

**ORNAMENTAL DESIGNS FOR FRET WORK, FANCY CARVING, AND HOME DECORATIONS.** Price 60 cents. New York city: Henry T. Williams, 46 Beekman street.

This book contains a very varied and extensive assortment of original designs, and will be found useful by the numerous workers with the band or jig saw. Our correspondence shows that many of our readers devote their spare hours to this occupation, which is a pleasing manner of passing the time, and occasionally a source of profit, as well as a means of adding to the interior decoration of a home. To their attention, we commend the numerous patterns given in this volume.

**THE FIRESIDE ASTRONOMER, a Plain and Familiar Description of All the Most Important Facts relating to the Heavenly Bodies.** By S. N. Manning, A.M. Kankakee, Ill.: Times Office.

This unpretending little pamphlet deserves to be widely circulated, for it contains a very clear and succinct explanation of the general plan of the sidereal universe and of the science of astronomy by which its laws have been defined. Free from algebraic and trigonometrical formulae, it is written throughout in a simple and clear style, which lacks nothing in precision or accuracy. We cannot expect that our tyros in the sublime science will find a book better suited to their needs.

**PAPERS ON THE TAILS OF COMETS, AND ON THE LOSS OF LIGHT IN ITS TRANSMISSION THROUGH SPACE.** By Henry M. Parkhurst, New York city.

This is a reprint of a very interesting paper read by the author at the Hartford meeting of the American Association for the Advancement of Science, in August last.

**NOTES ON EXPLOSIVES.** By Walter N. Hill, S.B., Chemist, U. S. Torpedo Station, Newport, R. I.

This pamphlet is a useful and compendious account of the constitution, action, and effects of the various explosives now in use in engineering operations and in warfare. The information in it has never, we believe, been collated before, and it is likely to be valuable to several important interests.

**LECTURE ON THE WHITEHEAD TORPEDO.** By Lieut. F. M. Barber, U. S. N., Torpedo Station, Newport, R. I.

A readable account, historical and descriptive, of an engine of destruction which now occupies the attention of naval men, as likely to play a most important part in future warfare.

**A PRACTICAL TREATISE ON FRICTION OF AIR IN MINES.** By the late J. J. Atkinson, Government Inspector of Mines for the County of Durham, England. Price 50 cents. New York city: D. Van Nostrand, 23 Murray and 27 Warren streets.

This little book throws much light on a subject little noticed in popular treatises on mining engineering; and it deserves to be attentively read, for it shows how readily the whole system of ventilation of a mine may be disturbed, and its efficiency destroyed, by the very currents intended to ensure a supply of pure air and free exit for foul gases.

**INTEROCEANIC CANAL (Route of Pava).** By L. Laoharne.

The author of this work desires to call public attention to the Pava of Pava as a route for the much discussed ship canal between the Atlantic and Pacific Oceans. He states that the Pava has always been followed by the Indians crossing the Isthmus, and claims, with apparent reason, that, by following it, a canal can be quickly and cheaply executed.

**THE DENTAL SCIENCE AND QUARTERLY ART JOURNAL.** Conducted by Dr. A. P. Merrill. Volume I, No. 1. One Dollar a year. New York city: E. Richards & Co.

This new-comer appears to be well and carefully edited, and is altogether a promising magazine for the use of the dental profession.

**JOURNEY IN HONDURAS AND JOTTINGS BY THE WAY.** By R. G. Huston, C.E., Honduras and Inter-oceanic Railway. Price 50 cents. Cincinnati, Ohio: Robert Clarke & Co.

A pleasant account of a country which attracts a great deal of attention just now, but the physical features of which are little known.

**THE GRAHAMITE ASPHALT PAVEMENT ON FIFTH AVENUE, NEW YORK CITY.** New York city: Francis and Lourel, 45 Maiden Lane.

Mr. J. L. Graham invites public attention to this pamphlet, in which the facts as to the durability and excellence of his system and material for paving are duly set forth and verified by testimonials.

**ANNUAL REPORT OF THE CHIEF ENGINEER OF THE WATER DEPARTMENT OF PHILADELPHIA, PA., FOR 1874.**

**CATALOGUE OF THE OFFICERS AND STUDENTS OF THE SCHOOL OF MINES, COLUMBIA COLLEGE, NEW YORK CITY, FOR 1874-1875.**

SCRIBNER'S MONTHLY for May contains the first illustrated and complete description of the new opera house in Paris which we have seen published on this side of the Atlantic. There is, besides, an electro-mechanical romance, which tells how two lovers, one a railroad engineer and the other a telegraph operator, utilized an abandoned wire to make a circuit which the passing locomotive closed, and so rang a bell in the operator's office, thus warning her of the approach of her John's engine. This neat little contrivance, while a special train full of railway magnets is standing at the depot gives unexpected warning of the coming of a lightning express. The young lady rushes frantically up the line just in time to stop the approaching train and arrest a horrible accident—and of course, in the sequel, she and her intended are bountifully rewarded. It is a pretty little story, charmingly told, and, besides, conveys a possible hint for an invention. The rest of the papers are of the usual standard of excellence, and the illustrations plentiful and good. Jules Verne's "Mysterious Island" is continued, and there is a valuable illustrated article on "Drainage in Holland." Scribner & Co., Publishers, 713 Broadway, New York. \$4 a year.

THE ECLECTIC MAGAZINE for May offers a well varied and excellent table of contents, selected from the foremost of contemporary periodicals. Professor Huxley's "Results of the Challenger Expedition" is given in full. The Professor arrives at the conclusion that "all the chief known constituents of the crust of the earth may have formed living bodies; that they may be the ash of protoplasm, and consequently that the time during which life has been active on the globe may be indefinitely greater than the period, the commencement of which is marked by the oldest known rocks, whether fossiliferous or unfossiliferous." This paper will repay careful perusal, as will indeed the other scientific essays, notably the "Limits of Science," and the "Reproduction of Organisms," with which the present number is rich. Thomas Carlyle's "Early Kings of Norway," and Julian Hawthorne's "Stone and Plaster" are continued; and there are the usual serial and other stories and editorial summaries. E. R. Pelton, Publisher, 108 Fulton street, New York city. \$5 per year.

#### Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From March 30 to April 13, 1875, inclusive.

BOOTS AND SHOES.—L. Heath, Boston, Mass.  
BRICK KILN, ETC.—E. W. Bingham, Portland, Oregon.  
CAR DRAW AND CUPPER.—A. B. Pullman (of Chicago, Ill.), London, Eng.  
CUTLERY, ETC.—O. W. Taft, New York city.  
DERAILMENT INDICATOR.—J. Turner (of Chicago, Ill.), London, England.  
FRICTION MATCH MACHINERY.—McC. Young, Frederick, Md.  
GRADUATED RULE, ETC.—Hastings & Co., Granby, Conn.  
LOOM.—J. F. Wicks, Providence, R. I.  
LOOM PATTERN CHAIN.—J. F. Wicks, do.  
MAKING STGAR.—F. O. Matthiessen, New York city.  
NET MACHINERY.—W. Charles, Chartiers, Pa., do.  
PAPER BOX.—L. A. Kettle, Philadelphia, Pa.  
RAILWAY WHEEL.—R. N. Allen (of Hudson, N. Y.), London, England, et al.  
RECORDING STEAM GAGE.—M. B. Edson, New York city.  
SUSPENDERS.—S. W. Fisk, New York city.  
TRAMWAY, ETC.—A. S. Halliday (of San Francisco, Cal.), London, England

#### Recent American and Foreign Patents.

##### Improved Ore Separator.

Thomas B. McConaughy, Newark, Del.—In using the machine, water is admitted at the upper forward end of a wash trough, and the ore is fed in at its lower rear end. The ore is moved through the channels of the trough against the stream of water by shovels, and is pushed by said shovels from the forward end of the said trough. The ore falls upon the screen, and the fine ore passes through the holes. The coarser ore and the rubbish are carried across the screen by its motion, and fall upon the apron of the carrier. The coarser stones and rubbish are removed by hand from the carrier apron as the stream of ore is being carried forward, and the remainder falls from the carrier into a receiver.

##### Improved Loom Shuttle.

James M. Peckham, Fall River, Mass.—This improvement consists in a metallic holder for the tension cloth and grooves cut in the shuttle from the shuttle opening to the eye recess. These grooves allow the holder containing the tension cloth to be shoved in to hold the tension cloth in the proper position. The holder is made of a single piece of sheet metal having two tongues doubled over on the plate. The cloth is slipped in between the plate and the tongues. The holder is slipped into the grooves, and the thread is passed over the cloth, which affords the necessary tension.

##### Improved Laboratory Gas Burner.

Charles D. Cheney, Canandaigua, N. Y.—The base is of concavo-convex form, having a hollow center extending down below its lower side. A small tapering tube receives the gas from the gas pipe, and delivers it in a small jet into the center of the burner tube, entering through an aperture in the hanging center. It is provided with a dovetailed lug, which fits a corresponding notch, the form of the notch being such as not to prevent sliding the tube endwise sufficiently to release the lug. A valve is made to close over the end of the center by means of the rod to which the valve is attached, which rod extends up through the base, with the lever on its upper end. This lever is moved back and forth between stops, and the extent or size of the flame is regulated thereby.

##### Improved Oiler.

Isaac Levy, Ellaville, Fla.—This oiler is so constructed that it may be first used for blowing off the dust, shavings, etc., from the places where the oil is to be applied, and afterward may be used for applying the oil. It is made in two parts—one made of sheet metal, for the oil, and the other made of india rubber, for the air—said parts being separated by a division plate, and each part being provided with its own nozzle.

##### Improved Bench Plane.

John E. Norwood, Boston, Mass.—The stock is provided with side openings, through which the cutting iron, which is made with side extensions, is permitted to pass out flush with the outside. The cutting iron is rigidly fastened and adjusted, and allows of the use of the plane for cutting rabbets, or as a block plane, for truing up miter joints or cutting across the ends of the wood.

##### Improved Comb.

Elias Brown, Wappinger's Falls, N. Y.—This is a neat and convenient comb for holding the ringlets or curls at the back of the head and preventing their falling forward; and it consists of two symmetrically arranged combs with curved connecting arms, which are pivoted together, to be introduced sidewise into the hair.

##### Improved Clothes Wringer.

Israel F. Brown, New London, Conn.—This invention consists of a shaft with anti-friction rollers interposed between the journals of the squeezing rollers and their bearings, so that the journals turn upon the faces of the rollers, while their shafts turn on the bearings, so as to diminish in large measure the resistance due to the great pressure of the journals on the boxes, and thus enable the machine to be turned much easier than the wringers usually are.

##### Improved Vulcanizing Apparatus.

William J. Birdsall, Naugatuck, Conn.—The rubber goods are vulcanized in a steam-heated chamber, and are thus rendered soft and silky to the touch, and superior to those vulcanized in dry heated air.

##### Improved Platen for Lever Presses.

John F. Taylor, Charleston, S. C.—This invention rests in the construction of a compound platen for a progressive lever or toggle joint cotton press, and it consists of a stationary part and a movable part, one part having cylinders and water ways, and the other part having rams or pistons and a suitable packing. It also consists in the method of regulating the space between the two parts of the platen by forcing water in, and letting the same out from between the stationary and movable portions of the said platen.

##### Improved Steam-Encased Engine Cylinder.

James E. Taylor, Westminster, Md.—This invention relates to certain improvements in steam-encased engine cylinders, and it consists in the peculiar construction of the steam dome in combination with the steam-encased cylinder, whereby the latter is relieved from the direct pressure of the entire subjacent body of steam, the tendency to become strained and loosened from the dome obliterated, and the consequent leakage of steam prevented.

##### Improved Self-Raising Seat for Water Closets.

James E. Walter, Baltimore, Md.—This invention relates to certain improvements in seats for water closets, whereby the same are rendered self-raising. It consists in two hinges having a common pintle, upon which, between the hinges, two parts of a spiral spring are wound in opposite directions from the middle, the central portions of the spring being secured to the frame work of the basin or closet, and the two extreme ends of the spring being inserted in holes in the edges of the seat to elevate the same. It consists also in the combination with the said spring and hinge of a cylindrical protective casing of sheet metal.

##### Improved Railway Safety Switch.

Edward A. Trapp, Davenport, Iowa.—This invention relates to certain improvements in railway safety switches, and it consists in a main rail having its bottom flange cut, flared inwardly, and bent up to form a horizontal guide, in combination with leading tongues, a volute spring, and a spring rail having its bottom flange extended so as to move under the guide formed by the out portion of the main rail. By means of the peculiar construction of the switch, guard rails are dispensed with, the switch made self-adjusting in one direction, and a continuous line of rails always insured to and from the switch.

##### Improved Cooler for Lard, etc.

Frank C. Pray, New York city.—The essential features of this invention consist in devices whereby the lard is bleached, after having been cooled, by being separated through the perforations of bottom sieve and caused to drop in small globules through the air. The invention is also intended for cooling milk and any oleaginous matter, and may be seen in operation at the store of the inventor, 333 West 12th street, as above.

##### Improved Piston Packing.

James L. Sherman, Cassville, Wis.—This invention consists in the construction and arrangement of divided and grooved rings to form the packing of a steam piston rod, and a cup-like device for containing said rings and receiving the steam, which acts on and compresses them upon the rod.

##### Improved Pen Holder.

John Boyd, New York city.—This is a flexible connection of the pen to the holder, made by connecting the tube of the penholder to the handle by a rubber band at the upper end, and a spring below, so that the point of oscillation is at the upper end of the tube. This is said to give better results than when the pen is connected to the lower end of the tube by a spring, so that the axis of motion is at the lower end. A further improvement on the penholder in common use is effected by placing an eccentric spring tip on the spring, which fills the hollow tube of the penholder. The pen is placed between the tip and the tube, at the smaller diameter of the latter, and bound in its place by turning the tip.

##### Improved Twine Holder.

Jonathan Hill, Stanhope, N. J.—The twine box contains the ball, from which the twine is passed along a hollow axle, out through the side, around a drum, thence to the guide eye in the ceiling, from which it is to be suspended over the counter. It passes also through the guide eye of a trip lever, so that when it is pulled off the ball the tension will lift the lever, and, by swinging the axle support, shift the drum out of gear with the regulating device, which is intended to act when the recoil takes place to slow the action of the spring. When the twine is pulled off from the drum, it will wind up the spring, to turn the drum back to wind on the slack again.

##### Improved Machine for Crushing Oleaginous Seeds.

Alfred B. Lawther, Chicago, Ill.—This machine has crushing rollers of great power, to which the seed is fed, under certain pressure, by an upright supply pipe, of suitable height, having a fluted feeding roller and hopper at the top end. The oil seeds are forced through the feed pipe, and compelled to pass through the rollers, which, by the uniformity and power of their motion, crush the seeds and break the oil cells completely, without reducing any portion to pasty condition, leaving also the husks or bran comparatively coarse, so that it may be seen in the cake after pressing. The crushed seeds are then passed to the mixing and moistening machine, doing entirely away with the muller stones, and producing a greater yield of oil with less power, less labor, and less pressure on the oil-extracting presses.

##### Improved Chuck for Making Swelled Tenons.

Alexander D. Ruff, Owingsville, Ky.—This invention consists of a pin and a lever, combined with a sliding tool in a revolving chuck, in such manner that the end of the piece on which the tenon is to be formed forces the tool, having an irregular edge for making swelled tenons, down against the side to dress off the tenon, by pushing the pin backward as the piece enters the cavity of the chuck. The invention also consists of a spring, combined with the sliding tool, the lever, and the pin, so as to push the tool back out of the way of the swelled portion of the tenon when it begins to withdraw from the cavity of the chuck, and allow it to pass out without the swell being cut off.

##### Improved Ventilating Attachment to Hearths.

William S. Winfield, Cross Plains, Tenn.—This invention consists of a box-shaped attachment, with hinged and concaved lid and cinder basket, set into the floor below the grate, to communicate either with the story below, or by a pipe with the outside air, for supplying the required ventilation on the opening of the lid for the ready kindling of the fire, etc.

##### Improved Tongue Support for Vehicles.

James McCarter, Frankfort, Ind.—This is an improved spring support for wagon tongues, by which the jerky action of the tongue and the strain on the horses arising therefrom on the passage of the vehicle over rough and uneven ground may be to considerable extent avoided. The invention consists of a U-shaped piece of spring wire, which carries, at the front part, a tongue-supporting pulley, being bent spirally around side pulleys of the pivot bolt, connecting tongue, and bounds, and applied with the rear ends equidistant from the king bolt to the front axle.

##### Compound Switch for Fire Alarm Telegraphs.

Samuel Weeks, New Orleans, La.—This is a compound switch for fire alarm telegraphs, for throwing by one movement a series of switches into circuit. It is composed of a series of upper switch fingers, establishing and breaking circuit of main alarm battery, and of a set of lower spring fingers for closing and opening the local batteries, in combination with an intermediate insulated crank shaft, and with opposite non-conducting cam extensions. The whole is so arranged that a turn of the crank shaft causes simultaneously the contact of the upper fingers and the disconnecting of the lower, or the breaking of contact of the upper and the closing of the lower.

##### Improved Screw-Cutting Die Plate.

Horace Griffing, New Haven, Conn.—This consists of two separate dies fitted in a recess in the side of the plate by being boxed thereto and bolted fast, so that they can be readily taken off, by removing the bolts, for changing and sharpening. The dies are provided with slotted holes for the passage of the bolts by which they are fastened to the plate, to allow them to be adjusted to suit the size of the pipe to be cut. The screws for adjusting the dies are fitted in hollow handles, which are also jointed near the plate, and the detachable portions have a socket in the end to receive the projecting shank of the screw when screwing into the portion formed on the plate.

##### Improved Miter Box.

Theodore C. Lawrence, Ladoga, Ind.—This invention consists of a metallic recessed guide casing, in which the saw runs by means of detachable clamped extension strips, a central wooden strip preventing the getting dull of the teeth. Wing-shaped side plates of the casing bear pivoted clamp plates, which may be set to any angle on the supporting wing plates. The clamp plates are provided with sliding and guided strips for fastening the molding securely by strong clamping screws, to expose it to the saw or connect the corners. The solid metallic construction of the miter box produces the permanent and accurate working of the same without the inaccuracies of the variable wooden boxes.

##### Improved Steam Brake.

Thomas F. Fouts and Elijah Planck, Burlington, Iowa.—This is a steam cylinder and piston, arranged transversely of the locomotive, and geared by a toothed rack attached to the piston rod with a revolving line shaft, which extends along the train from car to car, and winds up the chains which work the brakes. The steam is supplied from the locomotive boiler, with which the engine is connected by a pipe, to admit steam at one end for applying the brake. Springs are used to force the piston back. The line shaft is in sections, one for each car, which are coupled by socket couplings, which slide forward and backward as the train slack and extends.

##### Improved Machine for Coiling Metal Rods.

Phileander H. Standish, Jefferson City, Mo.—The mandrel consists of a plain flat bar of steel, wide and thick as the largest coil to be bent, with an oval tapered point, graduated from the size of the largest to that of the smallest coil to be made. The bar is fitted in the hollow shaft of the driving wheel, so as to be shifted along it, to cause the tapered point to project under the bending wheel more or less, according to the size of the coils to be made. A collar at each end of the hollow shaft holds it wherever it may be set, to utilize the same machine for coils of all sizes.