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THE SCIENTIFIC AMERICAN SUPPLEMENT

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ROBBERY AS A BASIS OF PROPERTY RIGHT.

It is commonly believed that the natural tendency of legislation in all civilized countries is toward a reversal of the "good old plan, that he shall take who has the power, and he shall keep who can." And so it is; but unfortunately the tendency is not universal. Under the specious plea of correcting alleged wrongs, it is still possible for legislators, presumably civilized, to propose (if not to secure) the enactment of laws which do not help to make it easier for men to retain and enjoy what is rightfully theirs. Nevertheless, one cannot but feel a degree of surprise at the sight of legislators calmly considering acts which would put a premium upon robbery, by making it impossible for the owner of any species of property to reclaim it after it had been taken from him by force or fraud; and that is precisely what is aimed at in bill No. 1,558, now before the Senate.

This is a strong assertion, yet the facts will bear it out; for the bill frankly discriminates in favor of the receiver of (admittedly) stolen property against the claims of the real owner.

The bill in question was introduced Feb. 16, by the Hon. D. W. Voorhees, Senator from Indiana, as a substitute for the bill (S. 1,115) to amend Section 4,919 of the Revised Statutes relating to the recovery of damages for the infringement of patents, the text of which is nearly the same as House bill 3,925, printed in the SCIENTIFIC AMERICAN for February 2, 1884. The proposed substitute reads as follows:

"*Be it enacted, etc.*—That it shall be a valid defense to any action for an infringement of any patent, or any suit or proceeding to enjoin any person from the use of a patented article, that the defendant therein, or his assignor, purchased the patented article for use or consumption, and not for sale or exchange, in good faith and in the usual course of trade, without notice that the same was covered by a patent, or without notice that the seller had no right to sell such article: and in all such cases notice received after such purchase shall not have the effect to impair in any way the right of such purchaser as absolute owner."

In brief, though the seller of a patented article have no right to sell, the sale shall be valid and the real owner cannot reclaim his property.

All the talk of "good faith," "the usual course of trade," "for personal use," and all that, goes for nothing, except to cover the naked injustice of the closing provision. In not one case in a million could the patentee prove an absence of good faith or the existence of collusion between the fraudulent seller and the "innocent" buyer, whatever the relations of the two might be.

The courts have held the property rights of patentees to be as sacred and inviolable as any other species of property rights; and public interest demands that they shall be as scrupulously respected and quite as carefully guarded, for they contribute their full share to the public well-being. Exact figures cannot be given; but anyone who will inquire into the value of property vested in, or contingent upon, patent rights on New York Island alone—property whose value would be unsettled or destroyed outright by the proposed legislation—will soon arrive at a sum that would go far to purchase the entire farm property of whole States.

On the score of sound policy, not less than that of common justice to inventors and patentees, Congress ought not to play fast and loose with interests so gigantic and vitally important. The public injury might be more readily apparent, but it could scarcely be greater, if cattle, or horses, or houses, or lands were similarly deprived of legal protection, by enabling any thief or trespasser to give a valid title to any one he might induce to buy of him in "good faith."

If the spirit of the proposed bill were not so plainly in harmony with that of other bills, on this and other subjects, proposed or enacted by the present Congress, one would be almost forced to think that its purpose must be not to secure a change in the cited section of the Revised Statutes, but rather to expose the inherent viciousness of other patent bills that seek, though less frankly, the same end.

It would be too hazardous, however, to treat the measure other than seriously, in view of the manifest temper of certain members in both houses of Congress, and the apparent inacquaintance of others with respect to the importance of our manufacturing interests or their intimate dependence on the integrity of the patent laws.

LOOSE PULLEYS, OR IDLERS.

The common practice of running a loose pulley on the shaft, as a wagon wheel runs on its axle, is one full of annoyances and is anything but a permanency in use. A loose pulley, or an idler pulley, should have its separate shaft with its separate journals. The shaft upon which the fast pulley is fixed is of too small a diameter to act as the axle for a pulley which revolves rapidly, and the hub of the pulley is too short to withstand the leverage strain of the broad rim, particularly when this strain is intensified by that of a long, heavy belt. The better practice, wherever it is feasible, is to mount the idler pulley on a short independent shaft with its own independent journals. One of these journals may turn in a projecting portion of the hub of the fast pulley, so that the rims of the two pulleys may come together, or the idler shaft may be supported by two boxes outside the loose pulley.

With this arrangement there is no pulley turning on a shaft and "wabbling" from side to side by the unequal and changing pull of the belt, making a wear that will insure a rattling.

Another device is practiced by a first class mechanic, which is to substitute the turned hub of the fixed pulley for the shaft as an axle for the loose pulley. The result of this method is to give a large bearing for the loose pulley hub. To accomplish this result the fast pulley is cast with the rim entirely on one side of the arms and the hub extending beyond the other side of the arms sufficient to receive the hub of the loose pulley its entire length, while the rim and hub of the loose pulley project from the same side of the arms of the loose pulley. This arrangement gives a very large bearing for the loose pulley hub—the outside of the finished fast pulley hub—and also saves the width of one pulley in the projecting end of the shaft, as it need come no further through the box than to receive the hub of the tight pulley.

In all cases it is a good plan to have the loose pulley slightly smaller in diameter than the fast pulley, to relieve the tension of the belt; and when the fast pulley is slightly larger, it will receive the belt and start the work more readily.

HOW KNURLS ARE MADE.

Knurls may be purchased ready made and of varying sizes and patterns at the tool stores, but it not unfrequently happens that these stores are not at hand or that their stocks are too limited for choice. But knurls of the ordinary cross flutings, for use for knurling thumb nuts and screw heads, may be readily produced on the lathe with the help of the ordinary screw chasing hob. To do this turn up the blank knurl, of soft iron or annealed steel, drill it, and mount it as usual in its handle, so that it turns freely on its pivot; place the hob on the lathe centers, dogged to the face plate, as usual. Place a lathe tool or bar of steel in the tool post for a guide or rest, and present the knurl on its side so that its pivot is vertical. Bear against the hob as for forming a chaser, and the threads of the bob will rotate the knurl as the cutting proceeds. If the knurl lies square on its side, the flutings will be slashed at the same inclination as the pitch of the thread of the hob. Should a greater slash be desired, or no slash at all, the result may be produced by inclining the face of the knurl, and this inclination can be assured by filing its handle where it rests on the guide. If the knurl has a rounding face, the inclinations at which it is presented to the hob must be changed as the work proceeds, to correspond. If the knurl is to have a concave face, the concavity of the knurl's face and the diameter of the hob must correspond. Good soft iron, as Swede or Norway iron properly case hardened, will make as good knurls for brass or softer metals as steel. The grades of fluting of knurls produced in this way may be varied by using hobs of different pitches of threads.

TETANUS—LOCK JAW.

A recent correspondent inquires "How many days after an injury to toes or fingers is lock jaw likely to set in, and after how many days may the danger be considered past?" A disease involving such extreme peril as tetanus is very naturally viewed with proportional horror and apprehension, and instead of answering our correspondent in "Notes and Queries," we devote a little space to the subject here; and we shall confine ourselves, as he does, to that form of disease known in surgical practice as traumatic tetanus, as that is the only one popularly recognized.

It is well to correct at once an impression which is very common and which causes much needless alarm. It is the general belief that a severe, and especially a lacerated, wound is extremely apt to cause lock jaw: a hurt, for instance, from a "rusty nail." Now, this not at all true. It will, by most people, be deemed very strange, but it still is strictly true, that tetanus has very little to do with the severity of the injury; a single smooth cut (for example, a slight surgical operation) may cause it, as may also a blow even of no great violence. On the other hand, the most terrible mangling and tearing may go free. And so extremely small is the number of cases, in comparison with the multitudes of injuries daily received, that every effort ought to be made to quiet the popular apprehension. Cases of tetanus do occur, but they are very few in their sum total.

There can be no question that the physical condition of the person injured has much more to do with the development of the disease than has the severity of the injury. Except in special localities, it is almost impossible to induce tetanus in a person who is in good, vigorous health. Depressing causes of every sort tend to its origination, and hence the well known fact that injuries and surgical operations during the exhaustion of a severe military campaign develop tetanus at a very alarming rate. The disease is purely nervous in its origin and its nature, and because of this whatever lowers the nerve force, that is, the life force, favors its inception. But though nervous only at first, organic changes in blood vessels (and probably also in the blood) as well as other tissues speedily follow, and these then play their own destructive part.

Tetanus may follow an injury almost instantly, certainly within an hour, though this is not common, and it may be delayed several weeks. Instances are on record where it has waited a full month, but this is also not common. From the third day to the tenth is the range in general. After the tenth day few cases occur, and even if they do, the danger is not so great, for they are milder in proportion to the lateness of their origin, and many such recover. Of those beginning early the prognosis is frightfully unfavorable.