

Agricultural Life in Missouri.

What can be pleasanter, says an exchange, than the life of a Missouri farmer? At daylight he gets up and examines the holes around his corn hills for cut worms, then he smashes the codling moth larvæ with a hoe handle until breakfast. The forenoon is devoted to watering the potato bugs with a solution of Paris green, and after dinner all hands turn out to pour boiling water on the chintz bugs in the corn and wheat fields. In the evening a favorite occupation is smudging peach trees to discourage the curculio; and after a brief season of family devotion at the shrine of the night-flying coleoptera, all the folks retire and sleep soundly till Aurora reddens the east and the grasshoppers tinkle against the panes and summon them to the labors of another day.

New French River Steamboat.

A large steamboat has recently been constructed at Seyne, France, after the plans of M. Dupuy de Lome, for the navigation of the river Rhone. She is 496'8 feet in length, and has 37'1 feet beam. With her coal on board she draws but 17'5 inches of water, and can receive 126 tons of load per 3'9 inches of immersion. At a draft of 50 inches she carries a load of 900 tons. The vessel has four boilers and two inclined compound engines, which drive two large helicoidal wheels placed in the stern, each of which has twelve wings. Each wheel moves independently of the other, so as to be used for steering. The craft has been tried once, but without good results, through some mistake in the construction of the machinery. It was found that a high speed threatened to shake her to pieces. This, however, it is said, will be shortly remedied.

American Telegraphy.

The efficiency of the service of the Western Union Telegraph Company is well illustrated by a statement which we copy from Mr. William Abbott's *Monthly Circular* for July 1. This statement, which alludes to the perfect organization of the Anglo American Telegraph Company, says that messages are exchanged between London and California in the same space of time occupied for similar service between London and Paris, the distances respectively being about 5,500 and 250 miles. As the Western Union Company perform over two thirds of the entire service between London and California, the exhibit is a remarkable evidence of the efficiency of that company, and, considering the respectable source whence it comes, the appreciation is all the more valuable.—*Journal of the Telegraph.*

Spiritual Phenomena.

At a private party, given at his London house during the past month, Sir Charles Wheatstone exhibited some curious electrical experiments for the amusement of his friends, which would seem to throw some light on certain so called "spiritualistic manifestations." In a dark room, by a stamp of his foot, Sir Charles produced a brilliant crown of electric light in mid air, while musical instruments seemed to be played by invisible hands, whereas the sounds really came from an adjoining room, in which the player sat, and were made to appear to be produced by the instruments before the spectators by an ingenious contrivance. A contest between Science and the "spirits" in their own chosen feats would be almost as memorable as the celebrated competition between Moses and the magicians.—*Liverpool Post.*

An Interesting Discovery.

Some workmen, while engaged in laying water pipes in Cividale, Italy, recently encountered a large flat stone. On raising this, a bed of mason work was revealed, in which was placed a stone sarcophagus covered with a marble lid. Within the receptacle were the remains of a human skeleton, some portions of which were yet perfect. Beside the body lay a sword, lance, helmet, spears, a gold clasp and ring, a piece of very beautiful gold tissue, and a flask of water, which was still remarkably clean. The removal of clay from the bottom of the grave brought out the letters **ISVL**—from which archæologists have decided that the remains are those of Gisulf, Duke of the Lombard Marches of Friuli, who fell in battle in 611, while repelling an invasion of the Avars.

THE NEW COMET.—Professor Parkhurst says that the new comet may be found, by the aid of a small telescope, 7° south of γ *Ursæ Minoris*, the upper pointer of the Little Bear. Between 9 and 10 P. M., it will be almost directly to the left of that star. The distance of our new visitor is estimated at about 100,000,000 miles. In about a week it will be found midway between the γ and Thuban.

TOOTHACHE CURED BY ELECTRICITY.—Dr. Bouchard, of Paris, says that toothache may be almost instantly arrested by a constant battery current from ten cells. The positive pole is placed against the jaw, on a level with the painful tooth, and the negative pole to the antero-lateral region, on the same side of the neck.

THE EARL OF CAITHNESS, of whose novel form of ship's compass we recently gave an illustration, has produced another invention in the shape of a machine for cleaning and brushing railway carriages. The device, we understand, is an excellent one, and has been adopted by the London and North-western Railway Company.

SUCCESS, says Josh Billings, does not consist in never making blunders, but in never making the same one a second time.

THE immersion of hides for hours in a two per cent solution of carbolic acid, and then simply drying them, has been recently substituted for the tedious and expensive process of salting them for transportation from South America and Australia, and with most satisfactory results. Bones have been similarly treated for transportation.

HOW SHALL I INTRODUCE MY INVENTION?

This inquiry comes to us from all over the land. Our answer is: Adopt such means as every good business man uses in selling his merchandise or in establishing any business. Make your invention known, and if it possesses any merit, somebody will want it. Advertise what you have for sale in such papers as circulate among the largest class of persons likely to be interested in the article. Send illustrated circulars describing the merits of the machine or implement to manufacturers and dealers in the special article, all over the country. The names and addresses of persons in different trades may be obtained from State directories or commercial registers. If the invention is meritorious, and if with its utility it possesses novelty and is attractive to the eye, so much the more likely it is to find a purchaser. Inventors, patentees, and constructors of new and useful machines, implements, and contrivances of novelty can have their inventions illustrated and described in the columns of the **SCIENTIFIC AMERICAN**. Civil and mechanical engineering enterprises, such as bridges, docks, foundries, rolling mills, architecture, and new industrial enterprises of all kinds possessing interest can find a place in these columns. The publishers are prepared to execute illustrations, in the best style of the engraving art, for this paper only. They may be copied from good photographs or well executed drawings, and artists will be sent to any part of the country to make the necessary sketches. The furnishing of photographs, drawings, or models is the least expensive, and we recommend that course as preferable. The examination of either enables us to determine if it is a subject we would like to publish, and to state the cost of engraving in advance of its execution, so that parties may decline the conditions without incurring much expense. The advantage to manufacturers, patentees, and contractors of having their machines, inventions, or engineering works illustrated in a paper of such large circulation as the **SCIENTIFIC AMERICAN** is obvious. Every issue now exceeds 42,000 and will soon reach 50,000, and the extent of its circulation is limited by no boundary. There is not a country or a large city on the face of the globe where the paper does not circulate. We have the best authority for stating that some of the largest orders for machinery and patented articles from abroad have come to our manufacturers through the medium of the **SCIENTIFIC AMERICAN**, the parties ordering having seen the article illustrated or advertised in these columns. Address

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Inventions Patented in England by Americans.

- (Compiled from the Commissioners of Patents' Journal.)
From July 7 to July 20, 1874, inclusive.
- AMMONIA FROM GAS.—B. Stillman, New Haven, Conn.
 - ARTIFICIAL STONE.—J. Friel, Brooklyn, N. Y.
 - BOILER TUBE SCRAPER.—J. Collicott, Boston, Mass.
 - CAR AXLE.—G. W. Milmore, Janesville, Wis., et al.
 - CHEMICAL TELEGRAPH, ETC.—T. M. Foote et al., New York city.
 - COAL CUTTING MACHINE, ETC.—H. F. Brown, Indianapolis, Ind., et al.
 - COD LIVER OIL.—J. G. Hava, New Orleans, La.
 - CONSTRUCTING PIERS, ETC.—C. E. Hill, New York city.
 - DAMPING PAPER.—R. M. Hoe, New York city.
 - FERTILIZER.—R. A. Chesebrough, New York city.
 - HORSE SHOE.—G. Dunning et al., Waukegan, Ill.
 - LIGHTING GAS.—E. E. Bean, Boston, Mass.
 - MAKING BOOTS, ETC.—D. Mills, Brooklyn, N. Y., et al.
 - MAKING BOOTS, ETC.—H. G. Thompson, Milford, Conn.
 - MAKING GAS.—W. Elmer, New York city.
 - MAKING ICE, ETC.—J. M. G. Beath, San Francisco, Cal.
 - MATCH IGNITION SURFACE.—L. O. P. Meyer, Newtown, Conn.
 - PUNCHING TICKETS, ETC.—J. H. Small, Buffalo, N. Y.
 - REGENERATOR FURNACE.—M. Foster, Alleghany, Pa.
 - RENDERING FATS, ETC.—H. S. Firmar, New York city.
 - SAW AND HANDLE.—H. Disston, Philadelphia, Pa.
 - SCREW-CUTTING MACHINE.—C. Sellers, Philadelphia, Pa.
 - SIGNAL LANTERN.—Universal Signal Light Company, New York city.
 - SPINDLE AND BOLSTER.—F. J. Rabbeth, Pawtucket, R. I.
 - STEAM BOILER.—G. G. Lobdell, Wilmington, Del.
 - STEAM ENGINE AND GENERATOR.—E. A. L. Roberts, Titusville, Pa.
 - STITCHING AND STRETCHING CLOTH.—A. S. Dismore, Boston, Mass.
 - TUCKER FOR SEWING MACHINE.—J. Barrett, Buffalo, N. Y.

NEW BOOKS AND PUBLICATIONS.

THE POEMS OF VIRGIL. Volume I., containing the Ten Bucolics and the First Six Books of the *Aeneid*. Price \$1.75. Boston, Mass.: Ginn Brothers.

A handsome reprint of classics of worldwide fame, edited with care by Messrs. Allen and Greenough, with notes of great value to the student and translator.

MINING INDUSTRY OF THE STATES AND TERRITORIES OF THE ROCKY MOUNTAINS, including Descriptions of Quartz, Placer, and Hydraulic Mining, Amalgamation, Concentration, Smelting, etc. By Rossiter W. Raymond, Ph. Dr., United States Commissioner of Mining Statistics, etc. Illustrated with Engravings and Maps, and a Colored Geological Map of the United States. 8vo., 540 pp. Price \$4.50. New York: J. B. Ford & Co., 27 Park Place.

There is little need to inform our readers of Professor Raymond's extended knowledge of the topography and resources of the mineral districts of the West. Probably no one has so thoroughly explored these regions, pregnant with the future prosperity of the whole continent, as Professor Raymond, and certainly no one can speak more authoritatively on the subjects of mining and metallurgy. The great experience and information of the author have been admirably elaborated in the volume before us, and we welcome it as a valuable addition to our list of technical and statistical works. It is excellently illustrated, the maps being especially commendable for accuracy and clearness.

STATISTICAL ATLAS OF THE UNITED STATES. Part III.—**VITAL STATISTICS.** New York: Julius Bien, 16 & 18 Park Place.

The third part of this magnificent publication is ready in advance of the others, and consists of charts of the proportional prevalence of various classes of disease and bodily infirmities, as well as of nationality of the people and other valuable statistics. The whole work is to consist of fifty maps, with explanatory text, the expenditure for which has been authorized by Congress; and from the initial section sent us, we are able to assert that no more elaborate or valuable compilation has ever been organized, printed and published. We are indebted to the Secretary of the Interior for the copy of this work.

WILEY'S AMERICAN IRON TRADE MANUAL of the Leading Iron Industries of the United States, with Descriptions of the Iron Ore Regions, Furnaces, Rolling Mills, Bessemer Steel Works, Car, Locomotive, Steam Engine, and Bridge Works, Iron Ship Yards, Stove Foundries, etc. Compiled and Edited by Thomas Dunlap. Price \$7.50. New York: John Wiley & Son, 15 Astor Place.

The promise held out in this very comprehensive title is amply fulfilled in the book, wherein Mr. Dunlap has, with great labor, care, and perspicacity, given an elaborate account of every establishment in the country which makes or uses iron in its trade. It is a complete directory of our most important industry; and the descriptions of the various mines, works, and factories are graphically written, giving the most detailed particulars of every branch of the subject. As a book of reference, it is indispensable; and it is also a very interesting and instructive work for the general reader.

THE LABORATORY is the name of a new monthly journal of the progress of chemistry, pharmacy, medicine, etc. Price 50 cents per annum. Boston, Mass.: W. W. Bartlett & Co.

Recent American and Foreign Patents.

Improved Bottom Plate for Range Chimney.

Hamilton C. Garwood, Jersey City, N. J.—This is a bottom plate for range chimneys having a conical or pyramidal elevation in the middle portion, with an opening and valve at the top, and above the top a pipe or flue for carrying off the odors, smoke, etc., from the range when cooking, and for ventilating the room.

Improved Burglar Alarm.

James H. Whitelegge, New York city.—This invention relates to the construction of safety bolts for burglar alarms; and consists mainly of a spring bolt so constructed and arranged in relation to a hole in the lock bolt that when the lock is acted upon by a key or other instrument from either side it stops the movement of the lock and rings a bell.

Improved Joint Connection for Top Chords of Iron Bridges and Improved Girders and Columns.

Walter G. Coolidge and Edward Hemberle, Chicago, Ill.—The first invention consists of a peculiarly constructed joint piece for wrought iron top chords in bridges having what are known as pin connections, the joint piece being made either of cast iron or wrought iron. This connection is adapted for the construction of the top chords entirely of wrought iron without necessitating any riveting at the place of connection; it further has the advantage of enabling the connection of ties and posts with the pin, being made independent of the top chords, and the chord sections being put on afterward, which expedites and cheapens the labor of the erection of the structure. The same inventors have devised a new form for iron bars for columns, consisting of a plate with ribbed edges. Into the trough of the said plate other plates are fitted to form thickening plates at the ends of the columns. Rolled or beam or plate girders are attached to said plates connecting two together. A plain plate, straight or tapered, may be employed between two beams. Pins pass through the ends of the columns. The advantages are superior strength for a given amount of metal, simplicity and cheapness of construction, and accessibility of all exposed parts for inspection and painting.

Improved Boiler Washing Machine.

Reuben Wood, Grand Ledge, Mich.—This is an improved washing machine so constructed that the steam and hot suds may be poured upon the clothes while they are in agitation and constantly changing their places, and may flow off, carrying the dirt with it, and may leave the dirt in the bottom of the boiler, so that it will not again be carried up and deposited upon the clothes. By suitable construction, as a cylinder is revolved, the clothes will be carried up by the wings and flanges nearly to the top of the cylinder, when they will give way in the middle of the mass, and fall back into the bottom of the cylinder, so that they will be all the time changing their position, and all the time will have streams of steam and hot water discharged upon them, so that they will be washed clean in a very short time. The water, as it flows back into the space beneath the false bottom, carries with it the dirt taken from the clothes, and leaves it there, so that very little of said dirt will again be thrown upon the clothes.

Improved Steam Boiler.

Carlos A. Clark, Bloomfield, Iowa.—This is a boiler constructed with two steam domes connected with each other by tubes, and with horizontal steam-generating tubes by vertical tubes. The steam may be used from the upper tube or from either of the domes, as may be found most convenient. With this boiler, fuel may be utilized to a great extent. No large body of water is to be heated, and danger of explosion is less than with ordinary boilers.

Improved Horse Blinder.

John W. Kennedy, Central Village, Conn., assignor to himself and William H. Kennedy, Oberlin, O.—This invention consists of a blinder made independent of bridle or halter, and applicable to prevent horses from jumping over fences and thereby escaping from a pasture. It passes under the eyes, stopping all vision from side views as well as front, and as the horse approaches a fence, not seeing it or the ground on the opposite side, he fears to and will not leap the fence.

Improved Curtain Fixture.

Levi Bradbury, Bennington, Vt.—The brackets are made of wire with one or more convolutions to form springs, and with prongs, so that they may be driven into the wood, and fastened without screws or nails. These spring brackets are made to press against the ends of the roller with any required amount of friction to hold the curtain in any desired position.

Improved Hay Elevator.

Uel H. Shockley, Ringville, Kan.—In this hay elevator a carriage is arranged to travel horizontally and carry a bundle of hay suspended by the cord, by which movement is imparted to the carriage. The improvement relates to the construction and arrangement of parts, whereby, when the carriage has reached the place of deposit for the hay, the suspending rope may be swung laterally to free it from hinged doors or clamps, and allow the load or bundle to descend.

Improved Feed Water Heater.

Richard Garstang, St. Louis, Mo.—This invention consists of a feed water heater composed of two cast metal oval heads, with short cylinder attachments, connected to an intermediate cylinder containing tubes fitting into tubesheet in the cast metal cylinders. This forms a heater of three compartments, in one of which is a filter, and in another of which the feed water is supplied in direct contact with the waste steam, after which it is forced by a pump through the other compartments, also through the tubes surrounded by the exhaust steam, and also through the filter into the boiler all in a way calculated to be very efficient in heating the water.

Improved Hog Ringing and Marking Instruments.

Philip Listemann, Collinsville, Ill.—This invention consists of pinchers so constructed that a semicircular ring blank for the hog's nose is formed, and the ring blank inserted. The partly finished ring blank is placed in the grooves of the jaws, and, in this position, it is slipped on the upper cartilage of the hog's nose, the jaws are compressed, and the ring blank is inserted. The blade for marking a hog shuts into one of the levers.

Improved Machine for Making Hollow Cylinders of Paper.

Marble D. Keeney, Rockton, Ill.—This invention consists of a forming roller, which is keyed to the free end of a shaft driven by suitable power, and constructed of two semicircular sections. These are pivoted by their diametrical arms and fulcrumed at some distance from one joint of the sections, while the other joint is acted upon by a pivoted wedge piece, so as to hold the edge of the continuous paper firmly in the clamping joint by spreading the other joint, and form then the box or barrel on the roller.

Improved Journal Bearing.

De Witt C. Clough, Auouros, N. Y.—This invention consists in a journal box, cast with longitudinal side grooves or channels, extending between shoulders near the face parts for producing a firm binding of the Babbitt metal lining cast therein.

Improved Hay and Cotton Press.

Hiram Lupter and Dexter S. Munger, Tullahoma, Texas.—This invention relates to novel means for operating the follower of a hay or cotton press, the object being to give a maximum purchase in applying the muscular strength of men, and to enable the greatest weight to be compressed into the smallest bulk. This not only produces greater convenience in the manipulation of the bale, but diminishes the freight chargeable thereon by railroads and steamers.

Improved Cooking Apparatus.

Mary A. Scott, Patoka, Ind.—This invention consists of a metal case containing a steam boiler, ovens, and steaming chambers, adapted to be placed on a stove or range, to generate the steam for heating the cooking chambers. It is designed to distribute the heat better, and thus utilize it to a greater extent than is done in the common stoves and ranges.

Improved Corn and Bean Planter.

George B. Smith, Coburg, Can.—The object of this invention is to plant corn, beans, etc., in rows of any width, and to fertilize and cover the same in one operation. It consists in an upper frame containing the fertilizer and grain boxes and mechanism actuating the same, and a lower or supplemental frame containing openers, spouts, coverers and rollers attached to the upper frame by links, and elevated by means of an elbow lever. A cylinder in the grain boxes having cavities upon its periphery is actuated by a squared shaft; and as it revolves inside a jacket of sheet metal, an arm attached to its end alternately opens a feed slide admitting the grain which fills the cavities in said cylinder; and the said cavities, when inverted from the revolution of the cylinder, discharge their contents through the spouts below. The mechanism in the fertilizer boxes is similar to that of the grain boxes, except that the hopper is provided with a stirrer, and the cylinder has no jacket. Both grain and fertilizer boxes are laterally adjustable upon the squared shafts, as are also the bars of the supplemental frame supporting the opener, spouts, coverers, etc.

Improved Rolled Metallic Bars.

Reuben P. Colton, Gananoque, Can.—This invention is a new manufacture consisting of iron rods or bars from three fourths to half an inch in cross section, rolled from piles or fagots, and provided with edged projecting ribs parallel to the planes of piling.

Improved Car Axle Lubricator.

John W. Bollman and John G. Ernst, Baltimore, Md.—This invention relates to a novel and economical mode of applying lubricants to car axles, and consists in using a spring, one or both of whose ends clasp a side or sides of the journal; while, on the inner side of each of these ends is attached the end of a wick which is saturated with and has part of its length resting in the lubricant.

Improved Bedstead.

Stephen P. Leake, London, Can.—This invention relates to the construction of cribs, cots, cradles, and bedsteads, so that they may be made cheaply, durable, and without the use of metallic fastenings, such as screws, catches, or hooks; and so that the labor, machinery, and expense of letting the fastenings into the frame, and fitting them thereto, may be entirely avoided.

Improved Thrashing Machine Attachment.

Asa Low, Shell Rock, Iowa.—This invention consists in causing the grain to pass from the thrasher cylinder to an upwardly moving endless straw carrier made of leather belts or wooden slats, and then to reach the rattle rake while the grain that drops from the straw falls upon the bottom of said rake, and is carried back where the apron deposits. The grain that is blown over the ordinary thrashing machine riddle passes directly to the riddle of the inventor's attachment; while that carried away in the straw is first dropped through the ventilators, and then returned with the straw carrier on the lower floor of the stacker to the same destination.

Improved Stamp Extractor.

Randolph P. Cory, Consocon, Can.—This invention relates to and consists in mechanical means for extracting stumps and roots of trees from their native soil, in lifting heavy bodies, and in transplanting them with convenience, dispatch, and facility.

Improved Apparatus for Hoisting and Tying Cotton.

James B. Wendel, Memphis, Tenn.—This invention relates to means whereby cotton bales may be raised and transferred to any given position so as to form a succession of tiers or piled bales in a building.

Improved Stove Grate.

M. Augustus Withers, Pottstown, Pa.—This invention relates to stove grates, and consists in novel means whereby the clinkers may be detached and removed from one part of the grate without the necessity of tipping, disarranging, or emptying the whole grate.

Improved Horse Detacher.

Thomas E. West, Nicholasville, Ky.—In this device the traces are released from pivoted levers by pulling a strap and allowing the levers to turn into a position at right angles to the whiffletree, to which they are pivoted.

Improved Railroad Car Stove.

John H. Mahrenholz, New York city.—Railroad car stoves are usually so constructed that, when the car upsets or the stove is displaced by a violent collision or other cause, the car is frequently set on fire, and the roasting of the helpless passengers is added to the other horrors of a railroad accident. The present inventor arranges a closed top firepot and drop flue in a cylinder having an openwork top, so as to present a large area of heating surface, and to allow the air free access to the pot and flue on all sides, and free escape through the top of the cylinder. He also arranges a water reservoir and steam generator beneath the floor of the car. The stove is firmly attached to the floor of the car, and cannot be readily displaced. It may be turned over or bottom side up without discharging any fire into the car, and is, therefore, safe in cases of accident.

Improved Balanced Slide Valve.

John T. Hill, Warren, Pa.—Slide valves for steam engines, as usually constructed, are subjected to the full pressure of the steam, and consequently wear and cut on their faces, and frequently become useless. The object of the present invention is to so construct a valve that it will not be subjected to this down pressure; and it consists in a valve having an elastic top plate or follower confined between flange plates on the sides and ends of the valves. The valve having this plate thus arranged is placed on the face of the cylinder within the steam chest, and the steam chest cover put on, which forces down the plate against the pressure of the springs. The reaction of the springs and the action of the steam on the lip forces the plate upward with a constant pressure.

Improved Table for Vessels.

Captain Edward P. S. Andrews, Havilah, Cal.—This is an improved table for use on vessels, constructed with sectional top leaves swinging in suitable supporting standards by means of weights connected to them by pivoted lever rods for the purpose of retaining a level position of the top during the rolling motion of the vessel.

Improved Bluing Package for Laundry.

Alexander M. Van Lier, New York city, assignor to himself and Frederick R. Gillespie, same place.—This invention relates to the manner of putting up bluing used for laundry purposes, and consists in a perforated glass casing in which the bluing bag is enclosed.

Improved Steam Boiler.

Phillip T. Brownell, Elmira, N. Y.—This boiler has a flue leading to its smokedischarge pipe, connected with a sliding fire box, to take off the products of combustion when said firebox is withdrawn. The sliding fire box is provided with a lip arranged to close the flue when the firebox has been pushed under the boiler. The firebox is also combined with a plate hinged to the boiler base, covering the top of the firebox when said box is drawn out, and swinging up out of the way at other times.

Improved Game Apparatus.

Henry L. Crist, Middletown, Pa.—In playing this game the object is to throw rings into the coils of a spring, so as to be suspended. The spring is vertically fastened to a suitable standard. It is also a part of the game to throw the rings over pins on the table beneath. The suspended ring counts a certain number, and the other rings encircling the pins are given less values.

Improved Vapor Burner.

Frederick A. Sawyer, Houston, Texas, assignor to himself and Addison H. Baldwin, same place.—The oil is carried through a wick tube to the reservoir. The burners are small perforated tubes, radiating from the center, but in communication with an annular generating chamber which forms the base of the reservoir. The flow of oil to the chamber is regulated by means of a valve. The burner tubes are closed at their outer ends and are provided with pans to catch the drip. The liquid consumed may be any of the light hydrocarbons, as gasoline, naphtha, etc., and is carried up to the reservoir by capillary attraction, and is converted into vapor as it enters the burners by the high temperature caused by the flames.

Improved Adjustable Window Reflector.

Charles Christensen and Charles Olsen, New York city.—This invention has for its object to furnish reflectors for windows, so constructed that they can be readily adjusted to give an inmate of the room a view of the street in both directions without being seen. It consists in a simple arrangement of gearing so constructed that, by turning the knob, the reflectors may be extended at any desired angle, as the observer may desire.

Improved Fruit Dryer.

Judson Allen, Everett, Mo.—The hot air enters into spaces at opposite sides of the drawers. These spaces are separated from the space under the lower drawer by plates. They are also separated from the spaces between the drawers, except the upper one, by valves, and they are enclosed below the upper drawer by curved deflecting plates. The drawers are arranged with a passage, alternately on opposite ends, and have slots or perforations in the bottom, to allow some heat to pass up between them. The heat is supplied to the drawers mostly from passages by the valves, which are graduated so that each one will take its due measure, the upper one entirely cutting off the space when necessary. The heat escaping beyond the upper valve is all turned in under the upper drawer, or the next to the upper one. The dampers are connected to levers outside of the case by links which are so adjusted as to graduate the valves to the air currents.

Improved Finger Ring.

James Annin, Le Roy, N. Y.—This invention consists of a spring fitting piece, to spring into the ring inside of the finger after it is put on, to fill up the slack space and make the ring fit the finger closer above the joint, and secure it against being lost. The fitting piece is provided with points, to spring into sockets in the ring to hold it in place; or it may have clips to overlap the edges of the ring.

Improved Ditching Machine.

Thomas F. Cockey, St. Louis, Mo.—On the right hand side of a plow is arranged a wheel the rim of which is a long endless belt of plates jointed together and running up over a sprocket wheel on an elevated frame, and carrying buckets which, in passing under the wheel, go alongside of the moldboard of the plow, so as to receive the earth turned over by it, and carry it up and discharge it into a spout, to be thrown upon the bank at the side.

Improved Wind Wheel Toy.

William Gorton, New York city.—This is a toy wind wheel consisting in a wheel and staff, the former being provided with a sleevebox and pinjournal, and the shaft with one or more ferrules. The wings may be placed at any desired angle, so that when the wheel is moved rapidly through the air it will revolve.

Improved Link Block for Locomotives.

William A. Alexander, Mobile, Ala.—This link block is not constructed of one solid piece, as ordinarily the case, but composed of two longitudinal parts, whose adjoining sides are produced under suitable inclination for the introduction and close fitting of a wedge piece; the latter is adjusted from time to time, and forces the block parts closely on the link, producing equal wearing over the whole surface of the same.

Improved Washing Machine.

William E. Banzett, Brooklyn, Pa.—This invention relates to that class of machines that combine in one apparatus a washer and wringer. It consists of a receptacle for the water having a concave false bottom, made of ridged or grooved slats, over which vibrates one or more rubbers attached to the ends of a pair of levers containing a wringer. Said wringer oscillates with the rubbers when the same are in operation, and when not in use is folded out of the way in the receptacle. Said receptacle is provided with a double hinged lid, which, in connection with a pair of hinged leaves upon the sides of the washer supported by brackets, forms an ironing board when the wringer is folded within the machine.

Improved Wheel for Vehicles.

Milledge B. Weyer, Johnston's Depot, Edgefield county, S. C.—This invention relates to methods of adjusting the spokes of vehicle wheels to the felles, and is a new and improved method of doing the same by means of oval-shaped thimbles terminating in screw-threaded stems. Said thimbles are attached to the ends of the spokes, and the screw-threaded stem provided with a nut. The projecting end of the stem passes into a socket or cavity in the felly, and the nut forms a shoulder by turning which the length of the spoke is increased and the connection correspondingly tightened, the oval shape of the thimble preventing the same from turning upon the spoke.

Improved Hay and Cotton Press.

Fielding L. Kirtley, Cleburne, Texas.—This invention relates to that class of machines known as hay and cotton presses. It consists in a strong, substantial box, for the purpose of holding the material to be pressed, provided with doors opening on all sides of the portion of the box into which the bale is compressed. Said box is mounted on rollers upon a frame work, one set of which are contained within a pair of keepers which allow the box to turn upon the frame and assume a vertical position when the same is to be filled. Securely attached to the box are metallic straps provided with links, one set of which engage with a ratchet toothed bar above and below, and the other set, with a rack, on each side of the apparatus. Said rack is contained within a frame work mounted upon rollers and moving upon a level with and upon the same supporting frame as the box. In the same frame with the rack is a shaft, bearing pinions which engage with the racks, said shaft being driven through cog wheels by a second shaft which is actuated by a spring-seated lever that engages with a ratchet wheel made fast to said shaft. As these levers are operated, the movable frame is advanced, and a follower block attached to the same is forced into the box, there compressing the material contained therein into a bale.

Improved Car Wheel.

Isaac Dripps, Philadelphia, Pa.—The wheel is formed of wood and metal, the object being to render it light, elastic, and yet strong and durable.

Improved Jigger for Separating Ores.

William H. Plumb, Mauch Chunk, Pa.—This invention consists, mainly, in the arrangement of an ore-receiving receptacle with inclined perforated bottom and central tubular extension, which is vibrated rapidly by suitable mechanism in connection with a central perforated disk. The latter is inclined in opposite direction to the bottom of the receiving receptacle, and provided with vertical downward extending guide lugs, and a mechanism for adjusting the relative position of the perforated parts. The central bottom extension of the receiving receptacle is guided in its motion by a sleeve, while the upper part of the same is guided in a surrounding perforated cylinder, with similarly reciprocating but considerably slower motion. This slides up and down in the upper wall of the main casing, and discharges intermittently the lighter part of the ores when its perforated inclined rim rises above the upper rim of the casing, conducting the lighter parts off to a chute of suitable inclination, extending around the main casing. The ore or coal is fed through a suitable hopper to the center of the receiver, and kept continually submerged in the water in the tank, and acted upon by the currents of the same. A piston valve serves, in connection with the bottom extension of the receiver round the conical base of the main casing or tank, for the regulation of the flow of water from the extension to the interior part of the tank where the heavier particles are discharged. An inclined casing connects with the bottom of the tank and incloses the ore elevator for carrying up the heavy particles and discharging them above the water level of the tank.

Improved Washing Machine.

John S. Headen, Freeman, Mo.—This invention consists in combining, with the beater or press board frame, a cover, in such a manner that the same is free to reciprocate with the beater frame for preventing spattering of the water, the cover being also detachably applied, so as to enable the clothes to be readily inserted and removed.

Improved Candle Holder.

William Ulrich, Newark, N. J., assignor to himself and F. Haupt, same place.—This invention relates to a candle holder for use on Christmas trees. Spring legs are soldered to the under side of the socket base, and bent in such a manner that they pass sidewise of each other and give to the curved parts, immediately below the point of intercrossing, a spring action, so that this part not only fits to the branch of the Christmas tree, but also adheres firmly to the point to which it has been applied. The lower parts of the legs are spread out in inverted V shape, and are detachably connected by a piece of wire to which a weight is hung.

Improved Sewing Machine.

William W. Abbott, Philadelphia, Pa.—The first part of this invention consists of a guard attachment on the bulged take-up plate used in connection with the rotary looper of a machine in which a commercial spool is used for the under thread, to prevent the said looper from hooking into the old loop. The second part consists of an improved arrangement of devices for actuating the loop spreader; and the third part consists of an improved arrangement of devices for operating the under thread spool carrier.

Improved Form Gate.

George Hoskins, Gilead, Mo.—This invention consists of a gate which slides by its double end piece along T-shaped pieces hinged to the main post, and is retained thereon by pins passing through perforations of the end pieces. A lever, pivoted near the middle part of the gate, raises the gate by its pivoted upright rod near the fore end of the lever, while the rear end of the same locks into notches of the gates for the adjusting of the supporting pins. The adjustment of the gate for the passage of small stock above the snow or other purposes is easily accomplished.

Improved Pill Machine.

Pierre Cahape, New York city.—This invention consists of a couple of sets of pointed hooks in a jointed stock, which opens and closes the hooks for gripping and releasing pills, in combination with a table and a holding bar, for holding the pills so as to be taken by the hooks for dipping them in the gelatin coating bath; also, a socket clamp for taking the pills from the hooks after the first dipping; and also a spring clamp for taking the pills from the socket clamp and dipping them a second time in the coating bath. A special advantage of this apparatus is that the pills may be dipped each time exactly to the center, so that the two coats will meet and join thereat without overlapping, and thus make the pills uniform.

Improved Horse Shoeing Harness.

John Clarridge, Mount Sterling, Ohio.—This invention consists of a strong harness with ropes from the breech band to posts near the head of the horse; also, straps from the breast strap to the post at the rear; also, straps for fastening the breech and breast straps to the floor, for preventing the horse from going forward or backward and rearing or kicking. It also consists of a strong saddle, having a windlass on it for raising the foot to be shod by a rope, said windlass being adjustable along the top of the saddle and capable of turning as required for hitching to the different feet; and it also consists of a strong bar on each side of the saddle, for the support of an adjustable hook, with straps attached, with suitable ring and buckle for lifting and holding the feet while being shod; also, for holding the guide pulley (which is adjustable), over which the rope passes from the windlass to the foot to be lifted.

Improved Gate for Railway Crossings.

Elmer Ridge, Philadelphia, Pa., assignor to himself, Amos H. Taylor, and Isaac C. Shalcross, of same place.—This is an improved gate for railroad crossings, consisting of balanced folding gates placed parallel to the track into recesses of the ground, and hung to side standards, combined with connecting lever rod and lateral crank shaft with lever handle, so as to be rapidly and easily thrown into position on the approach of a train for preventing the passage of vehicles or persons over the track, and instantly folded out of the way after the train has passed.

Improved Hot Air Furnace.

Edwin H. Camp, Jackson, Mich.—The fire box extends horizontally, and is made diamond-shaped in cross section, a little larger one way than the other, and arranged with its greatest diameter in its vertical axis. Flanges in the horizontal axis separate the parts below from the part above, so that the cold air, which is first admitted to the lower part, will be caused to pass through the fire chamber by tubes into the upper part of the heating chamber. The upper set of the horizontal tubes of the radiator in the space above the furnace is supported directly over the top of the furnace by two short flues, discharging the smoke and hot air from the furnace into it. The other tubes are suspended over the sides of the furnace by middle and end flues. Disks are placed on a rod, which extends along the interior of the upper horizontal tube and projects out at the front for a handle for working the disks which constitute a damper for controlling the escaping smoke, hot air, etc.

Improved Vehicle Spring Brace.

Andrew J. McRay, Alma, Wis.—The rear end of a brace is connected with the rear axle, and its forward end is connected with the forward bolster. A rod passes up through a hole in the reach, through a hole in the brace, and its upper end is firmly secured to the body of the vehicle. The rod has a head formed upon its lower end to prevent it from being drawn up through the reach. By this construction, the rod and the brace will prevent the body of the vehicle from being thrown forward when the wheels enter a hole, and will also prevent the springs from jumping up, so that the springs will be prevented from being injured or broken by these causes.

Improved Drawing Board.

Charles Poore, of Lexington, Ill.—This is an improved drawing board, on which the paper can be placed quickly and neatly without the use of mullage or glue, and without producing stiff glued edges or ridges, and thereby an inaccurate working of the T square. The board is provided with grooves running parallel to and at a suitable distance from the edges of the same. The inner sides of the grooves are slightly inclined, and the fastening strips, of the width of the grooves, are pressed down over the edges of the paper, to bind the same to the board.

Improved Tile Machine.

Ira P. Merwin, Syracuse, N. Y.—This invention relates to that class of machine in which the plate is mounted on a vertical core in a vertical case supported on a base pipe, so that the core can be removed from the molded pipe, and the latter removed in the mold case to dry, and consists of a core standard or core base for the support of the core, detachably connected to the latter by a bayonet fastening, to allow of connecting and disconnecting them readily; also, a novel mode of fastening the core standard in the machine.

Improved Sink Trap.

Henry Miller, Johnston, R. I., assignor to himself, George Miller, and Alfred B. Irons, same place.—The nozzle of the cesspool extends down so as to afford a considerable fall of water, and discharges into the cup of the trap. Thence the water escapes over the edge in such manner that small articles, falling down the nozzle when the strainer is raised, will not be carried out of the cup and down the pipe. Lugs are cast on the stretch trap, with a bolt cast in for attaching the trap by lugs on it to be screwed up by the nuts. This trap is adapted for the use of revolving scrapers for cleaning it out, if required, in case the strainer be screwed down, the scrapers being fixed on arms under the strainer connected to the pivot of a turning knob at the top of the strainer, in the center.

Improved Paint Compound.

George W. Pond, Brooklyn, N. Y., assignor to Mary E. Pond, same place.—This invention is a paint which readily dries and hardens under water either salt or fresh, effectually resists the attack of the *teredo spiralis* and is consequently very valuable as a paint for all marine vessels. It is made from coal tar by combining with the latter nitric acid, rosin, and sulphuric acid.