

A New and Important Amendment to the Patent Laws.

[H. R. 4949. In the House of Representatives, March 6, 1882. Read twice, referred to the Committee on Patents, and ordered to be printed.]

Mr. Morgan R. Wise introduced the following bill: "A Bill to amend the patent laws."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled: That to prevent the perpetration of fraud upon innocent purchasers of patent rights granted by the United States, it shall be the duty of all persons, before making the purchase of any such rights, or alleged rights, to require the patentee, or any person offering the right for sale, to procure and exhibit for the examination of the intended purchaser, or any person whom he may select, the original patent, or a copy of the specification and claim or claims, together with the drawings where they form a part of the specification and patent, each issued by the United States Patent Office, wherein is fully described in the specification, and in the claim or claims of which is particularly pointed out, just what was allowed, granted, and included in such patent, and no more; and if any person shall exhibit or use as a means for effecting any such sale any such specification, claim or claims, or drawing purporting or represented to have been issued by the United States Patent Office, and which was not issued from and by authority of said office, or shall so exhibit or use any patent or copy of a specification, claim, or drawing issued by said office, but which has afterwards been changed or altered in language or drawing with evident intent to thereby deceive, shall, upon conviction thereof, be deemed guilty of false pretense or forgery, according to the nature of the offense, and shall be liable to a fine of not exceeding one thousand dollars, or to imprisonment not exceeding three years, or both, at the discretion of the court.

SEC. 2. That whoever sells or conveys any interest in any patent right, or grants any license thereunder, knowing that said interest or privilege so purporting to be granted or conveyed has been previously conveyed, in whole or in part, to others, without informing the grantee or grantees of the existence and true nature of such incumbrance or prior right, so far as he has actual knowledge thereof, before receiving any payment therefor, by note or otherwise, shall, upon conviction thereof, be punished by imprisonment not exceeding three years, or by fine not exceeding one thousand dollars, or both, at the discretion of the court.

SEC. 3. That section forty-eight hundred and eighty-five of the Revised Statutes of the United States be amended so as to read as follows:

"Every patent shall bear date as of a day not later than seven months after the time at which it was allowed and notice thereof was sent to the applicant or his agent; and if the final fee is not paid within six months after the date of such notice of allowance, the patent shall be forfeited and withheld."

SEC. 4. That section forty-eight hundred and ninety-five of the Revised Statutes of the United States be amended so as to read as follows:

"Patents may be granted and issued to the assignee of the inventor or discoverer, and they may be reissued to the owner or owners of the entire interest in the patent; but the assignment must first be entered of record in the Patent Office. And in all cases of an application by an assignee for the issue of an original patent, the specification shall be signed and sworn to by the inventor or discoverer, if living; and in all cases of an application by an assignee for a reissue of any patent, the application may be made and the corrected specification sworn to and signed by the inventor or by the owner or owners or legal representatives of the entire interest."

SEC. 5. That the last sentence in section forty-eight hundred and eighty-seven of the Revised Statutes of the United States, being in the following words: "But every patent granted for an invention which has been previously patented in a foreign country shall be so limited as to expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term, and in no case shall it be in force more than seventeen years, shall be, and is hereby, repealed.

SEC. 6. That no machine or other article made prior to the surrender of a patent, and the issue thereupon of a new patent, which, or the use of which, did not infringe such surrendered patent, shall be held to be an infringement of any of the claims of the reissued patent, which claims were not in the original patent at the time when such machine or other article was made. All rights of action accruing to the patentee, his executors, administrators, or assigns, for profits and damages on account of any infringement of a patent prior to its surrender for a reissue, shall remain unaffected by such surrender, and no suit shall be barred or abated by such surrender; and all suits at law or in equity may be maintained for the recovery of such damages or profits in the same manner as if said surrendered patent had not been surrendered: *Provided*, That nothing contained in this section shall apply to letters patent reissued prior to the passage of this act.

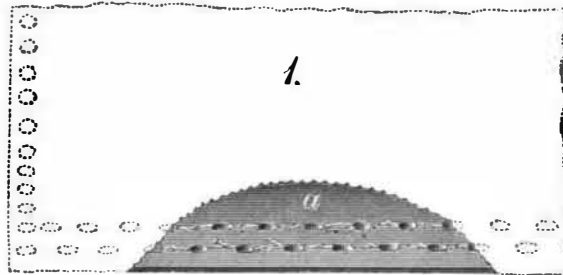
SEC. 7. That for the diffusion of mechanical knowledge and the encouragement of invention, the Commissioner of Patents is hereby authorized to furnish the weekly Official Gazette of the Patent Office, in the form and including the subjects now published therein, to subscribers within the United States at two dollars per annum, and to subscribers in foreign countries at a price not less than the estimated cost price thereof; and the price of uncertified printed copies of specifications of patents, including the printed drawings

thereof, shall be ten cents each for any number less than twenty copies, or five cents each for twenty or more copies of the same or of different patents ordered at the same time; and for uncertified manuscript copies of contents of patent files, or of any other records, the reasonable cost of making the same; and the price for certified copies shall be the same as for uncertified copies, with the addition of twenty-five cents for the certificate and seal; and all such copies of patents, or any other records in the possession of the Patent Office, when certified by the Commissioner, Assistant Commissioner, or Acting Commissioner of Patents as being correct and authentic copies of the originals in said office, shall be evidence in all cases wherein the originals could be evidence; and any person making application and paying the fees aforesaid therefor shall have certified copies thereof.

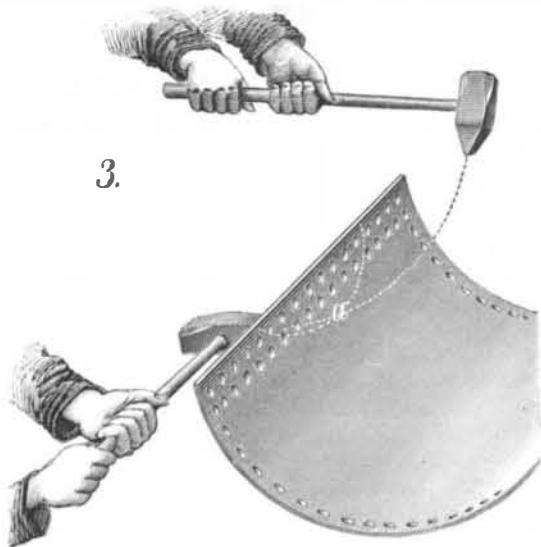
SEC. 8. That all acts and parts of acts in conflict with the provisions of this act are hereby repealed; and the five sections from section forty-nine hundred and twenty-four to section forty-nine hundred and twenty-eight, both inclusive, of the Revised Statutes of the United States are hereby repealed.

STEAM BOILER NOTES.

A letter from a practical boiler maker, in another column, commendatory of the verdict of the SCIENTIFIC AMERICAN on the Dayton, O., boiler explosion, contains much sensible

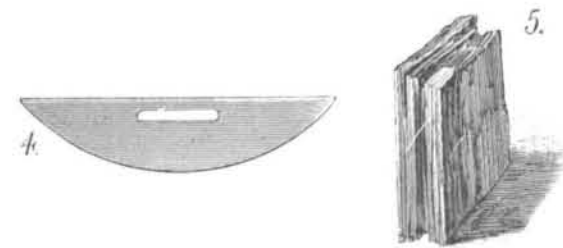


practical matter. The letter was accompanied by a sample of boiler iron cut from a three-eighths inch plate that had been worked in the boiler shop, but as it was brittle enough to crack and give a sign which was detected by the workman while undergoing the operation of fitting it for its place in a steam boiler, it was very properly condemned. The dotted lines in sketches 1 and 3 indicate its location in the plate.



The plate having been through the punching and roll bending processes, it was found, as is often the case, that the end was flat for a distance equal to half that between the summits of the lower bending rolls, see *b*, Fig. 2, page 184 of Mr. Parker's letter.

The plate was undergoing the hand process of forming the curvature at the end probably by means of sledges in the hands of the workmen, as shown in sketch 3. This



work is often done with the plate standing up on its edge, and many boiler makers use the face of the sledge instead of the "pane;" but the marks on the interior of this sample indicate that a "set" having an acute rounded angle, or else the above described method, was employed upon this sample. While this process is going on it is usually under the direction of a foreman or competent journeyman, who from time to time applies the template, sketch 4, which is a truly cut segment of the desired circle. He also indicates by touching the plate with the end of his template or a stick where he wishes the next blow to fall.

It will doubtless occur to some practical readers that this method not only produces imperfect results, but that it is severe on the iron, particularly when heavy blows are struck with the "pane" of a sledge hammer. This is true, because the plate having been punched is less able than a whole

plate to bear the strains of bending in this violent manner. Some iron, having a ductile "skin," might, if more gently dealt with, be able to endure hammer bending and give no sign upon its surface, though seriously injured in its interior.

It is plain, however, that iron that will not endure gently bending to a slight curve without injury after being punched, is totally unfit for boiler construction, though it might stand a tensile strain of fifty thousand pounds per square inch in a testing machine, which always gives a steady and slowly increasing pull in a direction parallel to its plane surfaces.

The piece of iron represented by sketch 5 was sawn from the ruptured edge of the plate that first gave way and caused the explosion of the Dayton boiler. The crack that is spoken of as being older than the date of the explosion was at the "calking edge" of a double riveted longitudinal seam, and this crack formed one of the boundaries of this sample. It was situated just over the line from the end of the plate. It has been digested in the bath for some time.

It will be observed that the better portion of the plate at the two surfaces has been less wasted than the poorer, probably not so snugly piled, and therefore more porous interior, about a third of the thickness. Perhaps the inferior middle portion has also been rendered more open by the hinge bending that it suffered while in the boiler, and by blows of the hammer in setting the curve by hand.

The Sugar Test Decision.

The long controversy with regard to the right of the Treasury Department to apply other than color tests in determining the grade of imported sugars, has at last been decided by the United States Supreme Court, and decided in favor of the position taken by the importers.

The opinion of the court describes the question at issue to be whether the dutiable quality of sugars is to be decided by their actual color graded by the Dutch standard, or by their saccharine strength as ascertained by chemical tests. "The defendant in error maintains the former, the plaintiff in error the latter. The test prescribed by the statute is the Dutch standard of color. If Congress desired the application of the chemical test, why did not Congress say so? Color was the standard which Congress, with the light which it had, saw fit to adopt. If it be found by experience that that standard is a fallacious one can the Executive Department supply the defects of legislation? Congress alone has authority to levy duties. Its will alone is to be sought. It appears very clear from the evidence that the Dutch standard is a color standard only. As applied to the sugars of the Island of Java brought to the mother country it was undoubtedly a very fair standard of the quality of sugar. With new processes of manufacture, however, and with the present perfection of the refining process, color has become a matter of little consequence, provided the sugars contain abundance of saccharine matter. The color standard has come to be a very precarious one. Still, if the government chooses to adhere to it, it is bound by it. If Congress, as it has done, adopt the color standard, it is not for the customs department to adopt a different one. When Congress chooses to do this it will be time enough for the Custom House to follow."

Justices Matthews and Harlan dissent from the opinion of the majority of the Court, on the ground that a color imparted to sugar artificially either during the process of manufacture or after its completion—a color which it would not contract by means of any of the processes necessary merely to the production of sugar—is not its natural color and not the real and true color of the Dutch standard.

Red Snow.

At a recent meeting of the San Francisco Microscopical Society, Dr. Harkness presented a bottle of "red snow," which he gathered last June on the Wasatch Mountains. The red snow was found on the north side of a spur which rose about 10,000 feet above the sea level. When fresh, the snow has the appearance of being drenched with blood, as though some large animal had been killed. The "red snow" is caused by the presence of a one-celled plant called *Protooccus nivialis*, which reproduces itself by subdivision; that is, the cell divides itself into several new cells. This is done with great rapidity, and a few cells lodged in the snow, under favorable conditions, soon will give it the appearance called "red snow." It was remarked that the phenomenon of red snow had been observed from the earliest times, as Aristotle has a passage which is thought to refer to it. The subject was, however, lost sight of until brought up by the investigations of Sanssure, who found it on the Alps in 1760. He made chemical tests which showed him that the red color was due to the presence of vegetable matter, which he supposed might be the pollen of some plant. In 1819, an Arctic expedition under Captain Ross brought some specimens from the cliffs around Baffin's Bay, and they were examined by eminent botanists, some of whom mistook the nature of the plant, and there was long discussion as to its proper classification, some holding it to be a fungus, some a lichen; but it was finally set at rest as one of the unicellular algæ. It is of interest also that some of the early examiners pronounced the color due to animalcules, but this was disproved. Dr. Harkness said that during his last visit to England he saw the original bottle of specimens brought from the Arctic more than sixty years before, and in which the *protooccus* could still be seen with the microscope.

New Method of Oil Printing.

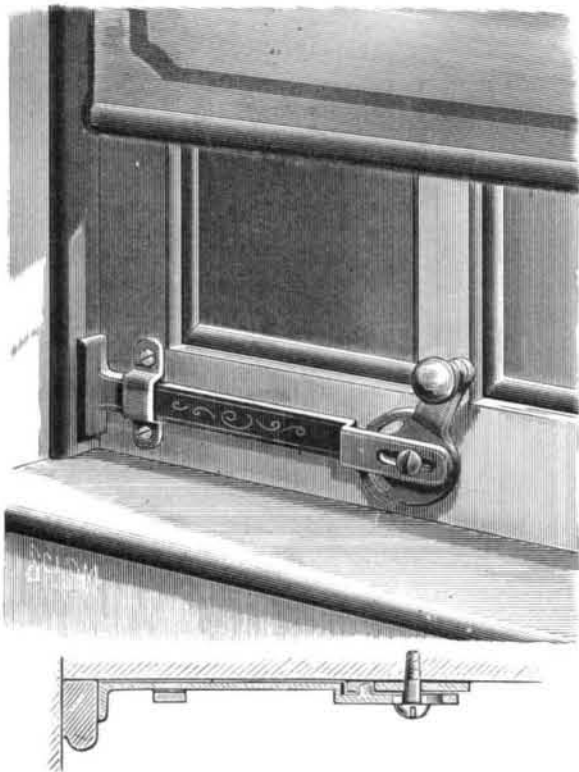
Bogaerts, of Herzogenbusch, has invented a new method of printing in oil colors, which is said to furnish a very close imitation of oil painting, far surpassing what was possible by means of chromo-lithography. It may be applied to painter's canvas, wood, or metal. The following description of his method is given in *New Discoveries and Inventions*:

The first thing to be done is to make a facsimile of the painting that is to be copied, in which the outline of each simple color is accurately reproduced. This copy is then transferred to a plate of zinc, which is cut up into as many pieces as the picture contains different colors, in such a way that each piece represents all the parts which in the original are of one color. Separate electrotypes are made from each piece, and from these the proper colors are printed in corresponding order upon prepared paper. (So far the process is similar to printing chromos.) At the end of this operation, when all the colors have been printed on the paper, the picture resembles an ordinary chromo-lithograph, and like that it is perfectly flat and smooth; the brush marks and roughness of surface noticed in oil paintings are wanting. In order to imitate this part, too, the original painting is covered with a solution of gelatine, in which are impressed with great accuracy the elevations and depressions of the painting. From this plastic copy of the surface another impression is taken in gutta percha, India-rubber, or other elastic substance, which will stretch so that it can be made larger or smaller, according as the copy is enlarged or reduced. This elastic impression is used for preparing a copper stereotype, with which a negative or depressed copy can be made in a suitable plate. This last plate, of course, will have depressions wherever the painting had elevations or raised spots, and these depressions are filled up with pigment of the same color as the raised portions of the original. The plate thus prepared is put in a press and the printed chromo laid on it, and then pressure and heat are applied to cause pigments in the depressions to unite with those already on the paper. The picture is now finished all but varnishing. To carry out the resemblance to oil painting it is afterward transferred from the prepared paper to canvas, wood, or metal. P. N.

IMPROVED SASH FASTENER.

The annexed engraving represents a novel sash fastener, recently patented by Mr. J. V. Risk, of Point Pleasant, W. Va. The invention consists of a bolt provided with a friction plate at the outer end and guided by a strap, and slotted to receive a screw which guides its inner end, and at the same time forms the pivot for the cam whose slot receives a pin projecting from the back of the bolt. The device is secured to the lower rail of the sash in such a position as to admit of pressing the friction plate at the end of the bolt firmly against the stop or side of the window frame.

By turning the slotted cam in one direction, the bolt is thrown outward against the frame with sufficient pressure to hold the sash in any desired position. By turning it in the opposite direction the bolt is withdrawn and the sash is free to move up or down.

**RISK'S SASH FASTENER.**

The friction plate at the end of the bolt not only holds the sash so that it will not move up or down, but it also prevents the window from rattling.

The smaller view in the engraving is a horizontal section showing the relation of the various parts.

The Northwest Lumber Trade.

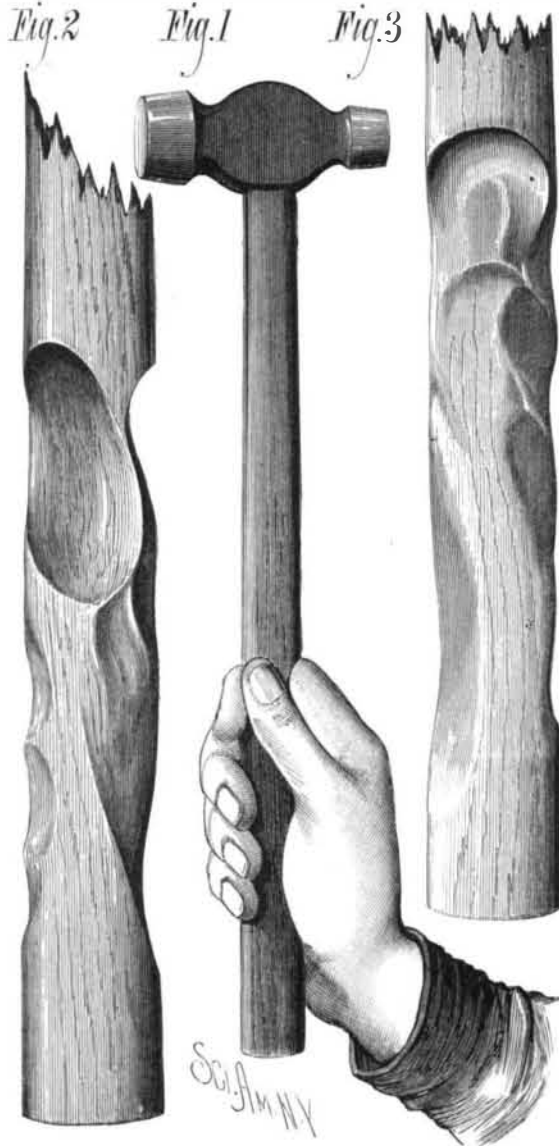
The Secretary of the Chicago Lumbermen's Exchange reported to the annual meeting, March 6, that the past year was one of the most successful ever experienced in the Northwest. The receipts of lumber were nearly 2,000,000,000 feet; shingles, 866,000,000; and lath, 104,000,000; while the

coarse forest grades by lake aggregate 2,846,000 posts, 4,200,000 ties, and a large quantity of miscellaneous stuff.

A CURIOUSLY WORN HAMMER HANDLE.

The worn hammer handle shown in the engraving is noticeable as an example of rapid as well as curious abrasion of a hard substance by the human hand.

The hammer was used by Michael Collins, of this city, in welding the ends of iron tubes in steam radiators. The cutting of the handle, which is of hickory, was probably

**A CURIOUSLY WORN HAMMER HANDLE.**

done by the fine scale struck off from the iron and caught by the tough skin of the striker's hand. The hammer is held loosely in striking, and every blow is attended by a slight motion of the handle under a varying gripe. The constant attrition causes the muscles of the palm and fingers to bed themselves, so to speak, in the tough wood, with an impression as perfectly reproducing the inner surface of the hand as would be obtained by squeezing a roll of putty. The oval handle is one inch in its shortest diameter, and where it is worn deepest by the thumb and forefinger only three sixteenths of an inch of wood remains. We are informed that a handle is worn in this way in the short space of three months.

AGRICULTURAL INVENTIONS.

Mr. Norman Mereness, of Seward, N. Y., has patented an improved seed planter and drill. This machine embodies novel combinations which insure accuracy in planting and drilling seeds, and the proper distribution of fertilizers.

Mr. William Mustart, of Jacksonville, Fla., has patented a fruit-picker and tree-trimmer, adapted to the picking of oranges, apples, peaches, or other fruits without damage to the trees, and it may be readily adjusted to act as a tree pruner or trimmer.

Mr. James M. Diffendafer, of Green Center, Ind., has patented an improved hay-rack, having a longitudinal base frame carrying two detachable inclined side frames composed of a series of posts provided at the lower ends with tenons fitting in mortises in the cross bars of the base-frame, the posts being united by longitudinal rails fitting in recesses in the inner sides of the posts, and held therein by a strip pivoted to the inner side of the posts.

Mr. Josiah L. Hughes, of Cleveland, Tenn., has patented a cotton chopper constructed with a carriage, gear-wheels connected with the rotary axle of the carriage, two shafts connected by a universal joint, radial arms being attached to the rear shaft and carrying the chopping knives. The machine has plows provided with colters for barring off the rows.

A novel aid binder attachment for harvesters has been patented by Mr. Mason Hedrick, of Oakland City, Ind. The object of this invention is to furnish an attachment for harvesters by the aid of which one man can bind grain as fast as a harvester can cut it. The improvement consists in adapting the driving mechanism of a harvester to compress the gavel.

An improvement in treadles has been patented by Mr.

Thomas A. Parkinson, of York, Neb. This is a compound treadle used by simulation of walking, and adapted for driving corn shellers, printing presses, grindstones, and other machines. By means of this device a constant pressure is applied to the crank shaft, and, the whole weight and strength of the operator being utilized, the power is much greater than that obtained by the ordinary treadle.

Work Yielded by Various Substances.

In a recent lecture at the Crystal Palace, London, Prof. Sylvanus Thompson explained the theoretic work obtained by the consumption of one ounce of various substances as follows:

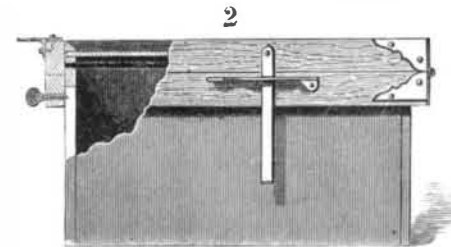
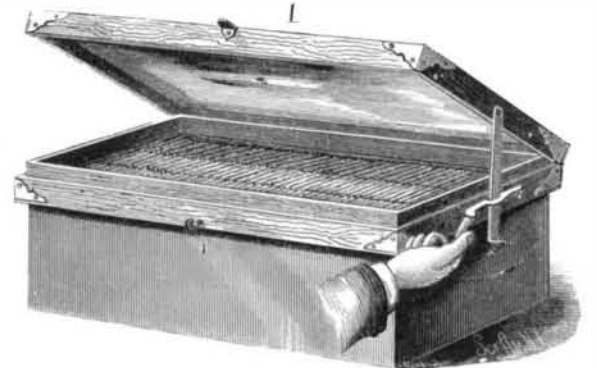
1 oz. of hydrogen gives	2,925,000	foot pounds.
1 " " coal	695,000	" "
1 " " zinc	112,000	" "
1 " " gunpowder	100,000	" "
1 " " copper	69,000	" "

Optical Blindness to Red Light.

A curious effect of bright white light upon the vision is recorded in a recent number of the *Journal de Physique* by MM. J. Macé de Lépinay and W. Nicati. After passing some hours in a snow field brilliantly lighted up by sunshine, it was observed that at least eight hours afterwards all gaslights, candles, and artificial lamps appeared to be strongly colored green. In other words, the red rays of such lights were not perceived. The reason of this was supposed to be the fatigue of the retina for red, which partial effect lasts longer than a similar weariness of other colors. The truth of this supposition may be proved in a very simple manner by obtaining three colored glasses—red, green, and blue—of such relative depth of color that they could be seen through with about equal visual effect with a given power of light. An observer furnished with these glasses is then to place himself at a convenient distance before one of the sight-testing placards commonly used by oculists, and consisting of a white ground printed with black characters of various sizes. If the room is now almost darkened, the blue glass will still permit the observer to distinguish the medium sized characters on the placard, while through the red screen not even the white sheet itself is perceptible. After a time, however—the same degree of semi-darkness being continued—the visual acuteness through the red glass is increased so that the larger characters on the placard may be discerned. The visual perception through the blue glass remains as at first. It is therefore clear that color blindness, of a temporary nature, to the red rays, is more persistent than in respect of the blue rays. Hence may be assigned to physiological reasons the well known fact that a prolonged or even temporary exposure of the eye to the electric light renders it for some considerable time afterward incapable of fully estimating the illuminating power of a gas flame, which is so much richer in red rays.

NEW SHOW-BOX COVER.

It is said that "goods neatly kept are half sold," and experience proves the adage true. The incursions of insects and idlers, the entrance of dust and moisture, seriously interfere with the profits of the retail dealer of many kinds of goods. Many contrivances have been tried to remedy these annoyances, but for one reason or another they have generally proved failures.

**LANGLES' SHOW-BOX COVER.**

We give herewith an engraving of a simple and efficient device for covering boxes of goods so as to protect them thoroughly while exposing their contents to view. This device consists of a case capable of fitting the goods box, and having a glass cover hinged to it and provided with a support that will hold it at any desired angle.

When the cover is raised it will stay where it is left until the holder is pressed upward by the finger as shown in the engraving.

This invention has been patented by Mr. Justin J. Langles, corner Common and Tchoupitoulas street, New Orleans, La.