

CAR COUPLING.—Robert Goole, Abingdon, Ill.—This invention relates to a new and improved method of coupling or connecting the cars of a railroad train.

HAND TRUCK FOR MOVING BARRELS.—T. W. Kennedy, Avon, Ill.—This invention relates to a new and useful improvement in the construction of a hand truck for moving barrels about from place to place in an upright position.

SHARPENING HORSESHOE CALKS.—N. Hays, Wm. Duncan and E. A. Bowen, Vinton, Iowa.—This invention relates to an improved tool for sharpening the calks on horseshoes, and consists in the combination of a hand lever, clamp and a circular rasp or cutter operated with a crank by which the calks on a horseshoe are rapidly and effectually sharpened on the horse's foot.

CULTIVATOR.—Charles E. Storrs, William E. Keyes and David W. Jones, Grandville, Mich.—This invention consists in forming a cultivator plow with its sides curved upward resembling a scoop and provided with a cutting edge to facilitate its passage through the soil, the whole attached to a frame.

FEED MOTION FOR HEAD BLOCKS OF SAW MILLS.—M. C. Lewis, Glasgow, Mo.—This invention relates to an improvement in the feed motion device of the head blocks of a saw mill each lever being so arranged that both the head blocks may move simultaneously or work separately.

OVENS.—John Adam Kinkele, Sacramento City, Cal.—This invention relates to a new and improved method of constructing ovens for baking bread and other articles, and it consists principally in a revolving hearth or bottom and in hot and cold-air flues in connection therewith.

GATE.—John Shartle, Lima, Ind.—This invention relates to an improvement in gates and consists in so constructing and hanging the gate that it can be raised and lowered in position for overcoming obstacles, such as snow, mud, etc.

ANIMAL TRAP.—W. H. Dav's, Lexington, Ind.—This invention relates to an improved animal trap, and consists of a box the floor or trap door of which is pivoted in the walls. A crank shaft having its bearings in the walls of the box and operated by a spring or weight is connected with said floor by a connecting rod or pitman attached to the floor by a staple.

MEANS FOR SECURING JIG OR MULEY SAWS TO THEIR SLIDES.—Wm. Inman, Middletown, N. Y.—This invention relates to a new and improved means for securing jig or muley saws to their slides, whereby the saw may be very readily secured to and detached from their slides, and when secured to them firmly held, without the possibility of becoming detached.

INDICATOR FOR STEAM BOILERS, ETC.—James Slater, Philadelphia, Pa.—This invention relates to an improved and novel construction of a valve, or indicator for steam and other boilers, etc., and in the manner of suspending a weight thereon, whereby many important advantages are secured.

FENCE.—Augustin Ellis and Oliver Albertson, Salem, Ind.—This invention relates to a new and improved portable fence, such as is designed to be readily put up and taken down. The invention consists in a novel application of braces, or supports to the fence, and the manner of constructing the panels together, whereby a firm and substantial straight fence is obtained, and the "worm" or zigzag fence avoided.

TOOL HOLDER FOR SLIDE RESTS.—Israel F. Brown, New London, Conn.—This invention relates to a new and improved tool holder for slide rests and other machines, and it consists in the employment or use of a V-shaped gib, or key, in connection with notches in the tool and a slot in the tool holder, all being arranged in such a manner that the tool may be held firmly in position in the tool holder, and at the same time be capable of being readily fitted in and removed therefrom.

FILTER.—George W. Goodwyn, New Orleans, La.—This invention consists in a novel arrangement of a filtering machine, with a water vessel and a vessel to receive the filtered water, whereby a very portable combination of a filter and water chamber is obtained, and in connection with a cooler if desired.

APPARATUS FOR PAPER MAKING MACHINES AND OTHER MACHINES HAVING TRAVELING WEBS AND FABRICS.—F. Thiry, Huy, Belgium.—The object of this invention is to restore the endless cloth or wire on which the pulp or paper travels (in the manufacture of paper and the webs or fabrics in other manufactures) to its true course, when from any cause it has a tendency to depart therefrom.

LAMP BURNER.—Charles W. Russell and Niel Clifford, New York city.—This invention relates to a new and improved lamp burner, designed for burning coal oil and other similar volatile hydro-carbons. The invention consists in a novel form or shape of draught chimney, in connection with a cone or deflector arranged in such relation with each other that the flame of the burner will be supplied with a requisite amount of oxygen to support combustion and produce a brilliant illuminating flame.

COPY HOLDER.—Herman A. Tremper, Hammon, N. J.—This invention relates to a copy holder. Intended for the use of compositors, and also for the use of proof readers, book keepers, lawyers and copyists, by substituting a change of support, so as to allow of its being used on a table or desk.

COMBINED THERMOMETER AND CANES.—James L. Reber, Philadelphia, Pa.—This invention relates to a new and improved method of using thermometers, whereby the same are rendered much more convenient for reference than they have hitherto been, and consists in constructing the index-plate of a proper form and attaching the thermometer permanently, or enclosing it in the wood or other material of walking canes, umbrellas, parasols, looking-glasses, etc.

MACHINE FOR BORING POST-HOLES.—Wm. R. Iles, Lancaster, Ohio.—This invention relates to a new and improved machine for boring post-holes in the earth, and consists in operating an earth auger, by an upright shaft, by cranks and gearing.

MACHINE FOR BENDING HOOKS.—R. B. Sears, Providence, R. I.—This invention relates to a new machine for bending wrought iron, or other hooks into the required shape, and consists in the use of a stationary die, to which the lower end of the bar, which is to be bent into a hook, is held by means of a follower, carrying a pin, that fits through an eye formed in the lower end of the hook-bar.

TRACK AND STREET CLEANER.—Ernest Abbiati, New York city.—This invention relates to a new device for cleaning railroad tracks and streets from snow, and consists in the use of a revolving, horizontal disk, carrying oscillating wings, which are drawn in and out by the action of crank shafts, revolved by means of gear-wheels from the shaft to which the disk is secured. This shaft is secured to the front part of a truck, which moves in front of the locomotive or car, or to the front part of a wagon or car, and receives rotary motion from one of the wheels of the locomotive, car, or wagon, or from any other suitable device.

CORN PLANTER.—Hans J. Johnson, St. Peter, Minn.—This invention has for its object to furnish an improved machine for planting corn, cotton, sugar cane, and other seeds, in hills which shall be easily operated, and accurate in operation.

STEREOSCOPE.—Oscar Goerke, Brooklyn, N. Y.—This invention has for its object to simplify and improve the construction of stereoscopes so as to make them less expensive in construction, and more effective and convenient in operation.

HAY FORK.—L. N. Tinkham, Sylvania, Penn.—This invention has for its object to furnish an improved horse hay fork, simple in construction, easily operated, and effective in operation.

TIRE-SHRINKING MACHINE.—Jacob Gettemy, Donigal, Penn.—This invention relates to an adjustable tire shrinker, which can be set to bend the tires to fit different wheels, and which is so arranged that it will require but very little power to bend tires of great strength and thickness.

FOLDING MACHINE.—Leroy A. Gleason, Southington, Conn.—The object of this invention is to construct a machine for bending sheet metal so that with one folding bar, either sharp or round bends can be made thereon, and that it can be adjusted for any thickness of metal, and for any desired length of overlap.

SYRINGE VALVE.—Nathan Lawrence, Taunton, Mass.—This invention relates to a new manner of securing the valves in the metal valve cylinder of a syringe, so that the said valve cannot drop out of its place. The inven-

tion consists in securely arranging a pin across the metal cylinder in which the valve is held, whereby the aforesaid object will be attained.

GATE AND BARN DOOR FASTENING.—W. W. Peck, Cassapolis, Mich.—This invention relates to a new fastening for gates and barn doors, which is so constructed that the gate or door can be opened from the inside and outside, or from the former only, as may be desired, and so that the same cannot be raised and opened by hogs and other animals.

FOLDING GATE.—Robert Gidley, Lagrange, N. Y.—This invention relates to a new folding gate, which can be easily opened or closed by persons in a carriage or on horseback. It consists of a picket gate, pivoted to a bar, which is suspended in a post, so that, when the said bar is swung back by means of suitable levers, the gate will also be swung back with the bar.

REFLECTOR.—Wm. Ulrich, Newark, N. J.—This invention relates to a new reflector, which is so arranged that it can be easily attached to or detached from gas burners or lamps of suitable description, and that it can be revolved around the same, so as to throw the light or shade to any desired spot, and which can be folded out of the way if desired.

HOOP-SAWING MACHINE.—George H. Shearer, Bay city, Mich.—This invention relates to a new manner of arranging the bearings for the axles of the feed rollers and saw of a gang sawing machine for cutting laths and hoops, and consists in so casting a bearing for each end of all the axles of a sawing machine, that those, or any one of those of the feed rollers can be removed whenever desired.

BANJOS.—Jerome Mayberger, New York City.—This invention relates to a new manner of arranging the sound board of a banjo, and consists in the use of an annular drum or box, which is covered by a board having S-shaped holes similar to those in the sound board of violins. The parchment head is secured to a ring, which is fitted upon the sound board, enough above the same to permit the escape of the vibrating air between the said head and the drum, while the circular open space in the center of the drum serves as a channel for a new supply of air.

VALVE.—Alfred Crossley, Brooklyn, N. Y.—This invention relates to a new valve for steam and water pipes, and consists in so arranging the parts that the packing is below the screw thread, by which the stem is moved in the bonnet, so that the water will not come in contact with the screw thread; the invention also consists in arranging a recess or chamber within the upper part of the bonnet, around the valve stem, said recess being above the screw thread.

TRUSS.—J. R. Blake and J. L. Jarrell, Dyer Station, Tenn.—This invention consists of a band or belt, adapted to embracing the body, around the bowels, to an under strap of which belt the hernia pad is supplied by a loop, in such manner as to be susceptible of adjustment within a vertical and horizontal or lateral plane, and in either plane independent of the other.

PURIFYING TRAY.—B. E. Chollar, Leavenworth, Kansas.—This invention consists of a tray, of any desired form, forming the ends of the tray. In the spaces between the teeth grate bars are placed, and the same are held in position by other bars or clamps, which said clamps are bolted down upon said grate bars.

ANIMAL TRAP.—Augustine Ellis and Oliver Albertson, Salem Co., Ind.—This invention consists in a novel construction and arrangement of the trap, whereby many important advantages and features are secured.

NAIL MACHINE.—Adrian Shaw, Westford, Mass.—This invention consists principally in hanging the hammer or hammers to the outer ends of a revolving beam or cross-arm, in such a manner that as such beam revolves the hammers will be thereby swung down and upon the anvil-block, which at the same time being moved upward then recedes or moves down again at the same time as the hammer draws up from the anvil-block, from the continued rotation of the helve or beam carrying the same.

WHEEL CASTER.—Jos. White, Providence, R. I.—This invention consists of a solid disk, secured to the spindle, provided with a groove in the underside of the same to receive metallic balls, on which the under plate, to which the wheel is attached, rests, whereby the supporting arms of the wheel move more freely and with less friction around the spindle.

HARNES PAD.—John Maclure, Newark, N. J.—The object of this invention is to so construct a pad plate for a harness pad that the mountings or trimmings can be easily changed without destroying, or in anywise impairing the beauty or utility of the pad, and also so that the cheapest as well as the most expensive kinds of pads may be made on the plate.

MACHINE FOR MAKING PLUG TOBACCO.—J. E. Withers, Toronto, C. W.—This invention relates to a machine for making plug tobacco, and consists of a series of rollers pressing the tobacco in troughs, running on flange rollers, a large wheel revolving in a transverse direction, shifts the troughs on to a series of rollers, revolving in the opposite direction, by which they are carried back to the end from which they started. An inclined knife removes the tobacco from the troughs when sufficiently pressed.

MACHINE FOR FORMING TUBULAR BEADS ON SHEET METAL GUTTERS FOR ROOFS.—O. W. Snow, Plantsville, Conn.—Sheet metal gutters for roofs are constructed of thin metal plates (most generally termed sheet iron,) bent in semi-circular shape, with a tubular bead formed on the center edge in order to stiffen the gutter and keep it in proper shape. This invention relates to a new and improved machine whereby a very simple and portable device is obtained; one which may be constructed at a small cost, and operated with the greatest facility.

SEED PLANTER AND CULTIVATOR.—M. R. Snodgrass, Jamestown, Ohio.—This invention relates to a new and improved seed planter and cultivator combined, and it consists in a peculiar construction and arrangement of the several parts, whereby the machine may be made to work in either of the above named capacities in a perfect manner.

PROCESS FOR REMOVING BURRS AND OTHER VEGETABLE MATTER FROM WOOL.—Wm. Sykes, Newton Lower Falls, Mass.—This invention relates to a modification and improvement of a process for removing burrs and vegetable matter or substances from wool, for which Letters Patent were granted to this inventor bearing date July 10, 1866.

SKATE.—George Brownlee, Princeton, Ind.—The present invention consists, 1st. In transversely dividing the foot rest or support to the skate at a point between its toe and heel, and where the ball of the foot will rest upon the same, into two parts or sections that are hinged together, in combination with the runner or blade, also similarly divided, but so formed at their joint that as they are opened, as it were, by the action of the pressure by the foot upon the support or rest of the skate, the runner will present an unbroken and continuous surface or edge to the ice or other ground on which the skate is used. 2d. In arranging upon the under side of the foot-rest or support, a driving jaw or claw or claws, in such manner that by the movement of the foot-rest or support, in the act of skating such claws will operate upon the ice or other surface, in a manner to propel or to assist the skater forward; the arrangement of the jaws being such as to be susceptible of adjustment at pleasure, and as may be found necessary. 3d. In securing to the side of the runner blade to a skate and along its length a parallel edge, by means of which the direction of the skater is turned, as he leans over upon the side corresponding with such edge.

EXTENSION NOTICES.

Ambrose Nicholson, of Poland, N. Y., having petitioned for the extension of a patent granted to him the 21st day of March, 1854, for an improvement in self-fastening shutter hinges, for seven years from the expiration of said patent, which takes place on the 21st day of March, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 2d day of March next.

Marinda Starks, of Genoa, N. Y., administratrix of the estate of Isaac Starks, deceased, and Lyman Ferrigo, of Groton, N. Y., having petitioned for the extension of a patent granted to the said Isaac Starks and Lyman Ferrigo the 13th day of June, 1854, for an improvement in device for holding pieces in spoke machines, for seven years from the expiration of said patent, which takes place on the 13th day of June, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 25th day of May next.

Horace Smith and D. B. Wesson, of Springfield, Mass., having petitioned for the extension of a patent granted to them the 8th day of August, 1854,

for an improvement in cartridges, for seven years from the expiration of said patent, which takes place on the 8th day of August, 1863, it is ordered that the said petition be heard at the Patent Office on Monday, the 22d day of June next.

Answers to Correspondents.

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

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

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

C. F. R., of Conn., claims to have a recipe for a paint—the principal ingredient of which is coal tar—admirably adapted to preserving the bottoms of ships. He has also a plan for rendering wood fire-proof, but neither gives the recipes nor offers to sell the preparations. He says: "Perhaps your readers would be pleased to obtain them on the same terms as those of water-proof fine fabrics; well, let them, I have no objections." Which must be very satisfactory to the "readers."

J. F., of La.—Concrete for foundations is made usually of one part hydraulic cement and two parts clean sharp sand, into which as mixed, is thrown five parts broken stone, the whole to be deposited at once in place. No amount of water, whether salt or fresh, can impair it.

P. S., of N. J.—Horn is merely a generic term applied to several widely differing animal substances. The horns of the stag, moose, antelope, etc., are very different from those of the genus *bovi*, as domestic cattle, and that of the rhinoceros differs from both. Treatment for one of these qualities of so-called horn in manufacturing will not do for others.

G. W. S., of Mass.—Gutta-percha is a perfect non-conductor of electricity and is used because of this quality for submarine and underground telegraphic wires. Its non-conducting quality is not surpassed by any known material.

J. J. D.—Microcosmic salt, Syn: with phosphorus salt, salt urinal nativum is the triphosphate of soda and ammonia and is found in certain kinds of guano. Still it is not extracted from the m, but prepared directly in heating 6 parts of phosphate of ammonia, 1 part of sal ammonia and 2 parts of water in a porcelain vessel, when in cooling it will be obtained in colorless needles. In recrystallizing them, having previously added some ammonia, the salt is obtained perfectly pure. As far as we know, it is only applied as a flux in blow pipe analysis.

W. E. L.—Common rosin melted with a little gallipoli oil and spirits of turpentine has been found to answer very well for preserving polished ironwork bright. The proportions should be such as to form a coating which will adhere firmly, not chip off and yet admit of being easily detached by cautious scraping.

H. B.—The following is a recipe for the preparation of yeast given us by a brewer: 72 lbs. of unkilned malt together with a handful of hops are gradually stirred in a clean tub containing 7 gallons of water of 170° Fah., and to this 5½ gallons of water of 200° are added. The tub is then covered tightly and left quiet for one hour. Supposing this to be done at 6 P. M., the whole is left undisturbed till 7 A. M., when it must be cooled rapidly, which is done by setting in cans filled with cold water. When the temperature of the mash has reached 70°, the tub is covered again and left during the day till 6 P. M.; at this time 1½ gallons of fresh beer yeast are to be stirred in. In 12 hours pierce a hole in the layer formed by the husks of the malt and dip 3½ gallons of the liquor beneath, then stir the whole up and dip 1½ gallons from it (husks and liquor). This is your mother-barm from which you can generate yeast all the year round in using it in the way described instead of the ordinary beer leaven. To the remainder in the tub add 5 gallons of wort of 90°, and make use of it within two hours. The mother yeast also must be used the same day for fermenting another portion.

H. M., of Hawksville, asks: "Can you tell me the reason why a wrought-iron plow runs easier than a cast-iron one and yet a cast-iron sleigh shoe easier than a wrought-iron shoe?" 1. The closer the grain of the metal employed for mold boards in plows the less friction. 2. Our correspondent will have to furnish us with better proof than the mere statement that sleighs shod with cast iron run with less friction than those shod with wrought iron before we can answer his question.

W. S. R., of Pa., asks for the recipe of a good writing ink. 135 parts of logwood are exhausted by a boiling with 1,000 parts of water, and to the strained decoction one part of bichromate of potassa in solution is added; the ink thus obtained will not give any precipitate nor become moldy.

R. C., of Ill., asks for the means to restore stoves which turn red from use. Apply the ordinary stove polish once or twice a week and your stove will not change to that rusty red of which you complain. . . . The application of provice oil to the head will remove dandruff.

C. I. H., of N. Y.—Rubber or gutta-percha would not be injured by illuminating gas.

Business and Personal.

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

Camden Tool and Tube Works Co., Camden, N. J., Manufacturers of Tube and the most improved Tools for Steam and Gas Filters and Tube Manufacturers.

Parties in want of Fine Tools or Machinists' Supplies send for price list to Goodnow & Wightman, 23 Cornhill, Boston, Mass.

Allen & Needles, 41 South Water street, Philadelphia, Manufacturers of Allen's Patent Anti-Lamina, for removing and preventing Scale in steam boilers.

Can anybody tell us the price, and where steam saws are to be had for cutting tree logs into cord wood, the saw attached direct to the piston rod? Address Munn & Co., this office.

Wanted—A full set of machinery, with steam engine, for a Planing, Sash, Door, and Blind Mill. Send circulars to O. J. Bollinger, Millwright and Mill Contractor, Glenrock, Pa.

Wanted—A first-class Molder, with capital of one or two thousand dollars. References required. Address Drawer 56, Akron, Ohio.

A cheap Iron Planer wanted, about 7 feet by 33 inches square. Jas. E. Coxeter, Winchester, N. H.

Copper Tubes Wanted.—Manufacturers who can make copper or brass tubes ¼ or ½-inch in diameter, and 1-64-in. thick, will please send their address and prices to Dr. J. R. Buchanan, Louisville, Ky.

A Schoenberg & Co., 840 South Front st., Philadelphia, Pa., wish to know where they can obtain machinery for making lead pipes.

That Good-Will case is settled by the Supreme Court of Mass. E. C. Tainter is successor to J. A. Fay & Co., Worcester, Mass. Address as above for first-class Eastern-made wood tools.

Manufacturers of large Kettles for Oil and Soap Manufactories, will please send circular and price list to J. P. Babcock, Westerly, R. I.

Winans' Boiler Powder, 11 Wall st., N. Y., proves reliable in removing or preventing scale—12 years in use. No better reference needed.