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TO OUR FRIENDS.

NOW IS THE TIME TO FORM CLUBS.

We are now about to close the present volume of our journal, and we appeal to its staunch friends in all sections of the country to endeavor to form clubs for the coming year. We feel justified in asserting that no other journal in this country furnishes the same amount of useful reading. Think of the extraordinarily low price at which it can be obtained. Fifteen persons can club together and get the paper at $1 50 each for one year. Twenty persons clubbing together can have it at the rate of only $1 40. Think of getting a volume of 832 pages of useful reading matter profusely illustrated with between 500 and 600 original engravings for such a small sum of money. Single subscriptions one year, $2; six months, $1. Even though the times may be hard, the long winter evening must be relieved of its dullness, and we must keep reading and thinking, and thus be prepared to overcome temporary difficulties and open new channels of wealth and prosperity. Friends, send in your clubs.

WHAT WILL BE THE EFFECT UPON PATENTS IN CASE OF SECESSION?

WE have recently been solicited by several inventors to give our opinion as to "what would be the effect on patents in the event of a dissolution of the Union?"

Although it is impossible for any person to tell what will assuredly take place in the future, we are able to state what would be the result, and what probably will follow, with respect to patents that issued prior to a separation of the States.

All such patents will undoubtably be considered legal, and held in full force in *all the States* until their terms have expired. Such is the conclusion at which every person must arrive who examines into the history of our legislation on patents, and into the nature of a patent itself.

The nature of a patent consists of a bargain or agreement between an inventor and all the people of the United States, to the effect that, upon the condition of the inventor revealing his invention to the people, they shall protect him in the exclusive use, sale and manufacture of it for a limited term on every foot of land in all the States and Territories. The patent contains a description of the invention, and is a witness to the fulfillment of the inventor's part of the agreement with the people. The seal and certificate of the officer who represents the people is also attached to their bond in the fulfillment of the bargain. As the bargain between these two parties can only be consummated and fulfilled by the people—the whole people—protecting the inventor in his rights until his patent expires, all the people in every State are bound in honor—and no doubt they will consider it so—to carry out the terms of the agreement.

Some new rules may be adopted by seceding States with respect to certifying to the legality of present patents. They will probably require that all of them must have a supplementary new government seal attached to render them valid within their dominions; but this will be all that is necessary. Each State will consider it an object of wise political action to encourage and protect all patentees and inventions. An opposite course would be detrimental to the material interests of any State. Although there have arisen many jealousies and strifes between different States, respecting commercial regulations and political theories affecting local interests, there has always been perfect unanimity regarding patents, because there is nothing local about them. They are of general benefit, and all reap equal advantages from them. Two of the most profitable patents of the present day have been obtained by citizens living very far removed from one another—the one in the most extreme Southern State, and the other in nearly the most extreme Northeastern. We refer to the patent for the Peeler plow, by a citizen of Florida, who is reported to have made $500,000 by it; the other the patent of E. Howe, Jr., of Massachusetts, for his sewing machine. We could instance a great number of like cases; but it is unnecessary to do so, as it is generally acknowledged that the citizens of all the States are equally and mutually benefited by patents, and it is therefore reasonable to conclude that, upon every consideration, all patents granted by the Federal Government will remain in force and be sustained in all the States, even in the event of a dissolution of the Union.

The history of patent legislation also affords us good grounds for entertaining these opinions. In colonial times, there were no such patent laws as we now have. It was customary for the several Assemblies to grant patents by special acts, and sometimes the King granted patents for all the colonies. No fees were required of the applicants; they simply prayed for all issues of Letters Patent, which petitions were granted by special bills. There were constant conflicts in those days between the dividing lines of patent jurisdiction, and the only way to secure full protection to an invention was to obtain a special act or grant in each colony. When the colonies resolved themselves into sovereign States, they all felt the inconvenience and insufficiency of the old modes of granting patents; and the consequence was that, on the adoption of the present consitution, each State gave up its power of granting patents to the general government with alacrity and pleasure, while it was far otherwise with most of their other sovereign privileges. Virginia took the lead in this great movement, and to Jefferson we owe our present confederate system of patents. He took a great interest in promoting the progress of science and the useful arts, and we believe that American inventors never had a warmer friend.

Viewing this question in the light of history, wisdom, honor and true policy, we believe that all patents which are now in force will be sustained in all the States until their terms expire.

EXPLOSIVE ENGINES.

A few weeks ago we corrected the reports which had been disseminated by many of our daily papers in regard to the novelty and utility of an explosive gas engine which had recently been exhibited in Paris. We stated that an engine, similar in every respect, had been invented long ago by Dr. Drake, of Philadelphia, and was exhibited during two fairs of the American Institute in this city, and finally destroyed by the burning of the Crystal Palace. Although we have done all this, we notice that our cotemporaries are still using their columns in describing the exploits of the Paris gas engine. Explosive gas and explosive powder engines are quite old. Twelve years ago, when gun cotton was first prominently introduced, quite a number of enthusiastic inventors believed that it might be employed as a substitute for steam, and theoretically various advantages may be claimed for a solid and suddenly expansive agent like gunpowder or gun cotton. Thus, with a package of gun cotton and a small galvanic battery, a portable explosive engine may be transported from place to place and operated on mountains or plains, for purposes of peace or purposes of war, for which it would be a most terribly efficient and destructive agent. The gas engine requires that coal be made into gas before it can be operated, and in this respect it is far more complex, troublesome and expensive than the steam engine. The gun cotton engine would require neither boiler nor furnace like steam and hot air engines, but it will be very difficult to give it an equable motion because the expansion of the charges is so sudden that they tend to produce great irregularity of motion in the piston. On page 180 Vol. III. (old series) of the SCIENTIFIC AMERICAN, we illustrated a gun cotton engine, invented by the celebrated W. Fox Talbot, of England—inventor of the Talbottype—the charges of which were ignited by electric sparks, like the gas engine in Paris. It never came into use; it merely reached the condition of an experiment, but some other inventor may yet be able to improve upon the first ideas, and render such an engine useful for many purposes.

WHAT WILL BECOME OF THE PATENT OFFICE IF THE UNION IS DISSOLVED?

The above inquiry we extract from a business letter received from a correspondent residing in Alabama. The idea of a dissolution of the Union has forced upon his mind a painful interest in behalf of one of the noblest institutions of our government. The dissolution of the Union can only be effected by a secession of some of the States. This would not necessarily break up the Federal Government, and, for the present, its seat of power would remain at Washington. Should the government acquiesce in the peaceful secession of the States, then, to all intents and purposes, these seceding States would be regarded as foreign countries, and their citizens treated accordingly. But the business of the Patent Office would still go on, and all applicants for patents would be dealt with according to law.

The citizens of a seceding State would, under such circumstances, be subject to all the legal inabilities imposed upon foreigners, and upon the presentation by one of them of an application for a patent, the government fee would be $300. If an inventor could swear that he was still a citizen of the United States, even though residing temporarily in a foreign country, he would be required to pay a fee of only $30.

We believe we have stated the matter fairly and correctly, without reference to any of the political issues that connect themselves with the subject. Inventors who are desirous of applying for patents, and are apprehensive that the States in which they reside will withdraw from the Union, had better file their applications at once, and thus save themselves $270, being the difference between the present fee and the one to which they would be liable when they could no longer swear that they were citizens of the United States.

OUR STELLAR SYSTEM.

The grandest of all the problems with which science has ever grappled is the relation of the stars to each other. Sir William Herschell, with his great telescope and his comprehensive mind, led the way in this sublime study, and the path which he marked out is now being pursued by able and earnest observers all over the civilized world. The results yet obtained in regard to the position of the fixed stars in relation to each other and their distances apart, are neither as positive nor as definite as our knowledge of our own solar system, still, within certain limits, some facts have been determined which almost overwhelm the mind with their inconceivable grandeur.

First, it has been ascertained that our sun is one of an innumerable multitude of stars which are grouped together in one collection or system, separated from other stars in the universe. The general form of this stellar system, and our position in it, have been roughly determined. It is in the form of an irregular wheel, with a deep notch in one side, and with a portion of another wheel branching out from it. Our sun is situated pretty near the middle of the system, and about where the branch divides. The dimensions of this collection of stars are so vast that if expressed in miles they would require rows of figures of such confusing length as to convey no definite idea to the mind, and the plan has been adopted of stating the time which a ray of light would require to traverse them. It would take a locomotive 500 years to pass from the earth to the sun, while a ray of light makes the journey in eight minutes, and yet a ray of light moving with the same velocity, would require three years to reach

the nearest fixed star! In applying this measuring rod to our stellar system, it is found that, through the thickness of the wheel the distance is such that light would occupy about 1,000 years, and through the diameter not less than 10,000 years, in making the passage! In some directions, indeed, the system stretches away into the depths of space beyond the reach of the most powerful telescope to measure.

If we pass through the inconceivable distances we have been considering, out beyond the boundaries of our stellar system, we find a region of empty space, destitute of stars, at all events of those which are luminous and visible. Traversing this void space through distances which appal the mind by their immensity, we find other systems of stars probably similar to our own. And astronomers are now considering the possible relation of these several clusters to each other—whether there is not a system of systems! This is the most snblime problem which has ever engaged the attention of the human mind.

PATENT LAWS AND THE PATENT OFFICE.

We take the following from the Report of the Secretary of the Interior, and to one of its recommendations we enter a decided protest in the name of every inventor in the United States. Our reasons for so doing we give below:—

"The increase of business in the Patent Office, and the magnitude of its operations, give additional force to the recommendations heretofore made for a re-organization of this bureau. The amount of work devolved upon the Examiners is enormous, and it is difficult to believe that the reiterated appeals in this behalf would have been so entirely disregarded, had Congress realized the actnal condition of the business of the office; and as the office is self-sustaining, it is only reasonable that this department should be empowered to graduate the force employed by the work to be done, provided always that the expenditures shall be kept within the receipts.

I take occasion to renew the recommendation of previous reports in regard to the anomaly of allowing appeals from the Commissioner of Patents to one of the three district judges. In addition to the reasons urged in my first annual report for an alteration of the law in this particular, it is to be observed that as each judge acts separately upon the appeal taken, it becomes very difficult, if not impossible to maintain uniformity and certainty in the execution of the patent laws.

The income of the office for the three quarters ending September 30, 1860, was $197,648.40, and its expenditure, $189,672.23, showing a surplus of $7,576.17.

During this period, 5,638 applications for patents have been received, and 841 caveats filed; 3,612 applications have been rejected, and 3,896 patents issued, including re-issues, additional improvements and designs. In addition to this, there have been 49 applications for extensions, and 28 patents have been extended for a period of 7 years from the expiration of their first term."

The recommendation of the Secretary of the Interior to which we object relates to repealing the law which permits applicants for patents to appeal from decisions of the Patent Office to judges in the District of Columbia. Two statements are made as affording causes for the repeal of the statute; to these we will make a brief argument, and we are confident that the Secretary of the Interior himself, by a further examination of the subject, will change his sentiments on this question.

It is stated that the present system of appeals is an anomaly. We consider that it is not so; that it is simply a safeguard against unjust decisions in the Patent Office, and is a very proper method of obtaining redress to inventors. Abolish such a system, and the method of deciding upon all applications for patents would become an *anomaly* indeed, in a free country. In constitutional monarchies and republics, we require checks upon hasty legislation and the decisions of courts; hence our compound houses of legislation and our courts of appeal.

Would it not be unjust, would it not be an *anomaly* in our form of government, were the actions of the Patent Office made an exception to such wise customs and modes of procedure? Certainly this would be the case, and yet this is what the Secretary of the Interior recommends.

Again, the repeal of the statute is recommended because the Secretary states that it is "almost impossible to maintain uniformity and certainty in the execution of the patent laws." We think this statement is unwarranted, but even if the repeal solicited was effected, it would not mend the matter, but rather increase the evil. Justice to inventors and the public is the first object to which we should look in all cases. The right of appeal in the District Courts is for the very purpose of securing this justice, and we do not know of a single reversal of a Patent Office decision which did not secure that object. Surely the Secretary of the Interior does not mean to defeat the means of obtaining justice to inventors, under the guise of obtaining *uniformity* of decisions. If the infallibility of the Patent Office officials could be guaranteed, then the reform solicited might be claimed with a good grace, not otherwise; without such a guarantee, the present system should remain as it is. We are confident that were the present method of appeals abolished, the Patent Office would become a petty despotism.

During the last session of Congress, when the patent bill was up for discussion in the House of Representatives, its further consideration was postponed until the second Wednesday of this month. As this bill contains the provision recommended by the Secretary of the Interior, we trust that the friends of inventors in the House will see that it is struck out and condemned as unnecessary and unjust.

THE PATENT OFFICE DEFENDED.

MESSRS. EDITORS:—After carefully perusing your strictures on the Patent Office, published in your last number, allow me to remind you of the saying that "one story is good until another is told." It is to be hoped that your articles have not left any of your readers in the predicament of the Pennsylvania judge, who was perfectly able to decide the case after hearing one side, but was nonplussed on the presentation of the other side. The ideas put forth are too narrow—not sufficiently comprehensive—just, perhaps, when viewed with an eye single to the interest of one class of individuals, but absolutely unjust when the interest of the whole community is taken in view. This Revisory Board, which you complain of, is, in my judgment, essential to the proper administration of the duties of the Patent Office. As you have taken the other side of the question, and as I take it for granted you are but seeking the enlightenment of your readers, you will not close your columns to a fair discussion of the subject.

It is a well-known fact that, previous, to say, 1853, it was far more difficult to obtain a patent than it is now. Since that time, patents have been issued with more regard to the increase of the revenues of the Office than to the proper validity of the patent itself. Hence it is that so many patents utterly worthless in themselves, are now before the public for sale. There are two kinds of patents taken out in this country (and it may be in others), and the precise merits of each are well-known to the inventors. Class No. 1 is that kind of patent which the inventor not only believes to be good, but is willing to expend his means or procure the assistance of his friends to demonstrate its utility previous to offering it for sale. These are commendable patents. Class No. 2, which in number exceed No. 1 (for the rejected applications may be fairly considered under this class) are those taken out for the express purpose of traffic, the inventor, caring but little for either their originality or usefulness to the public. His object is to procure a patent. He seems to be regardless of the strength of his claim, because his object is only to sell—*not to introduce.* It is quite common that, after having made up a claim that he or his agent supposes *may* pass, to request the Examiner, in case he cannot allow *that* claim, to suggest one that he can. I am not speaking of isolated cases, for I believe that this class predominates. Let any one examine the list of patents passed for the last seven years, and he will be utterly astounded at the barrenness of the claims, and his own inability to understand what they mean to claim as new. As I understand it (and I know nothing save that which is before the public), the object of this abused Revisory Board is to correct this; and its action is therefore commendable. It will reduce the revenues of the Patent Office, but, at the same time, it will lessen the loss in a tenfold degree of those persons who have been induced to embark in the enterprize and invest means in the patent, simply from the fact that it contains the great seal of the country. Many believe that a patent is incontrovertible, while it is notorious that not one in ten will stand the test of a court. The intention ought to be that when the government grants a man a patent, it should be fair to presume at the time that it is giving that which can be maintained, and the object of the Board is to approximate to that point as near as possible. It is no uncommon thing in Europe (Prussia, alone, excepted) for a patent to be granted five and six times over, to as many different individuals, and for one and the same thing. There is some excuse for this on their part. They must have revenue; and my experience teaches me to believe that they will grant a patent for anything, without any regard for its originality, novelty or utility. Thank God, our government is in no such predicament. We can therefore afford to have a Revisory Board—nay, inventors will be benefited by it in the end. The country is flooded with patents now, and the majority are so utterly worthless that they throw discredit upon the good ones. Many a good patent now lays in the drawer of the inventor, for the want of some one to invest means to introduce it. This evil has become so great that a man is thought to be in a failing condition who consents to deal in patents. I am fully aware that I am tramping on the toes of patent agents; but as I am seeking loftier results, let them stand from under. There is no reason why a man should not engage to introduce a patent to the public without being looked upon with suspicion; while it is notorious that such enterprises are viewed as a series of gambling by our business men. This difficulty would vanish if a closer scrutiny was applied to every application, and none passed which had not the stamp of originality on them. There are places in New York where any number of patents can be purchased for amounts ranging from $100 to $1,000. They are, it is true, worthless except for gambling purposes, and never should have, and, in my opinion, never would have been granted if this Revisory Board had been in existence and *done its duty.*

FAIR PLAY.

New York, Nov. 26th, 1860.

REPLY TO "FAIR PLAY"

In a letter accompanying the above communication, the writer informs us that if we should refuse it a place in our columns, he would procure it an insertion elsewhere. If we had treated it as it justly deserves, we should have declined its publication; and no doubt its appearance elsewhere would have subjected its author to the mortification of seeing the word *advertisement* standing at its head.

There is a certain amount of smartness in the communication not unlike that of some rattle-brained attorney who rushes to the rescue of his cause, without regard to truth or candor.

The position assumed by the writer is manifestly so one-sided and unjust that we might have been excused if we had taken the liberty of substituting "Foul Play" as a proper signature for his communication. In the first place, it is a gross libel on inventors generally; and, in the next place, if allowed to pass unrebuked, it would tend to injure the value of useful patented inventions in public estimation: hence our willingness to give "Fair Play" a chance to be heard. The author of this libel on the rights of inventors and their property purports to reside in this great city, where evidences are presented on every hand of the great value of patented inventions; and yet we feel bound to say that he is either the mere echo of some one who has felt the force of our criticisms, or whose mind has become so perverted that an invention seems of not much more importance than a bundle of straw.

If the ideas of "Fair Play" are sound, it would be better for the interests of the people that the Patent Office be abolished at once, as, on his theory, it is simply putting an instrument into the hands of a few for no other purpose than to cheat the multitude—a business which the government, at least, would not sanction. Fortunately, we are enabled to put forth with our own views in contradiction to the above, those of both the Secretary of the Army and the Secretary of the Navy, who, in their late reports, stamp the leading sentiments in the letter as false, and pernicious to the interests of the government and people. Imbued with the very sentiments set forth in the above communication, a United States Senator prepared a bill, and obtained its passage at the last session of Congress; but what has been its effects?