

Queries.

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers.]

1.—BLOW PIPE LAMP.—Can any of the readers of the SCIENTIFIC AMERICAN tell me if it is safe to convert common lamp oil (petroleum) into gas on a small scale for blowpipe use? Having had the experience that alcohol is too expensive, I tried to find a substitute for it. The receptacle for oil should be cylindrical, three inches in diameter, and about the same height, being heated by a lamp under it, fed with the same oil. Would the oil explode if heated so as to give gas, which would, under some circumstances, be above its boiling point? I think this a question of general interest, especially for watchmakers and goldsmiths, who have to use hard solder.—A. K.

2.—MALLEABLE CASTINGS.—What process is the best and cheapest to finish malleable iron castings? How is tanning done?—N. F. P.

3.—STEPS FOR WATER WHEELS.—Will some of the readers of your valuable paper please tell me what kind of wood makes the best step for water wheel? also the best form to turn the same?—S. H. R.

4.—DEODORIZING BISULPHIDE OF CARBON.—Will you please inform me in your "Answers" if there is any method of deodorizing bisulphide of carbon? I think I have seen an article on the subject in the SCIENTIFIC AMERICAN or some other scientific paper.—H. L. B.

5.—TRANSFERRING DRAWING TO GLASS.—Will some of your kind subscribers inform me of the process of transferring pictures on to glass to imitate stained glass? There are prepared prints and boards for the purpose.—C. S. M.

6.—PEASLEY'S CEMENT.—Can any of the readers of your valuable paper inform me how to make the celebrated "Peasley's cement?" I once read the recipe in a weekly journal, but have forgotten it.—I. G. H.

7.—PARLOR MATCHES.—Will one of your numerous correspondents please inform me how to put the red tops on parlor matches, what are the ingredients, in what proportion should they be used, and how to prepare them?—J. W.

8.—RELATIVE POWER ON THE SIDES OF PISTONS.—I wish to know if a steam engine works with as much power on the backward stroke as on the forward stroke? As the piston rod occupies some space on one side of the piston and none on the other, there will be that much more surface for the steam to act on.—J. H. C.

9.—ROSEWOOD GRAINING IN ASPHALTUM.—Is there any method for preparing asphaltum so that fine graining can be done by spreading it over a red base and then graining it as in paint? Asphaltum, although exceedingly beautiful for imitating rosewood naturally, runs, spreads, or flows together again, so that it will not retain the graining. We have remedied this defect by putting in linseed oil, boiled, prepared, or dryers which have it for a base (retaining its dark color by adding lamp-black), but it dries so slowly when mixed with oil that it is not practicable. Yet we have seen such graining. We have not been able to obtain any book which could give us the needed information. Such information would be thankfully received by about all the cabinet makers in the United States, for it is in general use, but on account of the above defects the great body of them are limited in its use exclusively to the cheapest imitations of rosewood.—A. T. & S.

10.—HEATING SURFACE OF BOILERS.—Will some reader give me a simple, practical rule for estimating the heating surface of steam boilers, both tubular and twoued?—A. H. G.

11.—CISTERN WATER.—Can I find out, through the SCIENTIFIC AMERICAN, how to obviate dirty and bad smelling water, which is kept in a large and well cemented cistern, having just been cleaned, and with good ventilation?—H. W. U.

12.—HEATING FURNACE.—Could you tell me how to arrange a smith's fire to heat my springs (putting in a dozen at a time), so as not to put them directly in the coal, as it is inconvenient for rapid work?—N. S. H.

13.—PREVENTION OF SCALE.—I have seen it stated that if borax be introduced into hard water it will become soft; and the idea came into my mind that it might be useful to introduce it into steam boilers to prevent scale; but I do not know the effect it might have on the boiler, or the quantity to the gallon, or how often to introduce it. Would it be preferable to put it into the cold water in a tub and lead the exhaust steam into it, and heat the water with the borax in it before pumping it into the boiler?—D. McI.

14.—CAPACITY OF BOILERS.—Will some of your correspondents answer the following question? There is a boiler forty-four inches in diameter, twenty-six feet long, with five twelve inch flues, that furnishes steam for an engine, fourteen inch cylinder, twenty-four inch stroke. How many plain cylinder boilers will it take to furnish steam sufficient for the above engine, of the following dimensions: two feet diameter, twenty-six feet long? If some one will answer the above, I will be obliged, as we do not agree about it here, and propose to refer it to your paper.—M. L. S.

15.—QUARTER TWIST BELT.—Can I run a quarter twist belt on my swinging cross cut saw, nine feet between shafts, driving pulley twenty-four inches diameter, and driven six inches, six inch faces? The driver is placed in lower story, the saw on floor of second floor; the saw has twenty-two inches throw from standing point; speed, 1,000 per minute.—A. M.

16.—BLEACHING STAINED BONE.—How can I bleach or clean articles of bone which have become dingy, soiled, and yellow, without removing the polish, or, if that must be done, how can I repolish them?—S. L. C.

17.—HINDRANCE TO THE FLOW OF WATER THROUGH PIPE.—I laid a three quarter inch iron pipe about 130 feet, from a spring to a watering trough, about a year ago. The water is moderately hard, and there is a descent of five or six feet in the pipe; at the lower end, a three eighth inch iron pipe is used to raise the water from the elbow, about three and a half feet to the trough. The descent in the main pipe is even—no depressions—and the small pipe is bent over to form a goose neck at the top. At first the water ran full and strong, but after a short time slackened and almost stopped. Upon removing the upright pipe, the water starts from the main pipe freely again, and after a few seconds large bubbles of air or gas begin to pass off rapidly, continuing for about eight or ten minutes, when it ceases, and the water runs steadily again from the upright pipe for from six to ten days, when it becomes weak and slacks up to almost nothing; and upon removing the upright, the bubbling process is repeated, and has been so at the usual intervals, ever since. Now there has been much speculation and argument among a few persons as to the cause of this strange proceeding. Is it air or gas? Why does it not pass out at the upper end of the main pipe, instead of accumulating and checking the flow? Why does it bubble so long? The pipe certainly is emptied of the accumulated water in less than one minute. Would the oxidation of the iron produce any such effect, by the combination with the hydrogen in the water, or form any kind of gas, and in such enormous quantity?—J. R. B.

18.—PUNCHED AND DRILLED GIRDEERS.—As I have heard various opinions as to punched and drilled girdeers for bridges, I should be glad if any of your numerous readers would give the exact percentage of advantage of drilled girdeers over punched, and the difference in cost per ton.—B. F. M., of Australia.

19.—SAFETY VALVE.—Will you permit me to ask the following question? If the steamboat Westfield's steam gage indicated twenty-seven pounds of steam when the engineer last saw it, her fires being in good order, generating steam at the rate of twenty-five revolutions per minute of her engine, boiler exploding from five to fifteen minutes after engineer had seen the steam gage, how much pressure of steam had the Westfield's boiler when she exploded? If her safety valve was of sufficient capacity, and not fastened down, how came she to have twenty-seven pounds of steam?—W. H. S.

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

DIGITARIUM.—Myer Marks, of London, England, assignor to William A. Pond, of New York city.—This invention has for its object to produce an instrument whereby the fingers and wrists of persons learning to play the pianoforte or organ can be trained, and the muscles used in playing strengthened. Five keys are pivoted within a box, and arranged alongside of each other like piano keys. Each key is held up by a spring of greater or lesser strength, so as to be more or less difficult to depress. The person practicing on the keys will train the fingers to the gentle touch required on actual instruments. A slide is fitted into a groove in the under side of the case, so that it can be drawn in or out at will, and supports, at its front end, in front of the keys, a wrist support, which is applied by a screw, to be vertically adjustable. The wrist can thus be sustained at suitable height and suitable distance from the keys. To the sides of the case are affixed plates with their corners so rounded that the thumbs and forefingers can be spread thereon, one plate being for the right, the other for the left hand. To the back of the case is affixed another plate, wedge shaped, so as to serve for spreading two adjoining fingers.

CLOD FENDER.—George L. Perry, of Berlin, Wis.—This invention furnishes an improved corn shield, so constructed as to effectually protect the corn from being covered or injured by the dirt or clods thrown toward it by the plow, and so that it may be conveniently raised or lowered, or adjusted at a greater or lesser angle with its bar, or adjusted for attachment to either side of the plow. It is a simple and useful device well calculated to accomplish the end sought.

CARPET STRETCHER.—James H. De Poe, of Boonton, N. J., assignor to himself and Richard Mansel, of same place.—This carpet stretcher consists in a long straight stock adapted for applying to the floor at the angle between it and the base board by the lower end, which terminates in a pointed metal piece with a fixed jaw projecting from the side opposite the base board, and a swinging jaw above it, between which the carpet is gripped by the jamming of the upper jaw upon the lower one when the upper end of the stock is pushed toward the wall. It is so arranged that when the carpet is placed upon one jaw, and the instrument is ready to be set in action, it will close upon the carpet by the action of gravity, and the friction, when the instrument is moved toward the wall, will cause it to gripe and hold the carpet firmly to stretch it.

PROPELLING CANAL AND OTHER VESSELS.—John Jochum, of Brooklyn, N. Y.—This invention consists in an improvement upon that class of propellers which acts against air instead of water. An ordinary screw propeller wheel is arranged in an elevated position on the deck, to be turned by the motive power in the same manner as when acting upon the water, but, of course, to be run very much faster for obtaining the required impelling force. It is contemplated to employ any suitable arrangement of wind wheels instead of screws, as may be found best for the purpose. By preference, a hood or case will be placed over the wheel to prevent lateral displacement of the air, also to protect it and the attendant from injury. The particular location of the wheel or arrangement of it or the driving mechanism is not material.

WRINGER ROLLERS.—Joseph Whitehead, of Trenton, N. J.—This invention consists in a novel mode of combining the rubber with the shaft by means of plates connected with the flanges or disks and arranged parallel with the shaft, preferably two in number, and arranged on opposite sides. The plates are intended to have the india rubber so built around them as to prevent the possibility of its turning, shifting, or working loose on the shaft. This is accomplished by first winding the india rubber, it being suitably arranged in a sheet on the shaft as thick as the distance of the plates from the shaft. Then the plates are on the rubber, said plates being enclosed in a canvas cover coated with india rubber, or otherwise arranged to cause the india rubber to adhere to them when vulcanized. Then the disks, secure to both the shaft and the plates, and the spaces, are filled out between the plates flush with the outer surfaces by pieces of india rubber laid in, and then winding on the sheet until the full size is attained; after which the whole is heated in the ordinary way of causing the layers of india rubber to unite in a mass, thereby incorporating the plates so that the india rubber cannot turn or shift.

HAND GARDEN PLOW.—William D. Smith, of Homerville, Georgia.—The shank of the plow is inserted in a handle, and secured by a key in the ordinary manner. The lower part of the shank is divided into two branches of unequal length. The shorter branch is curved to the right and downward, and to its end is attached or upon it is formed a blade. The other or longer branch is curved outward, upward, and downward, and upon its lower end is formed or to it is attached a blade. The blades are made thin, narrow, curved, and with sharply inclined forward edges, with a sharp point. Guard, plate or fender, made thin, flat, and broad, is formed upon or attached to the end of a rod, which passes horizontally through a hole in the shank, at or near its branching point, and is secured in place by a hand nut. This construction enables the fender or guard to be turned down when cultivating small plants, turned up when cultivating larger plants, and to be readily detached when required. The handle is about six feet long, so that it may be grasped nearer to or further from the plows, according to the height of the operator.

WASH BOILER.—Nathaniel Parks and George A. Hynes, of Rome, N. Y.—This invention relates to several improvements on the style of wash boilers containing vertical pipes, wherein the steam created in the lower part of the boiler ascends to be discharged laterally into and through the clothes to be washed. The present invention consists in the application to such boiler of a fresh water chamber, wherein a supply of fresh water is kept and heated, to be let on after the water in the boiler has become dirty. The invention also consists in a new manner of fastening and arranging the vertical steam pipes, and in the use of a removable false cover.

ELECTROMAGNETIC BURGLAR ALARM.—George E. Cook and John H. Guest, of New York city.—This invention relates to several improvements in the sounding and setting apparatus of a burglar alarm; and consists, first, in the arrangement of an adjustable spring, whereby the movements of the vibrating armature are regulated; also, in the application to windows of a balanced metallic circuit closer, which will serve to establish a current as soon as the sash is moved or its panes are meddled with. Finally, the invention consists in the introduction of a peculiar set of springs between the sash and window frame for closing the circuit as soon as the sash is elevated. We should be glad to give our readers some idea of the details of this ingenious invention, but the nature of these details precludes the possibility of so doing.

NAIL MACHINE.—Henry Reese, Baltimore, Md.—This invention relates to the manufacture of horse shoe or other wrought nails, by the process of rolling the end of a heated cylindrical rod between opposite and exactly similar faces moving with the same velocity in contrary directions, said faces being inclined so as to gradually approach each other as the rolling progresses and being so shaped that the cylindrical rod may be rolled and drawn into a pointed blank, round in cross section, said blank then being pressed into the proper shape between dies operated by a toggle or other equivalent arrangement.

TREADLE POWER.—Two cranks are used having friction rollers upon their wrists. The cranks are set opposite, so that when one is at the lowest point of its revolution, the other is at the highest. Two treadles are used, which are pivoted at one end, and rest upon the friction rollers at a convenient distance from the other end. On the under side of these treadles are inclines, so adjusted, that when the treadles are depressed alternately, they force the cranks by the dead point. William Reed, of Allentown, Pa., is the inventor.

WATER WHEELS AND GATES.—P. H. Wait, of Sandy Hill, N. Y.—This invention, the details of which are such as to preclude minute description here, renders the casting of the parts easier, as the rims and buckets may be molded together. The inclination of the buckets is preferably in the relation of the hypotenuse of a triangle whose base is five and whose perpendicular five. By this and certain improvements in chutes, etc., it is claimed that a more effective application of the water to the wheel is secured. A feature of the gate is, that, should any obstruction reach through it to be caught in the wheel, the gate will revolve with the wheel, and thus avoid breaking. There are several other good points to this wheel which will be duly appreciated upon its introduction to the public.

DENTAL DRILL.—The invention of Chandler Poor, of Dubuque, Iowa, relating to dental drills, provides an improved method of transmitting the power of a foot wheel to such drills in filling and preparing teeth for plugging. The power is transmitted, by a cord belt through a universally jointed standard, to a spindle at the top of the standard. This spindle is connected with the drill mandrel by means of a piece of catgut. The drill mandrel runs in a hollow cylindrical hand support, having a bell shaped opening in the rear where the catgut enters, thus allowing the drill to be presented in any required position to the tooth operated upon.

AUTOMATIC WIRE STRETCHER FOR FENCES.—This device, invented by Ebenezer Burnet Stephens, of Brownville, Nebraska, consists in a vertical bar, to which the ends of the wires are attached. This bar is drawn back so as to stretch the wires uniformly, through the agency of a weighted lever and a wire rope, said rope passing over a pulley in a fixed support, and branching to connect with each end of the vertical bar.

SIDE HILL PLOW.—This is a combination of well known devices designed to constitute a reversible plow that shall work equally well upon inclined or level land, and at the same time be easily reversed and firmly held while at work. The combinations are cheap, strong, and simple, and we judge well adapted to the purpose specified. Charles B. Pettengill, of Hebron, Maine is the inventor.

WASHING MACHINE.—T. A. Massie, of Plattsburg, Mo.—In this machine the clothes are passed over an obliquely ribbed board, and squeezed against a vertical grate by suitable squeezers, the clothes being forced back and turned over on reversing the movement by teeth attached to an oscillating head, said teeth being passed between the vertical bars of the grate. The whole is inclosed in a suitable tub or case, and the mechanism is operated by an oscillating hand lever.

SAW GUMMER.—William Reed, of Allentown, Pa.—The stock or frame of the machine is belted or otherwise secured to a bench or other support. The forward part of the stock is cut away to form a table, in which is placed the die plate that supports the part of the saw plate upon which the punch is operating. The punch works in a vertical hole in the forward part of the stock. The top of the stock is recessed transversely to receive pins or lugs formed upon or attached to the sides of the upper end of the punch to receive the hooks or eyes of a link that passes through a hole in the inner part of the lever near its end. The forward side of the top of the stock is slotted, to receive and serve as a guide to the lever. Upon the under side of the inner end of the lever is formed a cam, that rests upon the top of the punch, and, as the outer or free end of the lever is forced downward, forces the punch through the saw plate. The inner end of the lever is rounded off or has a cam formed upon it which works in a groove in the forward side of the rear part of the top of the stock, and thus serves as a fulcrum to the lever when operated to raise the punch. A link, the lower end of which rests in a recess in the base of the stock, and the upper end of which rests in a notch or recess in the upper edge of the inner end of the lever, serves as a fulcrum in operating the lever to force the punch through the saw plate. By this construction, as the outer end of the lever moves downward the fulcrum moves forward, so that when the punch comes in contact with the saw plate the short arm of the lever may be very short, causing the punch to operate with very great power.

WASHING MACHINE.—An endless chain of ribbed segments is passed over two rollers, fixed in a suitable frame, and under a ribbed roller also suitably fixed in the same frame, springs being employed to force up the chain of segments against the ribbed roller. The apparatus is fastened in an ordinary washing tub, and the clothes are passed from the suds repeatedly between the chain of segments and the ribbed roller until cleansed. Calvin J. Weld, of Brattleborough, Vt., is the inventor.

INFANT'S CHAIR.—John Hayes, of Philadelphia, Pa.—This improvement consists in forming a chair with detachable rockers and casters, so that the chair may be used with or without rockers, and also providing it with a seat made of two leaves, having a half circle cut from each, so that when closed they form an opening for the reception of the child's body when the chair is used as a walking chair for infants learning to walk.

VARIABLE CUT-OFF FOR STEAM ENGINES.—William B. Cross, of Sacramento, Cal.—This is an improvement upon an invention for which letters patent were granted to Mr. Cross, Jan. 24, 1871. The present improvement greatly simplifies the apparatus. The valves are actuated by levers pivoted at one end, which pass through slots in the valve stems. Upon the tops of the levers and in the slots of the valve stems slide blocks, which by a screw adjustment are made to vary the point of cut off. The levers are actuated by a double toe or cam on a rock shaft worked by the eccentric.

NAIL MACHINE FEEDER.—The study of this patent renders clear that it is an important improvement, but it would be futile to attempt a description of its details in the present notice. We call the attention of nail manufacturers to it as well worthy their consideration. The device is automatic, but though automatic feeders for nail machines are not new, this invention comprises improvements covered by five claims, the number of claims allowed showing its distinctive character from that of other machines which have preceded it. James Ferguson and John Turner, Bridgewater, Mass. are the inventors.

GRIST MILL.—Ephraim H. Austin, Scott's Hill, Tenn.—This invention relates to sundry improvements in grist mills, said improvements having for their object to thoroughly separate grain, prior to grinding, from all kinds of foreign matter that may be mixed with it, to regulate the passing of grain from the hopper to the stones, and to facilitate its passage through the stones.

APPARATUS FOR FORCING FLUIDS.—Thomas W. Malone, Mason City, West Va.—This invention has for its object the production of an upward flow of the contents of wells, whether of the salt, oil, artesian, or ordinary species, or of cisterns, or of gas tanks, or of coal pits or shafts, by means of a forced current of air.

HARVESTER DROPPER.—Ortel M. Harrison, of Glasgow, Mo.—The inventor disclaims any novelty in the general idea of operating the dropper automatically by a weighted lever, being well aware that the principle of producing an automatic action by a weight or spring is very old in the mechanic arts. His object is only to secure protection on the particular means employed to produce this action effectually, and to embody a new mode of applying this well known principle to harvester droppers. The invention consists in a weighted lever, pivoted to a rod entering a notch upon the under side of a brace, and passing over the reel box in front of the reel post thus forming a tilting apparatus, which drops the bundles of uniform weight.

COTTON PRESS.—James Templeton, Florence, Ga.—This invention has for its object to enable the follower of a cotton press to be moved at the beginning of the pressing operation, when the material is loose, faster than it can be moved in that portion of the operation when the material becomes more solid; and it consists in a windlass mounted in a sliding bar that is placed in a guideway located in the foundation of the press, by which means said windlass, which is connected by a rope with the follower lever, may be drawn away from the press box to a certain extent, and by this movement partially lower the follower before the windlass is actually rotated.

CORK CUTTING MACHINE.—George Purves, of New York city.—This invention consists in an improved arrangement of apparatus whereby cylindrical or tapered corks may be rapidly cut by two operations of the cutter upon each cork, said operations being performed by a right and left movement of the cutter along the cork while being revolved, the object being to obviate the tearing of the corks so much as they do when finished at one cut. The machine seems a valuable improvement upon the cork cutting machines now in use, and will, we judge, be generally adopted.

BEDSTEAD.—Thomas B. Baldwin, of Marshall, Texas.—This mode of sus- pending beds will be especially useful in stores and offices where it is desira- ble to economize room, and it will also be desirable in many dwellings. The name of the bedstead, which, for the class of bedsteads to which the improvement more particularly applies—being light, so that they may be readily handled—may be joined together rigidly at the corners, but the bot- tom should be detachable. Chains, one at each corner, for suspending it from the ceiling by flat or other springs, are attached thereto, or the chains may be connected to staples, as preferred. The chains are connected to the bedstead, preferably, by long links, in which the hooks of a hoisting frame may be engaged so as to press the bed clothes down snugly on the bed bot- tom to keep them in place. Said frame may also be attached to the chains above the bed when the latter is down for use, to suspend a mosquito net. The suspending rope is attached to the frame at the center, and passes over a pulley hanging from the ceiling; thence to the pulley off at one side and down one of the walls of the room to any convenient fastening. The chains are connected some distance above the bed by elastic cords, for drawing them inward to rest on the bed when twisted, and thereby prevent their hanging over the sides. As a general thing, these beds will be preferred without legs; but, in case any should prefer to have legs, they can be attached so as to be folded up or taken off when the bed is raised. The short vertical rods bear against the ceiling, when the bed is elevated, to prevent it from tilting or swinging. They may have india rubber tips to prevent injury to the ceiling. The bottom of the bed is, on account of being exposed to view, finished ornamentally.

WHEEL PIT, FOR SPOKING CARRIAGE WHEELS.—James Collins, of Cr aw- fordville, Ind.—The claims cover a guide staff, constructed and operating in connection with standards, a pin, and the end of the hub, and also an adjustable supporting and gage pin, with nuts, lever, and spring, con- structed and operating with the adjustable guide staff, and the outer ends of the spokes. The method of applying these devices not only holds the hub and spokes securely, but gages the dish of the wheel accurately.

CULTIVATOR TEETH.—Lewis Daley, of Minaville, N. Y.—This invention relates to improvements in cultivator teeth; and it consists in a wrought iron stock, with a steel edge and part of the upper wearing surface, and a wrought metal shank. These teeth are claimed to be superior to the solid steel points, because they may be sharpened from time to time, as they be- come dull, by hammering the edges down thin; or when the steel is entirely worn out they may be re-steeled, while the all steel tooth is worthless after wearing to a certain extent. They are also superior to cast or wrought metal teeth for the same reason.

Official List of Patents.

ISSUED BY THE U. S. PATENT OFFICE.

FOR THE WEEK ENDING SEPTEMBER 5, 1871.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT FEES:

Table with 2 columns: Description of fee and Amount. Includes fees for Caveat, Trade-Mark, original Patent, Reissues, Extensions, and Copies of Claims/Drawings.

MUNN & CO.,

Patent Solicitors, 37 Park Row, New York.

- List of patents 118,668-118,686 including TREATING FIBERS, GAS LIGHTER, SEALING CANS, SEWING MACHINE, GRAIN MILL, MOWER, FURNACE, KNIFE HANDLE, THROTTLE VALVE, BED LOUNGE, CARRIAGE JACK, FED REGULATOR, PROTECTING LIME, EARTH CABINET, SHAFT, SPECULUM, LOCK NUT, and MEDICINE.

- List of patents 118,687-118,776 including CHURN, JOURNAL BOX, ICE SHAVER, SHEARS, LUBRICATOR, STEAM ENGINE, CASTING CYLINDERS, WHEEL PLOW, VELOCIPED, ELEVATOR, LOG BINDER, CLOTHES POLE, CANAL, FIRE KINDLING, AXLE BOX, GENERATOR, BEARING, HUB, LUBRICATOR, LUNIMATOR, GRADING MACHINE, WATER WHEEL, GAS PUMP, COFFEE CLEANER, SPARK ARRESTER, CHURN, CHURN, MEDICINE, STOP VALVE, SEED DROPPER, HOLDER, EVAPORATOR, RECLINING CHAIR, CUTTER, MOUSE TRAP, CONNECTING JOINT, MOVEMENT, BURKLE, CURTAIN FIXTURE, HAY RAKE, EGG BEATER, SEWING MACHINE, SHACKLE, WEATHER STRIP, WATER WHEEL, MILLING MACHINE, BOOT SOLE, INJECTOR, GENERATOR, BENDING WOOD, DETECTOR, COATING CASKS, MAKING CIGARS, LIFTING MACHINE, RAISING VESSELS, COUPLING, ATTACHING BUTTONS, NAIL MACHINE, BED BOTTOM, PRESERVING HIDES, FLY TRAP, MITER BOX, CLOD CRUSHER, BATH, TORCH, FIRE ARM, PICK HOLDER, PLANING MACHINE, FLUID METER, COTTON PRESS, PAPER FILE, PLOW, SEWING MACHINE, AXLE, PULLEY, GRATE, SPINDLE, STEAM ENGINE, DESK, MEDICINE, RAG CUTTER, PACKING CAN, PLOW, AXLE, STEVE, FISHING LINE, DESK, WASHING MACHINE, REIN HOLDER, FORCING FLUIDS.

- REISSUES. 4,541.—LAMP BURNER.—H. W. Hayden, Waterbury, Conn.—Patent No. 106,363, dated August 16, 1870. 4,542.—LOCK.—J. C. Hintz, Jr., Cincinnati, Ohio.—Patent No. 108,481, dated October 18, 1870. 4,543.—WATER TANK.—J. Morton, Sedalia, Mo.—Patent No. 68,418, dated April 2, 1867. 4,554.—WASH BOILER.—C. N. Tyler, Buffalo, N. Y.—Patent No. 84,518, dated December 15, 1868.

- DESIGNS. 5,251.—WAGON SEAT.—P. P. Child, St. Louis, Mo. 5,252.—NAIL HEAD.—H. L. Judd, Brooklyn, N. Y. 5,253.—BURIAL CASKET.—W. F. Lane, Boston, Mass. 5,254 and 5,255.—BIRD CAGE.—G. R. Osborn, B. A. Drayton, New York city.

Practical Hints to Inventors.

MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, have devoted the past twenty-five years to the procuring of Letters Patent in this and foreign countries. More than 50,000 inventors have avail- ed themselves of their services in procuring patents, and many millions of dollars have accrued to the patentees, whose specifications and claims they have prepared. No discrimination against foreigners; subjects of all coun- tries obtain patents on the same terms as citizens.

How Can I Obtain a Patent?

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 Specifica- tion. 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 pat- entable, 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 pos- sible—and send by express, prepaid, addressed to MUNN & Co., 37 Park Row, New York, together with a description of its operation and merits. On re- ceipt 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 im- provement 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 inven- tion, 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 writ- ten report in regard to the patentability of your improvement. This special search is made with great care, among the models and patents at Washing- ton, to ascertain whether the improvement presented is patentable.

Caveats.

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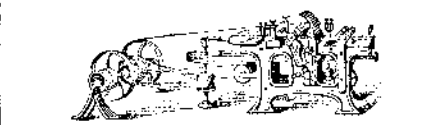
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