EXTENSIONS OF PATENTS BY CONGRESS.

We have long and uniformly opposed these extensions, not from unfriendliness to those who would be thereby benefited, but on account of the prejudice which thence results to others equally meritorious. An article published on page 277, Vol. II, of the SCIENTIFIC AMERICAN, in which the power of Congress to grant such extensions is questioned, having met with criticism from some of our cotemporaries, we have been induced to review the subject and shall now proceed to give the result of our mature reflection.

We do not deny that Congress has the full power to make such extensions, provided they be done *before* the patent expires. Nor do we question the right of the legislative power to revive an extinct patent, unless by so doing other interests which have sprung up in the meantime are thereby directly and injuriously affected. But we do hold that, after a patent has been enjoyed during the full length of time allowed by law—after the invention has become public property and rights have accrued founded on the faith that it is to remain so—to resurrect that patent in such a way as to overthrow those rights is not only unjust, but, as we believe, illegal. All the laws that have ever been passed or sought for on this subject, have been of this very character.

We are aware that Congress has positive power to "promote the progress of science and the useful arts by securing, for limited times, to authors and inventors the exclusive right to their respective writings and discoveries;" but in the same great instrument which gives this power there is just as positive a prohibition against the exercise of any power by which any citizen shall be deprived of "life, liberty or *property*, without due process of law." Congress cannot exercise its conceded powers in such a way as to violate this plain prohibition.

Now what is meant by the term "due process of law" in the prohibition just referred to? Are we to understand merely that life, liberty and property, are to be held sacred until taken away by some act of the Legislature? If so, a bill of attainder may deprive us of our lives, or an act of Congress may send us to the penitentiary for life without a trial. We certainly do not hold our lives, our liberty or our property, by such a tenure. "The general meaning of the clause is that no citizen shall be deprived of his life, his liberty or his property, except by the regular administration of the law of the land." (Shepard's Constitutional Text-book, 250.) No mere legislative sentence can ever deprive us of the one or the other.

Now, by the 18th section of the Act of 1836, it is provided that "no extension of a patent shall be granted after the expiration of the term for which it was originally issued." When, therefore, a patent which has been held by its owner during the term prescribed by law is brought to its final period without being extended, every one has a just right to conclude that the subject-matter thereof is public property and that it is to continue so *forever*; and he is justified in making his arrangements accordingly.

It may be said that the rule just referred-to is intended for the guidance of the Patent Office only. We reply that it is the general law of the land and ought to be relied upon as such. If Congress can change its own rules, this cannot be done arbitrarily and under all circumstances.

Thus, a statute of limitations is intended for the government of the action of courts of justice. The Legislature may change or repeal these statutes, either generally or in special cases, at its pleasure, so as to operate upon all cases where titles have not accrued or interests grown up under the law. But, suppose the law to declare that the title to real estate shall not be questioned after a peaceful possession of twenty-one years. Such a possession would render the title of the occupant complete and it could never be disturbed by any subsequent act of the Legislature.

Or, suppose the law to declare that land which had been used for a certain length of time as a highway should be held to have been forever dedicated to public use. The Legislature might undoubtedly change this law so as to affect all cases where that contingency had not happened, but never so as to disturb interests which had already become vested after the expiration of the time prescribed. It might perhaps surrender back any rights which had been acquired by the public, but could do nothing to impair, without compensation, any private rights that had grown up after the dedication had thus become complete.

The principle here involved is that, where interests have grown up under the protection of a general law, those interests become *property*, which is protected by those constitutional provisions which declare that no one shall be deprived of his property without due process of law. The same rule is clearly applicable in the cases we are now considering.

This right to protection against the subsequent injurious litigation of Congress in these cases is greatly fortified by another important fact. The 14th section of the Act of 1837 requires the Commissioner of Patents, in his annual report, to furnish a list of all patents which have become public property during the previous year. Such a list is incorporated every year in the Patent Office Report, which, by the authority of Congress, is published and, by tens of thousands, is scattered broadcast over the country.

Not satisfied, therefore, with merely declaring by law that, where a patent has expired without being extended it shall forever remain public property, Congress thus takes special pains to send out to all the world the precise knowledge of what has thus been made free to all. It says to every inventor, manufacturer and consumer: "Here is a list of inventions which you are at full liberty to use as freely as the air you breathe; they have heretofore been private property, but they shall never become so again, and for this the public faith is fully pledged." If any person invests his money in any property upon the faith thus pledged, can that property be taken away or rendered valueless by a mere act of Congress? Does not the free use of the thing so patented and made public become secured, and can it afterwards any more be granted out in a monopoly to one person than the raising of corn or the selling of salt?

Suppose, for instance, that, after an invention has become public property, a person was to establish a workshop and provide machinery for the express purpose of manufacturing the thing so invented. This he has been invited to do by the action of Congress itself. Can the pledge involved in that invitation and in the more express declaration of law be withdrawn, and the money thus invested be rendered valueless, by giving to another person the exclusive right to make, sell and use the very commodity which, at great expense, he has thus prepared himself to manufacture?

Or, suppose that, after a patent has been obtained, some other person makes a valuable improvement upon the thing so patented (which is a matter of the most common occurrence). The new patent will be subordinate to the original one and cannot be used without a license from the prior patentee. But when the previous patent expires without an extension, the subordinate patent becomes free from this incumbrance. Suppose, now, some person were to purchase an interest in this subordinate but now independent patent. Can Congress turn around and, by resurrecting the dead patent, impose an incumbrance upon this property, which will render it of little or no value? If so, cannot the law declare to the purchaser of a piece of unencumbered real estate: "You cannot enjoy this property unless you pay to some favorite of Congress such annual sum, for the period of seven years, as he shall demand?" Are not *all* kinds of property equal before the law? Has Congress the power to confiscate or encumber one kind of property more than another?

In a thousand different ways do the consequences of such an extension manifest themselves; and in so far as they have the effect of taking away a right that had become complete, do we deny the power of Congress to grant such an extension.

It is true that many acts of Congress are held to be valid which have the effect of benefiting one person at the expense of another. Thus the levying of duties on imported manufactures is regarded by many as giving money to Peter which is taken from Paul. We shall at present say nothing of the legality or propriety of such proceeding; but surely there is a manifest difference in principle between a law which *collaterally* affects one's property and one which takes it away *directly*. A law which indirectly renders A's property less valuable than it would otherwise have been, and makes B's property more so, is fundamentally different from one which says to A, "You shall not pursue your regular and honest business at all, unless you first pay to B such a sum as he may see proper to ask for the privilege."

We do not overlook the fact that the law permits machines to be patented which have been in public use for a period of not more than two years; nor that Judge Marshall, in the case of Evans *vs.* Jordan (1 Brock, 248), held that it was competent for Congress to extend that patent after it had expired. But that extension was made in 1808, before the enactment of the provision declaring that a patent should not be extended after it had expired, and before the occurrence of anything which caused all the world to be officially notified of that fact.

And, upon the same principle, can a patent be held valid which was granted a year or two after the subject-matter thereof had been in public use? Is there any reason why it should *not* be valid? No law has made it public property. There is no pledge of the public faith which has been violated. No person had acquired a property in the invention which had been thus in public use, and therefore the subsequent granting of the patent to the inventor took away no property in disregard of the constitutional prohibition.

But would an act of Congress be valid which should prohibit the owner of a field from raising corn therein, or the owner of a store from selling groceries or dry goods therein, unless he shall first pay some favorite of the government such sum as he shall see proper to ask by way of "blackmail?" If not, can it prevent the owner of a workshop from manufacturing any commodity the invention of which had legally become public property when such workshop was established and put in operation? If so, is one species of property as sacred in the eye of the law as another?

The foregoing reasons, among others, satisfy us fully that Congress cannot, by the extension of a patent, directly take away or diminish the value of property which has become vested subsequent to the expiration of the patent.

ELECTRIC TELEGRAPH WIRES.—A patent has lately been taken out by Mr. Clark, of London, for a peculiar manner of forming telegraphic wires, so as to make the current flow in the centre and prevent its dissipation by flowing off at the surface. He employs silver, which is the best conductor for the central wire, and on this is an outside casing of copper. The two metals are united by heating before they are wire drawn, so that strength is thus given to the best conductor. In employing the best conductor at the center of the compound wire, it will tend to centralize the current and prevent its dissipation in long circuits. The silver wire, it will be understood is melted in the inside of a hollow ingot of copper. This will be an expensive conductor, but there can be no doubts of its superior qualities to the common iron or copper telegraph wires.

GUN-COTTON AND CANNON.—The Austrian artillery has been making experiments with rifled cannon loaded with gun-cotton. Although the twist is very considerable, the pieces can be loaded at the muzzle. At the last account they had succeeded in throwing a six-pound ball three miles with six ounces of gun-cotton. These guns are very light, and this, with the small quantity of ammunition required, renders them particularly applicable to mountain warfare, especially as it is possible to fire for a considerable time before the enemy learn whence the shots are coming, since the gun-cotton makes no smoke.

GALVANIC BATTERIES.—Prof. M. Jacobi, of St. Petersburgh, Russia, has recently pointed out the advantages of substituting lead for platina in the application of secondary currants to the electric telegraph. M. Gaston Planté, who has made a special study of these currents, discovered that the inverse electromotive power furnished by electrodes of lead in acidulated water, is about six and a half times greater than that given by electrodes of ordinary platina. This electromotive power, although produced by plates of the same metal, is also very superior to those of the elements of Grove or Bunsen, in consequence of the great affinity of the peroxyd of lead for hydrogen—which has already been so ingeniously applied by De la Rive—in the voltaic cups.

THE *Moniteur Scientifique*, of Paris, publishes a short note by M. Golowkinsky, showing that when chlorobenzol, mixed with oil of naphtha, is acted upon by oxalate of silver, essence of bitter almonds is produced. If the naphtha is not present the mutual action of these two compounds is too violent, and they are entirely decomposed.