A harrow has been patented by Mr. Philip Nelson, of Las Vegas, New Mexico Ter. This invention covers improvements on a former patented invention of the same inventor for the support and adjustment of a plate through which the harrow teeth pass, the plate serving as a gauge to regulate the depth of the teeth in the ground, or as a smoothing plate for pressing the surface of the ground.

A combined cultivator and weed cutter has been patented by Mr. Lundy B. Hogue, of Carpen teria, Cal. It has a beam with standards and teeth connected with the axle by hinged drawbars, with a long cutting plate secured to the standards, with other novel features, whereby weeds can be destroyed without loosening the soil, and to facilitate the cultivation of fruit trees and plants.

A cane scraper has been patented by Messrs. Alfred R. Gourrier and Joseph M. Thompson of Dorcyville, La. Combined with a frame having runners and a double winged scraper is a bar attached to the scraper frame, and operated by a lever, so the forward end of the plow bar and scraper can be raised or lowered as desired, to remove the soil to any desired depth and leave the tops of the ridges smooth.

-----MISCELLANEOUS INVENTIONS.

A reservoir stove has been patented by Mr. George H. Matthews, of Leavenworth, Kan. This Henry E. Wolcott, of Syracuse, N. Y. Its construction invention consists in a novel arrangement of flues in connection with the ordinary three flue stove, to heat water in the reservoir more rapidly and to a higher temperature than heretofore possible.

A horse blindfold has been patented by Mr. James Brick, of Clifton, N. J. The device consists in a strap having muzzle and blinders attached to it, in combination with a strap connecting the blinders and strap supporting them, for convenience in blindfolding a horse in case of fire.

A grading and ditching machine has been patented by Mr. Benjamin Tobias, of of Washington, Ill. It consists essentially of a cart with a tilting bottom, a plain wheel and a bucket wheel, a plow be ing arranged to fill the bucket wheel, and a lever mechanism for raising and lowering it.

A flexible match lighting device has been patented by Mr. Daniel E. Carroll, of New Orleans, La. It is a simply made box for a fulminating tape, so made that in case of breaking the box the sectionally formed tape match may be used separately on any suit able igniting surface as a series of independent matches.

A vehicle shaft support has been pattented by Messrs. Dewitt Ellsworth and Morris Rogers. of Riverdale, Mich. This invention covers improvements in shaft supporters where a spring catch on the shaft engages a lug or roller on the axle clip, for holding the shafts erect when not in use.

A washboard holder has been patented by Mr. Henry M. Wines, of Center Moriches, N. Y. It is a combination of socket lugs and locking hooks with the washtub and washboard, by which the latter may be held securely in place while being used, and prevented from jumping up in the tub.

A carpet stretcher has been patented by Mr. John M. Hurst, of Coalville, Utah Ter. Combined with a hinged bar having pins is a hasp, staple hook latch, bands, frames, and pulleys, for conveniently stretching a carpet as desired, while the device may be folded compactly when not in use

A barbed fence has been patented by Mr. George M. Beerbower, of Cherry Vale, Kan. It has a flat central portion and two pointed ends standing nearly at right angles to the plane of the flat portion, the design being to make a fence that will not mutilate or injure animals and that can be cheaply made

A cartridge pouch has been patented by Mr. Charles McClure, of Champaign, Ill. Combined with a pouch provided with tubes are mouth pieces on the ends of the tubes, having their lower ends beveled, with springs in the mouth pieces for preventing the cartridges from sliding out of the tubes

A wire fence post has been patented by Mr. John Schafer, of Marine, Ill. This invention covers a special construction and combination of parts, including a novel form of corner and intermediate posts and diagonal supports, together with a convenient arrange-ment for readily tightening or making slack the wires.

A gate latch has been patented by Mr. Felix A. Harvey, of McLeansborough, Ill. The frame has corrugated parts, with a slide having corrugated flanges, a prong projecting from the slide, and a screw locking the slide in place, making a latch which can be readily adjusted to operate when the gate sags or shrinks.

A portable desk has been patented by Mr. Charles Newbourg, of Brooklyn, N. Y. This invention covers a novel construction of desk which may be readily folded flat, and if small be carried in the pocket, and which may be readily adjusted to the back of a chair or pew, with its upper surface at a proper inclina -

A stanchion has been patented by Mr. Jackson A. Barber, of North Adams, Mich. It is for securing cattle in stables, and is designed to secure them quickly and so they may turn their necks freely while standing or lying down, the construction being such that a boy can readily secure or release the stan chion

A fire escape has been patented by Mr. Theodore B. Woodward, of Norway, Pa. This invention provides means whereby a car may be hung upon a house to descend in front of the windows, and so it may he raised and its descent controlled either by its occu pants or by persons on the ground or on any floor of the hous

A joint for umbrellas has been patented by Mr. Samuel W. Staats, of Grand Bay, Ala. Combined with an umbrella ring or runner having its top bent over to form a hollow bead with apertures, are ribs or braces passed through the apertures, with cross pieces held within the head and a sleeve surrounding the slide for holding the bent folded parts in place.

A sash holder has been patented by Mr. George W. Naylor, of Jersey City, N. J. It is a spring holder, with a U-shaped bend in its outer part, holes in the corners of its short arm to receive fastening screws, and recesses over the screw holes to give access to the screws, the object being to prevent the rattling of sashes of cars, stages, etc.

An oil can has been patented by Mr. is such that the body may be filled, and the height of the contents readily ascertained without removing the top, or the top may be removed conveniently to cleanse the can or permit the contents to be more rapidly discharged than by the pump.

A bee hive has been patented by Mr. Joseph J. Pearson, of Batesville, Miss. The walls of the hive carry bars, with recesses in their upper ends to receive pins attached to the upper corners of the comb frames, affording a free passage way for the bees over all parts of the inner surface of the hive, while furnishing a firm support for the comb frames

An adjustable bedstead has been patented by Mr. Conrad H. Matthiessen, of Odell, Ill. It has a supporting frame, provided at the foot with toothed plates for holding a rod that supports the foot end of the beadstead, so the foot end can be adjusted higher or lower, and any desired inclination can be given to the bedstead from the head to the foot.

A nut lock has been patented by Mr. Lewis J. Williamson, of East Fairfield, Ohio. The nut has a recess in its face in which is pivoted a latch, one end projecting a short distance into the central aperture, and the inner end adapted to engage the threads on the bolt, a spring held on the nut acting on the latch to press the free end into the central opening.

A steam trap has been patented by Mr. Isaac Cumberbatch, of Newark, N. J. Combined with an expansion chamber and the head of its inclosing case is a rounded nut with concaved seat, whereby a perforation in the head will be opened and closed by the expansion and contraction of the chamber forautomatically withdrawing the water of condensation from the pipes of steam heaters and other steam pipes

A range boiler has been patented by Mr. Nicholas Styne, of Brooklyn, N. Y. This invention relates to a specially constructed valve, whereby the circulation pipe can be connected with the boiler or the waste pipe, to facilitate the washing out of range water backs, and to promote convenience in testing the circulation, to see if the pipes or water back are frozen or otherwise obstructed.

A combined adjustable chair, invalid bed rest, and stretcher has been patented by Mr. Frederick T. Dodge, of Carleton, New Brunswick, Canada. The back rest is hinged to the rear end of the seat frame and a leg rest to the front end, and combined with the back rest is a transverse shaft held removably thereon, which can be locked in place, with various other novel features.

A terry loom has been patented by a swinging reel having projections and means for raising and lowering them to bring them into or out of line with the projections on the breast beam, with other novel features.

A boat propelling device has been patented by Messrs. Newton C. Corckran and Robert J. Thompson, of Doniphan, Mo. Combined with a stern wheel are crank arms on the ends of its shaft, with sliding racks in front connected therewith by pitmen, levers with segmental gear teeth, with other novel features, in a boat to be operated by turning a crank in the boat.

A bracket has been patented by Mr. formation regarding the coals and natural hydrocar James A. Van Kirk, of New Brunswick, N. J. The bracket has spurs to facilitate securing it in place, and intended chiefly for practical people and amateurs, has a slot through which the screw passes for holding whose presumed knowledge of chemistry is somewhat it, so that by loosening the screw the bracket can be adjusted without entirely removing the screw, the device being more especially designed for holding window

signal board, which when set will remain wholly displayed the required length of time and then drop suddenly into the signal inclosure, the invention covering an improvement on a former patented invention of the same inventor.

The manufacture of paint from metallic lead forms the subject of a patent issued to Mr. William E. Harris, of New York city. This invention consists in burning the metallic lead with coal, coke, or charcoal, at a temperature of about 2,700° F., whereby the fumes are united and the vapors condensed, the product being in a finely divided condition, ready to be mixed with oil without grinding.

A station indicator has been patented by Mr. Wiley Jones, of Norfolk, Va. This invention consists mainly in the peculiar construction and arrange ment of the friction brake, whereby thrust on the bearings of the rollers and unequal wear are avoided, while the mechanism can be readily taken out of the case, the device being also applicable as a revolving calendar or for bulletins.

A stop motion has been patented by Mr. Chester E. King, of Phenix, R. I. Combined with the draught rolls and a belt shifting spring-actuated lever is a pivoted lever having a plate or arm, with other novel features, for stopping a railway head or drawing roll when the sliver breaks, and preventing the broken sliver from winding on the draught rolls and injuring their covering.

A metal splice for uniting the ends of cane strips for chair seatings had been patented by Mr. Francis A. Sinclair, of Mottville, N.Y. It consists of a plate having side flanges and transverse clots, to be used by two cane strips having their ends passed over the plate and through the middle slot, then under the plate and through the end slots from the bottom upward, by which the ends are firmly held.

A mechanical movement has been patented by Mr. Mark B. True, of Newburyport, Mass. Combined with a rotatable disk, and spindles or axles carried by it, is a circular rod or ring arranged to occnpy an eccentric position in relation with the disk, cranks connecting the rim and disk, the invention being applicable for giving a parallel and straight motion from a revolving disk in a reduced space

A saw setting machine has been patented by Mr. John H. C. Winston, of Lynchburg, Va. It has a driving shaft carrying opposite cam disks to lift oppositely arranged pivoted hammers driven by an elastic band against punches, for setting a pair of adjacent teeth at once in reverse ways, against anvils or set blocks held in the jaws of the vise in which the saw blade is clamped, while the punches act on the teeth, with other novel features.

A type writing machine has been patented by Mr. Andrew P. Hansen, of London, Eng. This invention covers a character bar or device adapted to travel across the table to space apart the letters, with mechanism for moving the paper, or in lieu of the oscillating index lever the type rack may be made to act as the index lever, the invention admitting of various modifications in the construction of an effective type writer. (Address Theo. Bourne, 100 William St., New York city, concerning this patent.)

NEW BOOKS AND PUBLICATIONS.

MINERALOGY SIMPLIFIED. Easy methods of identifying minerals, including ores. By Henri Erni, A.M., M.D. Philadelphia: Henry C. Baird & Co., 1885.

In this second edition of Dr. Erni's Elementary Mineralogy, the work has been revised and considerably enlarged. It is divided into two parts, treating of modern chemistry and of determinative mineralogy. In the introduction to the mineral tables is given a glance at chemical philosophy; a description of the apparatus and manipulations of the laboratory; the preparation Messrs. Thomas Holt, Jr., of Midland Park, and of the common reagents; blowpipe analysis and appara-James Mellor, of Paterson, N. J. Combined with a tus; the reactions of the oxides with general reagents; loom frame and lay are projections on the breast beam, frame reactions; special methods for the detection of certain clements; and finally the operations of fusing and fluxing. The descriptions are for the most part clear and intelligible, though the desire to abbreviate has occasionally produced a little obscurity. The part treating of determinative mineralogy is based upon Professor von Kobell's well known tables, and shows no particular originality of arrangement. It is not so compact as Dr. Frazer's translation of the same authority, nor so clear and easy of reference as the tables compiled by Professor Brush. The characteristic behavior of the most important ores before the blowpipe and with solvents is also given, together with some inbons. The work is well printed and illustrated. It is

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Curtis Pressure Regulator and Steam Trap. See p. 222. Wood Working Machinery. Full line. Williamsport Machine Co., "Limited," 110 W. 3d St., Williamsport, Pa. Keystone Steam Driller for all kinds of artesian wells. Keystone Driller Co., Limited, Box 32, Fallston, Pa.

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tion for writing or reading.

A corset has been patented by Mr. Sherwood B. Ferris, of Lakewood, N. J. This invention covers the use of plaited sections in the body of the corset, with the plaits confined at suitable points by stitching, so the sections are adapted to receive padding, and the corsets are suitably expansible to fit the

The manufacture of flat brushes forms the subject of a patent issued to Mr. Henry Rosenthal, of New York city. The method consists in placing the bristles around a core, passing a metal band or ferrule around the upper end of the bristles, which are cemented together, and then forcing out the core by introducing the handle.

A calculating device has been patented by Mr. Charles M. Bradt. of Newton. Kan. It is made with a plate having flanges with a series of pivoted rollers and cross strips, the strips and rollers having tables prepared for instantly finding the number of bushels in a given number of pounds, and thus quickly measuring grain.

shade rollers.

A churn has been patented by Mr. Abraham C. Gandee, of Syracuse, Ohio. The cream receptacle and its cover form a cylindrical vessel placed upright on a base, a shaft being joarnaled in one side of the box and in a neck of the other, the shaft operated by a crank, and carrying wings or blades, each of which has an aperture, there being also a drip pan for buttermilk, and other novel features.

A grain measure, register, and sacker has been patented by Mr. John'F. Porter, of Mount Washington, Ky. It has a casing with open front and a discharge opening in its bottom, within which is pivoted a wheel divided into compartments by radial partitions, the wheel receiving grain through a feed hopper at the top, so the grain can be measured and discharged from the machine by turning the wheel.

A time signal has been patented by year of grace 1886, but have omitted to supply a table Messrs. Stephen J. Swayze and John C. Lane, of Sag Harbor, N. Y. It consists of an independently acting by seventy woodcuts.

worthy of their attention.

LECTURES ON THE PRINCIPLES OF HOUSE

DRAINAGE. By J. Pickering Put-nam, Architect. Boston: Ticknor & Co., 1886.

Mr. Putnam's brief summary of the essential features of good house drainage comes to us very well recommended by Colonel Waring and other authorities in sanitary engineering. It consists of lectures delivered before the Suffolk District Medical Society and the Boston Society of Architects. The book is divided into three parts, treating respectively of traps, of lavatories, baths, etc., and of soil and drain pipes. Under these headings the main features of house plumbing are carefully discussed, and a number of sensible sugges tions are offered. The merits of the author's patent "Sanitas " apparatus claim, however, almost too much attention in a work which is presumably not an advertisement. The publishers have anticipated the of contents or an index. The work is well illustrated

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Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Minerals sent for examination should be distinctly marked or labeled.

(1) P. L. asks (1) the best way to kill reptiles, without disfiguring them. A. Use chloroform. 2. The proper strength of the alcohol to preserve the same in? A. A diluted alcohol, about 40 per cent, is used at first, and in time the strength can be increased to 80 or 90, as may be deemed necessary.

(2) E. P. M.-Silver or any metal should not be hammered to the extent to show cracks without annealing. Heat to a low red, allow to cool until it loses the heat color, and plunge in water. To remove solder coloring, you must refinish. You should use an alcohol flame with your blowpipe.

(3) H. W. F. asks: 1. What can I use to prevent Russian stove pipe from rusting? A. Such pipe with ordinary care should not rust; perhaps a little application of plumbago would be good. 2. What kind of blacking or polish can I use to make it look like new? A. Take of:

Asphaltum......2 pounds,

Boiled linseed oil.....1 pint.

Oil of turpentine......2 quarts. Fuse the asphaltum in an iron pot, boil the linseed oil, and add while hot. Stir well, and remove from the fire. When partially cooled, add the oil of turpentine. Some makers add driers. 3. What will take the rust off the pipe? A. Dip the pipe in a solution of one part sulphyric acid and ten of water, and then immerse in a bath of hot lime water; finally rub with dry sawdust.

(4) E. M. N. desires (1) a recipe for making shaving cream that can be used without water. A. Melt 20 pounds of lard in a steam bath at a temperature of 212°, and then letting 5 pounds of caustic potash lye of 36° Baume run in very slowly during constant stirring with a wooden paddle; when the paste becomes thick, 5 pounds more of lye are added in the same manner. After several hours' stirring, the mixture becomes firm, and is finished. It is then transferred to a mortar, and triturated until the soap becomes perfectly even throughout, and assumes a pearly appearance. Attar of almonds is the perfume for almond cream, and attar of rose for rose cream. They are dissolved in a little alcohol, and added during tritura- ! tion. 2. A recipe for making a shampoo mixture? A. Salts of tartar 4 ounces, pulverized borax 4 ounces, soft water 1 gallon; mix and bottle. 3. Something to make the hair grow on the face? A. Cologne 2 ounces, liquid hartshorn 1 drachm, tincture of cantharides 2 drachms, oil rosemary 12 drops, lavendar 12 drops. Apply to the face daily, and await results

(5) W. E. H. writes: I want to use the exhauststeam from a twenty horse engine for heating, or to aid in heating, a factory. "What are the best methods now in use for that purpose? A. You may heat your factory with great economy by means of the exhaust steam flowing directly into coils of 1 inch or 1¼ inch iron pipe placed along the walls or overhead. As a rule, make the inlet or connecting pipe nearly as large in area as the areas of all the pipes in the coil. Have the coils so laid that they will drain the water of condensation in the same direction that the steammoves, Also vent the coils with a pipe equal in size to one of the coil pipe. Vent may go directly to roof, or you may join all the coils in a common vent. By making the entire system equal to or larger than the area of the exhaust pipe, you may close the exhaust with a valve and carry the whole exhaust through the heating pipes. Or by using a back pressure valve on the exhaust pipe, you may control the steam in the coils.

(6) R. S. M. writes: Thirty-six rods,

upon the iron, and is probably the best way to keep such a boiler over winter; we are informed the Stiletto's boiler is to be thus treated when she is laid up for the winter.

(8) C. J. C. asks how to construct a brick wall partition (tenement houses) so as to prevent noise from one house being heard in other. Will a hollow wall do it? A. You may deaden sound between houses or apartments by hollow walls or furring off, and lath and plaster on both sides of a solid wall. Solid walls plastered directly on the brick are good conductors of sound.

(9) F. B. S. writes: I have a forge with large bellows with straight blast (horizontal). Can I not fix some kind of small cupola over the tuyere so as to melt cast iron to make small castings, say 12 or 15 pounds weight? A. It is considered impracticable and unprofitable to make iron castings by the use of a forge fire or bellows; 10 or 15 pounds of cast iron may be melted in a crucible by making a small brick stack over a forge fire. A small cupola should be fashioned in proportion to those in use in foundries, which we advise you to visit.

(10) C. H. P. asks: What substance other than tin and lead ashes can be melted with old glass to give it a white, opaque appearance? A. The white opacity of glass is due to the use of either arsenic trioxide, tin dioxide, lime phosphate, powdered talc, or cryolite. There are no recent books on glass manufacture in the English language. The article on glass in "Spons' Encyclopedia of | the Useful Arts " is one of the best authorities that we can recommend. We can send the number containing it for 75 cents.

(11) E. B. O. writes: In SCIENTIFIC AMERICAN, No. 11, page 170, you give a mixture for gilt-coating metals. Will you please state: 1. If the mixture is thickened to a paste, or thicker, with the chalk and cream of tartar? A. It is made into a paste. 2. Can the coat be increased in thickness by continued rubbing? A. Not to any extent. 3. Will it crack or peel off if too thick? A. The peeling off depends upon the cleanliness of the article to which the paste is applied. 4. Will it wear off quickly if handled or carried in the pocket? Will it tarnish quickly, and if so cau it be brightened except by rubbing with the mixture. A. The wearing off and tarnishing of the coat is m tirely a matter of usage. Under any circumstances process cannot at all be favorably compared with the electro-gilding by means of the battery. 5. Is it expensive? I am handling cutlery-plain steel and silver, and nickel plated. A. The expense is slight. The chloride of gold is the only expensive ingredient of the mixture. 6. How can I best keep it from rusting and tarnishing? A. Coat with paraffine.

(12) L. E. T.-A well constructed ice boat, on good ice, will sail much faster than the wind. Probably a wind velocity at rate of thirty miles per hour would give the boat a speed of two miles per minute, the boat and ice being in best condition.

(13) L. K. asks: 1 What is the compoposition of Babbitt metal? A. Add to 4 pounds of melted copper 12 pounds of Banca tin. Introduce it gradually, then add 8 pounds of regulus of antimony and 48 pounds more of tin. 2. How is phosphor-bronze prepared? A. A small quantity of phosphorus is added to an alloy of copper and tin. The phosphorus is pushed down into the melted alloy by means of an iron tube. Great care must be exercised in this operation, as well as in handling phosphorus generally.

(14) R. H. M. asks as to how porous cells are made. A claims that they are made the same as flower pots. B claims they are made with two kinds of clay. I claim they are made by mixing sawdust with the clay, leaving it porous when burnt. A. They are simply unglazed pottery.

(15) N. D. W. asks how new rubber rolls are put on clothes wringers. What is used for cement, and what material is used for filling old rolls? A. The unvulcanized rubber in sheets is rolled tightly around the iron cores. The material being soft or tacky, sticks together. The roller is then put into an iron mould and pressed tightly, so that the iron core or spindle will be forced to the center. The whole is then put in the steam oven and vulcanized. Rubber cement is used for mending old work. It may be had from the rubber dealers.

(16) W. P. F. asks: What are the metals on which ammonium hydrate has no chemical action? A. It has practically no chemical effect upon any of the common metals.

(17) F. V. W. asks: What is good for sore and painful bunions? Is there any permanent cure for them? A. Bunions result from pressure and irritation by friction. This frequently causes a permanent en largement of the joint, which it is difficult if not impossible to remove. The treatment for corns applies also to bunions, for removing the soreness; but in consequence of the greater extension of the disease, the cure is more us. Wh tedi

pin point, and turning it over and around to bring the pins to the same position.

(20) F. J. C. desires the formula for a cleaning and scouring compound which, when prepared, has the appearance of a large white ball. A. The fol lowing is the composition of a scouring ball which is useful for many purposes: Dissolve some good white soap in alcohol, and mix with it the yolks of four or five eggs; add gradually a little spirits of turpentine and sufficient fuller's earth to make the mixture into balls. To remove a stain, wet the spot with soft water rub it with a ball of the above composition, then rub the cloth and wash out.

(21) E. C.-The only means of determining the strength of tobacco as a cure for scab in sheep would be by chemical analysis. Such a process would be too complicated for you to use.

(22) B. G. P. asks: What power in pounds can the average locomotive freight engine exert on its drawbar on a favorable track? Do both engines give a power there together, or is only the power of one side of the locomotive applied at a time? A. For the locomotive, about 5,000 pounds, average of both engines. Both engines add their individual power to the locomotive.

(23) W. R. T. asks: Which is the best receipt for cleaning smoke off of tile? A. If the smoke cannot be washed off with a proper soap and water, it is probable that the heat has been sufficiently high to incorporate the carbon with the glaze, whence it could not be removed without destroying the surface.

(24) J. L. asks: What material is used at the manufactories for dressing ladies' white dress goods, especially jaconet and Swiss muslin, also how the dressing is applied? A. Take 1 part crystallized carbonate of soda; 4 to 6 parts each white wax, stearine, and pure white soap; 20 parts carbonate of magnesia or fine Paris white; 40 parts potato starch; and 160 parts pure wheat starch. Boil these together with sufficient water to make 1,600 parts altogether. A little ultramarine may be added to counteract the yellow tint of linen which is starched with this preparation, sed between rollers, and dried.

(25) J. G. H.-To remove old paint and varnish from wood and iron: Mix one part by weight of American pearlash with three parts quick stone lime, by slaking the lime in water and then adding the pearlash, making the mixture about the consistence of paint. Lay the above over the whole of the work required to be cleaned, with an old brush: let it remain 14 or 16 hours, when the paint can easily be scraped off.

(26) J. E. S.-We recommend you to read "Other Worlds than Ours," by R. A. Proctor, which we can mail you for \$2.50.

(27) N. W. writes: Manufacturers of house heaters (furnaces) claim that it is perfectly safe to put the hot air pipes leading from heaters in direct contact with joists 3 feet away. They say the wood never chars as it does from highly heated steam pipes. Are they right? A. It is considered by the Board of Underwriters of New York not safe at any distance. They require also insulation at registers.

(28) T. B. W. asks: How is weiss beer made? Is it a malt beer, brewed as other beers? A. Weiss beer is brewed from wheat, and in Berlin it is made from one part of barley malt and five parts of wheat malt. The process of manufacture is similar to that of ordinary beer.

(29) G. W. B. asks: What is a perform tion? Webster defines it: "A hole or aperture passing through anything." Worcester: "A hole, an orifice.' Stormonth: "A hole or aperture passing through.' Now, is "a hole passing through anything," however made, a perforation, e. g., a metal plate is cast in a mould in which there are pins (or cores). These pins form a hole through the plate during the casting, but do not perforate it. Can such a hole properly be called a perforation? A. We should say not, although every perforation is a hole or aperture. As the verb " perforate "comes directly from Latin words meaning to "bore through," we think a nice distinction in the use of language would call for some other word to cover such apertures as you mention.

(30) C. P. K. asks: 1. What is the best glue for sizing pictures, also best varnish for pictures? A. Cover with a thin coating of gelatine, and then use thin spirit varnish of either balsam of fir or dammar. 2. What material is best to cut on, as in cutting paper with a punch? A. Any hard, close-grained wood, such as maple or hickory.

(31) S. T. asks: What can I mix with Chair, I. Ehrlich..... ink to make it dry better? A. Gum, sugar, and glycerine are added to the usual ingredients with which ink is made, in order to give it the property of copy ing. Lessening the amount of these substances will be found desirable. See also the article on "Inks' in Scientific American Supplement, No. 157.

(32) F. W. S. asks: 1. How can I keep

INDEX OF INVENTIONS

For which Letters Patent of the **United States were Granted**

October 6. 1885.

AND EACH BEARING THAT DATE.

| [See note at end of list about copies of these | e patents.] |
|--|----------------------------|
| Adding machine, L. W. Swem | \$27,970 |
| Adjustable chair, invalid bed rest, and stretc combined, F. T. Dodge | |
| Alarm. See Watch stand alarm. | |
| Anchor, D. L. Coles Anvil, J. Mackert | |
| Atomizer, W. H. Bluett Axle box, car, R. Brewer | |
| Axle cap, carriage, J. O. Couch | 327,658 |
| Axle cap, carriage, J. M. Schorb, Jr | |
| Axles, implement for straightening, J. A. Ge | orge 327,787 |
| Bag holder for trucks, W. S. & J. W. Yothers Ballot box, registering and canceling, J. B. | |
| ton32 Banjo, A. C. Fairbanks | |
| Bath tub, F. J. Torrance | |
| Battery. See Electric battery. Beam, tubular, J. H. Jones | 327.949 |
| Bed bottom, D. F. Stambaugh | 327,611 |
| Bed, double, H. S. Simpson | 327,760 |
| Bed, sofa, W. J. Shaw Bedstead, adjustable, C. H. Matthiessen | 327,605 |
| Beehive, J. J. Pearson | 327,716 |
| Belt hole cover, D. Kane | ··· 327,694 |
| Bicycle saddle, L. S. Copper Billiard and pool tables, pocket for, D. W. Se | 327,770 |
| Billiard and pool tables, pocket for, D. W. Se Bitters, P. Schwind | ely 327.729 |
| Block. See Carriage prop block. Stereo | |
| block. Board. See Laying-out and embalming board | đ. |
| Boiler. See Steam boiler. Boiler covering, non-conducting, T. Merriam | 997 810 |
| Boiler head, sectional, R. R. Zell. | 327,850 |
| Bolt, E. Lucas Book and copy holder, A. Hockett | 327,887 |
| Boot or shoe calk, W. Rosenfield | 327,596 |
| Bottle cap, mustard, F. Wolff Bottle stopper, S. S. Newton | 327,818 |
| Box. See Ballot box. Match box. Paper Show box. | box. |
| Box opener, F. L. Perry. | 327,821 |
| Bracket, J. A. Van Kirk Brake. See Wagon brake. | 327,8 3 9 |
| Brick machine, L. Lernelle | |
| Brick machine, G. Martin Brick moulds, machine for sanding, A. Naylo | or 327,569 |
| Bridges, etc., bearing roller for, J. A. McDona Brush, circular wire, B. F. Quinby | ald 327,808 |
| Brush, marking, C. E. Perry | 327,586 |
| Brush, paint or whitewash, T. Huntbatch Brush, rotary, Acker & Michler | 327,947 |
| Brush, rotary, Acker & Michler Brushes, manufacture of flat, H. Rosenthal | |
| Buck pole, B. F. Cook Buckle, Tourgee & Jennings | 327,622 |
| Buggy boot, J. W. Leek Burial apparatus, J. C. Herrmann32 | |
| Bushing and bung, A. E. Aldridge | 827,509 |
| Butter, treating, E. J. Woodruff Button, B. H. Bradley | |
| Button, L. P. Conard | 327,768 |
| Button, D. B. Shantz Button, C. F. Veit | 7,906, 327,907 |
| Button and fastener, G. W. Prentice Button attaching machine, C. J. Brosnan | 327,719 |
| Button for fur garments, H. F. Bindseil | \$27,757 |
| Button shank, metallic, E. N. Foote | 327,873 |
| Calculating device, C. M. Bradt Calendar, S. J. Cox | 327,572 |
| Camera stand, L. Noble Can. See Shipping can. | 021,890 |
| Cane scraper, Gourrier & Thompson Car coupling, G. W. Curtis | |
| Car coupling, C. W. Curtis et al | 327,661 |
| Car coupling, J. C. Doerr Car drawhead, tram, J. Stephenson | 327,869 3 27,614 |
| Car, dumping, Cook & Summers | 327,769 |
| Cas motor, street, W. C. Trussell Car. railway, Tesseyman & Billings | 327,8 3 6 |
| Car, stock, C. C. & C. W. James Card table. A. Rodgers | 327,880 |
| Carpet stretcher, J. M. Hurst | 327,688 |
| Carpet stretcher, J. Mead | 327,809 327.978 |
| Cartridge pouch, C. McClure | 327,700 |
| Casting printers' leads, mould for, H. C. Hand Casting rolls, mould for, W. W. Wallace | se11 327,346 |
| Chain spring link, A. W. Cox | 327,865 |
| Chair. See Adjustable chair. Folding c Nursery chair. Reclining chair. Surge | |

Nursery chair. Reclining chair. Surgeon's Surgeon's or reclining chair. chair.

Chair backs, etc., manufacture of. H. J. Har-... 327,549

wood Chair seatings, metal splice for uniting the ends Churn, Eckles & Frow.....

| with 7 foot fail, brings water to my house from a | |
|--|----|
| fountain 20 feet diameter, 5 feet deep, surface of water | by |
| 2½ feet over strainer. In winter it runs continuously, | G |
| but in warm weather stops every few days, from the | |
| accumulation of air in the pipe. Can you explain the | |
| cause? The bottom of the fountain is porous clay, and | |
| quite often bubbles of air may be seen to rise. Does | |
| air accumulate in the water by this means, and thus | |
| enter the pipe? A. If your pipe is a siphon, and ex- | gl |
| posed to a warmer temperature at its apex than at the | m |
| fountain, air will have a tendency to become liberated | by |
| under the decreased pressure, and accumulate in suffi- | m |
| cient quantity to stop the flow; while in winter the | w |
| exposure of the siphon to lower temperature will retain | m |
| the air combined with the water, and make the flow | be |
| permanent. The bubbles that you speak of are proba- | st |
| bly marsh gas, or sulphureted hydrogen, arising from | w |
| decomposition at the bottom of the fountain. These | |
| gases may be partially or fully the cause of stoppage | dr |
| in the siphon flow. | en |
| | |

| ious. when a pullion is forming, | It maj | ne probb | cu |
|----------------------------------|--------|-----------|-----|
| poulticing and carefully opening | it wit | th a lanc | et. |
| zow's corn cure consists of: | | | |
| Salicylic acid | 30 | grains. | |
| Fet Connobis indias | 10 | | |

ois indica. 1 Collodion..... ½ ounce. Mix.

(18) R. A. D. asks how to clean kid oves, so as not to injure them? A. Stains may be reloved even from the most delicately colored kid gloves y suspending them for a day in an atmosphere of am-Provide a tall glass cylinder, in the bottom of onia hich place strong aqua ammonia. Be careful to reove from the sides of the jars any ammonia that may e spattered upon them. Suspend the gloves to the opper in the jar. They must not come in contact ith the liquid.

(19) O. H. asks: Can the rear pair of riving wheels of a locomotive railroad engine be turned nd for end, and rods connected when in perfect

(7) A. O. asks if it is any benefit to quarter, and, when so changed, will the engine operate a yacht's coil boiler to fill it with crude petroleum with former perfection? A. There will be no difference in the action of the engine, provided all the bearings A. P. W.-Your specimen is pyrite, iron sulphide while she is hauled up for the winter; what effect will it have on the iron? A. It will have a preserving effect fit, as you will find by marking a spool at the crank no value.

| a bouquet of flowers? A. Dip the flowers in melted paraf- |
|---|
| fine, withdrawing them quickly. The liquid should |
| only be just hot enough to maintain its fluidity, and |
| the flowers should be dipped one at a time, held by |
| the stalks, and moved about for an instant to get rid of |
| air bubbles. 2. How to dissolve paraffine? A. Paraf- |
| fine is soluble in hot alcohol, ether, and oils. 3. How |
| can I paint tin covers so that they will not rust? Or- |
| dinary paint often comes off. A. You will find japan |
| more satisfactory than paint for tin. 4. How can I coat |
| old trays or waiters where the japan has come off? |
| A. They must be rejapanned. See SCIENTIFIC AMERI- |
| CAN SUPPLEMENT. Nos. 160 and 166. |
| |

(33) W. J. P. writes: I want to make a salve consisting of sal soda and soap, but do not know how to mix it. A. Heat the soap sufficiently to so melt it that the sal soda can be thoroughly incorporated or mixed while the soap is in liquid condition.

MINERALS, ETC.—Specimens have been received from the following correspondents, and ex. amined with the results stated.

| Churn, A. C. Gandee | 327,938 |
|--|----------|
| Churn, H. H. Teeter | |
| Churn, Witte & Murrell | \$27,912 |
| Clip. See Paper clip. Spring clip. | |
| Clock movement, secondary electric, C. H. Pond | \$27,897 |
| Clocks in series, electrical attachment for wind- | |
| ing, C. H. Pond | |
| Noset tubes, apparatus for warming and disin- | |
| fecting, Guhring & Kohrer | 327,945 |
| Clothes wringer, C. K. Stinson | 327,616 |
| Clover huller, Miller & Kailer | |
| Nock for sinks, etc., waste, S. D. Samuels | |
| Cocks in gas and water service, casing for street, | |
| E. Lindsley | 327,561 |
| Coffins into graves, apparatus for lowering, F. | |
| Gamper | |
| Collar and cravat, H. P. Huntoon | |
| Colter, plow. O. A. Essig | 327,872 |
| Comb. See Curry comb. | |
| Concentrator, G. S. Armstrong | |
| Cooker, feed, C. H. Marshall | |
| Corn from the cob, machine for cutting, B. Col- | |
| lins | |
| Corset, S. B. Ferris | |
| Corsets, stiffening cord for, Newman & Blakesley. | |
| Cotton chopper, J. B. Robinson | |
| lotton ain FC Commons 297 026 | |