in such relation to each other and to the eyes of the wearer that the lenses when the eye glasses or spectacles are adjusted on the nose, will have a proper relative position with the eyes.

COMBINED GRAIN DRILL, ROLLER AND PLANTER.—T. S. Mills, Kendleville, Ind.—This invention relates to a new and improved combined grain drill, roller and planter, and consists in a novel construction and arrangement of the parts, whereby several advantages are obtained over other similar combined implements now in use.

BERRY BOX.—Truman Mabbett, Jr., Vineland, N.J.—This invention is designed to supersede the small baskets and boxes now used for conveying berries and small fruit to market. The invention consists in a novel construction of the box, whereby the berries are effectually prevented from being bruised or injured in their transit from place to place, a free circulation of air allowed therein when a series of boxes are packed within a case and the boxes rendered capable of being manufactured at a very moderate cost.

MACHINE FOR POINTING PICKETS.—W. W. Johnson, Nashville, Tenn.—The object of this invention is to point the ends of pickets or fence palings and cut circular sides or edges on other wood work.

HORSE COLLAR.—Thomas Moore, New York city.—This invention relates to an improvement in the construction of horse collars.

ANIMAL TRAP.—James P. Wigal, Henderson, Ky.—This invention has for its object to furnish an improved self setting animal trap which shall be simple in construction, convenient, and effective in operation and not liable to get out of order.

ATTACHMENT FOR HARNESSES.—W. W. Beebe, Dubuque, Iowa.—This invention relates to an attachment for either single or double harnesses, the object of which is to overcome and cure in a horse all inclination to be balky when driven, whether such horse is in single or double harness.

IRON FOR HARNESS PADS.—Heber R. Ridgley, Mansfield, Ohio.—This invention relates to an improved method of forming the frame iron of harness pads, and the attaching of the pad thereto.

GATE.—Ralf Adams, Ottawa, Ill.—This invention is a gate which can be opened from a vehicle or the saddle. It has a rack operated by levers, the rack engaging with a pinion on the bottom of the post of the gate, with other devices perfecting the whole mechanism.

MOVABLE BARREL STAND.—P. J. Skinner, Oswego, N. Y.—This invention, as its name imports, is a movable barrel stand for use in groceries or liquor stores where many barrels are employed and set in rows.

WORM FENCES AND PENS.—John Will, Bryan, Ohio.—This invention relates to an improvement in worm fences, and consists in a fence divided into panels or sections, composed of rails or boards bolted together by upright cleats and having notches at either end, the notches at one end being on the under part of each board and fitting into notches between two cleats on the upper part of the boards of the adjoining panel.

CHURN.—A. J. Heavner, Time, Ill.—This invention relates to an improvement in churns, and consists in a dasher constructed in two parts, one part working within the other, the two dashers being operated by two cranks working simultaneously.

SAFETY PLUG FOR BOILERS.—T. G. Eiswald, Providence, R.I.—This invention consists of small fusible plugs placed at the low water level of boilers, and provided against being prematurely blown out by being located in conical seats. When the water level passes below the plugs they are melted out, and thus announce the state of the water.

CARPET STRETCHER.—Alexander L. Dunbar, Sheldon, Ill.—This invention relates to a novel and useful implement or device for stretching carpets when to be laid or put down by tacking or otherwise, upon floors, which implement is so constructed that it can be applied to the carpet, and suitably operated to stretch it and there hold it.

COMBINED CATHETER AND SYRINGE.—Dr. N. B. Sornborger, Northampton, Mass.—The combined catheter and syringe embraced in this invention is provided with a collar on its body or cylinder, susceptible of adjustment at will, and thus through a stem or rod connecting it with a collar arranged to slide upon the discharge tube or passage of the syringe.

BAGGAGE CHECK.—Edward Flather, Bridgeport, Conn.—This invention relates to an improved baggage check, and consists of a slotted arm or bar revolving on a screw set in a circular disk on which the names of various places or numbers are marked. The name of the place desired to be indicated is seen through the slot in the arm which is secured in place by a pin attached to the arm and fitting into a hole in the disk. Or the required number may be indicated by the pin being set into the hole opposite thereto.

IMPROVEMENT IN GATES.—Lewis Essig, Clinton, Ohio.—This invention relates to a new and improved method of hanging and operating the gates of farms, plantations, &c., whereby the same are easily opened by a rider, without alighting for that purpose.

IMPROVED AIR CONDENSER.—H. J. Bailey, Pittsburgh, Pa.—This invention relates to a new and improved apparatus for condensing air for various purposes, but more particularly for forcing liquids; and the invention consists in an arrangement of vessels, which communicate with each other by pipes or tubes—such communication being controlled by valves or cocks, which are operated by floats and governed by hydranlic pressure, whereby the apparatus is made automatic or self acting.

IMPROVED ANNEALING FURNACE.—W. R. Thomas. Catasauqua, Pa.—This invention consists in the construction of a furnace for annealing car wheels whereby the hubs of the said wheels may be raised to a high temperature without injury to the hardened or chilled rim or tread of the wheel; and also in placing rings of metal between the wheels, as they are placed in the furnace for the protection of the rims.

IMPROVEMENT IN WATER WHEELS.—William Snodgrass, Cold Spring, Wis.—This invention is to so construct a water wheel that the full or nearly the full per centage of power may be obtained, which is due from water under a given head; and the invention consists in providing for a free escape of air from the buckets or floats, and in bringing the full pressure of the water to act upon a given point of the wheel, in a manner similar to the action of water on the piston of a water engine.

IMPROVED ARGAND GAS BURNER.—George Mooney, Providence, R. I.—This improvement relates to the manner in which the burner is formed, and to the method of regulating the flow of the gas; and the invention consists firstly, in forming the burner of one piece of metal; secondly, in forming the gas jet apertures without drilling, and thirdly, checking and regulating the flow of gas by a screw.

IMPROVEMENT IN CRUTCHES.—James C. Rhodes, Stillwater, Minn.—This invention relates to a new and improved device for preventing the end of a crutch from slipping on ice or other slipping places; and it consists in arranging an adjustable spur or point in the end of the crutch.

IMPROVEMENT IN CULTIVATORS.—James B. Sexton, Pella, Iowa.—This invention has for its object to furnish a simple, cheap, convenient and durable cultivator.

INSTRUMENT FOR DRAWING AN ELIPSE.—Franklin Bowly, Winchester, Va.—This invention relates to an improved instrument for describing elipses of various diameters, and consists in a marking rod, on which is a graduated scale for fixing the major and minor diameters of the elipse to be described, which marking rod is connected with two sliding rods that govern its elliptical motion around a common center pin.

BLOCKS OR SUPPORTS FOR THE KEEL AND BILGE TO VESSELS IN DOCKS.—Joseph T. Parlour, Brooklyn, N.Y.—This invention more particularly relates to a block for supporting a vessel by its keel or bilge when laid up in a dock for repairs, which block is made in parts or sections for adjustment, either in a higher or lower plane, as may be desired.

MANUFACTURE OF PENS.—Edwin Wiley, Brooklyn, N.Y.—The present invention relates to that class of pens commonly known as the "Union Pens," and which are made with their nib of gold, and their heel or body of silver or other inferior metal.

CORN HUSKING MACHINE.—H. W. Knowlton, Saratoga Springs, N.Y.—This invention relates to a new and improved machine for stripping Indian corn from the stalks, and taking the husks from the ears. The invention consists of a pair of stripping rollers, one of which is armed with stripping blades, in connection with a series of husking aprons arranged to work over rollers, whereby the ears of corn may be broken or detached from the stalks, and the husks removed from the detached ears with the greatest facility.

STREAM OR RIVER FENCE.—H. A. Kephart, Fletcher, O.—This invention relates to a new fence to be placed across rivers and streams. The invention consists in a novel construction and arrangement of parts whereby due provision is made against the passage of cattle or animals around the ends of the fence when the stream or river is low, and provision also made for the passage of drift wood over the fence without the liability of the same being injured thereby. The invention also consists in a novel construction and application of the fence at the central or deep part of the river or stream whereby said portion of the fence may be readily put up or adjusted, and not be liable to be injured by drift wood or floods.

## 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 advertisemets at $1 00 a line, under the head of "Business and Personal."*

☞ *All reference to back numbers should be by volume and page.*

J. G., of Canada.—The oil used by woolen manufacturers is either that known as gallipoli, an inferior sort of olive oil, or palm oil, neither of which are very expensive.

J. A. G., of Pa.—We do not know of any chemical which could be mixed with light varnish to make paper water proof. The ordinary varnish to coat maps, however, which you probably require is prepared by pulverizing 1 oz. sandarac, ¼ oz. mastic, ¼ oz. elenir, dissolving them in ½ oz. of venet. turpentine, and adding to it a solution of 4 oz. shellac and 3 oz. oil of lavender in 12 oz. alcohol.

J. B., of Ky.—In reply to your inquiry as to the manufacture of crucibles, you will find in one of the first numbers of this journal of 1867, in an article, "Plumbago and its use," some remarks on the manufacture of plumbago melting pots which perhaps may be useful to you.

G. A. H., of N. Y.—The difficulty you encounter in forming an alloy of platinum and copper may have its reason in different causes, of which we are not aware, not having witnessed your operations. Platinum we suppose you know, can only be melted before the oxy-hydrogen fire. You will find much information about the melting of platinum in referring to the articles of M. Deville, in the back numbers of the "*Annales de chimie et physique.*

J. W., of Mass.—Phenylic alcohol (carbolic acid) in the proportion of about one per cent after having been previously dissolved in water will undoubtedly be an excellent means of preventing mold in flour paste.

C. H. G., of Tenn.—"What cheap material can be mixed with plaster of Paris that will leave it as hard or harder no matter what color it will produce?" Most anything will depreciate the quality of plaster of Paris, which should consist of nothing but sulphate of lime. We remember that at the late fair of the American Institute in New York a premium was refused to an exhibitor of that product because the judge of the group happened to find some carbonates in it.

E. W., of Mass.—Oil when put on boots will scarcely have any protective influence against cold. . . . In painting the outer coating of a Leyden vial you will insulate it. Electricity in the Leyden jar resides on the glass as is shown by the experiment with the three separable pieces (*vide* Sillimann's "Principles of Physics," chapter, Accumulated Electricity), but we close the mouth of the jar, as the air itself is a conductor of electricity, particularly when moist. For the stuffing of the rattle snake you speak of we recommend to you crude naphtalin; it is preferable to arsenic soap.

A. P., of Ky.—For the detection of sulphur or better, sulphur compounds in water, heat it in a test tube while holding a strip of paper impregnated with sugar of lead over the orifice. If sulphur is present the paper will be covered with a brownish film. Lime will show itself by adding oxalate of ammonia to the liquid. The iron in the water you speak of must be present as a protoxide and then a blue color will be produced by adding red prussiate of potassa. The sulphur may either be present as H S or Ca S.

B. C., of N. H., asks if the subjection to smoke, as in the baconing process, would have a preservative effect on stakes to be driven into the ground and what substances in burning produce a smoke of the strongest creosoting effect? Mere exposure to smoke will never do for the preservation of stakes, especially if employed for agricultural purposes. For such and other purposes we recommend as the cheapest and best material the so-called pitch or dead oil. Heat the oil in an iron pot and fill a tight barrel to the hight of about two feet and leave the stakes in it for two and a half or three hours. The pitch or dead oil is obtained in the distillation of benzole and other light hydrocarbons and can now-a-days be purchased in every large city.

G. F. W., of Mass.—Provence oil is the *oleum olivarum otim* of the Pharmacopœia and is obtained from the pericarp or fleshy part of the olive before perfect maturity.

J. L. D., of Mass., asks how to put quicksilver on the back of a looking glass. The coating of a mirror is made by spreading tin foil smoothly on a stone table, rubbing a little mercury (containing tin) over it to amalgamate the surface, pouring a large quantity of mercury on it, pushing the clean glass plate on this, beginning along one edge, pressing it with weights and giving the table top gradually an inclined position to drain off the excess of mercury.

V. D. W., of N. Y., adds to the information given on page 391, Vol. XVII., to "C. S., of Minn.," who asks how to tin a worn copper kettle., the following: A thick coating may be obtained by preparing a tinning solution of zinc dissolved in hydro-chloric or muriatic acid, making the solution as thick or heavily charged with zinc as possible, adding a little salamoniac. Clean the inside of the kettle, place it in a charcoal fire until a piece of block tin placed inside melts, then rub the melted tin, with some of the tinning solution quickly on the copper surface by means of a ball of oakum and a little powdered resin; the tin will readily adhere. Wrought iron and steel may be tinned in the same manner. We know of no effectual method of tinning cast iron.

E. A. L., of Mo., asks if there are any clocks made which are specially designed for use on locomotive engines and calculated to keep time notwithstanding the jars of the machine. We think such clocks are quite common. They are what are called "spring clocks." We lately saw a steam fire engine with one attached, and a fire steamer is subject to as many and as severe jolts as a locomotive.

S. A., of Iowa, says he has cleaned his steam boilers with soda and asks if its use is detrimental to the iron. We reply, it is not.

R. S. B., of N. Y., referring to the communication of "C. B.," page 35, current volume, on harmonizing church bells, asks why the plan cannot be introduced in sleigh bells, and recommends the manufacture and arrangement of the "merry sleigh bells" so as to produce concord rather than discord. We have seen several sleigh teams so ornamented, but the owners themselves were compelled to make a selection from many "strings." They were not arranged to hand.

W. W. T., of Mass., asks what sort of a filter he shall use for purifying the water flowing from a spring into his trout hatching boxes. We recommend passing the water through a filter of charcoal and gravel. A little manual entitled "The House," published by G. E. & F. W. Woodward, 37 Park Row, New York city, has an engraving and description of such a filter as W. W. T. needs.

H. H. C., of N. Y., inquires for a method of determining the required amount of lap on a slide valve to cut off at any given point, the stroke of the valve *not* being known! We cannot furnish the information desired.

W. P. G., of N. H.—Potassium and sodium melt below 212 degrees, the temperature of boiling water. Silver requires 1,873 degrees Fah., for fusion while cast iron requires 2,786 degrees.

T. L. S., of Me.—The enamel of iron hollow ware is made of powdered flint, ground with calcined borax, fine clay, and a little feldspar. This mixture is made into a paste with water and brushed over the pots after they have been scoured with diluted sulphuric acid and rinsed clean with water. While still moist they are dusted over with a glaze composed of feldspar, carbonate of sodium, borax, and a little oxide of tin. Thus prepared, the pots are gradually dried and then the glaze is fired or fused under a muffle at a bright red heat. Oxide of lead, although increasing the fusibility of the glaze, impairs its efficiency as it will not resist the action of acids in cooking.

P. J., of Pa.—It is a mistake to suppose that water will not affect the composition of glass. At a high temperature water acts upon glass very rapidly. Turners suspended plate and window glass in the steam of a high-pressure boiler, and in four months the specimens, one-fourth of an inch thick, were completely decomposed. Faraday found that flint glass under similar circumstances was still more rapidly acted upon.

B. A. B., of N. J.—The *kaolin* or porcelain clay used in the manufacture of fine "China" ware is furnished by the decomposition of a granitic rock, the constituents of which are quartz, feldspar, and mica.

## Business and Personal.

*The charge for insertion under this head is one dollar a line.*



## EXTENSION NOTICES.

Morris Mattson, of New York city, having petitioned for the extension of a patent granted to him the 4th day of April, 1854, for an improvement in enema syringes, for seven years from the expiration of said patent, which takes place on the 4th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of March next.

Carmi Hart, of Bridgeport, Conn., having petitioned for the extension of a patent granted to him the 4th day of April, 1854, for an improvement in machine for cutting veneers, for seven years from the expiraton of said patent, which takes place on the 4th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of March next.

James McCarty, of Reading, Pa., having petitioned for the extension of a patent granted to him the 4th day of April, 1854, for an improvement in heating skelps for the manufacture of wrought iron tubes, for seven years from the expiration of said patent, which takes place on the 4th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of March next.

L. Otto P. Meyer, of Newtown, Conn., having petitioned for the extension of a patent granted to him the 4th day of April, 1854, for an improvement in treating caoutchouc and other vulcanizable gums, for seven years from the expiration of said patent, which takes place on the 4th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of March next.

Samuel J. Parker, of Ithaca, N. Y., having petitioned for the extension of a patent granted to him the 11th day of April, 1854, for an improvement in sewing machines, for seven years from the expiration of said patent, which takes place on the 11th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 23d day of March next.

James L. Cathcart, of Georgetown, D. C., having petitioned for the extension of a patent granted to him the 18th day of April, 1854, for an improvement in attaching propellers to the driving shaft, for seven years from the expiration of said patent, which takes place on the 18th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 30th day of March next.

James Buell, executor of the estate of James McGregor, Jr., deceased, of New York city, having petitioned for the extension of a patent granted to the said James McGregor, Jr., the 11th day of April, 1854, for an improvement in the construction of tea and coffee pots, for seven years from the expiration of said patent, which takes place on the 11th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 23d day of March next.

Julia M. Colburn, administratrix, *de bonis non*, of James H. Stimpson, deceased, who was executor of James Stimpson, deceased, of Baltimore. Md., having petitioned for the extension of a patent granted to the said James H. Stimpson as executor aforesaid, the 17th day of October, 1854, and antedated the 17th day of April, same year, for an improvement in vessels for holding liquids, for seven years from the expiration of said patent, which takes place on the 17th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 30th day of March next.

Stephen Bazin and James A. Bazin, of Canton, Mass., having petitioned for the extension of a patent granted to them the 25th day of April, 1854, for an improvement in machinery for laying rope, for seven years from the expiration of said patent, which takes place on the 25th day of April, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 6th day of April next.