RECENT DECISIONS RELATING TO PATENTS, ASSIGNMENTS, ETC.

THE RIGHTS OF ASSIGNEES IN PATENTS.

It frequently happens that an inventor, in order to supply himself with the means to apply for a patent or introduce his invention, agrees with another person that, in consideration of the advance of funds, he will grant an assignment of the invention and of the letters patent therefor, in a certain State or States. The making of such assignments in advance of the issue of the patent is quite common; and when the patent is granted the assignee is the owner of the patent without further transfer, for the district originally conveyed to him.

There have been cases where the inventor has attempted to deprive his assignee of the benefits of the original assignment by dodges like the following: The inventor applies for the patent, and it is officially rejected. His assignee is informed that no patent can be obtained, and the matter is supposed to be closed. But on a subsequent occasion the inventor, having made changes in the invention, files an entirely new application. At last a patent is granted, but the inventor declines to admit the original assignee to any benefits therefrom on the ground that the patent is not for the application on which the advances were based.

The question whether the assignee has any right in such patent has been very forcibly decided in favor of the assignee by the U. S. Supreme Court in the well known coal-burner stove case.

An assignment of April 5, 1853, recites the granting to Littlefield of a patent on the 15th of April, 1851, "for a coal burner so constructed as to produce combustion of the inflammable gases of anthracite coal," and the fact that he had applied for a patent "securing to him a certain improvement in the invention so as aforesaid patented by him," and then assigns to Treadwell and Perry all the right, title, and interest which Littlefield "now has, or can or may hereafter have, in or to the aforesaid inventions, improvement, and patent, or the patent or patents that may be granted for said inventions or any improvements thereon, and in any extension or extensions thereof, within and throughout the district and territory embraced within the States of New York and Connecticut, for and during the term for which the aforesaid letters patent were granted, and the terms for which any patent for the aforesaid improvement, and any other improvement or improvements thereof, or extensions for or of either thereof, may be granted." The Supreme Court of the United States, in Littlefield *versus* Perry (21 Wallace, 205), held that this assignment, "taken by itself, contains, in most unmistakable language, an absolute conveyance by the patentee of his patent and inventions described, and all improvements thereon, within and throughout the States of New York and Connecticut," and that this assignment and a supplemental agreement executed between the same parties at the same time, when construed together, operated to constitute Treadwell and Perry the assignees of Littlefield within the patent laws in respect to the subject matter of the assignment, and to give them and those claiming under them the right to sue in this Court to prevent any infringement upon their rights.

On the 22d of July, 1853, Littlefield withdrew the application before mentioned, which had been filed December 30, 1852, and filed a new application, on which a patent was issued to him January 24, 1854. The Supreme Court held, in the case referred to, that the assignees became in equity the owners of this patent of 1854 under the assignment of April, 1853; that all the patents outstanding and the subject of the controversy in that suit, exclusive of the patent of 1851, were either reissues of the patent of 1854 or improvements upon it; and that the use of the said patents issued after January, 1854, by Littlefield and his co-defendant, Jagger, was an infringement of the rights of said assignees. The patents so referred to were these: A patent issued June 25, 1861: reissues, in two parts, 132 and 133, made November 19, 1861, of the patent of January 24, 1854; reissues, in four parts, 1,332, 1,333, 1,334, and 1,335, made August 26, 1862, of the patent of January 24, 1854, on the surrender of reissues 132 and 133; reissues, in two parts, 1,426 and 1,427, made March 3, 1863, of the patent of January 24, 1854, on the surrender of two of the four reissues of August 26, 1862; reissues, in two parts, 1,478 and 1,479, made May 19, 1863, of the patent of January 24, 1854, on the surrender of the remaining two of the four reissues of August 26, 1862; reissues, in two parts, 1,813 and 1,814, made November 8, 1864, of the patent of January 24, 1854, on the surrender of reissues 1,426 and 1,427; reissue 1,815, made November 8, 1864, of the patent of January 24, 1854, on the surrender of one of the two reissues of May 19, 1863; reissue 1,823, made November 22, 1864, of the patent of January 24, 1854, on the surrender of the remaining one of the two reissues of May 19, 1863; a patent issued December 19, 1862; a patent issued August 18, 1863; and reissue 1,594, made December 22, 1863, of the patent of August 18, 1863. The outstanding patents, when the bill of revivor and supplement was filed by John S. Perry, trustee, etc., against Littlefield and Jagger, on the 6th of February, 1865, were (exclusive of the patent of 1851), the patent of June 25, 1861, the patent of December 9, 1862, reissues 1,813, 1,814, 1,815, and 1,823 of the patent of January 24, 1854, and reissue 1,594 of the patent of August 18, 1863.

A new suit, brought by Perry against Littlefield, to recover ownership and damages in some other patents, additional to those named above, has just been decided in favor of the assignees by Judge Blatchford, in the U. S. Circuit Court in the Northern District of New York.

U. S. Circuit Court—Eastern District of New York.—Benedict, J.

BLACKMAN *et al. versus* HIBBLER *et al.*—GLASS BASE FOR COAL OIL LAMPS.

1. The invention embraced in patent to E. Blackman, February 6, 1872, No. 123,325, is a lamp chimney with the top or upper portion constructed of mica, and a glass base, the two being united and designed to be used together as a unit, and the reissue No. 7,417, December 5, 1876, describing and claiming the base separately, is invalid, as being for a different invention.

2. When the original patent described a certain form of mica chimney united to a glass base, a reissue claiming such glass base in combination with any form of chimney top was regarded as greatly enlarging the scope of the invention by dropping one element from the combination and putting in its place another, not its equivalent

3. A lamp chimney constructed with base and top in one piece being old, no invention was required to conceive the idea that it could be made in two pieces, nor to form a surrounding rim upon the upper part of the base for the purpose of maintaining in position the separate top piece.

Bill dismissed for lack of novelty in the invention.

U.S. Circuit Court.—Eastern District of Pennsylvania.—McKennan, J.

LORILLARD *et al. versus* RIDGEWAY.—THE MARKING OF PLUG TOBACCO BY PRESSURE NOT A PATENTABLE INVENTION.

1. Tobacco having been marked by pressing into its surface metallic or other hard substances, the imprint of which was left upon the tobacco, it was no invention to provide such plates with prongs or projections, and allow them to remain upon the tobacco.

2. Letters and other distinguishing marks having been produced upon tobacco, to put such marks upon a metallic tag, if greater prominence was desired, was readily suggested to the common mind, and did not rise to the dignity of an invention.

Before the Commissioner of Patents.—Paine, Commissioner.

VEGETABLE-LIFE DESTROYER.

The motion is submitted in the following words:

In the application for patent for vegetable sprout killer by Francis B. Rodgers, filed January 2, 1878, the decision of the Examiner denying the patent has been overruled by the Board of Appeals. Applicant requests the allowance of the patent by the Examiner (unless the utility of the patent is denied) in accordance with the decision of the Examiners-in-Chief.

The application relates to a compound or mixture for the destruction of vegetable life.

One of the grounds upon which the Examiner rejected the application was that the mixture was a mere aggregation having no functions differing from those of its several ingredients. The applicant insisted that the compound operated more rapidly and effectually than either of its elements. The Examiners-in-Chief decided, on appeal, that if the mixture described operated more effectually and rapidly, and was more convenient in use, than its elements, the applicant was entitled to a monopoly of his new compound; but in their decision they stated that they were not informed on this point, and suggested that the applicant should be permitted to file affidavits, under Rule 31, in case the examiner should traverse his assertion that the mixture operated as *above stated.* Thereupon the applicant requested the allowance of the patent by the Examiner (unless the utility of the patent was denied), in accordance with the decision of the Examiners in-Chief.

The examiner replied that he did not deny the usefulness or operativeness of the mixture, but denied its patentability.

The applicant appealed to the Commissioner because, as he alleged, the Examiner ignored the decision of the Examiners-in-Chief; and he asked that the Examiner might be instructed to act in accordance with that decision.

The Commissioner held that, inasmuch as the Examiners-in-Chief had decided that if the mixture was operative, as claimed, it was patentable in favor of the applicant, although they had not decided whether it was or was not so operative, their decision was obligatory upon the Primary Examiner, and that it was therefore the duty of the Primary Examiner, if he did not deny that the compound operated as the applicant claimed, to pass the case to issue. Thereupon the applicant requested that the Primary Examiner, inasmuch as he did not deny the operativeness of the invention, should, in obedience to the decision of the Commissioner, pass the case to issue without further delay.

The examiner replied that the Commissioner's decision was that he should pass the case to issue if he did not deny that the mixture operated more effectually and rapidly than any of its elements; and that, while he did not deny the operativeness of the mixture, he did deny that it acted more effectually than its component parts. And he added that, while the suggestion of the Examiners-in-Chief that the applicant should be permitted to submit affidavits would have been consistent with the rules if the Examiner had denied the operativeness or usefulness of the compound, nevertheless, inasmuch as he did not deny its operativeness or usefulness, but only denied that it would act more effectually or rapidly or conveniently than any of its elements, affidavits were expressly prohibited by the last clause of Rule 31, in which it is provided that "affidavits in support of applications will not be received at any stage of the examination unless the office denies that the invention is operative or useful." Upon this action of the Examiner the present motion for the transfer of the case to another division is based.

This motion cannot be granted. The Primary Examiner has not disregarded the decision of the Commissioner, nor has he disobeyed the decision of the Board of Examiners-in-Chief; and, while he has declined to comply with their suggestion that applicant should be permitted to submit affidavits in the case, he has done so in the belief that this course was forbidden by the rules of the office. I am not prepared to say that this impression was incorrect.

But I see no good why the applicant should not be permitted, if he can do so, to show that this mixture acts more rapidly and more effectually than the elements of which it is composed, and is more conveniently used. I think that, under Section 483 of the Revised Statutes, I have authority by an order made with the approval of the Secretary to authorize him to introduce such affidavits.

It is accordingly ordered that the applicant be permitted, within sixty days after the date of this order, to submit affidavits for the purpose of showing that his compound or mixture operates more effectually or rapidly and is more convenient in use than any of the substances of which it is compounded.

The relief demanded by the applicant is denied.

[Approved by the Secretary.]

An undue zeal for the observance of forms and ceremonies is apt to make the ablest officials lose sight of the main object for which they are individually housed in the Patent Office, and for which the patent laws were enacted, to wit: *the promotion of the useful arts by the grant of patents to authors and inventors.* In times past some of the Commissioners and some examiners seemed to labor under the mistaken notion that the chief purpose of their official life was the opposing of inventors, the placing of obstacles in their way, and preventing the grant of patents.

The foregoing case illustrates our meaning: The Examiner in the first place appears to have wrongfully denied the patent. The applicant was then put to the expense of an appeal to the Board of Examiners, who practically decided that a patent should be granted. But the Examiner then holds back the patent on a technicality; the applicant is then put to the further expense of appealing to the Commissioner in person, who supports the little point raised; which now subjects the inventor to further delays and costs in getting up expert testimony. All the trouble to all the parties concerned would have been avoided had the Examiner in the first instance simply issued the patent.

We doubt whether there is any instance where a Patent Office mistake made in favor of the inventor ever hurt the Examiner, the Commissioner, the Secretary of the Interior, or any other official. On the other hand such wrangles as the foregoing are always unprofitable, and do them little credit.

Yankee Inquisitiveness.

The *Price Current,* Portland, Me., suggests a legitimate and wise plan to increase the demand for the products and manufactures of any and every country. When a man has a really valuable article to offer to the world, he should devise the best ways and means to let the buyer and consumer know the source from whence it came, and, if possible, the means and expense by which the recipient may obtain more of the same kind. The result of this justifiable inquisitiveness will be the doubling of the crop of good apples in Maine within a few years. L. J. Stout, of Limington, Me., while barreling apples to be shipped to parts entirely unknown to him, conceived the novel idea of ascertaining their destination by putting a letter, inclosing money to pay the postage on a letter, in one of the barrels, kindly asking the purchaser to write him the date of opening it, his name and residence, the price paid, the condition of the apples when opened, etc. In about three months Mr. Stout received a letter from a merchant in London, England, saying one of his customers found the letter and passed it to him, and by him it was neatly answered, giving all the desired information in regard to the apples, etc. Last winter Mr. Stout received a letter from the same merchant in relation to filling an order for Maine apples, but the quality and scarcity of the fruit last year prevented his filling the order satisfactorily to himself. Last week Mr. Stout received another order by cable for several hundred barrels as samples, from the same person. As Mr. Stout will undoubtedly fill the order, the English gentleman will no doubt be surprised at the size and quality of the fruit—which is this year probably a third larger than two years ago.

The Metric System.

It may not be generally known that we have, in the nickel five cent piece of our coinage, a key to the tables of linear measures and of weights. The diameter of this coin is 2 *centimeters,* and its weight is 5 *grammes.* Five of them placed in a row will, of course, give the length of the *decimeter;* and two of them will weigh a *decagramme.* As the *kiloliter* is a *cubic meter,* the key to the measure of length is also the key to measures of capacity. Any person, therefore, who is fortunate enough to own a five cent nickel may carry in his pocket the entire metric system of weights and measures.

Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from $1 to $5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

(1) J. writes: I have a boiler that is good with the exception of about 4 inches at bottom of leg that is eaten badly by salt deposit. I have an idea of raising grate bars and filling with a cement of some kind. Can you inform me how to make it? A. Hydraulic cement, properly mixed, may answer your purpose.

(2) C. F. L. asks how tracing or vellum cloth is made. A. Wagner's tracing cloth is said to be prepared as follows: Boiled bleached linseed oil, 20 lb.; lead shavings, 1 lb.; zinc oxide, 5 lb.; Venetian turpentine, ½ lb.; boil for several hours, then strain, and dissolve in the strained composition 5 lb. white gum copal. Remove from the fire, and when partly cooled add purified oil of turpine sufficient to bring to the proper consistence. Moisten the cloth thoroughly in benzole, and then give it a flowing coat of the varnish.

(3) G. writes: If a 10 lb. weight is dropped from the center masthead of a steamer running 16 knots per hour, what position would the steamer bear to the weight on its reaching the water? A claims that the time occupied by the falling of the weight will cause the steamer to be in advance of the weight's original position at the mast head in the steamer's center, said advance to be computed by the length of steamer and rate of her progress, due allowance being made for force of wind. B claims the weight will fall directly perpendicular, and when touching the water will be in its original position, due allowance being made for the force of wind. A. Neither is exactly right; the weight will strike the deck a very little aft of the perpendicular, as the vessel maintains a constant speed, whereas the weight has the speed of the vessel before dropping, but loses a very small fraction of that speed during the time of falling.

(4) C. M. K. asks: What will destroy or drive away fleas? A. Try pennyroyal or essence of pennyroyal.

(5) D. S. K. asks for directions for silver plating iron and steel. A. Dissolve 12 ounces cyanide of potassium and 1 ounce (troy) of chloride of silver in 1 gallon soft water; filter, and suspend in this bath the chemically clean work and a plate of pure silver, exposing a surface somewhat larger than that of the work. Connect the work with the negative or zinc pole of a small Daniell or Smee battery of two or three cells by means of a stout copper wire, and join the silver plate in a similar manner with the positive pole of the battery. The work may be prepared for the bath by boiling it in a strong aqueous solution of caustic potassa or soda to remove traces of oil, rinsing in running water and scouring with a brush and pumice powder moistened with strong cyanide of potassium solution; then quickly rinsing again, and, without fingering, placing in the bath, and in circuit. A somewhat weaker (in silver) bath, called the "whitening" bath, and a stronger battery, is generally used to whiten or throw on the first film of silver. The proportions for this are: cyanide of potassium, 1 lb.; chloride of silver, ¼ ounce (troy). If the silver runs on dark, use a weaker battery, or break the current so as to give alternate intervals of rest. 30 minutes ordinarily suffices when a battery of 3 or 4 Smee cells, plates 10x4 inches, are used. In the whitening process an additional cell or more is employed. Iron takes silver better after having received a light deposit of copper. The metal must be freed from oxide by pickling in dilute acid and scouring with sand. For coppering a slightly acid bath of the sulphate and a strong battery may be used.

(6) "Reader" asks: Has chromic acid much application in the arts, where manufactured, and what its probable price? A. Yes, several of our large Philadelphia houses now produce the acid. It is quoted at 20 cents per ounce. 2. Can muriatic acid gas be made to combine with turpentine by the aid of heat, or at ordinary temperature without aid of a freezing mixture? A. Turpentine oil forms several compounds with hydrochloric acid. The gaseous acid converts it into the monohydrochloride, $C_{10}H_{16}.HCl$; when the oil is subjected for several weeks to the action of the strong aqueous acid, crystals of the dihydrochloride $C_{10}H_{16}$ 2HCl are obtained. The latter compound is also formed by the action of hydrochloric acid on lemon oil; hence it is called citrene dihydrochloride.

(7) H. H. K. asks how to clean and crystallize the blue vitriol which is found in the bottom of dip jars. A. Dissolve in small quantity of hot water, cool slowly, and evaporate by exposure to the air.

(8) F. W. D. writes: 1. Will you please inform an amateur photographer of the easiest way to recover the silver from waste solutions. 2. If it harms or benefits the silver bath to leave it in the sunlight? A. 1. Precipitate the warm solution by addition to it of common salt; allow it to settle, decant the clear liquid, and throw the precipitate, together with several scraps of zinc, into warm dilute sulphuric acid. When the chloride is all reduced, pick out the remainder of the zinc, decant and press out the liquid from the precipitate, dry, mix it with a little borax, glass, and powdered resin in a small clay crucible, and heat to complete fusion. Cool and break the crucible; the silver will be found as a button in the bottom. With a small crucible, a good fire in an ordinary cooking stove will answer for the fusion. 2. If covered, it is beneficial.

(9) A. R. F. asks: Can I get any more power from an undershot water wheel fitted with appliances to keep the paddles vertical than I can with a common stayed undershot of the same dimensions? If so, how much? A. You can, if the arrangements are suitable to the course of the current. The amount of gain will depend very much upon such arrangements.

(10) C. R. B. asks how to tin iron castings. A. Small articles of cast iron may be tinned by wrapping them loosely with zinc wire and immersing in a solution of perchloride of tin in 10 parts of soft water for 15 minutes. The castings must of course be well cleansed, by pickling them in dilute sulphuric acid and scouring with sand and water or scratch brushing. Use the bath at ordinary temperatures and polish the tinned goods with whiting and the brush. 2. Can you give me any information on soluble glass? A. Consult Feuchtwanger's treatise on Water Glass and its uses.

(11) W. A. C. asks if there is a cheap process by which pine poles can be prepared for service as telegraph poles, something that would preserve them in the ground a reasonable length of time? A. Char the ends slightly and coat them thickly with wood tar.

(12) W. J. R. asks: Please answer the following in your paper. Can I build a cemented wall in water; if so, how? Machinery to pump the water out would be too costly. A. Yes, by using a diving bell.

(13) F. X. M. asks: 1. How can I preserve cider? A. See p. 81, Vol. 41, SCIENTIFIC AMERICAN, "How to Preserve Cider." 2. A stick of wood weighing 100 lb., when converted into charcoal will be very much lighter, say 60 lb. less, and yet will give a much greater amount of heat. What is the chemical process and what change has taken place? What was the 60 lb. (missing from the original) composed of which would seem lost? A. Your assumption that the combustion of 40 lb. charcoal develop more heat than 100 lb. dry wood is erroneous. In comparing equal weights of the combustibles, the available thermal value of charcoal is greater, as wood contains more or less water, incombustible nitrogenous compounds, and volatile combustible matters which escape complete combustion in ordinary furnaces. Consult some elementary work on chemistry and heat.

(14) F. G. asks for a receipt for making black marking ink for boxes, bales, etc. I am familiar with the japan and turpentine preparation, but desire, if possible, an ink that will flow free from the brush and not become gummy. A. Try nigrosine dissolved in boiling water.

(15) P. E. writes: I wish to protect young pear and apple trees against gnawing by rabbits, by the use of lime whitewash; but it washes off the smooth bark so rapidly by rain that it becomes impracticable. Can you tell me any addition to make to the wash that will make it adhere in wet weather? A. Try mixing a small quantity of water glass solution (20 per cent) with your lime. Wash and moisten the wood with alum water before coating.

(16) W. T. S. asks: 1. Is there as much or any more pressure at the top of a steam boiler than at the bottom? I would suppose that the most would be at the bottom on account of the weight of water and steam pressure also. Am I right? A. You are right. 2. Can you explain why an injector throws water into a boiler against the pressure? Because the momentum of the water driven by the steam at a high velocity is superior to the pressure on the valve. 3. Is an inch and one fourth steam pipe large enough to supply a seven and a half by ten engine, running from four to five hundred revolutions per minute? A. No; it should be 2 inches diameter, if the engine runs at usual speed.

(17) M. J. asks: What will remove fruit and wine stains (especially peach and claret) from table linen? A. If uncolored, moisten with dilute sulphuric acid and then rub with a strong aqueous solution of sulphite or hyposulphite of soda; or soak for a short time in a strong aqueous solution of bleaching powder (calcium hypochlorite), press out excess of the liquid, and immerse in dilute sulphuric acid (1 to 10 of water); rinse in cold water, dip in hyposulphite of soda solution, and afterwards wash out thoroughly in hot water. If colored, use plenty of soapsuds and ammonia water. See p. 2511 SCIENTIFIC AMERICAN SUPPLEMENT, No. 158.

(18) J. E. E. writes: 1. I am intending to build a steam saw mill, 45 horse power. I wish to set the engine 60 feet from the river and 10 feet above the water line. Will I be likely to have any trouble in supplying the engine with water through the pump at that distance? A. Not if your pipes are carefully laid and tight. 2. There is an idea prevalent among engineers here that an engine whose cylinder diameter is 2-3 the stroke is better for saw mills than one whose diameter is ½ the stroke, or that a 12x16 is a better proportion than 9x18. Are they correct? A. Ordinarily cylinder ½ the stroke is best. The losses from waste spaces and clearances is less.

(19) J. A. W. asks which is properly the front end of an ordinary stationary engine, the crank end or the cylinder end. A. The cylinder end is usually considered the front, whether it be a beam or horizontal engine.

(20) J. H. D. writes: I am building a light draught side wheel boat, 65 feet long, 15 feet beam, making over all 22 feet, to be propelled by 10 foot paddle wheels making 50 revolutions per minute, paddles to be 26 inches long and 10 inches dip. How many paddles would it be advisable to put on each wheel? A. Not less than 10 nor more than 12. The latter will work the smoothest.

(21) E. B. D. asks: What is the cheapest and strongest battery or electric pile you know of? A. The Grenet is cheap and strong, but not constant. You do not state how you intend to use it.

(22) C. B. C. asks whether an induction coil could be made without commutator or condenser, that would give perceptible shocks, using three or four of the large sized cells of battery described in SUPPLEMENT 149. A. A condenser is not required for a coil used for giving shocks, but some kind of an interrupter must be used in the primary circuit.

(23) S. S. D. writes: I am going to try to make an emery wheel for grinding skates, etc. What grade of emery should I get, and what should I mix with it, and how mix? A. You will hardly succeed in making a regular solid emery wheel without expensive moulds and many trials and failures. You may, however, make a serviceable emery wheel in the following way: Turn a wheel of the desired shape from a well seasoned piece of pine board. Heat some emery on an iron plate to 200° Fah., and coat your wheel with good glue of about the consistency used for wood work; roll it in the emery and allow it to dry, then give it another coating of glue and emery. When it becomes thoroughly dry it is ready for use. You should make several wheels of different grades.

(24) C. S. asks (1) how the article in No. 161 of the SCIENTIFIC AMERICAN SUPPLEMENT, about a dynamo-electric machine, is to be understood. I mean that portion describing the electro-magnet. It says there: It is not necessary to use permanent magnets. Electro-magnets may be employed, the slight residual magnetism of the soft iron cores serving to excite the armature. Now how can I make this soft iron core to be magnetic, or must the armature be a magnet? A. Temporarily connect the wires that surround it with a battery; or place it in the magnetic meridian, that is, with one pole toward the north and the other toward the south. It is hardly necessary to resort to either of these expedients, as it is almost impossible to find a piece of cast iron that is not in some degree magnetic. 2. Also please give me the title of some book on such machines; one giving experiments that may be tried with it. A. An elementary work on physics would meet your wants. Ganot's Physics is a good work for you.

(25) S. M. E. asks: 1. What effect will ozonized air have on gelatinous animal substances in course of their manufacture? Will it bleach, purify, and deodorize them? A. It would probably bleach and deodorize them to some extent. 2. Is process practicable? A. We have no record of any experiments in this line. Without a better generator of ozones (ozonifier) than any at present used, probably not. 3. Are fish scales utilized in the preparation of isinglass; if not, by what process can they be practically converted into gelatine in quantities? A. No; it remains to be devised. 4. What books give reliable information as to the various manufactures of gelatin, glue, isinglass, and preparation of hair (from cattle) for mattresses, etc.? A. Consult Dawidowsty's Leim und Gelatin Fabrication.

(26) S. L. H. writes: I was in an assayer's office this morning and saw brought in by a miner something that he thought was very valuable, but it proved to be a mass of iron. Its greatest dimensions over all were: length 13 inches, width 10 inches, thickness 8 inches, weight 130 lb. It seems to be about the quality of best Norway iron, shows regular lamination across the mass, and has the appearance of having been thrown while at a welding heat into a bed of coarse gravel, and is not magnetic. I inclose a fragment chipped from it. It is very tough and would make good horse nails. Is this meteoric iron, or what is it, and are such things common? It was picked up about 8 miles from the Ivanpole gold and silver mines in the northern part of this county. [Judging from the small fragment sent us it is undoubtedly of meteoric