found to pay correspondingly well. The names of Blanchard, Morse, Bigelow, Colt, Ericson, Howe, McCormick, Hoe, and others, who have amassed immense fortunes from their inventions, are well known. And there are thousands of others who have realized large sums from their patents.

More than FIFTY THOUSAND inventors have availed themselves of the services of MUNN & Co. during the TWENTY-SIX years they have acted as solicitors and Publishers of the SCIENTIFIC AMERICAN. They stand at the head in this class of business; and their large corps of assistants, mostly selected from the ranks of the Patent Office: men capable of rendering the best service to the inventor, from the experience practically obtained while examiners in the Patent Office: enables MUNN & Co. to do everything appertaining to patents BETTER and CHEAPER than any other reliable agency.

HOW TO OBTAIN Patents

This is the closing inquiry in nearly every letter describing some invention which comes to this office. A positive answer can only be had by presenting a complete application for a patent to the Commissioner of Patents. An application consists of a Model, Drawing, Petition, Oath, and full Specification. Various official rules and formalities must also be observed. The efforts of the inventor to do all this business himself are generally without success. After great perplexity and delay, he is usually glad to seek the aid of persons experienced in patent business, and have all the work done over again. The best plan is to solicit proper advice at the beginning. If the parties consulted are honorable men, the inventor may safely confide his ideas to them, they will advise whether the improvement is probably patentable, and will give him all the directions needful to protect his rights.

How Can I Best Secure my Invention?

This is an inquiry which one inventor naturally asks another, who has had some experience in obtaining patents. His answer generally is as follows:—and correct

Construct a neat model, not over a foot in any dimension—smaller if possible—and send by express, prepaid, addressed to MUNN & Co., 37 Park Row New York, together with a description of its operation and merits. On receipt thereof, they will examine the invention carefully, and advise you as to its patentability, free of charge. Or, if you have not time or the means at hand, to construct a model, make as good a pen and ink sketch of the improvement as possible and send by mail. An answer as to the prospect of a patent will be received, usually, by return of mail. It is sometimes best to have a search made at the Patent Office. Such a measure often saves the cost of an application for a patent.

Preliminary Examination.

In order to have such search, make out a written description of the invention, in your own words, and a pencil, or pen and ink, sketch. Send these with the fee of \$5, by mail, addressed to MUNN & Co., 37 Park Row, and in due time you will receive an acknowledgment thereof, followed by a written report in regard to the patentability of your improvement. This special search is made with great care, among the models and patents at Washington, to ascertain whether the improvement presented is patentable.

Rejected Cases.

Rejected cases, or defective papers, remodeled for parties who have made applications for themselves, or through other agents. Terms moderate. Address MUNN & Co., stating particulars.

Caveats.

Persons desiring to file a caveat can have the papers prepared in the shortest time, by sending a sketch and description of the invention. The Government fee for a caveat is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address MUNN & Co., 37 Park Row, New York.

Trademarks.

Any person or firm domiciled in the United States, or any firm or corporation residing in any foreign country where similar privileges are extended to citizens of the United States, may register their designs and obtain protection. This is very important to manufacturers in this country, and equally so to foreigners. For full particulars address MUNN & Co., 37 Park Row, New York.

To Make an Application for a Patent.

The applicant for a patent should furnish a model of his invention if susceptible of one, although sometimes it may be dispensed with; or if the invention be a chemical production, he must furnish samples of the ingredients of which his composition consists. These should be securely packed the inventor's name marked on them, and sent by express, prepaid. Small models, from a distance, can often be sent cheaper by mail. The safest way to remit money is by a draft, or postal order, on New York, payable to the order of MUNN & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents.

Reissues.

A reissue is granted to the original patentee, his heirs, or the assignees of the entire interest, when, by reason of an insufficient or defective specification, the original patent is invalid, provided the error has arisen from inadvertence, accident, or mistake, without any fraudulent or deceptive intention.

A patentee may, at his option, have in his reissue separate patent for each distinct part of the invention comprehended in his original application by paying the required fee in each case, and complying with the other requirements of the law, as in original applications. Address MUNN & Co. 37 Park Row, for full particulars.

Design Patents.

Foreign designers and manufacturers, who send goods to this country may secure patents here upon their new patterns, and thus prevent others from fabricating or selling the same goods in this market.

A patent for a design may be granted to any person, whether citizen or alien, for any new and original design for a manufacture, bust, statue, alto relievo, or bas relief; any new and original design for the printing of woolen, silk, cotton, or other fabrics; any new and original impression, ornament, pattern, print, or picture, to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture.

Design patents are equally as important to citizens as to foreigners. For full particulars send for pamphlet to MUNN & Co., 37 Park Row, New York.

Foreign Patents.

The population of Great Britain is 31,000,000; of France, 37,000,000; Belgium, 5,000,000; Austria, 36,000,000; Prussia, 40,000,000; and Russia, 70,000,000. Patents may be secured by American citizens in all of these countries. Now is the time, while business is dull at home, to take advantage of these immense foreign fields. Mechanical improvements of all kinds are always in demand in Europe. There will never be a better time than the present to take patents abroad. We have reliable business connections with the principal capitals of Europe. A large share of all the patents secured in foreign countries by Americans are obtained through our Agency. Address MUNN & Co., 37 Park Row, New York. Circulars with full information of foreign patents, furnished free.

Value of Extended Patents.

Did patentees realize the fact that their inventions are likely to be more productive of profit during the seven years of extension than the first full term for which their patents were granted, we think more would avail themselves of the extension privilege. Patents granted prior to 1861 may be extended for seven years, for the benefit of the inventor, or of his heirs in case of the decease of the former, by due application to the Patent Office, ninety days before the termination of the patent. The extended time inures to the benefit of the inventor, the assignees under the first term having no rights under the extension, except by special agreement. The Government fee for an extension is \$100, and it is necessary that good professional service be obtained to conduct the business before the Patent Office. Full information as to extensions may be had by addressing MUNN & Co., 37 Park Row.

Copies of Patents.

Persons desiring any patent issued from 1836 to November 26, 1867, can be supplied with official copies at a reasonable cost, the price depending upon the extent of drawings and length of specification.

Any patent issued since November 27, 1867, at which time the Patent Office commenced printing the drawings and specifications, may be had by remitting to this office \$1.

A copy of the claims of any patent issued since 1836 will be furnished for \$1.

When ordering copies, please remit for the same as above, and state name of patentee, title of invention, and date of patent. Address MUNN & Co., Patent Solicitors, 37 Park Row, New York city.

MUNN & Co. will be happy to see inventors in person, at their office, or to advise them by letter. In all cases, they may expect an honest opinion. For such consultations, opinions, and advice, no charge is made. Write plainly: do not use pencil, nor pale ink; be brief.

All business committed to our care, and all consultations are kept secret and strictly confidential.

In all matters pertaining to patents, such as conducting interferences, procuring extensions, drawing assignments, examinations into the validity of patents, etc., special care and attention is given. For information, and for pamphlets of instruction and advice

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OFFICE IN WASHINGTON—Corner of F and 7th streets, opposite Patent Office.

Recent American and Foreign Patents.

Improved Track Clearer.

Frederick Buse, Fergus Falls, Minn.—This invention consists in two wheels arranged in front of the cowcatcher of a locomotive: and in a plane perpendicular to the direction of the track. By suitable gearing, these are connected with the forward axle so that the wheels are swiftly rotated, causing radial wings or shovels attached thereto to throw and blow the snow from the track, and thus work their way rapidly through the snow even should it be greatly drifted.

Improved Hoop Lock.

Thomas E. Lucas, Chesterfield, S. C.—The object of this invention is to provide a way for fastening or tying the ends of wooden hoops together for barrels, tubs, and other cooper work, and for other purposes, and it consists in a metallic tie having two sockets connected together, in which sockets the ends of the hoops are wedged.

Improved Cherry Stoner.

Elmer Buck and Edgar W. Kirk, Cincinnati, Iowa.—By suitable construction, as punches descend upon the cherries in tapering holes, the stones are punched out of the fruit and through the holes, and fall into a dish placed beneath the said holes. As the punches ascend they carry the fruit with them up to a plate having holes in it, through which the punches pass but not the fruit, so that the latter is pushed or stripped from the said punches. As the punches ascend, the pan moves back so as to pass beneath the punches and receive the fruit as it falls from the plate. The fruit slides down the pan into a dish placed beneath the lower end of said pan. The descent of the cherries in the pan is regulated with one hand, while the crank is turned with the other.

Improved Cotton Gin.

Nicholas W. Gaddy, Nichols, S. C.—This invention is an improvement in the class of gins having auxiliary bars or fingers applied to the ordinary bars or fingers between which the saws revolve; and the invention consists in the arrangement of short secondary fingers so as to be readily attached and detached, and to be shifted or moved toward the saws from time to time, as they wear smooth at the corners, thus exposing new and sharp edges.

Improved Ticket and Delivery Holder.

Leonard J. Blades, Harrington, Del.—This invention relates to fare boxes, and consists in providing a lock case with sliding drawers which are partitioned off, inclined, and caused to allow the exit of the tickets one by one.