Another American Invention Abroad.

Mr. J. W. Cole, to whom we are indebted for the drawing and description of the miner's shaft published a few weeks ago, is traveling on the European continent in the interest of the Tanite Company, of Stroudsburgh, Pa. He sends home a description of his visit to the works of the *Société de la Meuse,* at Liege, Belgium. He found them using one of their E machines with Tanite wheels. They had two men working on one wheel, and these men were grinding annealed files, which were to be again annealed and then recut. They claimed that these two men did the same work that it formerly required four to do.

This is another instance of the adoption of American machines on the continent. We believe that file manufacturers and recutters in this country have not yet generally adopted Tanite wheels. Is the subject not worthy their attention? It would seem to be, from this account from Belgium.

THE BRETON CATTLE.

We publish herewith a well executed engraving of the bull of the breed of cattle common in Brittany, the extreme northwestern province of France; and it is questionable if there is a domesticated member of the genus *bos* more fully fitted for its situation or surroundings—the right beast in the right place. Living on a poor granitic soil for the most part, among the broom, which, with the scrubby herbage intermixed, forms their chief and in many cases only nourishment, they live and they thrive. Hardy as West Highlanders, Welshmen, or Kerrys, doubtless they are not; the climate of Brittany, though bleak and foggy and ungenial compared with other provinces of France, is less so than that of the mountainous districts of the British islands. Then local circumstances modify considerably the calls made on the hardihood of the breed; they are housed at night, and kept indoors in stormy weather—for the wolf still stalks a dreaded devastator over the length and breadth of Brittany. Shelter and safety, however, are about the extent of what the owner's roof affords (and which in many cases is shared with him as fully and closely as that of Paddy with his pig). A scanty dole of bog hay, and haply a ration of pounded gorse or furze, is all the cottager and the small farmer (who form the majority of the agricultural class) have to bestow.

The effect of such treatment shows itself, as might be expected, in the diminutive size of the breed; and a proof of this being an unmistakable case of cause and effect is the fact that, in every locality to which the breed has been introduced, where the soil is of higher fertility or the system of culture such as to afford good ordinary forage, in a generation or two the progeny becomes changed; the poor, slight, attenuated frame, with the hinder extremities frequently what is called cat-hammed and the concomitant indices of early starvation, developes and expands, and assumes the form of a deep-carcased, shapely animal. It preserves the deer-like head and limbs of its upland progenitor, and surpasses, in the opinion of most people fitted to judge, in its general conformation as a specimen of what is wanted in dairy stock, the far-famed and justly admired Ayrshires--the breed of milk cows, certainly the hardiest as to short and coarse keep that Scotland produces, and which on this latter point at least must yield the palm to the Brittany.

The Ayrshire breed was to some extent introduced into Brittany some years ago, with the intention of effecting improvement in that district; but the effort has proved for the most part an evident failure. The cross formed does not maintain itself on the keep at the disposal of the poor farmers, who form nine tenths of the bulk of the tillers of the soil.

Our engraving, selected from *The Field,* also shows the rustic costume of the peasants of Brittany, who, like their cattle, are endowed with a vitality persistent in spite of poor food and rough living.

Eclectic Dentistry.

Thousands of teeth are ruined annually by the indiscriminate use of heavy, hard, adhesive gold, and heavy mallet force; where they might be saved for years with soft gold, less force used in filling, and less surface exposed to the action of mechanical leverages. If we have proper self-cleansing surfaces between the teeth we fill for such patients, we do more to preserve them by our separations than we do by our filling, by changing the conditions, so that the destructive agents which wrought the ruin cannot again find a lodgment. The proof of this assertion can be observed where a tooth has been extracted and the adjoining one has a superficial carious cavity on the face which was in contact with the extracted tooth. It will often remain for years without farther change. This example proves the efficacy of self-cleansing surfaces as a preventive of decay.

Gold continues to be the material *par excellence* for filling teeth, where the tooth structure is of sufficient strength for the gold to be impacted into the cavity without fracturing its walls. There are certain exceptional cases, in the posterior teeth, where a good amalgam plug will serve a better purpose and save the teeth longer.

In the preparation of gold foil for filling teeth, we cannot be too careful not to handle it; for however clean we may wash our hands, there are more or less of the excretions of the system oozing from the pores of the skin. The fact can be easily demonstrated by rolling or folding one strip of gold thus, and another on a clean napkin or piece of spunk with a nickel-plated spatula, and then passing each piece through the flame of an alcohol lamp. From the former there may be seen steam and smoke arising, while in the latter we cannot discern either.

Tin, amalgam, Hill's stopping, and oxychloride of zinc are all good materials for filling teeth, where they are properly used. I think it is not improbable that at no distant day a plastic material will be discovered for filling teeth, that shall possess all the good qualities of gold with none of its objectionable ones. The man who shall make this much-needed improvement will most certainly be a benefactor of his race.
Dr. G. B. McDonneld, in Dental Cosmos.

Kentucky China Ware.

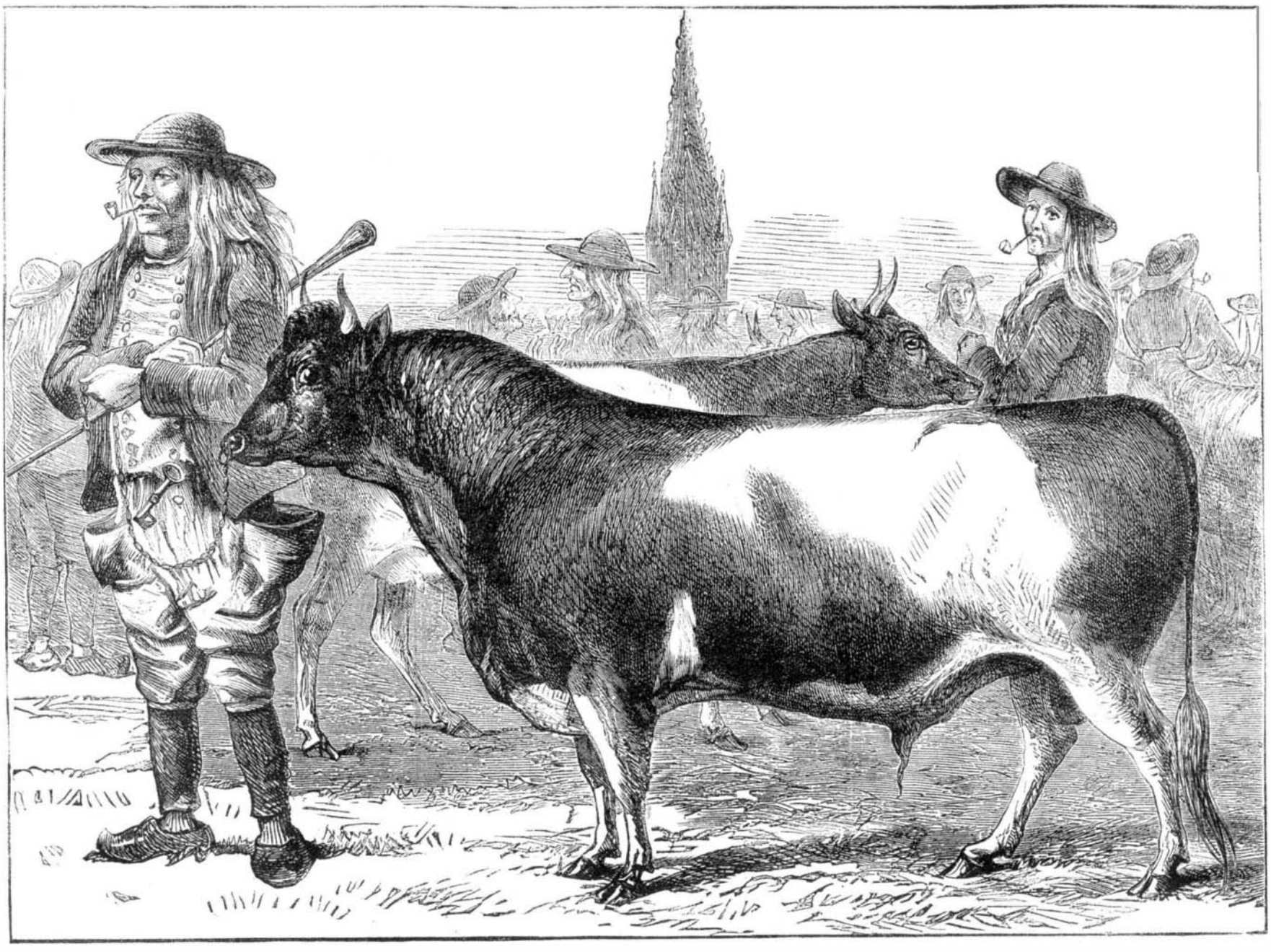
The *Southern Agriculturalist,* published at Louisville, Ky., takes its neighbors to task for not establishing the manufacture of china ware in their State, which, it claims, abounds in the requisite material for the purpose. The editor, in enforcing his views, says that its production has established an industry that employs a capital of $100,000,000 in England, and as much more in Germany and France.

"Crittenden and Livingston counties in Kentucky contain an unlimited deposit of pure china clay, known among china manufacturers as kaolin, called by ancient pottery men 'petuntse,' which is simply decomposed felspar. It is refractory, resists the most intense heat: in fact it is not fusible by any degree of heat, but assumes a strong consistence in the furnace. A deposit of this clay also exists near Golconda, in Southern Illinois, which supplies a large establishment located at Trenton, N. J., where it is ground, elutriated, made into china ware, baked, glazed, and passed through the various manipulations necessary to produce a marketable article, and then shipped back and sold to our good people, who, of course, glory in their indedendence, or exult in the progress they are making in manufacturing, and perhaps do not really know that they pay an exorbitant price or profit for the privilege of sipping coffee out of a cup made from their own soil.

If this crude clay can be shipped a thousand miles, made up into china ware, shipped back, and then be sold at large profits, why cannot it be manufactured in Kentucky at much greater profit, and still be sold at present prices? Kentucky's wealth in this material is not known, or, if known, our good people are too indifferent or careless to appreciate it. In the district where these immense deposits of china clay exist, there is also to be obtained, near the surface of the ground, an unlimited supply of fluor spar, French chalk, steatite, fire clay, yellow ocher, lead, iron, and coal. Not only china ware can be made out of these clays, but porcelain, glass, drain and sewer pipe, terra cotta, fire brick, etc., and yield a profit of fifty per cent on the investment, and still undersell present prices."

[If the statement of our contemporary is not overdrawn, Kentucky would seem to be the State producing all the material necessary for the successful manufacture of china tea sets.—EDS.

THE *Revue Industrielle* states that sour milk, after protracted exposure to the sun, developes a poisonous quality, sufficient to cause disease and death to pigs fed thereon.



BRETON CATTLE

Bee Keeping in 1875.

A writer in the *Journal of Horticulture*, England, gives the following hints on bee keeping, adding his own experience on removing dead bees from the hive. If the writer's observations are correct, that the best honey seasons follow the coldest winters, certainly the coming summer must be a productive one in this country.

"I have often observed that our best honey seasons, and they are of rare occurrence here, have followed our coldest winters. Therefore I augur hopefully for the summer before us. It is now (January 16) so warm, and has been for some days, that a fire might have been dispensed with. At this moment I am sitting with my window wide open, facing north, and my bees have been busy pollen gathering. I noticed this pleasant sight for the first time on the 12th, but I have no doubt they were at it some days before, during my absence from home. All my hives, eleven in number, seem to be in good health, and well supplied with provisions.

It is a good thing when the weather is open, as at present, to clear away as many dead bees as can be got at within the the hive without breaking away the hive from its board. This can frequently be done by inserting a piece of wire with a curve at one end, and hooking out the dead on the floor board. The effluvium arising from a mass of corrupting bodies is often very great; and after a long period of cold weather, there is sure to be a considerable quantity of such dead bodies lying about the floorboard inside. The bees ordinarily remove their dead themselves from day to day, when they can get out; but it helps them much to assist them in this labor, besides adding to their health and comfort. Where wooden hives are used, no harm can accrue from breaking up the hive from its board in any case where these fit accurately. It is in the case of straw hives, which rarely sit evenly on the board, that it is perilous to remove these boards in winter. Sometimes I have known the dead accumulate so thickly about the entrances inside as to choke them up entirely, in which case, there being no exit for the bees, the hives perish inevitably. Let all bee keepers watch against eventualities like these, as well as against long-continued accumulations of snow outside on the entrance boards.

These hints are not untimely, as we shall doubtless, ere long, be visited by a sharp increase of cold, all the more severe for the present extraordinary warmth of temperature.

Since writing the above, I have been examining my hives, and found ten out of the eleven pollen gathering, some of them quite vigorously. One hive, active and strong, on inspection by a window at the back, seemed to have a large number of dead scattered below the combs. So being a "good divine that follows his own instruction," I quickly heaved up the hive by means of a screwdriver, and, with a thin stick, swept off right and left about thirty dead bees, whose fragrance was not of the sweetest."

American Plumbago or Graphite.

Plumbago is found in almost inexhaustible quantities in Ceylon, and there are mines capable of producing vast quantities in several States on this continent. The *American Manufacturer* says, however, that repeated trials have been made, and a large amount of capital expended, to work these mines profitably, resulting (with one exception) in failure.

The only plumbago mines in the United States successfully worked are located at Ticonderoga, and are the property of the American Graphite Company, 24 Cliff street, New York. This company has been running its works constantly since their erection in 1863. The mines, however, have been worked for half a century. Those at Ticonderoga yield the foliated, while one at Warrensburg, thirty miles south, contains the granulated.

The American Graphite Company, under the management of Mr. Cyrus Butler, were the first in the world to attempt the purification of plumbago ore in a large way.

The company now produce every quality, adapted for all purposes for which black lead is used. For lubricating purposes, for which there is probably nothing superior, the plumbago must be perfec ly pure; and the article produced by the Graphite Company possesses, in a remarkable degree, this qualification, superseding in lubricating qualities even the Ceylon plumbago, the latter being too soft and spongy. The works at Ticonderoga purify the ores, producing an article pure and safe to use in any situation.

Plumbago is infusible, insoluble, and practically indestructible. It is affected neither by extremes of heat or cold, nor by acids or gases. On bearing surfaces, particularly those of iron, steel, and wood, it fills up the interstices and forms a slippery glaze, thus removing the cause of friction.

A Cure for Lockjaw.

In the course of lectures, recently delivered before the British Society of Arts by Dr. Benjamin Richardson, the following important remarks were made upon nitrite of amyl: 'One of these specimens, I mean the nitrite of amyl, has within the last few years obtained a remarkable importance, owing to its extraordinary action upon the body. A distinguished chemist, Professor Guthrie, while distilling over nitrite of amyl from amylic alcohol, observed that the vapor, when inhaled, quickened his circulation, and made him feel as if he had been running. There was flushing of his face, rapid action of his heart, and breathlessness. In 1861-62 I made a careful and prolonged study of the action of this singular body, and discovered that it produced its effects by causing an extreme relaxation, first of the blood vessels, and afterward of the muscular fibers of the body. To such an extent did this agent thus relax, I found it would overcome the tetanic spasm produced by strychnia; and having thus discovered its action, I ventured to propose its use for removing the spasm in some of the extremest spasmodic diseases. The results have more than realized my expectations. Under the influence of this agent, one of the most agonizing of known human maladies, called *angina pectoris*, has been brought under such control that the paroxysms have been regularly prevented, and, in one instance at least, altogether removed. Even tetanus, or lockjaw, has been subdued by it, and in two instances, of an extreme kind, so effectively as to warrant the credit of what may be truly called a cure."

NEW BOOKS AND PUBLICATIONS.

CATECHISM OF THE LOCOMOTIVE. By M. N. Forney, Mechanical Engineer. Price $2.50. New York city: Railroad Gazette Office, 73 Broadway.

This admirable handbook fills a place in our technical literature which has long been vacant. Although, with commendable candor, the author acknowledges that the plan and title of his work are adapted from Kosak's book on the locomotive, the substance of the articles is so exclusively founded on American practice that it is virtually an original treatise. It is authoritative and accurate in its description of the constructive of the modern steam horse; and it gives many valuable precepts for the manipulation and running of the engine, which have never before, we believe, been printed in any form. The numerous enquiries on these subjects which we receive from all parts of the country are the best proof of the necessity and value of this book.

SCIENTIFIC LONDON. By Bernard H. Becker. New York city: D. Appleton & Co., Broadway.

The author has made a very interesting volume of historical and descriptive sketches of the Royal Society, the Royal Institution, the Society of Arts, the Institution of Civil Engineers, the British Association, the Royal Geographical Society, and several other learned bodies, more or less known to fame. The papers originally appeared in the columns of *Iron*.

GRAPHICAL METHOD FOR THE ANALYSIS OF BRIDGE TRUSSES, extended to Continuous Girders and Draw Spans. By Charles E. Greene, A.M., Professor of Civil Engineering, University of Michigan. Illustrated by Three Folding Plates. Price $2.00. New York city: D. Van Nostrand, 23 Murray and 27 Warren streets.

This treatise elaborates a method of investigating the stress on roofs and trusses, originated by Professor Clerk-Maxwell; and it shows once more the value of the graphical method of describing the physical characteristics of complex bodies, a method which seems destined to be adapted to every branch of mechanical and dynamical science. The author points out, with much force, that not only is the system available for the solution of the problem of the strains on a girder, the dimensions of which are given, but it also contains a means of checking the accuracy of the working drawings of the structure.

CHEMICAL EXAMINATION OF ALCOHOLIC LIQUORS. By Albert B. Prescott, M.D., Professor of Organic and Applied Chemistry in the University of Michigan. New York city: D. Van Nostrand, 23 Murray and 27 Warren streets.

This volume is a useful and trustworthy aid to the analysis of all such alcoholic fluids as are used as food or stimulants. It discourses on the question of adulteration in a sensible and practical manner, and contains statements that go far to justify immediate government interference with the trade of the falsifier.

THE OVERLAND MONTHLY. Devoted to the Development of the Country. Terms $4.00 per annum. San Francisco, Cal.: John H. Carmany & Co., 40 Washington street.

This excellent magazine maintains a well earned reputation. The number now before us (February, 1875) commences with an interesting account of the naval duel between the Kearsarge and the Alabama.

A PRACTICAL TREATISE ON THE GASES MET WITH IN COAL MINES. By the late J. J. Atkinson, Government Inspector of Mines, England. Price 50 cents. New York city: D. Van Nostrand, 23 Murray and 27 Warren streets.

A useful and readable essay, published in Mr. Van Nostrand's Science Series.

THE AMERICAN EDUCATIONAL CYCLOPÆDIA, a Reference Book for All Matters Pertaining to Education. Published Annually Volume I, 1875. Price $2.00 in cloth, $1.50 in paper. New York city: J. W. Schermerhorn & Co., 14 Bond street.

This volume is a complete manual of the statistics of the educational condition of all the States and Territories, with a synopsis of the occurrences affecting the question during the years 1873-1871. Some biographical sketches of prominent educators recently deceased, and articles on the educational systems of other countries, add much interest to this useful work, an advertisement of which appea 's on page 157.

DECISIONS OF THE PATENT OFFICE.

BEFORE THE BOARD OF EXAMINERS-IN-CHIEF. PRESENT: MARCUS S. HOPKINS, R. L. B. CLARKE, CONCURRING.—APPLICATION OF MILLER T. GREENLEAF AND GEORGE Q. ADAMS FOR A PATENT FOR A CAR COUPLING.

Continued from page 139.

Our position is a peculiar one with respect to the Commissioner. We are a tribunal vested by statute with certain jurisdiction and powers, but it has never been judicially determined under the present act that our favorable decisions, made in the proper exercise of statutory jurisdiction, upon *ex parte* applications, are binding upon the Commissioner. We are no more than a *quasi* judicial tribunal. The Commissioner's office is both executive and *quasi* judicial. The whole Patent Office and all its officers are a portion of the executive branch of the government, and not of the judiciary. None of us have full judicial powers and the ordinary means of sustaining the exercise of them. Just what is the legal scope of the power of the Board and the effect of our decisions upon cases appealed to us as a *quasi* judicial tribunal within the Patent Office, which is under the general direction of the Commissioner as its head—has long been, and still is, a disputed question between the Commissioner and appellants before us, who have sought to invoke our favorable decisions, as sufficient to warrant him in the grant of patents. This question is now actually pending before the Supreme Court of this District in a suit brought for the purpose of determining it. The opinion of the court in Snowdon *vs.* Pierce (manuscript decisions, Supreme Court, D. C.), referring to the act of 1861, although going clearly to the root of the matter, and strongly and unequivocally declaring our judicial independence of the Commissioner, and the reason for it, had not the force, in the opinion of Commissioner Fisher, of a judicial decision of the point. (Commissioner's Decisions, 1869, page 68.) He regarded it as merely *obiter dictum*, and declared that the question was an executive one, that ought to go to the Attorney General. His decision, like that of Judge Dunlop in Snowden *vs.* Pierce, referred to the act of 1861, and sharply disputed the ground taken by the court. The present act, however, is not identical with that of 1861. In fact it appears to be materially different. Beyond the difference indicated from a consideration of it in the light of the ordinary rules for the interpretation of statutes (namely, regarding the words, the context, the subject matter, the effects and consequences, and the spirit and reason of the law), the following extract from the records of the House of Representatives, relating to the passage of section 10, by that body, are not without significance:

"*Mr. Butler, of Massachusetts:* Now he (the Commissioner of Patents) has under him a Board of Examiners, who are nominated by the President and confirmed by the Senate, and who are quite his equals in every respect. I understand that the opinion of the Committee on Patents is that this provision, as to establishing rules and regulations for the proceedings, does not apply to the conduct of the employees of whatever class. But the difficulty is that the Commissioner of Patents has made a series of time tables, and other rules and regulations covering the acts of the employees, which he has applied to the Examiners, who are his equals and coördinates, and who ought not to be in any way under him. Therefore I want to put in this language to exclude the idea of his having any such power. I am willing that he should govern his clerks and laborers and all who hold under him, but I am not willing that he should have the power of annoying and disturbing, if he chooses, the men who are appointed by the same power as he is, and with the same rank.

"*Mr. Jenckes:* I think I can show the gentleman from Massachusetts that his amendment is not needed. This power to make the rules and regulations is to apply to the *proceedings* in the Patent Office, and *not* at all to the persons employed there; and the rules and regulations to which the gentleman refers, and of which he complains, are made by the Commissioner under the power in the existing law, which is reprinted in this bill at the end of section 10 in the following words:

'They shall be governed in their action by rules prescribed by him.' (Act of 1861.)

That power *we propose to take away*. It is part of the recommendation of the Committee that these words be stricken out from the existing law, and that the power which the Commissioner shall have and ought to have shall be that of regulating the manner in which proceedings shall be conducted in his Office; the rules of court, so to speak, *not the rules of decision but of government*. I hope that gentleman will withdraw his amendment.

"*Mr. Butler, of Massachusetts:* The explanation which the chairman of the committee on patents has put on record will obviate the necessity of the amendment I had proposed. I therefore withdraw my amendment. But I desire to make another, in the ninth line of the tenth section. The section, as reported from the committee, reads thus:

'The Examiners-in-Chief shall be persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the appellant, to revise and determine the validity of the adverse decisions of Examiners upon application for patents, and for reissues of patents, and in interference cases; and when required by the Commissioner, they shall hear and report upon claims for extensions, and perform such other duties as he may assign them.'

I want to strike out the words '*he may assign them*' and insert in their place the words 'may be assigned them by law.' The chairman of the committee will see that under the words 'and perform such other duties as he may assign them' the Commissioner might—though that would not be very likely, yet he might—put them to sweeping out the Office. The duties should be assigned them by law and not by the will of the Commissioner. That is the point I desire to make.

"*Mr. Jenckes:* The language which the gentleman objects to is the language of the exis ing law. As there is no hardship under it, we did not take the responsibility of recommending its alteration.

"*Mr. Butler, of Massachusetts:* Ah! But the difficulty is that under the old law the Commissioner has shown a disposition to interfere, which the committee by this bill seek very properly to regulate.

"*Mr. Jenckes:* We thought we met that objection sufficiently by taking away the power to assign duties in the Office. But there are many things in which the Commissioner might wish the services of the Examiners-in-Chief, but which it would be very difficult to prescribe definitely by law.

"*Mr. Butler, of Massachusetts:* Then I will compromise by moving to substitute the word 'like' for the word 'other,' so that it may read 'such like duties as he may assign them.'

"*Mr. Jenckes:* I have no objection to that. * * * * * The amendment was agreed to." (Cong. Globe, Part 4, 2d. session, 41st. Congress—1869 and 1870, p. 2,855.)

This authentic record history of the passage of section 10, defining the duties of the Board, like the language) of the section itself, plainly shows the intent of the law-making power. The section must be read in connection with section 7 defining the duties of the Commissioner, and both sections must be construed together so that each shall stand—the rule being "*ut res magis valeat quam pereat.*"

Section 10, following after section 7, and conferring special powers on the Board, must be held to restrict the meaning of section 7, giving general powers to the Commissioner, if it can be supposed that the two sections are in apparent conflict. But it is plain to us that they are not: that section 7 relates wholly to executive and ministerial duties, over which it provides the Secretary shall have "direction," and not at all to judicial duties. Sections 46 and 47, providing for appeals, confer upon the Commissioner his judicial powers, in the exercise of which he is independent. These sections, in connection with section 10 (with none of which do any other sections of the act in the least conflict), make the law as plain as language can well make it.

It is clear we must in our judicial capacity be, in a certain measure, independent of the Commissioner, and our decisions, favorable to appellants, be binding upon him and all others, so far as the duty of granting patents is concerned (except fraud should appear), or else we must be wholly subordinate to his judgment, and our favorable, as well as adverse decisions, be liable to be overruled by him at his pleasure. We are either an independent tribunal in this Office with appellate jurisdiction, to relieve the Commissioner of all judicial responsibility, except in cases regularly appealed to him from our adverse decisions, or else we are mere clerical reviewers of a portion of the work of Examiners, to aid the Commissioner, subject to his dictation in forming our opinions, and wholly depending in all cases upon his approval of the judgments we pronounce. There is no middle ground. But if the former be the correct view of our powers and responsibilities under the law, it is undoubtedly competent for the Commissioner, in order to prevent the erroneous issue of a patent, in any case where in his judgment there is reason why it ought not to issue, to refuse to issue it, and to refer it to the Board for their consideration and review of the alleged matter of error. And if the Board, for any cause, should fail to agree with him as to the judgment, then he might still refuse to execute and grant the patent, and the existence of the alleged error, to warrant them in the alteration of their sufficiency of his reason for refusing could be tried before the Supreme Court of the District on application for writ of *mandamus*, and then on appeal before the Supreme Court of the United States. This would seem to be ample provision against the erroneous issue of a patent or a dangerous exercise of a power of independent judicial action by the Board. But the presumption is that officers of the intelligence and dignity of Commissioners and members of this Board would endeavor to do their duty, and to avoid conflicts; and we apprehend cases of irreconcilable difference of opinion, of such importance as to involve litigation, would seldom occur. Were each tribunal (the Commissioner and the Board) *purely* judicial, instead of administrative and *quasi* judicial, each would have a distinct jurisdiction and be as independent of the other in the Office within that jurisdiction as supreme and subordinate courts; and the first duty of each would be to define its own jurisdiction and act accordingly. In that state of things no Commissioner would ever have questioned our judicial independence, and it would be admitted to be our duty to pass upon this case independently of the Commissioner: coming to us as it does, without any very recent action of his upon the question at issue, and with the recent decisions of the courts, as we think, clearly controlling that issue. The case does not appear to be very different than if a new statute had in the meantime been enacted, declaring a rejected and abandoned application insufficient. It is only the mixed nature of the official duties in this Office that has raised a doubt of the distinct distribution of them by law. But from the language of the statute, and the necessities of the case, we can have no doubt that we are required to *adjudicate*, and not merely to report upon cases duly appealed to us, and, in doing so, to exercise ordinary judicial freedom of judgment. We are to "revise and *determine* upon the adverse decisions of Examiners." Appellants who pay their fees and employ counsel to argue cases before us are entitled to such adjudications, and to have them enforced so far as they are legally effective. Otherwise they do not obtain their *quid pro quo*, and appeals to us and adjudications by us would be farcical. Nothing can be plainer than that in all executive matters relating to the proper transaction of our business—matters of mere practice, or mode of procedure, etc.—we are, with great propriety, subject, under the law, to the control of the Commissioner. Nor can anything be clearer than that, upon points that have come judicially before him, upon regular appeal from our adverse decisions upon them, and been decided by him, we are bound to follow his decisions to the extent of their legitimate intendment and effect, until they are unmistakably overruled by higher authority. Beyond that, it is our opinion, upon the most careful consideration, we are not subordinated to him by law, in our judicial capacity. Nor do we perceive any anomaly, or any change to the public, from such a fact. The Secretary of the Interior has full supervision of the Commissioner and all other officers in the Patent Office, in all executive and ministerial matters. But the Commissioner is vested, by section 47 of the statute, with certain judicial functions, in the exercise of which he is entirely independent of the Secretary; and we know of no instance of the Secretary's attempted interference with respect to them. Following the necessity of the case, in order to enable the public business to be done, the law has made the Commissioner thus independent. Following the same necessity, growing out of the magnitude of the judicial work of this Office, the whole of which it is impossible for the Commissioner to perform and be held judicially responsible for, the law, we think, has made the Board, within the limits above named, independent of the Commissioner. This being so, our legal duty, from which there can be no conscionable escape, requires us to pronounce our judgment upon the issue in this case. We could not be justified in letting it go to the Commissioner with a *pro forma* affirmance of the rejection by the Examiner, thus compelling the party to pay his appeal fee of $20 and the other expenses incident to such an appeal. There are many considerations, which we duly appreciate, in favor of the greatest courtesy and deference, and of a harmonious exercise of the functions of the different tribunals within this Office. But official ethics cannot require or warrant the deprivation of a legal right of a suitor, by the withholding of its own proper judgment, under circumstances like the present, by a lawful and responsible tribunal. We should greatly have preferred that so important a matter be first enlightened by a decision of the Commissioner; and in order to get this case before him for decision, we have proposed to certify it up to him, in analogy to the practice sometimes adopted by the Supreme Court of this District, so as to save the appellants their appeal fee. The Commissioner, however, not approving of that course, we must reverse the decision of the Examiner, and his decision is hereby overruled. We recommend, however, that he call the Commissioner's personal attention to this case, on account of its peculiarity and importance.

MARCUS S. HOPKINS, *Examiner-In-Chief.*

I concur with the views in regard to the insufficiency of the references, and unhesitatingly unite in a decision reversing the examiner's rejection.

A plain question of law based on admitted facts as presented for our adjudication is in fact the only point relied upon by the appellant.

We find that the examiner erred in holding the invention anticipated by a rejected and abandoned application.

We have the highest authority known to our judiciary to sustain the point made by appellant.

We have the repeated decisions of the circuit courts—as cited—to the same effect.

We have the principles and reasons underlying the law to sanction it to our good sense and judgment.

All we have to do, in the discharge of our duties under the statute giving us power and jurisdiction, is to find and record our judgment.

If done honestly and intelligently, the Commissioner can have no occasion to except to our action.

His power is ample to guard against any evil effect from our finding.

If he thinks a patent should not issue for *any* cause, he has only to refuse, and it will not issue.

If called to give his reasons upon *mandamus*, his action would be undoubtedly sustained if his reasons should prove good and legal.

I do not believe in forcing parties to pay fees and go to the Commissioner on questions which the law contemplates as within our peculiar province and jurisdiction, and which we should decide on our own consciences and according to our best judgment.

R. L. B. CLARKE, *Examiner-In-Chief.*

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From January 15 to February 1, 1875, inclusive.

BURNING LIQUID FUEL, ETC.—C. E. Robinson, New York city.

COATING METALS, ETC.—D. R. Brownlow *et al.*, Middletown, Conn.

CUTTING FABRICS.—A. H. Cramp (of New York city), London, England.

DYEING AND FINISHING.—P. Magner *et al.*, New Orleans, La.

FUR-COATED FABRIC.—H. Kellogg, Milford, Mass.

HEAD COVERING, ETC.—H. Kellogg, Milford, Mass.

MAKING ICE, ETC.—C. P. N. Weatherby (of New York city), London, Eng.

PRESERVING ANIMAL SUBSTANCES, ETC.—J. R. McClintock, New Orleans, La.

PREVENTING FRAUDS BY CONDUCTORS.—C. G. Imlay, Philadelphia, Pa.

ROLLERS FOR TEXTILE FABRICS.—E. Edwards, Boston, Mass.

ROLLING NUT BLANK BARS.—G. Johnson, Haverstraw, N. Y.

SACK SEWING MACHINE.—H. P. Garland, San Francisco, Cal.

SEWING MACHINE.—E. Moreau, San Francisco, Cal.

SPIKE MACHINE.—A. Whittemore, Cambridgeport, Mass.