

Useful Recipes for the Shop, the Household, and the Farm.

A permanent and handsome reddish color may be given to cherry or pear tree wood by a coat of a strong solution of permanganate of potash, left on a longer or shorter time, according to the shade required.

Chloroform, which has undergone decomposition by exposure, can be easily purified by shaking it up with a few fragments of caustic soda.

Fruit is kept in Russia by being packed in creosotized lime. The lime is slaked in water in which a little creosote has been dissolved, and is allowed to fall to powder. The latter is spread over the bottom of a deal box, to about one inch in thickness. A sheet of paper is laid above, and then the fruit. Over the fruit is another sheet of paper, then more lime, and so on until the box is full, when a little finely powdered charcoal is packed in the corners, and the lid tightly closed. Fruit thus enclosed will, it is said, remain good for a year.

Pounded alum will purify water. One teaspoonful of alum to four gallons of water will cause a precipitation of the impurities.

To estimate the quantity of shelled corn on the cobs in any given space, level them, and measure the length, breadth, and depth; then multiply these dimensions together, and the product by four. Cut off the last figure, and the result will be the number of bushels of shelled corn and the decimal of a bushel.

Bee moths can easily be killed in large numbers by setting a pan of grease, in which is a floating ignited wick, near the hives after dark. The moths will fly into the light and fall into the grease.

The best way to catch hawks or owls is to set up a high pole with a steel trap on the top. The birds often alight directly in the trap.

Pictures may be transferred to painted surfaces in the following manner: Cover the ground with an even coat of light colored carriage varnish, which should be allowed to set (nearly as dry as if for gilding). If the print to be transferred be colored, soak it in salt and water; if not colored, use water alone. Remove superfluous water by pressing between blotting pads, and then place the picture face down upon the varnish, pressing it smooth. When the varnish is dry, dampen the paper and rub it off with the finger. The picture will be found upon the varnish, and another coat of the latter should be added to bring out the effect. This process answers equally well for glass or metal surfaces.

For the protection of iron and steel tools against rust, Vogel recommends a solution of white wax in benzine. The latter, heated, will dissolve half its weight of wax. This will preserve the metal, even from the action of acid vapors. Apply with a brush.

Round steel wire rope will bear more than double the weight required to break iron rope of similar diameter.

The following rule for strength of iron pipes is based upon the fact that a 10 inch pipe, one inch thick, will stand the pressure of 100 yards head of water. The coincidence of one inch of metal to every 10 inches diameter and 100 yards pressure should be remembered. For every inch in the diameter of pipe, increase or deduct 1/10 of an inch; and for every yard of pressure, increase or deduct 1/10 of an inch.

In calculating the strength of iron columns, the safe plan is to find the diameter of a solid column necessary to bear the compression, and then distribute the same area of metal in tube form or a hollow column.

A mixture of peroxide of manganese and water glass is recommended to be applied to cooking stoves when they are red hot, as it is said to make a good blacking, not as liable to burn off as common black lead.

According to recent experiments of MM. Kundt and Lehmann, the velocity of sound in pipes filled with water increases with the thickness of the sides of the tubes.

To make yellow wax into white wax, the former is boiled in water, spread out into thin layers, and exposed to the light and air. This is repeated until all the color is gone.

Cuttings of many kinds of plants, not usually increased with facility by amateurs, may be rooted easily in a Wardian case in the sitting room.

An Alloy of Copper Adherent to Glass.

An alloy of copper which will adhere to glass or porcelain is made by mixing from 20 to 30 parts of copper in powder, (obtained by the reduction of the oxide by hydrogen or by the precipitation of the sulphate by zinc) with sulphuric acid and then with 7 parts of mercury. The mixture is triturated and mingled with care. The acid is removed by washing in hot water, and the mass allowed to dry. At the end of 10 or 12 hours, the latter becomes quite hard and susceptible to a fine polish. On heating it softens, but on cooling does not contract. This alloy may also be used for joining delicate objects which will not withstand very high temperatures.

Chloral as an Anæsthetic.

Hydrate of chloral, administered hypodermically, has recently been used as an anæsthetic with success in the hospital at Bordeaux, France. The operation was a resection of the internal and external nasal nerve, involving some fifteen minutes' work and, necessarily, excessive pain to the patient. The drug took effect in eight minutes, and complete insensibility on the part of the sufferer resulted.

BRICKS made in Japan, and paying 20 per cent duty, are now imported into San Francisco. The quality is superior. Japanese brick makers can beat the world in the cheapness and excellence of their productions.

[American Chemist.]

Prices of Metals.

The prices of many of the dearest may be considered also as "fancy prices," and actually a whole pound of some of the metals named could hardly be obtained at even the extravagant figures annexed. In compiling the following table, we have taken the prices of the rarer metals from Trommsdorff's and Schuchard's last price lists; we have assumed the avoirdupois pound as equal to 453 grammes, and the mark as equal to 24 cents gold.

An inspection of the table is not without interest; it is evident that the prices of the metals bear no relation to the rarity of the bodies whence they may be derived, for calcium, the third in the list, is one of the most abundant elements. Even that excessively sparingly distributed metal, indium, the most recently discovered element, stands tenth in the list, below strontium. The metals of the alkalis seem to occupy a remarkably low place in the table.

Table with 4 columns: Metal, Value in gold per lb. avoirdupois, Metal, Value in gold per lb. avoirdupois. Lists various metals like Vanadium, Rubidium, Calcium, etc.

DECISIONS OF THE COURTS.

United States Circuit Court--District of Massachusetts.

PATENT ELEVATOR.—OTIS TUFTS et al. vs. THE BOSTON MACHINE COMPANY.

[In equity.—Before Shepley, Clr. J.—January, 1875.]

Shepley, J.: This is a bill in equity brought for alleged infringement of letters patent issued to Otis Tufts, dated August 9, 1859, and extended seven years, for improvements in hoisting apparatus, and adapting that apparatus for use as an elevator for carrying persons and goods from the different stories in hotels and other buildings; and also of letters patent dated May 28, 1861, for improvement in the mode of suspending and operating the elevator; also, for infringement of letters patent dated December 11, 1866, for improvements in the mode of adjusting the length and tension of the ropes of an elevator; and of letters patent dated December 11, 1866, for an improvement in elevator guides. All of these patents were duly assigned to complainant.

The twelfth claim in the patent of August 9, 1859, No. 25,061, is the one on which the infringement is claimed, and is as follows: "I claim passing the shipping rods and the cord or rod that operates the friction brake through the car or platform, for the object and purposes set forth."

The shipping rods are described in the specification as passing up through the car the whole height of the building and operating a shipper, by which the driving belt is shipped from a fast to a loose pulley when the power is to be thrown off. The cord is also described as passing down through the car or platform, so as to be accessible within the car, which operates to apply a counterpoise spring, so as to put on a friction-strap brake, its office being to check or perfectly stop the descending motion of the car at the will of any person within the car or on the gallery.

The great advantage (claimed) of running the shipping rods and the cord or rod up through the car itself is that they are thus rendered accessible to the conductor, or any person within the car, without incurring the danger of protruding the hand or arms beyond the same while in motion.

George V. Hecker has, in his flour mill in Cherry street, New York, an elevator which was put in twenty years ago, and which has been in successful operation since that time. A chain passes through the roof and floor of the cage or car, which operated upon a friction clutch and a brake. The conductor or operator within the car could, by means of this chain, operate the shipping apparatus and the brake without incurring the danger of protruding the hand or arms beyond the car while in motion.

This chain is connected with a brake in such a manner that the brake could be thrown off by pulling upon the chain, or put on by relaxing the pull upon the chain, a device which was desired to prevent the car from starting up when the conductor or operator was at the top of the car. The friction clutch is a known substitute for a shaft with a fast and loose pulley, a belt, and a belt shifter.

It is manifest, therefore, that, in view of the state of the art, the twelfth claim in the patent can only be sustained by giving to it a much narrower construction than the one claimed for it, and one strictly in accordance with the language of the claim, namely:

"I claim passing the shipping rods and the cord or rod that operates the friction brake through the car or platform, for the object and purposes set forth. The defendants do not infringe the twelfth claim thus construed, or any other claim of the patent of August 9, 1859.

Infringement is also alleged on the first and second claims of the patent of May 28, 1861, which are as follows: "1. Constructing an elevator or hoisting apparatus with a series of two or more hoisting ropes or chains having independent attachments, and winding simultaneously upon the hoisting drum for greater safety, substantially as described.

2. Equalizing the strain upon the series of ropes or chains of my improved elevator or hoisting machine by automatic adjustment, substantially as described.

To construct "an elevator or hoisting apparatus with a series of two or more hoisting ropes or chains having independent attachments, and winding simultaneously upon the hoisting drum," was not new at the date of this patent. Letters patent of Great Britain to Frederick Levick and Joseph Fieldhouse, sealed January 13, 1854, describe a hoisting car or carriage with two hoisting ropes wound around the same spirally grooved drum. The ends of the ropes are attached to a common chain, which passes under a pulley attached to the top of the car. Another chain is attached to the first-described chain in such a manner that the chain surrounds the pulley. If one breaks, the other, with the chain, forms a loop around the pulley, and sustains the car. The second chain converts the attachment into an independent attachment of each rope, and, when one rope breaks, the other rope will continue to sustain the weight of the car. Mr. Renwick, the expert, correctly states that—

The ropes act precisely as if they were attached to the two ends of a horizontal lever whose center, upon which it could turn, was secured to the top of the car.

In the patent of 1861 the patentee, Tufts, says: "I do not confine myself to the precise method here described of effecting the automatic adjustment of the strain upon the hoisting ropes, as sometimes accomplished by the use of a rocking lever, when two ropes are used. It is plain that, in the Levick and Fieldhouse elevator, the two ropes, when intact, have equal strain upon them, and that, if one of the ropes should break, the weight of the car would be supported by the other rope. If the chain should break under the pulley the car would fall, as it would in the form last described, or the Tufts elevator, if the attachment to the car at the center of the rope should fail."

It is contended that the purpose of the two ropes in the Levick and Fieldhouse machine was to keep the cage in the center of the shaft, and that, therefore, the Levick and Fieldhouse patent does not anticipate the first claim in the patent of 1861. The answer to this is, first, that, whether they were placed there for the purpose of greater safety or not, they effected that result; and, secondly, that the patentees evidently contemplated that one of the beneficial results to be obtained by the use of two ropes instead of one, as there is no conceivable use for the cross chain before described, except in case of the breakage of one rope, to form a loop around the pulley, thus attaching the surviving rope to the car.

In the elevator which was placed in the mill of the Parsons Paper Company, at Holyoke, Massachusetts, in 1856, there were two hoisting ropes, having independent attachments to opposite arms of a rocking lever; they jointly and equally took the strain of the weight of the car, and each rope was sufficient to sustain the load put upon the machine. This elevator has been in constant use, and when one rope has broken the elevator has been worked several days with the remaining rope. The ropes in the Holyoke elevator did not, it is true, wind around a drum, but were passed around a series of pulleys, and the free ends of the ropes were attached to counterpoise weights, but these two means of winding up a rope to which a weight is attached are well known substitutes for each other.

Without adverting to the other patents which have been introduced in evidence, and relied upon in defence in this branch of the case, enough has been stated to show that the first claim of the patent of 1861 is void for want of novelty.

The second claim in this patent, namely, "equalizing the strain upon the series of ropes or chains of my improved elevator or hoisting machine by automatic adjustment, substantially as described," can only be construed as a claim for the described means of performing this function, and for well known substitutes for or equivalents of those described means. The means the patentee describes are three. One of those modes is by means of a rocking lever, or system of rocking levers, to the ends of which the suspensory ropes are attached. The Holyoke elevator and the Levick and Fieldhouse elevator both anticipate this claim. One had a rocking lever, and the other had a device which operated in the same way and produced the same result.

If the claim is valid, defendants are not proved to have infringed it, for there is no evidence in the record tending to show that the contrivance used by the defendants—a series of pistons fitting into a set of cylinders with connecting pipes, the cylinders being filled with an incompressible fluid—were, at the date of the patent, known substitutes for either of the means of adjustment described in the patent.

The patent of December 11, 1866, No. 60,441, so far as the second claim concerned, which is the one alleged to be infringed, relates to "mean for manipulating relative adjustment within reasonable limits of the series of ropes or chains, which are independently attached to the winding drum and to the car of the elevator, so that an equal degree, or very nearly equal degree, of tension can be had upon each rope or chain of the series, by proper attention or manipulation on the part of the party having such elevator in charge."

The patentee states in his specification that considerations of saving in the first cost of construction render it desirable in many instances to substitute for an automatic adjustment of the ropes or chains a means for adjusting them from time to time, as occasion may require; in other words, that the means of manipulatory adjustment in the patent No. 60,441 were intended as a substitute or alternative means for the automatic adjustment described in the patent of May 28, 1861, No. 32,441. The defendants have put into their elevators means of mechanical manipulatory adjustment, but they do not perform the function described by Tufts as a substitute for the automatic adjustment, because the tension on the ropes or chains cannot be varied by any manipulation of the nuts. Owing to the presence of the equalizer, the means of automatic adjustment in the defendant's elevator, the nuts or the stirrups may be screwed up or down to their fullest extent on any rope, without any variation of the tension on that or any other rope. As defendants do not infringe, it is not necessary to consider the question of novelty of this claim.

The patent of December 11, 1866, relates to means by which an elevator is so guided as to prevent the sway thereof, and the noise consequent upon contact with the ways by which the elevator is guided. The claim is as follows: "I claim combining the suspended car of an elevator with the ways or rails which confine it, by means of guides kept by springs constantly in contact with said ways or rails, which guides are so arranged as to be capable of motion toward and from the rails."

In the provisional specification, filed April 6, 1858, in the office of the Commissioner of Patents for Great Britain, accompanying the petition of Louis T. Van Eiven for a patent, which did not proceed to the great seal, but which specification was printed by Eyre & Spottiswoode, is a clear and accurate description, which contains the features of this claim. Respondent's exhibit No. 13 is a model of the device described in the Van Eiven specification. It fully anticipates every feature of this claim. Complainant's bill dismissed.

James B. Robb, for complainants. Causten Browne, for defendants.

Recent American and Foreign Patents.

Improved Lint Room Floor.

John N. Stitt, Sardis, Miss.—This lint floor consists of small rods arranged with spaces between, and on joists sufficiently wide to spring a little by the weight of persons walking on the floor—the object being to allow the dust which settles down to the floor to escape, and thus avoid soiling some of the cotton which comes in contact with the floor.

Improved Cultivator.

Edward Nauman, Uniontown, Ohio.—The cultivator is supported at its front end by a small wheel, whose position or angle to the frame may be changed at will by means of a rod which extends back and rests on a notched bar connecting the handles, whereby the wheel may be held locked in any desired position. This construction enables the plows to be held up to the row of plants, when plowing upon inclined ground, by the action of the wheel.

Improved Gas Generator.

James C. Mitchell, Lancaster, N. H.—This invention relates to certain improvements in the manufacture of illuminating gas, designed to utilize any kind of fuel for the production of the gas, and applicable to limited manufacture, as for private families, etc. It consists in a retort placed within a furnace, or a common stove, if desired, and having an airtight door of peculiar construction, and a communication direct with the furnace, by means of which construction the gaseous contents of the retort may be drawn into the furnace and burned when the airtight door is to be opened for drawing and recharging the retort. It also consists in the peculiar construction and arrangement of the tops of the purifiers and an airtight door to the retort, and the combination with the feed pipe to the gas holder of a ball valve to prevent back pressure.

Improved Plow.

Henry Krog, Sr., Washington, Mo.—The connecting ends of the share landside bar, and seat are welded together, while the outer ends of plates on the share and bar are riveted or bolted together.

Improved Hoop Fastening.

William Spalding, Petersburg, Mich.—This consists of a triangular plate clip, which covers the outer end of the hoop. It has points, which are passed through the hoop and clinched on the inside.

Improved Saw Setting Device.

Lewis A. Greeley, Elmira, Ohio.—This is a block of steel, on the working side of which is a projecting face, a fulcrum, and a set screw, which latter passes through the gage and is turned or graduated from the back side. The screw may be turned so as to project more or less, as may be desired, according to the degree of set of the teeth. The gage is held against the saw with the hand in such a manner that the set screw rests or bears against the saw, and the fulcrum against the base of the tooth. The tooth is then bent over the fulcrum until the point touches the face, which is accomplished by means of a hammer and anvil or screw wrench.

Improved Means for Raising Water into Railroad Tanks.

Tyree Rodes, Wales Station, Tenn., assignor to himself and T. A. Atchison, same place.—The invention consists of a grapple attachment, which is hinged to the cow catcher beam, and used at either side of the locomotive, the grapple taking hold of a wire rope stretched on running gear along the track, and operating thereby the tank pump, until a post near the end of running gear strikes the clamping lever and drops the wire rope.

Improved Veneer Cutting Machine.

Curtis T. Fairchild, Hartford, N. Y., assignor to Burrell, Ives & Co.—The improvement in this machine is a presser roller, arranged for adjustment independently of the knife, but feeding along with it. It bears upon the log so far above the said knife that, before the edge of the part split off comes in contact with the knife, and is subjected to the lifting force thereof, the said presser roller will force the said piece down upon the main body of the log so hard that it will overcome the force of the knife, and be thereby prevented from being forced off.

Improved Folding Seat for Horse Cars.

Cevedra B. Sheldon, New York city.—This consists of an extra seat contrived to be carried under the main seat when not required for use, and to be readily shifted into position for use above and in front of the main seat on a jointed and folding standard, rising up so that it will project from under the main seat between the passengers sitting on it without inconvenience to them. The extra seat is so jointed to the top of the standard that it turns up edgewise at right angles to the longitudinal direction of the seat for affording the necessary freedom to the sitters on the main seat to rise up or sit down. The object is to afford seats which may be temporarily brought into use when more persons are in the car than can be seated on the ordinary seats.