

**LAMP BURNER.**—William Robinson, Funkville, Pa.—This invention relates to an improvement in the construction of lamp burners and consists in making the cone or deflector movable by raising and lowering it within the outer perforated frame or case of the burner, to set the top nearer or further from the top of the wick tube.

**COATING IRON AND STEEL WITH CAST IRON.**—James Rigg, Iowa Falls, Iowa.—This invention relates to a method of producing a hard surface on iron and steel, and it consists in coating the said metals with cast iron, thereby producing a surface hard as the hardest steel, and which is susceptible of a high polish.

**LATHING TOOL.**—John C. Shackleton, Lawrence, Mass.—This invention relates to the manner in which a turning tool for lathes, in iron turning, is constructed and secured to the shank or tool holder, and it consists in forming the shank with a head in such a manner that the cutting tool is firmly secured to it and made adjustable by screws.

**MOP WRINGER.**—A. G. Starkweather, Burlington, Vt.—This invention has for its object to furnish a neat, simple, and cheap device by means of which mops may be wrung without its being necessary to take hold of the mop with the hands.

**ANIMAL TRAP.**—L. V. Badger, Chicago, Ill.—This invention has for its object to furnish an improved rat trap, simple in construction, not liable to get out of order, and reliable in operation, and one which the rat, by escaping into the cage, will again set.

**COTTON GIN.**—A. Fessenden, Beaufort, S. C.—This invention relates to a cotton gin of that class in which the cotton is taken from a stationary platform and is carried between two rollers, which are so close together that the seed cannot pass through between them. The invention consists in the device for hanging the lower roller and adjusting it in the proper position. Also, in connection therewith, in an adjustable feed platform. Finally, in the shape of a self-adjusting seed-clipper or knife, and in the manner of hanging the same, so that it will assist in separating the seed from the fibers before the cotton comes to the rollers.

**SPRING-BED BOTTOM AND BEDSTEAD.**—E. Kreighoff, Rochester, N. Y.—This invention relates to a flexible spring mattress or bed bottom, which is so arranged that it can be easily removed or replaced when desired. When to be used as a bed bottom, the device is combined with a bedstead, which can also be easily taken to pieces, and to which it is secured in a novel and practical manner.

**WOOD SCREW.**—H. A. Harvey, New York City.—The object of this invention is to construct the head of a gimlet-pointed wood screw of a globular or spheroidal form, and to provide for driving it without cutting the ordinary nick across its face.

**SPICE MILL.**—H. W. Oliver, New Haven, Ct.—This invention relates to a new arrangement for keeping and grinding spices of various kinds, and the invention consists in combining and arranging a number of tubes or cylinders in such a manner that while the tubes severally contain different kinds of spices, either one may be ground separately from the rest.

**MACHINERY FOR MAKING BUTT HINGES.**—Adrian Rais, Waterbury, Ct.—This invention relates to improvements in machinery for the manufacture of butt hinges, and consists in mechanism so constructed and arranged that the two match blanks of a hinge are conveyed by automatic devices from two feed boxes or hoppers to the dies for bending the knuckles, thence to the milling wheels or disks, and thence to a central point where the leaves of the two match blanks are joined or interlocked, when another automatic device inserts the nail or rivet and the butt hinge is finished and discharged.

**WATER ELEVATOR.**—Samuel C. Lewis, Woodbridge, Mich.—This invention has for its object to furnish an improved apparatus for drawing water from wells, cisterns, etc.

**GATE.**—Ebenezer Young, Camden Center, Mich.—This invention has for its object to furnish an improved gate so constructed and arranged that it may be raised and will remain suspended so as to swing over snow or other obstructions, and so that its forward end may be lowered to rest upon the ground and hold the gate stationary in any position in which it may be placed.

**AXES AND HATCHETS.**—Daniel W. Callum, Laoni, Ill.—This invention relates to an improved form of ax, and consists in giving the edge a semi-circular shape.

**RAT TRAP.**—George Irwin, Elizabethtown, Ky.—This invention has for its object to furnish an improved rat trap so constructed and arranged that the caught rat, by locking himself in the inner apartment, will again set the trap.

**WASHER AND WRINGER.**—Wm. Bicknell, Hartford, Me.—This invention relates to a machine for washing and wringing clothes, and consists in the use of a tub in which a perforated reciprocating dasher is arranged, the removable cover of which is fluted on the under side, so that the clothes in the tub can be pressed between the dasher and the cover and are then submerged in water, and pressed again, until they are perfectly clean. They can then be wrung by pressing them between the dasher and the cover, and securing the former in place, gradually increasing the pressure until the water is removed from the clothes. The cover can be removed if desired, and can be used as a wash board.

**WASHING MACHINE.**—Samuel Brackett, Port Huron, Mich.—This invention relates to a washing machine in which a flexible concave is so arranged in a box, around a revolving cylinder, that it can be closed completely around the said roller, thereby forming a cylinder of friction rollers around the clothes. The latter are secured upon the cylinder and revolve with the same within the flexible cylinder.

**CARPET STRETCHER.**—William W. Taylor, Newark, N. J.—This invention has for its object to furnish an improved instrument by means of which a carpet may be stretched upon the floor and held in place while the nails are being applied.

**TUG TRIMMER.**—Albert V. Hill, Limestone, N. Y.—This invention has for its object to furnish an improved instrument by means of which the edges of a tug may be conveniently, accurately, and quickly trimmed.

**CLOTHES DYER.**—Henry Grandsen, Dubuque, Iowa.—This invention consists in arranging arms upon an upright pole, in such a manner that while the arms are securely attached to the pole, and the cord or rope upon which the clothes are hung are attached to the arms, the whole may be securely folded up.

**PETROLEUM FILTER.**—J. Henry Smith, Pittsburg, Pa.—This invention relates to a method of filtering and purifying petroleum, and it consists in passing it through filtering pans containing proper filtering materials.

**CAR COUPLING.**—James Depeu, Peekskill, N. Y.—This invention relates to a self-operating car coupling, in which a link is used that is made in shape of a strong bar, having a head at each end. This head, when inserted in the coupling box, raises the hook-shaped front end of a pivoted bar, which as soon as the head has passed under the hooks, drops down over the head and locks the same between the inner end of the hook and a stop that is provided in the coupling box. For uncoupling the link, the front end of the hooked bar must be raised, which can be done in various ways.

**BURGLAR ALARM GUN.**—John Wilson, Anderson Court House, S. C.—This invention relates to a burglar alarm that consists of a swiveled horizontal gun barrel, so arranged on a frame that the said barrel can revolve on its vertical support. Suitable stops are arranged around the barrel, which are connected with wires that are spread across the room in which the apparatus stands, so that when a burglar or other party not acquainted with the arrangement of the wires, comes in contact with one of the same, the stop which holds the shaft will be released, and the gun will swing around and strike against a stop, and point towards the direction in which the wire is stretched, whereby it will be discharged.

**SPRING BEDS, SEATS, AND COUCHES.**—Dwight Babcock, Seneca Falls, N. Y.—This invention relates to a new manner of securing the upper slat of a spring bed bottom, seat, or couch to the spiral springs, and consists in the use of a ribbon which is laid across the slats, above a row of springs, and which is passed under the upper winding of each spring, thereby connecting and securely uniting the slats to the springs without the use of other fastenings or devices.

**APPARATUS FOR DRYING LUMBER.**—Richard P. Johnson, Wabash, Ind.—This invention relates to an apparatus wherein wood of any description, whether sawed or split into lumber or not, may be steamed and dried, so as to be thoroughly seasoned.

**LATHING TOOL FOR TURNING WAGON AXLES.**—J. E. Cromwell, Jackson, Mich.—This invention relates to a machine for turning wagon axles, or the arms of axles that run in the wheel, and consists in the combination of saws and cutters that work in conjunction with each other in forming and giving the proper shape to the arm of the axle. It also consists in the novel arrangement of the feed works, which operate against a pattern which is duplicated by the machine in the most accurate and precise manner.

**CREAM STRAINER.**—George J. Bennett, Homer, N. Y.—This invention relates to a cream strainer, which consists of a cylindrical vessel with concave bottom, in which a sieve or strainer is secured in such a manner that it can be easily removed or put on. A disk, having inclined wings similar to those of a screw propeller, is suspended directly above the strainer from a vertical shaft, and forces the cream through the meshes of the strainer when the shaft is revolved by a crank or other suitable device. Below the strainer is secured to the bottom of the vessel an inverted funnel, which protects the strainer and directs the flow of the cream after the same has been forced through the strainer.

**DOOR HOLDER.**—Edmund Huddart, Prairie du Sac, Wis.—This invention consists in the construction and arrangement of parts of a door holder, in such a manner that one portion being attached to a door and the other part to the wall, the door may be held open, and in one position by friction.

Answers to Correspondents.

**CORRESPONDENTS** who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address the correspondent by mail.

**SPECIAL NOTE.**—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

**J. N. H., of Pa.**—We think you will find pitch to be a suitable cement for your aquarium having the ground as a bottom, and sides of wood.

**W. J. A., of Pa.**, suggests that instead of graduating the arcs of surveying and mathematical instruments on a flat surface, that the degrees minutes and seconds be determined by a train of gearing which shall be set in operation by the movable part of the instrument. The reading may be exhibited on a dial plate resembling a clock face or otherwise.

**J. C. G., of Kansas.**—You can procure Smee's and Napier's Electro-Metallurgy of J. Wiley and Son of this city. The cost of Smee's battery of a size suitable for electro-metallurgy, is about \$5 per cup. You can procure an outfit of apparatus and materials of Butler & Smith, Broome street, this city.

**F. H., of C. W.**—Magnetic iron ore is found in great abundance in America. But specimens which have strong polarity are quite rare. Artificial magnets are easily made of greater power than natural magnets, and the latter (loadstones), are now only objects of curiosity for a museum or a mineralogical cabinet. For information on magnetism consult Ganot's or Silliman's Physics.

**H. T. B., of Iowa.**—"What is the best way to melt india-rubber, also where can I procure some of the pure gum?" India-rubber may be melted in a metallic or earthen vessel, and the care to be taken is that the heat be applied gradually and slowly. It melts at about 248°. On cooling, however, it does not resume its original condition but remains in a semi-fluid adhesive state. Raw rubber can be procured at any of the rubber factories, and at some of the rubber stores in this city.

**E. P., of Pa.**—"The papers say that if his invention is perfected, it will revolutionize all previous systems." There's the rub, the success of the project depends upon its perfection. If our dreams were realities we might all be kings. We know nothing of the invention to which you allude.

**N. K. S., of Vt.**—For japanning, use the best quality of copal varnish.

**A. T., of N. Y.**, is arguing with a friend who contends that the earth is not round like a ball but flat like a mill stone. A. T. seems to have been handled roughly and appeals to us for assistance. It is a pretty quarrel as it stands and we prefer not to interfere. But as some encouragement to hold on, we remind him that at last the truth is apt to prevail.

**R. N. D., of O.**—Chalk has not yet been found in America. It is imported from England, mostly as ballast.

**R. G. D., of Mo.**—Carbolic acid is now extensively used here as a disinfectant, and is approved by the board of health and by the medical profession.

**R. V. W., of R. I.**—Alkali is an essential ingredient of soap, and we think you are wasting your time in looking for a substitute for it.

**E. W. N., of Mass.**—We recommend you to get "The Draftsman's Book," published by H. C. Baird, 406 Walnut street, Philadelphia. You should procure other books in proportion to your means and to the extent you desire to pursue the subject.

**T. L., of Mo.**—The pressure on the pipe leading water from the pump into a boiler is greater than the pressure in the boiler. Otherwise no water would pass through into the boiler.

**W. P. M., of Ill.**—"We have a saw mill here (Ullin) owned by J. Bell which sawed on the 26th of June 42 poplar logs making 40,807 feet, square face, parallel inch boards by one double circular saw in 10 hours and 8 minutes." Mr. Bell appears to be the "top sawyer" of the Continent.

**J. H. McC., of Ill.**, sends a recipe for a cement which he finds useful for vulcanized rubber or "anything else." Take best glue 4 oz., isinglass, 2 oz., and dissolve in mild ale, in a glue kettle, to the consistency of thin glue. Then stir in half oz., well boiled linseed oil. When cold it resembles india-rubber. It may be preserved in the form of cakes. When used it is to be dissolved in a suitable quantity of oil. It is an excellent cement for leather earthen ware, etc.

**J. R., of N. Y.**, made a solution of chloride of silver in cyanide of potassium to which he added whiting. The mixture was put into two bottles, when shortly in one bottle it became reddish, while in the other it was not changed. The case is not extraordinary. Cyanide of potassium is a very powerful solvent of organic and metallic compounds, and the foreign matter to produce the color was introduced by some accident such as a dirty bottle or cork, etc.

**J. B., of Iowa.**—It is very doubtful if any of the processes of preserving wood by means of metallic salts are practicable for shingles in this country. The creosoting process (treatment with dead oil or coal tar) is however, economical and cheap. The strongest objection to it is that the wood is rendered more combustible.

**D. S. C., of Mo.**—A practical lithographer of this city says he is unable to give an opinion of the value of lithographic stone except an actual trial, and the sample you send is too small for the purpose. The appearance of the sample is favorable.

**F. G. S., of Mass.**—Your plan of measuring the curvature of the earth is correct and ingenious. The angle formed by plumb lines erected at the short distances from each other is so small that it cannot be determined with desirable accuracy.

**A. G. C., of N. Y.**—We are not aware that an ink is on sale, which fades completely in a short time after it has been used in writing with. It would not be very difficult, however to make such an ink.

**J. Mc., of Ct., R. A. D., of Wis.**, page 7 says, people out there claim that a raft of lumber will travel faster than the current, etc. I know the people who say so, are right. The surface of a running stream is an inclined plane, and heavy bodies floating on its surface slide down the incline, and the heavier of two rafts will drift the faster. I am an old boatman and raftsman." The most rapid part of the current is generally in the middle of the stream, and if the raft be in it, the raft will travel faster than the current at its side. Also it often happens that the current is a littleswifter just below the surface, and for this reason a heavy body might float more rapidly than one which did not sink below the surface.

**W. P., of N. Y.**, has been told that a perfect sphere when elevated high in the air appears to the eye an oblate spheroid, and that the balls to be placed on steeples, etc., are consequently made of a prolate form to compensate for the optical illusion. . . . Mercury is a solvent for brass, and hence when rubbed on a brass wire, the wire becomes brittle. Observe how a lump of sugar becomes softer when wetted.

**S. L. G. F., of Mass.**—The sterility of land in a well watered tropical region is generally due to the impregnation of the soil with sulphate of copper or iron. . . . Coal is always associated with certain geological strata which are so disposed that they form a basin for the coal deposit. A knowledge of these facts is very important in making explorations for coal. . . . Mica is injurious to fire clay, and you will fail to make the best quality of fire bricks.

**T. H. W., of N. Y.**—For a given head and supply of water the larger the water wheel the better.

Business and Personal.

The charges for insertion under this head is 50 cents a line.

**Machines for Rossing Oak Tan Bark.** Send maker's address with description and price to Hamilton & Cunningham, Nashville, Tenn. **Manufacturers of Galvanized Wire Cloth and Hoop Iron,** please send address to Box 60, Georgetown, D. C.

**M. R. S., of Mo.** The crystals of a metallic appearance in the mineral you have sent are sulphide of iron.

**A. B.** is informed that Olmsted's Spring-top Oilers are superior to any other in the market. Sold everywhere.

**Wanted**—A purchaser of my patent-right clothes bars and wardrobe hook for the New England States, the best of the kind ever made. Address M. D. Hotchkiss, Sheboygan Falls, Wis.

**Wanted**—Circulars and terms of manufacturers and dealers in sewing machines. Circulars and terms of dealers in useful inventions and novelties. Address of parties who manufacture small patent articles. W. Clare Anderson, Agent, St. Louis, Mo.

**Manufacturers of Peat Charcoal** send their address to C. Browning, Rush Run, Ohio.

**Wanted**—Address of Toy Manufacturers. Address Lock Box 23, Des Moines, Iowa.

**Wanted**—Best Clover Seed Gatherer. Manufacturers send circular and price list to Gillespie, Watkins & Co., Chattanooga, Hamilton county, East Tennessee.

EXTENSION NOTICES

Ephraim L. Pratt, of Boston, Mass., having petitioned for the extension of a patent granted to him the 4th day of October, 1853, for an improvement in machines for paring apples, for seven years from the expiration of said patent, which takes place on the 4th day of October, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of September next.

Harvey Lull, of Hoboken, N. J., having petitioned for the extension of a patent granted to him the 31st day of January, 1854, and antedated January 2, 1854, for an improvement in shutter hinges, for seven years from the expiration of said patent, which takes place on the 2d day of January, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of September next.

Joshua Gibbs, of Canton, Ohio, having petitioned for the extension of a patent granted to him the 4th day of October, 1853, for an improvement in machine for grinding plow castings, for seven years from the expiration of said patent, which takes place on the 4th day of October, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of September next.

PATENT OFFICE DECISIONS.—WHAT CONSTITUTES A PATENTABLE COMBINATION.

Elisha Foote for the Board of Appeals.

**IMPROVEMENT IN FEEDING MILLSTONES.**—The apparatus which the applicant claims to have improved is attached to grinding mills, and operates between the hopper or feed and the eye of the mill stone to blow out dirt and other impurities from the grain on its passage from the former to the latter. The applicant has changed the general structure of the apparatus, for which he claims many advantages, and has also added to it a new feature—that of separating and saving the light grain, chaff, and cockle, which before was blown off with the dirt. The first claim is for the separator, constructed and operating substantially in the manner described, and applied in the relation to the feeder and the eye of the stone, substantially as shown.

The reasons assigned by the Examiner for rejecting this claim are, that the combination claimed is not a valid one, that the separator and feeder perform separate and distinct offices; and are not co-active in a legal sense; that "if the action of the feeder depended upon the separator, or the separator upon the feeder, for a common result, such a condition of circumstances would change the action of the office, but the two devices act in succession and not together, and the two classes of claims cannot be considered as in connection with the feed devices of a grinding mill."

We do not agree with the Examiner in respect to these grounds on which he has rejected the application. We do not regard it as essential that the several parts of a new combination shall act simultaneously, or that one part shall be dependent for its action upon another. But, on the contrary, we hold that it is no objection that the separator and feeder perform separate and distinct offices; that the feeder does not depend upon the separator or the separator upon the feeder, and that the two devices act in succession and not together.

In the card-making machine, for example, one part draws the wire into the machine, another cuts it off, another bends it into proper shape, another punches the leather, another moves the carriage, etc. The whole is a combination of unperformed machinery. It was no objection to the patent that the different parts operated in succession and not together, and that one performed its office without aid or dependence on the rest. It was enough that all contributed to a common result. In the present case, so long as the feeder and separator contribute to the purpose intended—the manufacture of flour—it matters not in what way they act, whether together or in succession, or whether dependently or independently.

There is no peculiarity in patent laws relating to combinations. Claims for them should be examined upon the same principles that apply to other inventions. In all there must be found invention and new and useful results. Mere aggregations of parts without invention to combine them—substitutions of merely equivalent devices for others—mechanical changes merely and variations of form, proportions, or arrangements, without new and improved results, do not constitute patentable combinations. It has been said that the several parts must be co-active—that means that the addition of something that is useless or does not co-operate in producing an improved result, will not debase the patent.

But when invention has been brought into exercise to add a new feature to a machine, or to produce old results in a better or cheaper manner, we are not aware that patent laws impose any limitation as to the order or particular manner in which the several parts shall operate to produce the new results obtained. The Examiner's decision is consequently overruled.

Inventions Patented in England by Americans.

[Condensed from the "Journal of the Commissioners of Patents."]

PROVISIONAL PROTECTION FOR SIX MONTHS.

- 1,335.—SELF-ACTING AND VENTILATING FEED BAG FOR HORSES.—Nathanie Kl.ight, Auburn, Me. May 11, 1867.
- 1,440.—BILLIARD TABLE.—Hugh W. Collender, New York City. May 18, 1867.
- 1,475.—TRUSS.—Wm. Pomeroy, New York City. May 18, 1867.
- 1,491.—INSTRUMENT FOR SHARPENING CUTLERY.—James Meyer, New York City. May 20, 1867.
- 1,499.—REAPING AND MOWING MACHINES.—Walter A. Wood, Hoosic Falls N. Y. May 20, 1867.
- 1,547.—STEAM GENERATOR.—Richard J. Nunn, Savannah, Ga. May 24, 1867.
- 1,551.—EMBROIDERING APPARATUS FOR SEWING MACHINES.—Louis Morris New York City. May 24, 1867.
- 1,607.—PROPELLER FOR STEAMSHIPS AND OTHER VESSELS.—Henry Rolle Boston, Mass. June 8, 1867.
- 1,717.—APPARATUS FOR ELEVATING, WEIGHING, AND MOVING GRAIN.—Stephen W. Wood, Cornwall, N. Y. June 11, 1867.