

PEGGING JACK.—John G. Ziegler, Salt River, Mich.—This invention consists of a circular ring or table mounted on a standard by being pivoted to the top of it at one edge, and resting at the opposite edge on braces to which it is pivoted. Said braces are swiveled to the standard so as to swing around it horizontally and be adjusted vertically by controlling nuts screwing up and down on the standard, whereby the said ring or table, whereon the blocks to which the last is clamped are mounted, can be readily adjusted to any required angle to the horizontal plane. The invention also consists of the attachment of the last-supporting blocks to this ring or table by a long slotted plate, which is secured through the table, so that it can turn freely thereon, the said slotted plate being capable of shifting endwise along the bolt by which it is secured, which passes through the slot, so that the last can be oscillated horizontally on the table, and shifted transversely thereof to facilitate the adjustment of the work to any position.

IRON STRUCTURE.—Joseph D. Duclos, New York city.—This invention has for its object to simplify the construction of iron buildings by dispensing with the "backing up" or covering of the walls on the inner sides thereof. The invention consists in finishing the cast metal walls of such structures on both sides with panels, ornaments, or otherwise, and in thereby making the inner backing up, by means of plaster or other devices, entirely unnecessary. The cost of putting up iron buildings is thus greatly reduced.

DENTIST'S AND BARBER'S CHAIR.—Francis J. Coates, Cincinnati, Ohio.—This invention consists of certain arrangements of apparatus for supporting the seat and shifting it on a horizontal pivot laterally, also forward and back, and raising and lowering the seat. It also consists in the construction of such chairs with perforated covers to the seats and backs for ventilation. Thus constructed, the seat and back will be kept moderately cool instead of becoming and remaining unpleasantly heated when in use.

WASHING MACHINE.—William W. Grant, Bloomington, Ill.—This invention has for its object to furnish an improved washing machine. It consists of a rectangular suds box, made with a concave bottom and concave vibratory back, so arranged as to swing down to allow the water to flow back into the suds box when a wringer is being used. It contains a corrugated beater board, actuated by a standard and lever passing through notches in the cover.

BUGGY REACH.—John W. Reeder, West Manchester, Ohio.—This invention has for its object to furnish an improved reach for buggies and other vehicles, which shall be so constructed that one of the wheels may rise in passing over obstructions without twisting the reach, splitting the head-block, breaking the braces, or straining or otherwise injuring the reach or its connections.

BOOK HOLDER.—David Moritz, Carmanville, and Robert White, Mott Haven, N. Y.—This invention relates to a new strap or holder for books, being intended for children's use while carrying their books to and from school, and for similar purposes. The invention consists in the combination of a spring slide with a perforated guide and with the fastening string, all operating in such manner that the string drawn through slide and guide will be clasped and held secured by the action of the spring.

MODE OF PROPELLING CANAL BOATS.—Joseph Hough, of Buckingham, Pa.—This invention relates to a new apparatus for propelling ships and boats and for preventing, to the greatest practicable extent, the lateral disturbance of the water. The invention consists, first, in the use of a double propeller, composed of two wheels, that revolve in opposite directions but effect the same results by having their wings inclined in opposite directions. The invention consists, also, in the use, at the sides of the vessel, of laterally adjustable plates, which serve to absorb the lateral disturbance of water and thereby prevent all injury to the banks or shores of any water course in which the vessel may be used.

PAINT MILL.—Robert J. McGrew, Evansville, Ind., assignor to himself and George W. Shanklin, of same place.—This invention consists in an arrangement of the furrows or grooves of stationary or movable conical grinders, calculated to be efficient in performing work and to be self-sharpening. Second, it consists in a construction and arrangement of both the grinders, so that they can be readily taken off when worn out and new ones applied without any unnecessary waste of parts not worn out. Third, it consists in an arrangement of the connecting devices by which the bridge or top frame is connected to the hopper to facilitate the removal of the rotating grinder. Fourth, it consists of an arrangement of devices for suspending and adjusting the rotary grinder. Fifth, it consists of an arrangement of grooves in the shell to answer the purpose of an ordinary scrape for the discharge of the ground paint.

BORING MACHINE.—William C. Freeman, Louisiana, Mo.—This invention consists of one or more gangs of boring tools arranged on a vertically adjustable support and provided with driving belts for the tools and apparatus for raising and lowering the tools while in operation, with automatic feeding gear, a hopper, guides, and holder for the stuff to be bored, all arranged so that the feeder pushes a board from the bottom of the hopper along the guides to the holder over the gangs of boring tools, which then come up and bore the board along one or both edges at the same time that the feeder goes back for another board, and then go down before the feeder comes forward again with the next board and ejects the first by the next, and so on. The hopper, guides, holder, and the tools are adjustable to boards of different sizes.

LEATHER BOARDING AND GRADING MACHINE.—Louis Townsend, Terre Haute, Ind.—This invention has for its object to furnish an improved machine for boarding and graining leather, doing its work quicker and better than it can be done by hand, and with substantially the effect of hand boarding upon the leather. By suitable construction the upper boarding and graining roller can be raised for the convenient insertion of the leather without disarranging the gearing. The frame is held down to hold the upper roller down upon the lower roller by a spring. Levers are provided, the outer ends of which are connected by a cross bar which serves as a foot lever or treadle for operating said levers. The inner ends of the levers are pivoted to the lower parts of the sliding bars or frame and also to the frame of the machine. A roller is attached, made somewhat smaller than the boarding and graining rollers, so as to enter the space between the forward sides, and hold the leather firmly against them. In using the machine the outer ends of the levers are pressed down, which raises the frame and upper roller and operates another lever to throw back the small roller and blade. The leather is then passed between the rollers and the blade, and as the levers are released the spring forces the frame and roller down, which operates the second levers to throw the blade and roller forward, the blade folding or doubling the leather, and the small roller holding it firmly against the graining rollers. If, now, the machine is started, certain rollers will draw the leather inward and other rollers will draw it outward, while the blade will keep it doubled or folded and pressed in between the graining rollers, the fold of the leather constantly changing its place, and the same effect being produced as is produced by hand boarding and graining, and doing it quicker and better.

SASH BALANCE.—Herman Gross, Hoboken, N. J.—The invention consists in a screw passing through a nut at the meeting rail and spring at one end, all arranged on the inside of window frame, and so adjusted that the tension of the spring tends to turn the screw in the direction to raise the sash with just sufficient power to balance or hold the sash wherever it may be, so that the latter can be moved up or down with but a slight application of force, the same as when balanced by a cord and weight or other balancing contrivance.

BUGGY, FARM AND LUMBER WAGON.—Chesley Jarnagin, Beans Station, Tenn.—The invention consists in a peculiar mode of arranging the seat so that it will be out of the way of any load that maybe carried, and so that the driver may never be inconvenienced by the load, and thereby incapacitated from a faithful attention to his business; also in a stone body of peculiar construction and adaptation; and also in a new mode of graduating the load upon a stone body.

HAY OR GRAIN RACK.—Chesley Jarnagin, Beans Station, Tenn.—The invention consists in a lower frame for hay racks, which projects forward and rests upon a platform of the running gear; in a shield or fender by which all forward movement of the load in going down hill, and all inconvenience from the same to the driver, is entirely prevented; and also in a folding curtain fastened to said shield and attached to an end pivoted to a bow, to shelter the driver from the effects of the direct rays of the sun.

MANUFACTURE OF BROMINE.—Herman Lerner, Mason City, and Elijah C. Harpole, Hartford City, W. Va.—The invention consists in making the bitter water pan with a close cover so as to form a boiler, and in connecting its steam space with the stills, whereby the vaporized bitter water may be utilized for the agitation of the liquid therein. It also consists in connecting this boiler with a primary reservoir, which is thereby kept at a proper temperature, and a large proportion of the salt precipitated. It also consists in connecting the furnace with a secondary reservoir, whereby the latter may be always maintained at the desired temperature, and thereby precipitate nearly all the residue of salt.

COTTON CULTIVATOR.—William Brooks, Lexington, Ga.—This invention relates to a cultivator for cotton and other crops, etc., and it consists in the combination, with an ordinary single shovel plow, of a pair of horizontal curved wings, which are attached loosely to the heel of the shovel standard by means of a single fulcrum bolt, to enable said wings to adjust themselves to the surface of the ground.

BLIND SLAT ADJUSTER.—Oliver L. Houghton, Holden, Mo.—This invention consists of a coiled spring connected to one of the slats for turning them up all the slats being connected together with a ratchet disk on the lower slat, and a catch pivoted on the lower cross piece of the blind to hold the slats open; or, instead of the disk and catch, it is proposed in some cases to have a hasp with a knob hinged to the lower slat, and a catch plate attached to the cross piece below, for pulling the slats down, and fastening them by a pin on the hasp.

EARTH AUGER.—Joseph Wilson, Cameron, Mo., assignor to himself and Lewis A. Bing, of same place.—This invention relates to augers for boring wells, and consists of two semicircular tapering pods, each with a cutting lip and opening, securely riveted or fastened to arms. Securely fastened, by brazing or otherwise, to the sides of the shank, are two pairs of cross plates. To the upper pair the ends of the arms are jointed, so that the parts of the pod may be separated when the auger is raised and the inclosed earth may be released. The pods are held together in close contact with each other, so that they form a round hollow cylinder sufficiently tapering to allow it to be revolved in the earth with but little friction. When the auger is full it is withdrawn, the pods are separated, and the earth discharged.

AWNING SLIDE.—John Boyle, New York city.—This invention has for its object to furnish an improved awning slide, retaining its position securely and not being liable to get out of order; and it consists in a grooved slide, sliding block, and the tubular socket to receive the rod.

DRAWER SUPPORT.—John Baggs, Easton, Md.—The invention relates to drawers generally, and consists in providing them with a support, susceptible of easy adjustment to take up wear, prevent sticking, and render the relative position of a drawer to the frame always readily maintainable. It consists, secondly, in beveling the front division piece between drawers, so that the drawer will not rub the veneering and cause it to peel off, but will cease to have a bearing on said division as soon as it is started outwardly, and will not contact with it until the drawer is entirely closed.

ADJUSTABLE CHIMNEY CAP.—Patrick H. Carlin, Brooklyn, assignor to himself and George H. McLaughlin, New York city.—This invention has for its object to produce a metallic chimney cap or covering for the tops of chimneys in place of the blue stone or other stone or brick caps heretofore used, and thereby to increase the strength and durability of chimneys, and reduce the possibility of their crumbling to pieces. The invention consists in the use of a metallic top having adjustable ledges to fit any thickness of walls, and adjustable cross pieces to fit any position of flues.

COOKING VESSEL OR BOILER.—William Y. Thomson, Oyster Bay, N. Y.—This invention has for its object to furnish an improved cover for kettles and other cooking vessels, which shall be so constructed that the liquid contents can be conveniently poured off without danger of spilling the solid contents of the vessel or scalding the hands of the operator. Upon the upper part of the opposite sides of the inner surface of the vessel, and directly opposite the lugs, are attached shoulders or flanges upon which the cover rests. To the inner side of the vessel are attached lugs or pins to keep the cover in place upon the shoulders. The cover is made in the form of two semicircular disks, hinged to each other at their straight edges. To the middle part of one of the semicircular disks is attached the handle by which the cover is handled. In the other semicircular part of the cover are formed a number of perforations, through which the water flows out when the kettle is inclined. The perforated part of the cover is covered with a flap, hinged to the said semicircular dish, so that it may be pushed out by the outflowing liquid. Suitable means are provided so that, by turning the cover one quarter around, it will be locked into place. In pouring off the liquid contents of the vessel, the said vessel is inclined by means of the handle, upon the lower ends of the arms of which are formed straight hooks which enter slots in the lugs formed upon the lower part of the said kettle. This construction enables the handle to be kept from dropping down upon the stove or range and being burned or heated.

CORN PLOW AND MARKER.—George W. Meixell, Hecktown, Pa.—This invention has for its object to furnish an improved machine for furrowing the ground for planting and cultivating. The two beams, to which the standards of the plows are attached, are connected and held in their proper relative positions by the cross bars, which are secured to the upper sides of the beams so that the plows may be conveniently adjusted wider apart or closer together, as circumstances may require. The rear end of the tongue, which is loosely bolted to the center of the central cross bar, passes through a keeper, which is so formed as to allow the said tongue to have a vertical but no lateral movement. This construction relieves the horses' necks from having to support any weight, and at the same time leaves the plows free to follow the surface of the ground. The depth at which the plows work in the ground is regulated by the gage wheels, which may be readily adjusted. The handles may be inclined, to allow the plowman, while guiding the plows, to walk at the side of the row of plants being cultivated. By suitable construction, the marker may be turned from one side to the other as the machine passes back and forth across the field, working equally well at either side.

MACHINE FOR POLISHING MARBLE AND WOOD.—John C. Mateer, Kankakee, Ill.—This invention has for its object to furnish an improved machine for polishing marble and wood, and which may also be used for operating a bit or drill for boring purposes, doing its work well and thoroughly, and adjusting itself to the surface to be operated upon; and it consists in a vertical shaft, revolving in bearings attached to suitable supports. Upon the upper part of the shaft are placed a fast pulley and a loose pulley to receive the driving belt. A frame is arranged, to the rear ends of the top and bottom bars of which are attached bearings in which the shaft revolves, so that the said frame may be supported by the said shaft. This shaft, by means of a belt, imparts motion to a second shaft attached to the frame. From the second shaft extends another frame, at the end of which is a third shaft, to the lower extremity of which the rubber is fastened and so arranged as to adjust itself to the surface to be operated upon. The swinging frames can be conveniently raised and lowered to adjust them to the thickness of the material to be operated upon.

STEAM ROAD ROLLER.—Thomas Aveling, Rochester, England.—The object of this invention is to construct a light and efficient steam road roller with horizontal boiler. To this end, the construction of the roller is so modified as to avoid the necessity for the heavy framing heretofore employed. In carrying out the invention, the general arrangement of the ordinary traction engine is adopted, converting the driving wheels into rollers, and the space left by these rollers is covered by a pair of front rollers, which serve also as steering wheels. These rollers are made conical or "dished," in order that, on the ground line, they may be close together, while at and above their axle there is space for a vertical shaft standing up from their axle, and which serves as a front support for the boiler. This support is so connected to the shell of the horizontal boiler as to allow of its receiving a slight lateral (as well as an axial) motion, which lateral motion is required to permit of the rollers adjusting themselves to their work. The front rollers are mounted loosely on a dead axle to which is bolted the lower end of the vertical shaft or support. To the extremities of this axle a horizontal forked or saddle piece is attached to receive and act as a guide for the steering chain. The chain passes rearward to a chain wheel, by turning which the steering of the rollers will be effected, their axle being free to swivel and oscillate with the vertical support attached thereto. Mr. Aveling has done more towards developing improvements in this line of invention than any

other person. Aveling & Porter manufacture the machines in England, and Mr. W. C. Oastler, 43 Exchange Place, New York city, is the agent for this country.

BRIDGE.—George E. Harding, New York city.—The invention consists in a stiff upper chord of metal or wood, preferably arranged in the form of a double ribbed arch, braced and counterbraced in suitable panels, and rigidly connected at each end with a double lower catenary chord, also braced and counterbraced with vertical tension rods connecting the upper and lower chords.

[OFFICIAL.]

Index of Inventions

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FOR THE WEEK ENDING NOVEMBER 5, 1872, AND EACH

BEARING THAT DATE.

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APPLICATIONS FOR EXTENSIONS.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.
 22,890.—CARPET SWEEPER.—N. B. Pratt. January 22, 1873.
 22,990.—MOP HEAD.—L. Taylor. January 29, 1873.
 23,084.—FIRE PLUG.—J. L. Lowry. February 5, 1873.

EXTENSIONS GRANTED.

2,036.—FRUIT PRESERVING HOUSES.—B. M. Nyce.
 2,038.—PRESERVING FRUIT, ETC.—B. M. Nyce.
 4,784.—PRESERVING FRUITS, ETC.—B. M. Nyce.
 7,813.—HORSE RAKE.—H. W. Sabins.
 21,924.—PATCHING RIFLE BALLS.—L. H. Gibbs.
 21,936.—LOCOMOTIVE ENGINE TRUCK.—L. Blaisell.
 21,952.—CAR SPRING.—P. G. Gardiner.
 21,991.—SAFETY STEAM BOILER.—F. Stebbins.
 22,049.—RAILROAD CAR WHEEL.—T. C. Ball.

DESIGNS PATENTED.

6,235.—TEA CAN.—J. Britton, Greenpoint, N. Y.
 6,236 & 6,237.—FURNITURE.—D. Denyven, Cambridgeport, Mass.
 6,238.—COOKING STOVE.—A. J. Gilbert, New York city.
 6,239.—PERFUMERY BOTTLE.—F. Storm, Philadelphia, Pa.
 6,240.—COOKING STOVE.—I. J. Vincent, Pittston, Pa.
 6,241.—COOKING STOVE.—I. J. Vincent, Pittston, Pa.
 6,242.—COOKING STOVE.—A. C. Williams, Albany, N. Y.
 6,243.—FIRE SET HOLDER.—A. Wunder, New Haven, Conn.

TRADEMARKS REGISTERED.

48.—MEDICINE.—T. Boyce, F. McKenzie, San Francisco, Cal.
 1,049.—WHISKY.—F. Chevalier & Co., San Francisco, Cal.
 .050.—MUSTARD.—H. C. Hudson & Co., San Francisco, Cal.
 .051.—CHAMPAGNE WINE.—Renault, Francois & Co., New York city.
 .052.—BRANDY.—Renault Francois & Co., New York city.

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 they have 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 written 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.

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.

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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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