MACHINE FOR STAMPING CLAY DOOR KNOBS, ETC.—George Lawton, Treuton, N. J.—The object of this invention is to construct a machine whereby door knobs and other articles of clay may be formed or stamped in the most simple and efficient manner, completing the door knob or other articles as far as the working inclay is concerned. The invention consists in such an arrangement of the machine that the stamping process may be perfect; the upper die fallingdown three times with variable forces as to completely finish the article. The machine is also so arranged as to prepare the holes in the knobs or other articles for the reception of the shanks of said knobsor other articles.

WAGON-BRAKE LOCK.—Thomas Urle, Springfield, Iowa.—This invention relates to an improvement in the construction of locks for operating the brake on a wagon wheel.

CORSET.—James P. Love, New York City.—This invention consists in laying each steel of a corset between two flaps which are left on the corset, and in then hooking the outer flap to the body of the corset so that the steel is firmly held in place. By simply unhooking the said flap the steel can be at once released from the corset.

BUTTER WORKER.—S. H. Wade, Montgomery Center, Vt.—This invention has for its object to furnish an improved machine for working butter, cheap, simple in construction, durable, and not liable to get out of order, and which will do its work quickly and thoroughly.

TANNING APPARATUS.—Abrsham Steers, New York City.—This invention relates to an apparatus in which the hides or skins are distended upon a cloth within a wired frame of suitable metallic substance, whereon they are subjected to the action of reciprocating platens or faces of rammers, in such a manner that they are repeatedly compressed, the spent tanning liquor squeezed out, and fresh tanning liquor of the requisite strength admitted to their tissues, the process of tanning being thereby most materially accelerated with a great saving of time and labor.

HOISTING APPARATUS.—Joseph A. Dayton, New London, Conn.—This invention has for its object to furnish an improved machine for use in store houses and in other places for hoisting heavy weights with a comparatively small exertion of power, and which shall be simple in construction, strong and not liable to get out of order.

ROTABY ENGINE.—Thomas Banta, Hoboken, N. J.—This invention has for its object to furnish an improved rotary engine so constructed and arranged as to utilize the expansion of the steam and avoid the difficulties arising from the back pressure caused by the condensation of the steam upon the interior surface of the cylinder, and its subsequent expansion mto steam.

GATE.—Gideon S. Granger and William Northrop, Wayland, N. Y.—This invention has for its object to furnish an improved gate so constructed and arranged as to require no hinges, and which may be raised up so as to allow small stock, such as sheep and hogs to pass through, while it prevents the passage of cattle, horses, etc., and so as to prevent its being clogged by snow.

WINDOW SASH FASTENER AND LOCK.—Ezram Johnson, Joliet, 111.—This invention has for its object to furnish an improved window sash fastener and lock so constructed and arranged that it will hold the sash at any desired elevation; and which when the sash is closed will hold it securely locked.

DRAFT EQUALIZER FOR HORSE POWER.—Archibald Stewart, Troy, Wis.—This invention has for its object to prevent breakages in the machinery of threshing and other machines driven by horse power, from the strain caused by the sudden starting or jerking of the horses.

CLUTCH.—Albert Heth and Gaylon Hall, Adam Center, N. Y.—This invention relates to a device, which is to be used for suspending hay forks from rafters, but which may also be used advantageously for other similar purposes. The invention consists in the use of a metal frame, from which a swivel hook is suspended, to which the fork or other article may be hung. Two pointed rods are secured to the top of the frame, one being attached to a sliding brace, that is operated by a screw; these points can be brought against the opposite sides of any rafter or beam, and thus the clutch is held on the rafter and supports the fork by the swivel hook.

SECURING THE TINES OF HAY FORKS OR RAKES.—J. P. W. Riley.—Montrose, Pa.—This invention relates to a new manner of securing the tines or prongs of hay or manure forks, rakes, potato hooks and other similar articles, to the handle. This consists in making the tines or prongs out of two pieces, and scarfing the same together, within a mortise or slot in the handle, and driving keys or wedges behind them, so that they will be securely fastened to the handle. Should one of the tines break it can be easily renewed without throwing all away.

| HARROW.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a harrow of that class which relate and are commonly termed revolving harrows. The invention consists in a novel construction and arrangement of the parts composing the same whereby the harrows are allowed to rise and fall, to conform to the inequalities of surfaceover which they may pass, and also rendered capable when required, of being secured in a higher or lowerfixed position, so that the teeth may penetrate more or less deeply into the earth.

SPINDLE.—Joseph Smith, Loth, Belgium.—The object of this invention is to regulate the tension of the thread as the same winds on the bobbins, spools or tubes in machines for spinning, doubling and spooling wool, cotton and other fibrous materials whereby a softer thread is obtained than on the spinning machines constructed in England under the name of cap frames.

APPARATUS FOR TEMPERING STEEL SPRINGS.—Ira N. Bevans, Litchfield, Conn.—This invention relates to an apparatus which steel springs are tempered by drawing them through a vessel containing melted lead. In or addinary apparatus of this kind, the spring on leaving this vessel, is wound on a drum which receives a positive revolving motion by gear wheels or belts, and as the spring winds on the drum, it is drawn through the melted lead. By this operation the operation of tempering the springs is not uniform, bebecause the diameter of the drum increases and the spring is drawn through the lead quicker and quicker so that it becomes too soft at the beginning and remains too hard at the end of the operation.

STUMP EXTRACTOR.—Isaac Pardee, Vineland, N.J., and R. C. Parvin, Forest Grove, N. J.—This invention relates to a machine for extracting stumps, elevating stone, and lifting or raising other heavy bodies. It consists of two ack bars fitted in a socket provided with pawls, and placed loosely upon a suitable framing, the rack bars having a lever attached to their lower ends, and all so arranged that a very simple, economical, and efficient device for the purpose specified is obtained.

FAUCET.—Alexander Brinckmann, New York City.—This invention consistsin applying a spring to the spigot of a faucet, and also in applying stops thereto, whereby the faucet, when opened to draw liquid from a cask or vessel, will be immediately closed to stop the flow when the hand is withdrawn from the handle of the spigot, and the faucet be allowed to close entirely to stop any flow of liquid, or, when the faucet is applied to water pipes, be allowed to remain a trifle open to admit of a small stream of water flowing to prevent the freezing thereof during the winter season.

CUTTING BOLTS AND RIVETS.—Walter Britton, Abingdon, Ill.—This invention relates to a device for cutting bolts and rivets, and consists in a peculiar construction of parts, whereby a very simple, portable, and efficient device is obtained for the nurose.

MACHINE FOR SPLITTING WOOD.—Leonard Tilton, Brooklyn, N. Y.—This invention relates to a machine for splitting wood for fire-kindling purposes, and it consists of two reciprocating V-shaped knives or cutters, and a swinging holder, arranged in certain relation with a hopper and operator, whereby wood may be splittnto small or thin square pieces very expeditiously, and with but a moderate expenditure of power.

SURFACING OR LEVELING RAILEGAD TRACKS—8. L. Porter, Rochelle, Ill.—This invention relates to a new and improved device for the purpose of surfacing or leveling the tracks of railroads.

RAILROAD CAR SEAT.—Jesse S. Wheat, South Wheeling, West Va.—This invention relates to an improvement in railroad car seats, and consists in certain devices for reversing and holding the back of a seat in different positions of elevation or inclination to adapt it for the support and comfort of the person occupying the seat, instead of being confined to one position, as reversible seats are of erdinary construction.

Locomotive Pilot.—B. F. Partridge. Jr., Columbus, Ky.—This invention relates to an improvement in the construction of a pilot for a locomotive engine, and consists of a series of inclined rollers on the sides of a \sim eugeshaped frame, similar in its general form to the pilot usually attached to the front of locomotives for the purpose of clearing the way of obstructions on the railroad track.

WHEAT DRILL.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a drill for drilling in wheat and other grain. It consists in the use of a rotary shaft, provided with pins, in connection with a seed-distributing side, all arranged to effect the desired end.

MANUFACTURE OF CHEESE.—Sylvester Greene, Rome, N. Y.—Thisimprovement relates to the means employed for expressing the whey from the curd, whereby the rich or buttery portion of the curd is retained. It consists in placing in the box or vessel, in which the curd is produced as usual by the application of rennet, a perforated plate and a strainer, if necessary, the plate, and also the strainer, if one be used, resting upon the curd, and by their own gravity alone, or with additional weight if necessary, be made to exert a very gradual pressure on the curd, so that the whey will pass up through the perforated plate.

MACHINERY FOR CUTTING WOOD MOLDINGS.—George S. Hudson. Ellisburg, N. Y.—This invention relates to improvements in machinery for cutting waved and serventine wood moldings.

Plow.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a new and improved plow of that kind designed to be attached or applied to a frame mounted on wheels, and to consist of one or more plows. The invention consists in a novelconstruction and arrangement of parts whereby the plow is placed under the complete control of the operator or driver.

CUTTING SHEET LEAD.—S. E. Chubbuck, Roxbury, Mass.—This invention relates to a new means for cutting sheet lead transversely during the rolling or milling process, whereby said work may be done with the greatest facility.

SLEEPING-CAR BED FOR RAILROADS.—J. Wyatt Reid, New York City.— This invention relates to a novel method of constructing and arranging the beds in a railroad sleeping car, and consists in forming the beds of canvas or other suitable material, attached to rods or chains in such a manner that they may be conveniently suspended for sleeping in, and taken down and packed away as may be necessary.

Adjustable Shoe Sole and Lift.—Charles B. Loveland, Elizabethport, N. J.—This invention relates to improvements in the manufacture of shoes, boots, etc., and consists in attaching an extra sole to a single sole by means of a metal platefastened with screws, and also inserting a metal plate lift and tap secured to it in such a manner that the metal plate lift and tap on the heel of the shoe on the one foot may be shifted and adjusted to the shoe on the other foot in on order to equalize the wear on the sides.

HORSE HAY RAKE,—Israel L. Bullock, Mercy, Ind.—This invention relates to a revolving horse hay rake, and it consists in a novel arrangement and application of the rake whereby it may be actuated or controlled by the feet of the driver, and with the greatest facility.

DEVICE FOR TRANSMITTING MOTION.—Leonard Tilten, Brooklyn, N, Y.— This invention relates to a mechanical device for transmitting a reciprocating motion from a rotary shaft, and it consists in the employment or use of a belt shipper in connection with a cam, on idle and working pulleys, and gearing.

MACHINE FOR CUTTING SLATE.—J. W. Durgin, Bangor, Maine.—This invention relates to a machine for cutting slate for roofing purposes, and it consists of a knife attached to a suitable bed-piece, and of such a shape as to cut the slate in the form required, the knife being attached to the bed-piece by pivots, and operated through the medium of a lever or treadle.

CLOTHES-WASHING MACHINE.—Robert Rooke, Empire City, Oregon.—This invention consists in a series of pounders arranged in connection with a rotating perforated tub which is placed within a fixed or stationary tub, the pounders and rotating tub being operated from one and the same driving shaft, and all so arranged that the clothes may be cleansed very expeditiously and in a perfect manner.

CORN PLANTER.—D. S. Fisher, Cedar Spring, Ind.—This invention relates to a machine for planting corn and other seed in hills or drills, and it consists of a novel seed-distributing device and a covering mechanism to accomplish the desired end.

DEVICE FOR HOLDING CLAPBOARDS.—William H. Cummings and Isaiah Babcock, Boonsboro, Iowa.—The nature of this invention consists in a new and useful clamping device for gaging and holding weather-boards or siding when put on a building for the purpose of securing them on each other evenly and expeditiously.

BALETIE.—Henry Lampson, London, England.—This invention consists in so arranging two metal loops or rings, which are similar in form to the "sliding loops" of leather used with leather straps, that by means of these loops or rings the ends of the metal bands are firmly held and clamped.

METHOD OF CHILLING OIL.—John E. Richardson, New York City.—This invention relates to a new manner of chilling all kinds of oils so that they may be kept in a fluid state after having undergone this process. It is adapted more particularly to the production of paraffine from petroleum or other hydro-carbon liquids, but may also be nsed with the same effect in the treatment of lard from animal oils.

VEHICLE.—John S. Campbell, Newton, N. Y.—This invention consists in making the body of a carriage or sleigh, and also the carriage wheels or sleigh runners of hard rubber in such a manner as to produce a durable and elegant carriage or sleigh with comparatively little trouble or expense.

THE MANUFACTURE OF SULPHURIC AND OTHER ACIDS.—John Hughes, Brooklyn, N. Y.—This invention relates to an apparatus for concentrating sulphuric acid to any desired degree; and which may also be used for any other little feetile.

Answers to Correspondents.

- CORRESPONDENTS icho caped to recate ansicers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; bestder as sometimes happens, we may prefer to address the correspondent by unit.

 | Declarate Name | The order of the following the following the correspondent by unit.
- aress are correspondent by mint.

 SPLCIAL NOTE.—This column to designed for the general interest and instruction of our readers, not for graingisus replies to questions of a purely
 business or personal nature. We will publish such inquiries, however,
 token paid for as affectivemets at 50 cents a line, under the head of "Business and Personal."
- E. R., of Wis.—The earth has the form of an oblate spheroid, of which the equatorial diameter is about twenty six miles longer than the polar. The bulging outtoward the equator is generally conceded to be due to the centrifugal force of the earth's revolution. Thewater in the equatorial ocean is about thirteen miles higher than in the polar ocean. The ocean current moving from the north pole southwardly is running up hill (up hill being defined away from the center of the earth) and if the current travels to the equator, it has run up thirteen miles. A river running south in the northern hemisphere has a tendency to wear on its western bank
- J. W. L., of N. Y.—The force given out by condensed air on expansion is precisely equal to the force which was used in the compression, provided that none of the heat of compression has; been lost. The form of vessels used or the rate or manner of compression or expansion, do not affect the question one way or the other.
- H. H. B., of Iowa.—Your proposed chimney 48 feet high by 30 inches diameter will surely give you draft enough to burn saw dust.
- J. Mc. C., of Wis., is much annoyed by leakage of valves of his engine. The valves are brass and theseats from the leakage is caused by the unequal expansion of from and brass. The valves should be replaced by from valves. Brass valves are now generally discarded.
- G. B. N., of Texas, asks how he can consume the smoke from his boiler furnace made by burning pine shavings. Construct behind your fire box a combustion chamber through which the smoke must pass and feed it with atmospheric air through apertures the sizes of which may be controlled by dampers.

- H. H., of Wis.—We are not responsible for the published opinions of our correspondents, and in the case you quote we differ with the writer if he means what he says in the portion of the sentence you quote; that "a belier will make steam faster when the pressure is high than when it is low, with the same fire." Probably his meaning is to be seen, in the remainder of the sentence; "so it is economical to carry a high pressure—even if it is not necessary to do the work—and to work the steam expansively." It has been pretty well established that it is economy to use high pressure steam, but we not think the same fire will generate more under a pressure of 100 lbs. than under one of 50 lbs.
- I. J. O., of Minn., is troubled by the overflow or the creeping over of the oil in his lamps, and wants a remedy. Tho smearing of the upper part of the lamp with a substance which is repulsive to oil migh be effectual. Try the white of an egg or gum arabic.
- C. F. R. of Conn., sends us a sample of printing paper made from sedge or marine grass grown in Norwalk harbor. When cured the hay is sold for \$3 per tun. The paper is manufactured by Henry Betts, Norwalk, Ct.
- R. V. M., of Conn.—You cannot make the best quality of sealing wax, if you omit the shellac. Sealing wax without shellac is brit tle.
- D. L. M., of N. J.—Spirit varnishes have often been used as substitutes for ordinary blacking for shoes, and answer admirably for one or two applications. The objection to the continual use of the varnish is that its resinous matterfills up the pores of the leather rendering it stiff and rough.
- R. S., of N. Y.—There is no standard recipe for making what is called Babbittmetal. The name simply indicates an alloy of certain properties or uses without reference to its exact composition. Antimony generally enters into the composition, but is not essential. Zinc is nearer in properties to the Babbitt metal than any other simple metal.
- S. V. L., of Vt.--There are many exceptions to the law that alloys melt at a temperature below the mean melting points of its constituents. wroughtiron may be melted, and cast into molds, but the operation is not practicable on account of the intense heat required. If we could easily produce the heat to melt wrought iron, what could we melt it in or keep it in?
- R. G. G., of N. Y.—Telegraph wires are now every where made of iron. A perfect coating of the iron with copper would no doubt be useful, but more for the purpose of protecting the iron from rust than for increasing the conducting power.
- S. B., of Ill.—A blow pipe produces a greater intensity of heat by reasen of its furnishing the air for more combustion within a given space and time. Whether a given amount of air should issue into a furnace from two or more tweers, would depend mainly upon the size of the furnace and the work to be done. Where the object is to bring the whole body offuel into equal and vigorous combustion the greater the division of blasts of air the better. Most blast furnaces may be improved by multiplying the number of tweers.
- A. Y., of Vt.—We are not acquainted with a late work on "Natural Philosophy by Prof. Comstock" and therefore cannot give an opinion on the centrifugal pump to which you allude.
- P. P. C. C., of Eng.—The specimen of dry lubricant which we have received appears to be a very useful article.
- G. S. W. of Pa.—Sends a diagram representing a train of gearing. The first member of the train is a worm or screw acting on a wheel of a hundred teeth. One hundred turns of the worm revolves the wheel once. The axis of this wheel is a worm acting on a second wheel also of a hundred teeth. The axis of the second wheel is likewise a worm acting on a third wheel of a hundred teeth. Suppose the worm No. 1 revolves 100 times in a minute what is the rate of revolution of wheel No. 3?
- W. W. & Co., of Texas.—If you think it would pay to manufacture ice in Texas at an expense of say 3 cents a pound for materials, the requisite information may probably be obtained by writing to M. Foselli, manufacture of Glacier Roulante, at the Great Exhibition, Paris.
- W. B., of Ill., disputes with a friend concerning the philosophy of the siphon, and we are appointed umpire. "Does the siphon work on the same principle as the common suction pump?" Yes. In the pump the lifting of the piston or sucker produces or tends to produce a vacuum, and the pressure of the atmosphere forces the water up the barrel to prevent or fill the vacuum. In the siphon it is the greater weight of water in the longleg, which tends to produce the vacuum and the pressure of the air which forces the water up the short leg to fill it. The force which raises the water in both cases is the same—the weight or pressure of the air. As the pressure of the air per square inch is only equal to the pressure of a column of air 34 feet high and I square inch in section, neither the pump nor the siphon can raise water higher than 34 feet.
- F. R., of N. Y.—You ought to have no difficulty in using tinsmith's solder in soldering the connections of the zinc plates of your battery. Use with it the common soldering fluid, a solution of chloride of zinc.
- G. W. V., of Miss.—To restore the softness and pliancy of leather which has become hard by having been wet, apply neat's foot oil and rub it in. The luster of morocco is restored by a varnishing with the white of an egg.
- E. D. H., of ———inquires whether the top of a wagon wheel moves faster than the bottom while attached to an axletree and running on a road. Certainly it does. On page 251, current volume, April 20, this question was answered in a reply to T. M. S. Jr., of Ga. You can prove it by placing a straight-edge upright at the side of a wneel across the center, and mark on the rim, where the straight edge touches top and bottom, and then draw the wagon forward far enough to turn the whee slightly. You will find the mark at the top of the wheel has traveled much further from the straight edge, than that at the bottom.
- D. A. McK., of Pa.—We think you can break up your casting by drilling a few holes of three-quarters or one inch diameter from six to ten inches deep, filling them nearly to the top with water and then inserting carefully fitted steel plugs to rest on the top of the water. A blow from a heavy drop will probably do the business. In your case the mass of iron is three feet square; perhaps inch holes, drilled ten inches deep, and filled to within two inches or the top would be effective. The steel plug should be about four inches long and fit as nearly water tight as possible.

Business and Personal.

The charge for insertion under this head is 30 cents a line.

Manufacturers of clock work to run light machinery send address to A. S. Griswold, Pittsburgh, Pa.

Makars of Brass Lamp Tone address A Packham Prestone.

Makers of Brass Lamp Tops address A. Packham, Prestonsville, Carroll county, Ky,
Wanted Manufacturous of Agricultural Implements of all

Wanted—Manufacturers of Agricultural Implements of all kinds. See advertisement and address A. P. Smith, Sterling, Ill.

Wanted—The address of Mr. Snow, patentee of Match, Safe.

Wanted—The address of Mr. Snow, patentee of Match Safe, dated April 19, 1864. Address J. Maclaren, Scranton, Pa.

Manufacturers or dealers in machinery for the manufacture

of tubs, buckets and firkins, please send their address to D.S. McDannel, Kachusa, Lee county, Ill.

Small Emery Balls Wanted.—Address Box 258, Troy, N. Y. Jos. Lees, 417 East 10th street, New York City, alleges that he has valuable improvements in manufacturing gas from coal, and he wishes to engage with some company where his services may be apppreci-