

DECISIONS OF THE COURTS.

United States Circuit Court--Southern District of New York.

PAINT CAN PATENT.
JOHN W. MASTURY vs. WILLIAM ANDERSON AND FREDERICK O. PIERCE.
BLATCHFORD, Judge.

This suit is founded upon the same letters patent upon which the suit of the same plaintiff against Daniel F. Tiemann and others was brought. (8 Blatchf. C. C. N. 435.) The opinion in that case describes the invention and sets out the specification and claim. It also states, at length, the value and use of the patent.

In this suit the infringement charged in the bill is the same as in that suit, namely, "That the defendants have made and caused to be made, for their use, cans embodying the patented invention, and have vended paints and colors put up in cans so constructed." The defendants are shown to have sold cans containing paints made liquid with oil, put up by them in such cans.

The answer in this suit sets up the defense of want of novelty in the invention, as did the answer in the former suit, but adduces, to support such defense, matters not set up in that suit. It avers, among other things, that the plaintiff's invention is described in letters patent No. 11,592, granted in England to Jules Jean Baptiste Martin de Lignac, and dated October 7, 1847. In the specification of the Lignac patent, which was enrolled April 3, 1848, the following language is used: "The concentrated milk is then, as quickly as possible, to be filled into vessels made of plate tin, or other suitable material, which will allow of being closed hermetically, and also allow of being treated by heat, as hereinafter explained. The vessels I prefer for this purpose are cylinders, and in order that the upper end or cover may be readily removed by the simple act of cutting, I prefer that lead should be used all around. These vessels, being filled quite full with concentrated milk, are allowed to stand for twenty-four hours, when the vessels are soldered all around, so as to hermetically close them." An exhibit, introduced in evidence by the defendants as being constructed in accordance with such description, is a cylindrical can, made of ordinary sheet tin some five inches in depth and four inches in diameter, one end of which is composed of a circular shaped piece of tin formed with a flange something less than a quarter of an inch deep, turned down at the outer circumference of such end. The lower edge of such flange is connected with the outer wall or side of the can by a band of sheet lead, a little over one half of an inch wide, encircling the circumference of the can, the lower part of the band being soldered to the top of the wall or side of the can, and the upper part of the band being soldered to the lower edge of such flange, so as to leave a width of lead of about one quarter of an inch between the upper edge of the wall or side of the can and the lower edge of the flange and allow the lead to be penetrated and cut in such width around the circumference of the can, and thus the top or end of the can to be separated from the body of the can. This arrangement differs from the plaintiff's invention, which consists in placing in one end of the can, and adjacent to the edge of the lead wall or side of the can, a rim or ring of thin brass or other soft metal, such rim or ring thus forming part of the end of the can. It is shown, by the evidence, that lead is a much more difficult metal to solder than thin brass, owing to the fact that special preparation is required in order to enable the solder to adhere to the lead, and that the lead is liable to melt when the soldering iron is brought in contact with it in the process of soldering; and that for these reasons it would take a workman a much longer time to manufacture a given number of cans, constructed according to the Lignac specification with a lead band, than it would to make the same number of cans constructed in the same form, but with a brass band in the place of one of lead. It is also shown that the use of thin brass instead of lead, in the case of the cans, admits of a neater and more perfect finish. Independently of this, the testimony shows that the plaintiff's can presents several advantages over the Lignac can. First, the plaintiff's can, in the size and number of the pieces of which it is composed, and in the labor of preparing them and putting them into the form of, and securing them together as a can, does not differ materially from the simplest form of can used; while in the Lignac can the band of lead constitutes a separate and additional piece, requiring additional labor in preparing it and inserting it in the can, and the seams cannot be soldered by machinery as in the plaintiff's can; second, in the plaintiff's can the force necessary to cut the metal in the end of the can can be applied in an oblique or vertical direction, and is not required to be applied laterally, as in the Lignac can. The former mode of cutting is a disadvantage, for cutting, in that direction, requires that it causes the lips of the opening to spread in different directions, while in cutting the lead band in the Lignac can, by lateral pressure, both lips of the opening are forced to yield, and they, in turn, stand upon and obstruct the passage of the knife blade, so as to render the process of cutting more difficult. Third, cutting one end, with the can standing on the other end, permits the can to be filled above the center of the inserted band, the contents will run out in the process of cutting through the band.

If the Lignac can be an improvement on the ordinary hermetically sealed can, these advantages make the plaintiff's can a material improvement on the Lignac can; and the advantages thus shown to result from changing the position of the soft or thin metal from the side of the end are sufficient, in my opinion, to sustain the patent as against the Lignac can. The defendants prove that the plaintiff made cans in the form of the Lignac can, but having in place of the band of lead a band of brass, and that he placed on such cans labels claiming them to be within his patent. It is urged that, by reason of this, the plaintiff is estopped from denying that the Lignac can is the equivalent of his invention. But this view is not tenable. The rights of the plaintiff depend upon the claim in his patent, according to its proper construction, and not upon what he may erroneously suppose it covers. If at one time he insists upon too much, and at another on too little, he does not thereby work any prejudice to the rights actually secured to him. The evidence shows that a can constructed according to the Lignac patent does not accomplish the end sought by it, and is not a can which can be easily opened; and that when the plaintiff substituted in it a brass band for one of lead, his customers found it more convenient to open the can by cutting out the hard top by the use of a hammer and a knife, than to do so by cutting through the brass band. Although the inventor of the Lignac can had the general idea of enabling a can to be opened by cutting more easily through a softer or a thinner metal, while the body of the can would have the hardness of the harder metal, yet he did not embody his idea in a form which was practically of any substantial utility, and the means he adopted were substantially different from those adopted by the plaintiff.

The defendants also introduce in evidence, on the question of novelty, a can made wholly of tagger's iron—that is, sheet iron rolled so thin as to be easily cut by a pocket knife—and state that similar cans had been used by the Pennsylvania Salt Manufacturing Company for putting up pickles in alkali, for some years prior to the date of the plaintiff's patent. These cans were filled by pouring in the alkali in a molten state, and it solidified on becoming cold. The only reason given for using tagger's iron, by the witnesses who testify to the use of those cans, are, that when tin was used, the heat the cans were subjected to caused the tin to melt, and that tin was less expensive than iron; and that, previously to July 1, 1857, while tagger's iron was used for the sides, sheet tin was used for the bottom and top, showing that the original use of tagger's iron was with no purpose to facilitate the opening of the cans. One witness testifies that the company put up the alkali in broken pieces in cans made wholly of tagger's iron, but he does not state that he did so previous to the date of the plaintiff's patent, nor does he know of the cans being put up in that condition prior to such date. The defendants, at the hearing, asked leave to put in further proof on the question whether the tagger's iron was used with a design to facilitate the opening of the cans, and on the question whether it was practicable to open the cans, when filled with the alkali, by cutting out the top, leave was given to both parties to put in further proofs on these points. The defendants, however, failed to avail themselves of the leave so granted, but the plaintiff has furnished evidence which conclusively puts to rest all pretensions in favor of such can. He has produced, in evidence, sheet iron cans containing caustic alkali of the manufacture of the salt company, the same being put up by said company in such cans, and sold by it, together with the circulars in which the cans were enveloped when sold. These cans are made of sheet iron not capable of being easily cut with a knife; and their contents consist of a solid mass of alkali, apparently conforming in shape to the capacity of the can. But the circular furnishes conclusive evidence against the claim set up in behalf of this can in the directions it gives for opening the cans, which directions are in these words: "Break up one box of the sapolifier into fragments, by striking upon the side of the box." It is again, "Knock out the end of a pound box of concentrated lye." Moreover, on the whole testimony, it is doubtful whether the tagger's iron actually used by the company before the date of the plaintiff's invention was so thin as to be capable of being cut to facilitate the opening of the can. It is, therefore, not shown that the use of tagger's iron, in the manufacture of such cans by said company, was a prior use of the plaintiff's invention.

The defendants admit, by stipulation, that they have made and used, for putting up paints and colors, and vended paints and colors put up therein, cans with one end made wholly of thin tin, which can be easily cut at the outer edge of such end. The plaintiff claims such can to be an infringement of his patent. In the view I take of the patent, if one end of the can is made wholly of thin tin, and thereby the location of the thin or soft metal in such can is changed, so that it is placed near the outer edge, the patent, it is required to be, or where it is essential it should be, namely, at the part of the end nearest its outer edge, it is not material whether the metal in the other parts of the end be thick or thin, so far as the plaintiff's invention is concerned. The use of a plain end of thin metal secures what the patent is designed to accomplish, and in the mode specified in it, by enabling the end to be removed by cutting it out near its outer edge with a knife, while the body of the can may be made of a thicker metal, and thus strong, and the thinness of the metal left thin to be cut does not interfere with the safe handling and transportation of the can.

There must be a decree for the plaintiff for a perpetual injunction, and an account of profits, with costs.

[W. Douglass, complainant's solicitor.
George Harding, defendant's solicitor.]

United States Circuit Court--Southern District of New York.

PATENT FOR BURNING WET TAN BARK AS FUEL--CHARLES N. BLACK, claimant, vs. JOHN A. BROWN, et al., defendants.

Kenneth G. White, the Master to whom this was referred by a decretal order of this Court, dated July 1, 1873, to take, and report to the Court an account of the profits, gains and advantages which have accrued to or been made by the defendant from the use of the patented invention upon which this suit is brought, reports as follows, namely:

First, that the complainant is entitled to receive from the defendants, as profits made by them from the infringement of the patented invention upon which this suit is brought, the cost or value of all the wood which, but for the use of said patented invention, they would have burned in the tanneries owned and operated by them and referred to in the bill of complaint.

Second, that the profits taken before me on the part of the complainant, and not contradicted or disproved on the part of the defendants, show that the saving of wood to the defendants, by the use of said patented invention, was one cord of wood for every ten pieces of hides by them, less per 100 cords per year for a tannery tanned a less number of hides; also less ten cords per year for each tannery, used in the tanning of hides.

Third, that, according to the account furnished by the defendants by direction of the Master, it is shown that the number of hides tanned by

them while using said patented invention was as hereinbefore stated in the account hereto annexed and made part of this report.

Fourth, that the proofs show that the cost or value of wood per cord to the defendants at the several tanneries owned and operated by them and specified in the bill of complaint, and the cost or value of which was saved to them by the use of said patented invention, was as hereinafter stated in the account hereto annexed and made part of this report.

Fifth, that the complainant is also entitled to recover from the defendants interest at the rate of seven per cent per annum upon the gains and profits made by them from the use of said patented invention in each and every year, said interest to be calculated from the close of each year to the 12th day of July, 1873, the date of this my report, and which interest appears in the account hereto annexed and made part of this my report.

The report then gives a tabulated statement of the several years of infringement, and finds that the total amount due to the complainant up to July 2, 1873, is \$44,975.

The Master has made a like report in the case of the same complainants vs. Daniel T. Stevens for the sum of \$23,757.47.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From July 12 to July 17, 1873, inclusive.

COPYING BRUSH.—W. Shriver, New York city.

FEEDING BOILERS.—W. Sellers et al., Philadelphia, Pa.

GRATE BAR.—W. B. Rogerson, Paterson, N. J.

HARNESS CONNECTOR, ETC.—S. Reynolds, Pittsburgh, Pa.

METALLIC CARTRIDGE.—H. Berdan (of New York city), Berlin, Germany.

PRESERVING IRON AND STEEL.—R. A. Fisher, San Francisco, Cal.

PRINTING TELEGRAPH.—G. M. Phelps, Brooklyn, N. Y.

RAILWAY RAILS AND SPIKES.—W. B. Rogerson, Paterson, N. J.

TOOTH BRUSH.—W. O'Donoghue et al., New York city.

Recent American and Foreign Patents.

Improved Shirt Bosom.

John Pagan, Yonkers, N. Y.—This invention consists in folding the cloth of which the bosoms are made in such a manner as to re-enforce the portions between the plaits with one or two webs to strengthen it where it wears out soonest, and to do it without sewing on extra strips, as has been done in some cases. The single web is re-enforced between the plaits of a shirt bosom by means of narrow plaits formed of the cloth of which the wide plaits are made, and by overlapping the edges of the wide plaits.

Improved Belt Guide for Paper Machine.

Robert Hutton, Holyoke, Mass.—The endless wire belt carriers of paper making machinery are very difficult to keep in the true course on the rollers over which they are carried, owing to the variations of the tension caused by the shifting of the wires, and they cannot be kept in place by having the edges run against stationary guides, because the wires bend and double over at the edges and wear out rapidly. It is proposed, therefore, to have one of the bearings of one of the rollers arranged so that it can be shifted, so as to vary the tension at the edges of the belt, and provide mechanism in connection therewith, whereby the belt itself will cause the bearing to be shifted automatically whenever it runs out of its true course so as to correct it. Supposing the tension to be greatest on the left hand side of the belt, by which it would be caused to run to the left and come in contact with a plate and move a bar in the same direction, the belt crank would be shifted thereby, so as to move wheels toward the front, so that a blade would act on the front wheel and turn it so that a screw shaft would draw the bearing toward the front, which would lessen the tension on the left hand side of the belt and prevent it from running in that direction. If the tension be greatest on the right hand edge of the belt, the shaft would be shifted in the other direction, so that the blade would act on the other wheel and cause the screw to move the bearing in the other direction.

Improved Tooth Brush.

James D. O'Donoghue and William O'Donoghue, New York city.—This invention consists of an ordinary tooth brush having a convex brush arranged at the end of the handle, crosswise to it, in a different plane and fronting the other brush, so that, holding it by the end whereon the latter is arranged, and placing the convex brush in the mouth inside of the teeth, the convex form will apply to the concave wall of teeth in a manner calculated to brush the teeth at the inside more efficiently than can be done by the ordinary brushes.

Improved Well Bucket.

Charles F. Stiles, Cincinnati, Ohio.—This invention consists of an improved self emptying or dumping well bucket, composed, essentially, of a metal cylinder and wooden bottom, and provided, on the upper end, with a metal tilting buffer cast into a slot in a part, which embraces the top of the bucket, and is secured thereto by rivets. These buffers are employed to tilt the bucket, by arresting one side of it under a stop projecting beyond the water spout from a point a little above it. By their use the emptying of the bucket is facilitated, and the injury to the bucket by striking the object which stops it is much less than when the buffers are not used.

Improved Apparatus for Treating Cane Juice.

George C. Taylor, Thibodeaux, La.—The object of this invention is to construct an improved condensing machine for sugar plantations and chemical establishments, by which cane juice and molasses may be rapidly bleached without allowing the escape of sulphurous gases from the machine to the other parts of the building. By a fan wheel the required supply of gas is regulated, and the action of the same on the juice effected by a centrifugal or spray wheel in connection with a reacting arch and absorbing shelves, producing a thorough contact of the gas with the greatest surface of juice.

Improved Saw Filing Machine.

William B. Bizzell, La Grange, N. C., assignor to himself and W. H. Hardee, of same place.—This invention has for its object to furnish an improved machine for use in filing saws, which will enable the saw to be filed quickly and accurately, and will render the operation of "striking" unnecessary. In using the machine the saw is secured in clamps, with its toothed edge projecting about one and a quarter inches above said clamps, which are then placed upon the saw and another clamp. The guide frame is placed upon the clamps and the file handle is placed in the groove of the guide frame. The guide frame is adjusted to bring the file to the desired angle across the saw, and is secured in place by a set screw. The clamps are adjusted to bring the file to the teeth to the desired depth. A rule is adjusted to bring the appropriate notch in the circular frame of the clamps to a division mark of the proper scale. After filing one side of the teeth, the machine is again adjusted and the other side of the teeth is filed.

Improved Cloth Holder for Sewing Machines.

Lewis Aladin Dupré, Donaldsonville, La.—This invention has for its object to furnish a neat, simple, and convenient device for holding cloth while being sewn upon a sewing machine, to avoid the necessity of basting the work before sewing it. The invention consists of the device formed of a strip of thin sheet steel, made wider at one end and narrower at the other end, having a single bent point at its narrower end, two bent points at its wider end, and a short slot in its wider end, and bent so that its narrower end may be passed through the slot in its wider end, and the two ends may project parallel with each other.

Improved Sewing Machine.

Edwin D. Smith, New York city.—It is proposed, in this invention, to cast the head for the needle and presser bars on the branches of the supporting arms, then saw the lower arm off from the head close to the latter, and fit in an adjusting screw to spring the head toward the arm thus separated from it, and to utilize the elasticity of the upper branch of the arm, together with the adjusting screw, to adjust the needle toward and from the shuttle, and thus save considerable labor heretofore expended in fitting a head made separately to the overhanging arm. It is also proposed to arrange the lever for lifting the presser bar on this adjusting screw between the head and the end of the armsawn from it to utilize said screw from the pivot.

Improved Saw Set.

Gustaf Swenson, Hackensack, N. J.—This invention relates to an improved combination of parts or devices for setting teeth on both sides of the saw at the same time. To the opposite sides of the forward part of the handle are attached two plates, which are kept at the proper distance apart by a bar which also serves as a stop for the points of the saw teeth to rest

against while using the machine. The saw teeth to be operated upon pass between two bars, one of which, when the machine is in use, is stationary, and may be adjusted according to the size of the saw teeth. The other bar is formed upon the side of the lower edge of a plate, to the upper part of which is attached a pin, which passes in through a hole in another plate and rests against the inclined side of a cam wheel, so as, at the proper time, to clamp the saw against the bar while a tooth is being operated upon. The teeth are set by the punches, which pass in through holes in the forward parts of the bars, and which are so arranged as to operate upon two consecutive teeth and set them at the same time. The punches are forced in to set the teeth by the levers by the revolution of the cam wheel. The length of the feed may be adjusted according to the size of the teeth. By suitable mechanism, as each pair of teeth is set, the machinery is drawn forward into such a position as to operate upon the next pair of teeth. As described, the machine is designed to move along a saw secured in a vise; but, if desired, the machine may be inverted and secured in a vise, the saw moving along the machine as the teeth are set.

Improved Dash Board Bag.

Samuel Hipkiss, Charlestown, Mass.—The object of this invention is to furnish to the public a neat, strong, and waterproof bag for dash boards of carriages of all kinds, which may be readily taken off and placed on another vehicle as required, and which will not interfere at all on entering the carriage, being an ornamental appendage to the same. The invention consists of a strong main piece of leather, to the upper part of which strong spring hooks are attached, which are slipped over the dash board. The bag is applied below the hooks, with suitable elastics to prevent the bag from expanding too much and protruding too far into the carriage.

Improved Stamp for Crushing Ores.

James M. McFarland, Golden City, Col. Ter.—The most essential part of this invention consists of a novel mode of operating stamps for crushing and pulverizing ores, etc., by a horizontal revolving cylinder, through which a series of bars, with a stamp head at each end, are arranged diametrically, so that they can slide endwise a short distance. The cylinder is arranged a suitable distance above the bottom of the bed containing the ore, and caused to revolve slowly; the stamps, as they approach the vertical line, slide in the cylinder and strike a blow on the ore, and are then forced around by the cylinder, and have a grinding or crushing effect. They strike two blows at each revolution. They are arranged as close together, both lengthwise and circumferentially, as they can be and work well, and they strike a great number of blows to each revolution. Another part of this invention consists of a hollow cylindrical rotating ore holder, into which the ore is fed at one end and caused to work along slowly to the other end during the progress of the work, and discharge through holes on to a screen, which is arranged to separate the fine particles and carry the coarse portion back to the head of the ore holder, to be delivered into it again for reworking it. Another part of the invention consists of spiral ribs in the hollow revolving ore holder, to work the ore along the cylinder as it is gradually reduced by the stamps.

Improved Method of Enlarging Oil Wells.

Martin Gillespie, Smith's Ferry, Pa.—This invention relates to a novel method of enlarging the bore of an oil or analogous well, and in peculiar means for carrying out this method.

Improved Portable and Adjustable Hoisting Apparatus.

George A. Myers, Williamsburg, N. Y.—This invention has for its object to furnish an improved hoisting apparatus for tiering or stacking goods in storehouses, and which shall be so constructed that it may be readily moved from one part of the room to another and swung around to work in any desired position. To the stanchions of the room are attached one or more clamps which are so formed as to fit upon the stanchions. The clamps are hinged so that they can be readily detached from one stanchion and attached to another in some other part of the room. To a frame, made in U form, is pivoted the drum, around which the hoisting rope is wound, and to the ends of its journals are attached a larger and a smaller gear wheel. In the frame also works a shaft, to which are attached a smaller and a larger gear wheel, in such position that when one of the gear wheels meshes into the other the second pair will be out of gear, so that by sliding the shaft longitudinally the apparatus may be adjusted to work with speed or power, as may be desired. To the ends of the shaft are attached the cranks by which the power is applied. The frame may be swung around so as to work in various positions, as may be required in tiering the goods. In using the apparatus the rope from the drum is passed around the pulley of a block, which is connected with and supported from the joists or rafters by means of a clamp something like an ice tong, so that, the greater the weight of the package being handled, the firmer the said clamp may hold. With this apparatus the goods may be tiered rapidly and with a comparatively small amount of labor, the apparatus being readily adjusted as the position of the tiers may require.

Improved Reciprocating Churn.

William M. Thompson and John L. Mahurin, Rockfield, Ind.—This invention consists in the arrangement of perforated dashers, sliding in grooves within the churn, which are moved and operated against by similar perforated dashers fixed to a plunger rod passing through the sliding lid, which prevents the splashing of the cream.

Improved Sky Light Bar.

Charles Sellman, New York city.—This invention is an improvement in the class of sky light bars formed hollow or of sheet metal; and consists in forming the bar with a central, vertically projecting part, inclined side supports for the glass panes, and inclined gutters. The long and narrow shape of the bar is favorable to the admission of the light—more so than the bars with projecting gutters and parts. In a modification designed for lighter structures, the main support is bent of one or two pieces, and the gutter part projects sideways instead of approaching toward the central axis.

Improved Driven Well.

Alphonso Wilson, Plainfield, N. J.—This invention has for its object to improve the construction of drive well tubes so that the wire gauge cannot be cut or torn off, by stones or other obstructions, while the tube is being driven. The invention consists in a water section of a drive well tube cast of malleable iron with a conical point, alternate contracting and expanding ring sections, and a tubular top section, and having its contracting sections perforated and covered with wire gauze, and a screw thread cut upon its tubular top section.

Improved Combined Refrigerator and Beer Cooler.

George Nuss, New York city.—This invention is designed to furnish an improved device, so constructed as to hold a beer cask and keep it cool, and which may also serve as a refrigerator for preserving various articles. The invention consists in the box provided with a cooling chamber, an ice-chamber, and one or more downwardly projecting recesses, projecting downward into the ice chamber, which keep the cask and its contents cool until said contents may be wholly drawn off.

Improved Window Weather Strips.

Giles P. Potter, Coventry, R. I.—This invention consists in providing the battens or vertical guide strips of sash windows with India rubber strips set obliquely into the battens to project with their opposite ends and act like spring packing on the window sash. Suitable recesses in the battens allow the receding of the strips on opening or closing the windows.

Improved Surgical Splint.

Ara Wheat, Canaan, N. H.—This surgical splint for the lower limbs consists of a thigh piece, leg piece, and a heel and foot piece in three separate sections, of light wood, curved or concaved both lengthwise and crosswise, suitably to fit the different parts, the thigh and leg piece being connected by a hinged joint, the foot and leg piece by an extension joint, and the lower joint and upper section provided with extension screws.

Improved Door Spring.

Charles W. Oldham, Leipsic, Ind.—This invention consists of a hollow vertical cylinder partly filled with liquid, and containing a piston with a valve which opens freely to allow the piston to rise unobstructed when the door opens, and raises the arm of an elbow lever, to which the piston is connected by a rod, but which closes the passage, except a small orifice, when the door closes and forces the piston down, so that the closing of the door by a spring attached to the arm to which the piston is attached is retarded so as to prevent slamming.

Improved Coal Car Elevator.

Philip H. Lamey, Wilkesboro, Pa.—This invention relates to car elevators generally, but more particularly to such as are employed to transfer coal from the bottom of the mine up a slope and to the landing from which it is to be discharged. It consists in several improvements upon the patent granted to the same party February 4, 1873.

Improved Stool.

Cevdra B. Sheldon, New York city.—This invention consists in a ring constructed with journals that are arranged at intervals and provided with friction wheels to allow the cap to be dispensed with altogether.

Improved Glove.

Remus D. Burr, Kingsboro, N. Y.—This invention consists, 1st, in a glove or gauntlet in which the back of the hand is formed or cut without fingers, and with which, in a gauntlet, the back or portions of the front of the wrist are all in one continuous piece of material. 2. A gauntlet, the front of whose wrist is gore shaped, isso arranged and combined with the remaining portion of the wrist that, when folded or made, the seams are brought on the inside of the wrist. 3. A glove or gauntlet having the parts that form the palm and the front, back, and side portions of the fingers made of a separate piece or pieces from the body of the back. 4. A glove or gauntlet finger back composed of or wholly reinforced with leather when combined with a back composed of cloth or other textile fabric. 5. A glove or gauntlet in which those pieces, portions or parts that form the side of the palm and back portion of the fingers are connected, joined to, and closed on the body of the back with a continuous stitched seam.

Improved Bee Hive.

David Latchaw, Barkeyville, Pa.—This improvement relates, 1st, to a mode of preventing robber bees gaining access to the brood or honey chamber, and also entrapping them by means of adjustable pivoted guides arranged in the bee entrance, and of a cage or prison placed at one side of the comb frames, both the guides and cage serving for other useful purposes in the ordinary economy of the hive when not thus utilized. 2. To providing the comb frames with removable guides, thus enabling the filled comb of one frame to be removed and transferred to an empty frame or to a box for transportation to market or elsewhere without removing the frame itself. 3. To a cloth or flexible guide plate forming a division between comb frames and thus compelling the bees to build comb the whole length of one frame instead of building it in one end of several adjacent frames, as they will often do if left to themselves. 4. To devices for closing the bee entrance, which are adapted to co-operate with the guide strips above mentioned.

Improved Fire Place.

John L. Garlington, Snapping Shoals, Ga.—This invention is an improved grate, which may be adjusted to any chimney place, allowing full control of the fire and increasing the heating properties of the same. It consists of a grate with inclined back plate and sliding dampers to throw forward the heat and regulate the same. It also consists in adjustable side plates to fit the grate into a chimney.

Improved Subsoil Plow.

Augustus L. P. Vairin, Ripley, Miss.—This invention consists in an improvement of subsoil plows. The front of the standard is made upon the arc of a circle, and is made sharp from near the beam to its junction with the cutter of the share, forming with the said cutter of the share a continuous colter from the beam to the point. The back part of the standard is made of such a form and thickness as to give it the strength necessary for the particular kind of work for which the plow may be intended. By suitable construction the bottom of the furrow is cut flat, and the slice is gradually raised from its old position and is broken to pieces by its own weight as it falls over the raised rear edge of the share, pulverizing the ground as deep and wide as the furrow is cut. The standard and share, presenting three cutting edges, go easily through the ground, making the draft light. The concavity of the share, raising the middle part of its bottom from the bottom of the furrow, diminishes the friction, causes the plow to run steadily and makes it self-sharpening.

Improved Washing Machine.

William K. Flietstra, Holland, Mich.—This invention is designed to furnish an improved washing machine in which the clothes are washed by being projected from end to end of the machine as it is rocked upon its pivots, the labor of rocking being lessened by a balance weight connected with it. To the sides and bottom of the box are attached ribs or cleats, against which the clothes are rubbed as they slide back and forth; and in one or both ends of the box are secured a number of plates, the upper edges of which are formed with rounded projections, gradually increasing in height toward the end of the box, and which are designed to catch upon the clothes and turn them over as the box is oscillated.

Improved Farm Gate.

Mahlon Burtless, Seneca Falls, N. Y.—To open the gate a latch is turned up so that its rear end may enter the space between the parts of the front vertical bar of the frame, which allows the gate to be slid back upon wheels for half its length or less. The gate and frame may then be swung around upon hinges to fully open the gateway.

Improved Cutter Head for Moldings.

Elde H. Hinners, New York city.—The object of this invention is to produce a rotary cutter head for making moldings with a rabbet at one side, separated from the molding by a narrow strip too thin and weak to sustain the strain to which it would be subject if the rabbet was formed with the ordinary rotary planing cutter; and it consists of a staggered saw attached to the cutter head of the molding planer to form the rabbet.

Improved Washing Machine.

Francis B. Preston, Fayette, Mo., assignor to himself and William H. Stapleton, of same place.—In using the machine, levers are raised into an upright position, the clothes are inserted between the beaters, and the cover is closed. As the levers are lowered the beater moves forward, pressing the clothes against a forward beater, forcing the water and dirt out of said clothes and through the perforations of the said beater. As the levers are again raised the beater moves back for another stroke, and the forward beater is rocked, its upper edge moving rearward and its lower edge forward, so as to loosen and detach the clothes.

Improved Blasting Plug.

Julius H. Holsey, Butler, Ga.—This invention consists in having the meeting edges of a hollow blasting plug made in sections, rabbet-jointed together to prevent the escape of the blast until it has nearly expended its force on the object to be blasted or wholly separated it. It is also proposed to provide the plug with strong spurs on the sides, to be forced into the wall of the hole of the object to be blasted, to prevent the plug from being forced endwise out of the hole.

Improved Horse Power.

Zachariah P. Landrum, Columbus, Miss.—This invention is an improvement upon the horse power for which letters patent No. 136,075 were granted, and consists in a novel mode of combining certain parts so as to facilitate the draft and simplify the general construction.

Improved Table Caster, etc.

Cevdra B. Sheldon, New York city.—This invention relates to casters and analogous devices having a seat or holder that is allowed to rotate on its stand or support. It consists in converting nearly all the sliding friction which is usually created by the surface contact of the holder and the bolt into rolling friction, by making the guide tube bear against the bolt only at the top and causing the enlarged bottom to bear on the outside of the bearing plate that moves on and with adjacent anti-friction rolls. It consists also in a peculiar construction of the bearing plate to enable it to embrace and work against the outer side of the balls, whereby the plate itself is prevented altogether from contact with the bolt, and therefore from all sliding friction.

Improved Pump Valve.

Wilson Barnes, Maquoketa, Iowa.—This invention relates to the lower or check valve for pumps, which are liable to break off, to twist out of position, get out of shape, retain sand or grit, and become useless in a short time. The invention consists in constructing a valve with a series of wings to which is screwed a cap, while between the two is compressed a leather, rubber, gutta-percha, or other suitable packing, and in forming the valve seat upon a raised and tapering tube with a bottom flange.

Improved Extension Hat Brim.

I. Ygnacio Cassiano, San Antonio, Texas.—For an extension sunshade attachment to hat brims, to be extended for use or folded back at will, it is proposed to have a wide annular piece of cloth, having an india rubber cord sewn to the outer edge of the ordinary brim, and stationary arms projecting from a supporting ring at the base of the crown under the ordinary brim to the edge, with branched extension arms pivoted to them, so as to swing outward and engage with socket clips on the flexible cord to extend the brim. These clips, with which the extension arms connect detachably, engage with hooks at the base of the crown, when the extension brim is folded back under the principal brim, to hold it up close to the underside of the latter. At the same time the rubber cord shirs the edge of the reversed extension brim around the opening of the crown in a manner to dispose it completely and neatly when it is not required to have it extended. The same inventor has also patented a similar device, which consists of an annular extension brim of cloth, sewn to the outer edge of the permanent brim, with folding arms for extending it, which are mounted on sliding arms for moving them out or in for extending the brim more or less, and elastic straps on the extension brim, in combination with the sliding extension, to control the extension brim when not wholly extended. The sliding extension arms have spring catches combined with them in such manner as to hold them in any position to which they may be adjusted.

Improved Harrow.

Alexander C. Carnes, Smithville, Tenn.—This invention consists in constructing a harrow frame of longitudinal and cross pieces, the first on edge while the second are flat, and the first notched underneath so as to receive and brace the second. This forms a very strong, durable, and cheap harrow frame, which any farmer can construct for himself. The harrow may be made larger or smaller, according to the work for which it is designed; or two of them may be connected together for cultivating both sides of a row of plants at the same time.

Improved Plow.

Levin B. Richardson, Carrollton, Ill.—This invention has for its object to furnish an improved attachment for plows, to roll down stubble and weeds, and hold them until turned under by the plow so as to wholly cover them and leave the ground clean. An iron roller revolves in the bent down ends of a bar which extends along and parallel with the said roller. To the bar is attached another bar, the upper part of which is bent twice at right angles, or into U shape, to pass over the beam to keep it in place, and at the same time allow the roller to rise and fall to conform to the inequalities of the ground. Several holes are formed in the rear part of a brace bar to receive the bolt that secures it, so that by shifting the said bolt from one to another of said holes the roller may be moved toward or from the plow to adapt it for use with short or long grass or weeds. A rod projecting forward and bent upward, rearward, and inward, is designed to prevent the stubble or weeds from falling down toward the plowed land, so as not to be rolled down and held by the roller, and consequently not fully covered by the plow.

Improved Boot Blacking Kit.

Somers Van Gilder, Knoxville, Tenn.—This invention consists of an ordinary polishing brush with a blacking box attached to the back, and a daubing brush attached to the handle, so that all are collectively combined in one article so as not to interfere with the use of the polishing brush, and thus preventing accidental separation and misplacement of either of the articles. The daubing brush is detachably connected to the handle of the polishing brush, so that it can be taken off to use.

Improved Traction Wheel.

John G. Gallet, St. Auguste, Ill.—This invention consists in the means for holding the rubber sections of a tire on the wheel, so that they will be held securely and yet be easily detachable. The solid plate or spoke wheel, of suitable metal, is provided with two projecting rims. The outer rim is flanged to keep the rubber in place, and the latter is of two or more pieces, placed around the periphery of the wheel. The rubber tire is firmly sustained on the wheels by guard plates. By tightening the bolts in slots or holes in the rim, the rubber tire will curve out slightly between the interstices of the guard plates, forming, instead of a polygonal, an almost circular, periphery, avoiding thereby, in connection with the elastic washers, the noisy concussion of the old wheels. The breaking strain of the rubber tire is, by means of the strong support of the guard plates, obviated, and the elastic material applied so as to give bearing surface and spring action against concussion.

Value of Patents, AND HOW TO OBTAIN THEM.

Practical Hints to Inventors.

PROBABLY no investment of a small sum of money brings a greater return than the expense incurred in obtaining a patent even when the invention is but a small one. Larger inventions are found to pay correspondingly well. The names of Blanchard, Morse, Bigelow, Colt, Ericsson, Howe, McCormick, Hoe, and others, who have amassed immense fortunes from their inventions, are well known. And there are thousands of others who have realized large sums from their patents.

More than FIFTY THOUSAND inventors have availed themselves of the services of MUNN & Co. during the TWENTY-SIX years acted as solicitors and Publishers of the SCIENTIFIC AMERICAN. They stand at the head in this class of business; and their large corps of assistants, mostly selected from the ranks of the Patent Office: men capable of rendering the best service to the inventor, from the experience practically obtained while examiners in the Patent Office: enables MUNN & Co. to do everything appertaining to patents BETTER and CHEAPER than any other reliable agency.

HOW TO**OBTAIN**

Patents

This is the closing inquiry in nearly every letter, describing some invention which comes to this office. A positive answer can only be had by presenting a complete application for a patent to the Commissioner of Patents. An application consists of a Model Drawings, Petition, Oath, and full Specification. Various official rules and formalities must also be observed. The efforts of the inventor to do all this business himself are generally without success. After great perplexity and delay, he is usually glad to seek the aid of persons experienced in patent business, and have all the work done over again. The best plan is to solicit proper advice at the beginning. If the parties consulted are honorable men, the inventor may safely confide his ideas to them: they will advise whether the improvement is probably patentable, and will give him all the directions needful to protect his rights.

How Can I Best Secure My Invention?

This is an inquiry which one inventor naturally asks another, who has had some experience in obtaining patents. His answer generally is as follows, and correct:

Construct a neat model, not over a foot in any dimension—smaller if possible—and send by express, prepaid, addressed to MUNN & Co., 37 Park Row, New York, together with a description of its operation and merits. On receipt thereof, they will examine the invention carefully, and advise you as to its patentability, free of charge. Or, if you have not time, or the means at hand, to construct a model, make as good a pen and ink sketch of the improvement as possible and send by mail. An answer as to the prospect

of a patent will be received, usually, by return of mail. It is sometimes best to have a search made at the Patent Office. Such a measure often saves the cost of an application for a patent.

Preliminary Examination.

In order to have such search, make out a written description of the invention, in your own words, and a pencil, or pen and ink, sketch. Send these with the fee of \$5, by mail, addressed to MUNN & Co., 37 Park Row, and in due time you will receive an acknowledgment thereof, followed by a special report in regard to the patentability of your improvement. This special search is made with great care, among the models and patents at Washington, to ascertain whether the improvement presented is patentable.

Rejected Cases.

Rejected cases, or defective papers, remodeled for parties who have made applications for themselves, or through other agents. Terms moderate. Address MUNN & Co., stating particulars.

To Make an Application for a Patent.

The applicant for a patent should furnish a model of his invention if susceptible of one, although sometimes it may be dispensed with; or, if the invention be a chemical production, he must furnish samples of the ingredients of which his composition consists. These should be securely packed the inventor's name marked on them, and sent by express, prepaid. Small models, from a distance, can often be sent cheaper by mail. The safest way to remit money is by a draft, or postal order, on New York, payable to the order of MUNN & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents.

Caveats.

Persons desiring to file a caveat can have the papers prepared in the shortest time, by sending a sketch and description of the invention. The Government fee for a caveat is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address MUNN & Co., 37 Park Row, New York.

Reissues.

A reissue is granted to the original patentee, his heirs, or the assignees of the entire interest, when, by reason of an insufficient or defective specification, the original patent is invalid, provided the error has arisen from inadvertence, accident, or mistake, without any fraudulent or deceptive intention.

A patentee may, at his option, have in his reissue a separate patent for each distinct part of the invention comprehended in his original application by paying the required fee in each case, and complying with the other requirements of the law, as in original applications. Address MUNN & Co., 37 Park Row, for full particulars.

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Foreign designers and manufacturers, who send goods to this country may secure patents here upon their new patterns, and thus prevent others from fabricating or selling the same goods in this market.

A patent for a design may be granted to any person, whether citizen or alien, for any new and original design for a manufacture, bust, statue, alto-relievo, or bas-relief; any new and original design for the printing of woolen, silk, cotton, or other fabrics; any new and original impression, ornament, pattern, print, or picture, to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture.

Design patents are equally as important to citizens as to foreigners. For full particulars send for pamphlet to MUNN & Co., 37 Park Row, New York.

Foreign Patents.

The population of Great Britain is 31,000,000; of France, 37,000,000; Belgium, 5,000,000; Austria, 36,000,000; Prussia, 40,000,000; and Russia, 70,000,000. Patents may be secured by American citizens in all of these countries. Now is the time, while business is dull at home, to take advantage of these immense foreign fields. Mechanical improvements of all kinds are always in demand in Europe. There will never be a better time than the present to take patents abroad. We have reliable business connections with the principal capitals of Europe. A large share of all the patents secured in foreign countries by Americans are obtained through our Agency. Address MUNN & Co., 37 Park Row, New York. Circulars with full information on foreign patents, furnished free.

Value of Extended Patents.

Diligent patentees realize the fact that their inventions are likely to be more productive of profit during the seven years of extension than the first full term for which their patents were granted, we think more would avail themselves of the extension privilege. Patents granted prior to 1861 may be extended for seven years, for the benefit of the inventor, or of his heirs in case of the decease of the former, by due application to the Patent Office, ninety days before the termination of the patent. The extended time inures to the benefit of the inventor, the assignees under the first term having no rights under the extension, except by special agreement. The Government fee for an extension is \$100, and it is necessary that good professional service be obtained to conduct the business before the Patent Office. Full information as to extensions may be had by addressing MUNN & Co., 37 Park Row.

Trademarks.

Any person or firm domiciled in the United States, or any firm or corporation residing in any foreign country where similar privileges are extended to citizens of the United States, may register their designs and obtain protection. This is very important to manufacturers in this country, and equally so to foreigners. For full particulars address MUNN & Co., 37 Park Row, New York.

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On the first of September, 1872, the new patent law of Canada went into force, and patents are now granted to citizens of the United States on the same favorable terms as to citizens of the Dominion.

In order to apply for a patent in Canada, the applicant must furnish a model, specification and duplicate drawings, substantially the same as in applying for an American patent.

The patent may be taken out either for five years (government fee \$20) or for ten years (government fee \$40) or for fifteen years (government fee \$60). The five and ten year patents may be extended to the term of fifteen years. The formalities for extension are simple and not expensive.

American inventions, even if already patented in this country, can be patented in Canada provided the American patent is not more than one year old.

All persons who desire to take out patents in Canada are requested to communicate with MUNN & Co., 37 Park Row, N. Y., who will give prompt attention to the business and furnish full instruction.

Copies of Patents.

Persons desiring any patent issued from 1836 to November 26, 1867, can be supplied with official copies at a reasonable cost, the price depending upon the extent of drawings and length of specification.

Any patent issued since November 27, 1867, at which time the Patent Office commenced printing the drawings and specifications, may be had by remitting to this office \$1.

A copy of the claims of any patent issued since 1836 will be furnished for \$1.

When ordering copies, please to remit for the same as above, and state name of patentee, title of invention, and date of patent. Address MUNN & Co., Patent Solicitors, 37 Park Row, New York city.

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