*Chronicle* of the seventh inst. About a year or so ago, as our readers will remember, we published a series of articles descriptive of some of the great manufacturing interests in this country. We then selected and described the immense establishment of the Singer Manufacturing Company, located in this city, as the representative and leading concern in the department of sewing machines, and we are now pleased to find that we did not in the least exaggerate or over-estimate the importance of the company in question. It is noteworthy and somewhat suggestive that the Singer Company, who did not, as we understand, take the trouble of visiting, or even of sending their machines to the Paris Exposition—who seemingly do not care in the least for either gold medals or red ribbons, and whose name is rarely seen in print—should, nevertheless, eclipse all other sewing machine concerns in the magnitude of their business. There is, of course, a reason for all this, but we leave our readers to find that out for themselves.—*Home Journal.*

Prince Rupert's Drops.—The properties of unannealed glass are beautifully shown in the scientific toy bearing the above title, made by dropping melted glass into water, they take a long oval form tapering to a point at one end. While the body of these drops will bear a smart stroke from a hammer without fracturing, if a portion of the smaller end is snapped off the whole mass will be broken into an almost impalpable powder with a violent shock. Prof. Faraday used to illustrate the incompressibility of water by placing one of these drops in a phial of water, the concussion from the disruption of the drop shattering the glass bottle. Another interesting experiment with the same toy is now given by Reusch. In place of water he fills the vial with melted resin, and when this has solidified he nips off the end of the glass drop, the bottle is broken as before, and the mass of resin is deeply fissured throughout its length. The drop is found as a kernel, loosely aggregated together, but easily detached from the resin, entire. When broken to pieces the fragments will be seen to have the form of a cone on an hemispherical base, like some forms of hail.

Tourist Indicators.—Mr. Bayalgette proposed at the late meeting of the British Association, a plan for providing for the wants of tourists for obtaining local information and supplying reliable topographical information after reaching the summits of eminences. A fixed circular stone or metallic table has radial lines pointing to objects of interest drawn upon it. Upon the line is to be engraved the name of the object, distance from point of view, and other information of interest. A form of this indicator would be found useful in open places in large cities, giving the directions and distances to public buildings, railway stations, etc.

An International Workshop.—The French Emperor has been seriously considering a project for transforming the machine gallery at the Exposition into an international workshop. In estimating the whole of the steam engines employed at 2,000 horse-power, four million francs might be yearly realized by the rent, and, says the engineer Erissac, "a Cyclopean school would be stationed on the banks of the Seine, without rival in the world, and which would render to Paris, to France, and to industry, the greatest service."

American Mastodons.—Not long ago Dr. Stimpson, of the Smithsonian Institute, heard of the discovery in Hunterdan, Ind.—a place about sixteen miles north of Fort Wayne—of bones of extraordinary size, evidently the remains of some monster. Proceeding to the spot, he unearthed one by one the bones of three mastodons, a male, female, and calf. The skull of the largest is four feet in length, the animal being at least fifteen feet in hight. The remains will form a part of the collection of curiosities in the Bureau of the Chicago Academy of Sciences.

Steel Pens.—If a steel pen is hard and obstinate, refuses to yield when pressed, and annoys by its rigidity, hold it a half minute or less in the flame of a gas light or candle and stick it into water, oil, or tallow. In most instances it will cure the rigidity. In fact, it is a good practice to pass a steel pen through the flame of a lamp before using it. This burns off the oil used in the tempering and prevents that slipping of the ink, or the refusal to flow, generally noticed in all new steel pens.

Preliminary Soundings for the proposed Franco-American cable are announced to be completed. The route decided upon is from Brest to the French island of St. Pierre off the south shore of Newfoundland, thence along the coast to this city. The cable is now making in London, the *Great Eastern* is chartered to lay it, and by next July telegraphic communication, it is hoped, will be opened.

Military Aeronauts do not appear to have afforded any very useful results in the war in Paraguay. Although frequent balloon ascensions have been made, the ascent was but the signal for Marshal Lopez to order the kindling of great fires, the smoke from which covered his camp, and thus prevented the allies from discovering what was going on therein.

## POPULAR ERRORS.

This heading is a somewhat favorite one among writers, but not seldom those who attempt to expose these "popular errors" fall into errors of their own, sometimes as egregious as those they condemn. A correspondent sends us a communication intended to notice some popular errors, and we give below the essential portions of his article. He says in effect, that although Lord Bacon knew seven men who attained the age of one hundred years by drinking cider, he does not mention the seven-score men who attained that age drinking only water. Luigi Cornaro reached the age of ninety-eight living from his fortieth year largely upon wine, and Red Jacket saw his hundredth year although he got drunk daily. The hydropathists believe in water and frequent ablutions of the body, as the remedy for almost all the ills flesh is heir to, yet plantation negroes and other people, who shun water as poison, are as healthy as the most rigid followers of Priessnitz. Tradition says that James, "the just," the brother of Jesus, neither took his daily bath, shaved his beard, nor cut his hair.

Our correspondent says further, that he has buried his brightest and most beautiful child—a martyr to science from daily ablution—while his younger born, puny and feeble, and knowing not what a bath is, lives and promises to grow to a healthy maturity. His mother, nearing her eightieth year, was by the carelessness of a nurse allowed to go without bathing and she is rarely ill; while all the rest of her mother's children, bathed regularly by the mother, died in youth (one accidentally drowned) of the same disease.

Our correspondent states that some years ago the theory was advanced in a book that grapes, used alone as food, would insure long life, free from disease, but that it would be difficult to find any grape eaters entirely free from disease and not in danger of death. So it is said salt is unhealthful and not fit to be used by the human family. Yet we know that our perspiration, and our tears are salt, and that the people who live without salt are no healthier, nor longer lived than those who use it habitually. Animals, both domestic and wild, thrive the better for it. Two thousand pounds of hay contain seven pounds of salt; a tun of turnips, four pounds, and bulbs, straw, and grain all contain this essential mineral largely. In the "blue grass" region of Kentucky writers say the girls grow to be more beautiful than in any other portion of the country; yet their food is mainly "hog and hominy" with potatoes and eggs, food that requires a large proportion of salt. Kentucky's stalwart sons, her old men and women, are healthy, hardy, and almost as indestructible as pine knots.

### The Day Line.

Mr. Lyman Thayer, of Burlington, Vt., who appears not to be aware that the subject has been fully discussed in the Scientific American, sends us a very interesting and logical exposition of the question of the beginning of the day. He has gone, however, a little further than any of our correspondents, and has invented an admirable device for illustrating the subject to the senses. We quote that part of his paper which describes his invention:—

"I have addressed you on this subject, having learned there had been many remarks in your paper editorially and from correspondents, in regard to this vexed question, and no satisfactory answer given.

"I have just completed a diagram, in good form, representing the revolution of the globe with all the principal places on the globe shown on the face of it, set at their proper meridians as they are actually located on the globe, within the hours—the idea of representing the revolution of the globe with the hours shown, set at their proper places as they are actually located around the globe, is altogether a new and original contrivance or invention, and one that represents the revolution of the globe in a better and more distinct form, than any thing that has ever been invented and used for that purpose. It shows at once the relative position of all the principal places around the globe, and each and all the twenty-four hours as they are applied to each and every locality, at all times, at every revolution of the globe, or at all hours of the day—the hours being local or fixed principles, are attached to the sun, whilst the globe, with all its localities, continually revolving within the hours, is a fact that is not thought of or understood—it also constitutes a universal clock: every meridian is shown and numbered on the diagram, and by setting the meridian you are at, at the hour of the day, all other places stand at the hour or time it actually is at that place: shows where the days begin and end, and how they are applied to the revolution of the globe, and at all times, on how much of the globe it is Monday, for example, and how much it is Tuesday, or any other day, as the case may be: illustrates distinctly and plainly all questions that have been originated in regard to the day's changing, and shows a harmony of their application, and satisfies every intelligent mind on the subject. This diagram is set in a case, similar to the large parlor clocks, the diagram where the face of the clock would be; the revolution is made by a small crank at the side of the case, and the front of the lower part of the case contains an explanation of all its showing in plain form. They cost from five to ten dollars, according to the finish of the case, and would be useful in every family."

### The Boiler Disaster at Newark.

On Monday the 30th ult., at Ehehalt & Seydel's Brewery, Rankin Street a boiler explosion took place which was a case of most unmistakable lack of water. The boiler was nearly new, 22 feet long 42 inch diameter with two 12-inch flues. The boiler must have been red hot for with the exception of about 6 inches of the bottom part of it all above is burned to blackness.

Had there been a sufficient quantity of water in it and it had ruptured as it did, the consequences would have been terrible, as it pointed directly in its flight toward dwellings on the opposite side of the street. The end of the boiler, with some three feet of the shell and eight feet of the flues, would have passed through them. The boiler was to all appearance a good and safe one.

## ANOTHER LEVEE PLAN.

W. A. J. of Louisiana proposes a novel method of constructing levees on the Mississippi. He would erect on the banks, at a distance of 150 feet apart, a series of abutments of brick, having wings or projections on two sides in a direction parallel with the river banks. Between these abutments he would build the earth levees, not however in a right line, but curved toward the river, the ends of the arch or curve resting on the wings and body of the abutment. Perhaps his idea will be better understood by supposing arches of 150 feet span laid on a horizontal instead of a vertical plane, the top of the arch presented to the water. The banks of the river would then present a succession of curves instead of one straight line or a line following only the sinuosities of the river. He considers that if the earth between two piers was washed away, making a crevasse, it would not so easily extend further as with the present style of embankments. As this subject is one of great importance we will make a single remark on this proposed plan. The arches themselves are only earth, unprotected by piling or any other means. Of course, a portion of the arch, that presented to the force of the current, must to a certain extent, offer resistance—at least sufficient to deflect the current toward the center of the stream. How long this unprotected curve of earth would resist the continual wear of the current is for engineers or our correspondent to estimate, or experiment to determine.

## MANUFACTURING, MINING, AND RAILROAD ITEMS.

Rock crystal, sufficiently clear to be used for lenses, has lately been discovered in Arkansas, while digging around a breastwork thrown up during the war.

The total product of the Lake Superior iron mines last year was 306,252 tuns of ore. The reasons for the exceedingly rapid development of these mines since the year 1855 when the shipments of ore were 1,445 tuns—are many and obvious. The deposits are immense, easily worked, and nearly free from those noxious elements which render the flux of most iron or ores difficu and expensive. None of the mines, moreover, are over thirty-five miles from cheap water transportation. while most of them are only fifteen or sixteen miles distant.

Between Oil City and Meadville, says a recent visitor to the Pennsylvania oil regions, there is not one well in operation. It is only a long line of rotting derricks and rusted boilers and engines.

The survey of the proposed railroad from Schenectady to Ogdensburg on the St. Lawrence river, is about completed. The survey was provided for by the Legislature, and has been accomplished under the supervision of the State Engineer. From the St. Lawrence to the Hudson, this road in connection with the Athens and Schenectady "cut-off" will be direct and vastly shorter than any other. The route is pronounced by the superintending engineer a practicable and highly favorable one.

The extensive cultivation of flax in Australia will probably result from the success of late experiments in raising this plant at Portarlington on Port Phillip Bay. A factory for its manufacture has just been started in the suburbs of Melbourne.

The boot and shoe manufactories at Lynn, a town of twenty-three thousand inhabitants, employ seventeen thousand persons, or more than two thirds o its population.

The American company formed for the purpose of constructing a system of local telegraphs on the coast of China, has purchased from the Western Union Telegraph company some 525 miles of telegraph cable originally intended to be laid across the Behring's Straits, but now destined to be laid on such portions of the coast between Hongkong and Shanghai as may be considered advisable.

An immense deposit of toccoline has been discovered near Pescara, in Italy. It is combustible like asphalt and answers for pavements. About 60 per cent. of refined oil, which affords a far more brilliant light than petroleum, may be obtained from it.

Francis Morris, of New York has recently concluded at London, an arrangement with Capt. Pim, of the Royal Navy, looking to the establishment of a new interoceanic line across Nicaragua, by railroad, connecting with steamers on the lake.

The Air line railroad has been surveyed from New Haven to Middletown during the past few weeks. The line is twenty-one miles long, and can be built for $600,000 not including the right of way and the portion already built.

The Reis mine, near Downieville, Cal., has proved itself a most wonderful investment. For sixteen years ninety thousand tuns have been taken from it, and it now has forty-five thousand tuns of pay ore in sight, enough to keep two mills running for two years. The total production last year was $224,000. The mine is 5,100 feet above sea level.

The Belgians claim to have been the first to discover the uses of coal, and this discovery, they say, was made by one Hullos, a blacksmith, of the village of Plenevaux, near Liege, in the year 1049, from whose name they derive the word "houille." Coal was first used as fuel in London in the latter part of the thirteenth century; but the smoke was considered so injurious to the public health that Parliament petitioned King Edward I. to prohibit its burning, as an intolerable nuisance. He complied, and issued his proclamation against it. The most severe measures were then employed to abolish its use—fines, imprisonment, and the destruction of furnaces and workshops where it was used.

## Recent American and Foreign Patents.

*Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.*

Oil Can.—Martin Robbins, Cincinnati, Ohio.—This invention consists in providing a can or vessel which is to contain oil, sirups or other liquids, with a vacuum handle and with an adjustable nozzle, so that the nozzle may be adjusted to any desired angle, with the can, for the purpose of allowing a greater or less quantity of the liquid to be ejected or forced out, as may be desired.

Coal Elevator and Distributor.—Henry C. Clark and Robert B. Little, Providence, R. I.—This invention relates to a new device whereby coal or other articles can be conveyed from a vessel or other receptacle to any particular one of a number of compartments, where they can be dumped into carts or cars if desired.

Three Wheel Carriage.—John Gehr, Mercersburgh, Pa.—In this invention the journals of the forward axle work in boxes attached to a horizontal fixed wheel, which supports a revolving ring to which are attached the couplings that connect the forward and rear axles.

Lifting Jack.—Wm. Green, Holly, Mich.—This invention is a neat, cheap and convenient lifting jack, designed for the special purpose of removing hop poles from the ground.

Attachment for Sewing Machine.—John W. Neill, New York City.—The object of this invention is to provide an attachment for sewing machines for making the plaits or tucks in shirt bosoms, ladies skirts, dresses or garments of any description, whereby the material is creased and folded to any sized plait and sewed through the three folds or thickness of the plait to finish it completely at the same time.

AGUE MEDICINE.—T. M. Daniel, Athens, Ga.—This invention relates to a new composition, or rather application, of certain ingredients which when applied in the manner hereinafter specified, form a cure and preventive for ague, fever, etc.

LOOM.—Daniel K. Fretz, Buckeye, Iowa.—This invention has for its object to simplify and cheapen, and otherwise improve the ordinary hand power loom, wherein the various parts are put in motion by the vibration of the batten.

HOLD BACK,—James C. Covert, Townsendville, N. Y.—This invention relates to an iron hold back to be attached to the hames, and to be connected by a ring to the neck yoke, for the purpose of doing away with the breast strap, and to facilitate the easy adjustment of the harness and the management of the vehicle.

LAMP.—Peter Hoffmann, Constableville, N. Y.—This invention relates to a lamp which consists of two oil chambers, the upper chamber, from which the wick draws its supply, being arranged in such a manner above the lower one into which the oil is poured, that whenever it becomes empty it may be pressed down, its lower end having a plunger fitting close in a tube projecting from the lower chamber, whereby the oil is pumped into the upper chamber. The lamp is not liable to explode, and may be filled while burning without danger.

MACHINE FOR MAKING BULLETS OR SHOT.—C. H. Remington, Dubuque, Iowa.—This invention relates to a new and useful improvement in machinery for making bullets or shot by compression or swaging.

LEATHER ROLLING MACHINE,—Johnson Lombard, Springfield, Me.—This invention relates to an improved machine for rolling or folding sole leather in bundles and consists in a set of rollers and straps in combination with a table and main rolling shaft by which the leather is rolled tightly for packing and transportation.

KING BOLT.—Enos A. Keasey, Ligonier, Ind.—This invention relates to an improved construction of king bolts for carriages and other vehicles, and consists in attaching the bolt with a swivel joint to the axel clip which supports the bolt by a shoulder, so that the cam bolt and head block shall turn together.

GATE.—Hans J. Johnson, St. Peter, Minn.—This inventfon has for its object to furnish a durable and convenient gate, which may be used as a single or double gate, and which may be easily adjusted so as to swing over snow or other obstructions.

REIN HOLDER.—Buel D. Pease, Madison, Pa.—This invention has for its object to furnish an improved rein holder for attachment to the dash board of a wagon or carriage, which shall be so constructed as to hold the reins securely and at the same time allow them to be instantaneously detached.

SCHOOL DESK AND SEAT.—D. C. Wilson, Beaufort, S. C.—This invention has for its object to furnish a strong, simple and convenient manner of making school desks and seats, and it consists in the construction of their frames and in the manner in which they are secured to the floor.

CULTIVATOR.—J. Madison Morse, Sandwich, Ill.—This invention has for its object to furnish on improved attachment for corn cultivators, by means of which the driver may be enabled to ride, which at the same time shall have a tendency to prevent the cultivator from "jumping" or "bounding," and which may be easily and quickly attached and detached.

DRIVING PROPELLERS.—Wm. Lawton, Greenpoint, N. Y.—This invention has for its object to furnish an improved device by means of which the screw may be made to revolve more rapidly than the driving shaft operated by the engine, so as to drive the boat at speed by a slow movement of the engine.

SHOE KNIFE.—Henry Sauerbier, Newark, N. J.—The inventor has received two patents for a knife for cutting or trimming the edges of the soles of boots and shoes. His invention consists in the application of a sliding guard or gage to the blade of the knife whereby the desired work may be accomplished without the liability of cutting the upper of the boot or shoe.

TEST PUMP AND GAGE.—Henry Getty, Brooklyn, N. Y.—This invention relates to a combined pump and gage, more especially intended for the testing of gas or other piping or tubing.

MACHINE FOR CUTTING MITERS.—R. F. Tompkins, New York City.—This machine consists of two cutter blades, arranged to be moved up and down in a vertical plane, and so as to be adjusted with regard to each other at a greater or lesser angle, in combination with rests or blocks for the material or stuff to be cut, correspondingly susceptible of adjustment, and to be brought into the proper relative positions with regard to the cutter or knife blades.

WATER WHEEL.—Wm. Cooper, Hancock, Md.—This invention relates to an improvement in that class of water wheels which are placed on a vertical shaft and are commonly termed horizontal wheels. It consists, first, in an improved application of gates to the wheel, whereby the former may be opened or closed simultaneously with the greatest facility, and retained at any point without interfering in the least with the proper action of the water upon the buckets; second, in a peculiar arrangement of the buckets, the manner of placing them in the wheel, whereby power is obtained both by the impact and gravity of the water.

CORN PLANTER.—Joseph Krebs and August Johns, Massillon, Ohio.—This invention has for its object to furnish an improved machine by means of which the ground may be furrowed, the corn dropped and covered, and the hill marked by the same operation, and which shall at the same time be simple in construction and easily operated.

CHAIR SEAT.—George Heesen, Tecumseh, Mich.—This invention relates to a new and improved seat for chairs, settees, etc., and consists in substituting paper twine for flags hitherto used for such purposes. The seat is constructed in precisely the same way as the flag seat.

SAW-SET.—James C. Woodard, Franklin, Conn.—In this saw-set are combined and obtained many important advantages and features.

COUPLINGS.—E. and H. Butler, Croton Falls, N. Y,—The object of this invention is to prevent the rattling noise and wear of the center bolt or pin by which the shafts or thill are hung or pivoted to the couplings, and for this purpose the invention consists in a novel application to the said center pin or bolt, of an elastic cushion or cushions whereby the desired end is effected.

COMBINED ERASER AND LETTER OPENER.—George C. Barney, Philadelphia, Pa.—This invention consists in a blade of steel or other suitable material having two edges made of a curvilinear shape intersecting each other at one end of the blade where the blade is sharp pointed; the outer or convex edge of the blade being made suitable for use as an eraser, with the inner or concave suitably sharpened for cutting paper more particularly.

WATCHES—J. A. Harmann, New York City.—This invention consists in so constructing the pendant of a watch as to receive and hold the key adapted to such watch whereby the key is always at hand when to be used for winding the watch movement or setting or adjusting its hands, and furthermore the socket of the key, cannot becomed clogged or stopped up with dirt, etc.

HENS NEST.—C. W, Blackman, Bridgeport, Conn.—This invention relates to a new and improved nest for hens and has for its object the prevention of more than one hen occupying the nest at the same time.

WINDOW SCREENS.—James McFeeley, North Woburn, Mass.—This invention consists in so constructing the frame to a window or door screen in such manner that water can be made or allowed to flow over the surface of the screen from top to bottom whereby while the dust etc., is more perfectly excluded, the atmosphere of the room is rendered cooler and more pleasant.

CENTER BOARDS FOR VESSELS.—John G. Saunders, Narragansett, R. I.—This invention relates to a new and improved mode of laying center boards in vessels, whereby the center board may be raised and lowered with its lower edge parallel with the keel of the vessel and center board, in case of meeting with any obstruction when the vessel is sailing, allowed to rise and pass over the obstruction without sustaining anp injury whatever, and also admit of being readily detached from its trunk at any time when necessary for repairs.

MOUSTACHE GUARD.—A novel contrivance was patented on the 23d of July last by Chas. E. Mitchell, who is now residing at the Astor House, New York, in the shape of a mustache guard. It is made of thin metal and by means of springs ingeneously placed can be instantaneously attached to or removed from a cup or tumbler and carried in the vest pocket when not in use. By its use coffee or other liquids can be drank without wetting the moustache, Mr. M. will be happy to show his invention to persons taking an interest in novelties of the kind or, to dispose of rights to manufacture.

LOOM PICKER.—Bradford Nichols, Phenix Village, R. I.—This invention relates to a new and useful improvement in the picker of a loom, and consists in making the shell or casing and binder of the picker of rawhide, and securing it to the staff by flanges on each side in such manner that it cannot slip out, nor break, nor allow the filling to come out.

CLOTHESPIN.—R. G. Britton, Springfield, Vt.—This invention relates to an improvement in clothespins, and consists in uniting two wooden pieces by an iron pin or rivet, and inserting a spiral spring between the ends, on one side, to close the other ends upon a clothes line to keep the clothes fast when hung out to dry.

HORSE COLLAR.—James G. Haymaker, Salem Cross Roads, Pa.—This invention relates to an improvement in horse collars, and consists in a novel construction and arrangement of the lock upon the hame plates and pads whereby the collar can be placed on the horse without passing it over his head.

DRESSER COPPERS AND WARPER PLATES.—Ambrose J. Nichols, North Providence, R. I.—This invention relates to machinery for the manufacture of textile fabrics, and it consists in an improvement in dresser plates or coppers, as they are usually called by manufacturers, and which improvement is also applicable to warper plates, as both the dressers and warpers are used for similar purposes.

THILL COUPLING.—E. M. Naramore, North Underhill, Vt.—The object of this invention is to provide a wagon thill and pole coupling that may be readily coupled and uncoupled, and firmly and securely held in place.

TELESCOPE.—W. Kuebler and F. Seelhorst, Philadelphia, Pa.—This invention relates to a new and improved method for adjusting the eye-pieces and object-glasses of telescopes.

SAFETY VALVE.—John N. Wrigley and George Smith, Newark, N. J.—This invention consists in so arranging a valve or a valve seat in the coating or shell that it is nearly balanced by the steam, thereby rendering it much more sensitive than the ordinary safety valve now in use and consequently much more safe.

STEAM VALVE AND VALVE MOVEMENT.—John N. Wrigley and Geo. Smith, Newark, N. J.—This invention relates to a new and improved method of admitting steam to the cylinder of a steam engine.

STOVEPIPE AND SMOKE STACK JOINTS.—Wm. Stine, Elmore, Ohio.—The object of this invention is to improve the manner in which stovepipe, smoke stacks, etc., are usually joined together and to facilitate the operation of putting them up and taking them down,

CARRIAGE WHEELS.—John G. Buzzelle, Lynn, Mass.—This invention has for its object to furnish an improved carriage wheel, light, simple, strong, and elastic, and which can be readily tightened or strained whenever desired.

ATTACHMENT FOR SCHOOL DESK.—D. J. Stagg, New York city.—This invention relates to a new and useful attachment for school desks, for the purpose of holding or supporting drawings, maps, or any papers, while being copied. The invention consists in having a frame or a drawing board fitted in a slot or opening in the desk, and arranged in such a manner that the frame or board, when desired for use, may be raised up and adjusted in proper position relatively with the occupant of the desk, to receive the drawing or other article to be copied, and, when not desired for use, capable of being lowered or let down within the opening of the desk, so as to be entirely out of the way.

HORSE HAY FORK.—A. J. Purviance, Keosauqua, Iowa.—This invention relates to a new and useful improvement in operating horse hay forks, so that the same may not only be elevated as usual, but also drawn over the spot or stack where the hay is to be dropped or discharged. The object of the invention is to facilitate the stacking and storing away of hay with the horse hay fork.

SEEDING MACHINE.—Edwin Ritson, Maltaville, N. Y.—This invention relates to a new and improved seeding machine, of that class designed for sowing seed in circles.

PLOW.—Mason Prentiss, Cambridge, N. Y.—This invention relates to a new and improved plow of that class which is provided with a double mold board, and is more especially designed for cultivating crops. The invention consists in the application of an adjustable shoe at the rear of the share or mold board, the share being arranged in such a manner that it may, with the greatest facility, be adjusted higher or lower to graduate the depth of the furrow, as may be required.

MACHINE FOR KNEADING DOUGH.—W. B. Morrison, Muskegon, Mich.—This invention relates to a new and improved machine for kneading dough, and it consists in piercing the bottom of a box or dough receiver, with a concave surface in or over which a series of plungers work.

VENTILATING ATTACHMENT FOR MILL-STONES.—Hezekiah Mc Eldowney, Dixon, Ill.—This invention relates to a new and improved means for causing a circulation of air to pass down between the exterior of the upper mill stone and the curb thereof, whereby the stone is kept in a cool state, and the flour prevented from "sweating," as it is technically termed.

SHIFTING STEP FOR VEHICLES.—Edward Miller, Milwaukee, Wis.—This invention has for its object to furnish an improved shifting or detachable step for attachment to vehicles to enable persons, and especially ladies, to get in and out conveniently.

CHURN.—W. C. Peck, Bridgeport, Ohio.—This invention has for its object to furnish an improved rocking churn, simple in construction, convenient to be used, and which will do its work quickly and thoroughly.

ELLIPTIC SPRING BRACE.—M. Barker, Great Valley, N. Y.—This invention has for its object to furnish an improved means by the use of which elliptic springs may be strongly and securely braced, and which at the same time will allow either of said springs to act without a strain upon the other.

GATE.—A. Tandy, Columbia, Mo.—This invention has for its object to furnish an improved gate, simple in construction, and durable, and which can be opened and closed over obstructions, or up or down hill, as may be desired or necessary.

## 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.*

W. B., of Ohio, thinks it would be a good thing to silence an enemy's guns by firing, point foremost, into the mouth of the guns a number of square tapered files with the teeth cut the reverse way, which would plug or lodge the enemy's shot and burst their guns when fired. So it would; but will W. B. please inform us about his plan for getting so direct an aim as to shoot into the mouth of those cannon he intends to burst.

J. O. B., of Mass., has two stoves in his shop in which he burns wood, one of which with a funnel of 40 feet in length drips a great deal of liquid matter every day; and the pipe has to be frequently taken down and cleaned of a deposit resembling coal tar. The other, on the contrary, gives no such trouble. He wishes to know "what's the matter?" Wood when subjected to slow combustion is more or less distilled and one of the products of such distillation is pyroligneous acid which when heated still more becomes a dark, glutinous substance, It may be seen exuding from the ends of logs when heating on the andirons of an old-fashioned fireplace. The remedy is to put his stove and funnel in order to produce a draft and insure combustion.

J. T., of N. Y., asks what will remove the stain of claret from a table cloth, salt not always being efficient. Try oxalic acid.

N. D. F., of Conn., asks how ale and cider barrels can be thoroughly cleaned. We think a strong solution of sal. soda followed by hot water will do it.

W. M., of N. Y., wishes to be informed if hydrogen gas can be made available for heating or cooking purposes. It certainly can, but its expense is a serious objection, except where hydrogen can be had for next to nothing.

L. W. S., of Mass. "Can you give me information how to burn up the smoke from a planing mill, the furnace fires of which are from shavings and the waste of the mill?" Refer to the article on "Boiler Setting" first page of No. 9, current volume.

T. H. B., of Texas.—"What is the best way to keep a tubular steam boiler free from mud and scale, the latter of which accumulates rapidly from the use of hard water?" Blow off frequently, which will remove the mud and a part, at least, of the scale. One great fault of those who run boilers of any kind is their disinclination to perform this necessary work often enough.

R. B., of Pa., says there is in use in Philadelphia a check valve to steam boilers intended to prevent the pump from thumping. It is placed about two feet from the pump on the suction pipe and is supposed to admit about one fifth of air at every stroke of the pump, forming a cushion for the plunger and then passing into the boiler. It is used on the Harrison cast-iron boiler advantageously, and the question is whether this air endangers the boiler and whether such a pump could injure a wrought-iron boiler. In reply we would say that the air pumped into the boiler cannot injure it whether of cast or wrought iron; neither can we see how the injection of air with the water could benefit a boiler or assist in generating steam.

J. M. W., of N. Y., says: "Believing myself to have discovered a substance which I call liquid phosphorus or oil of phosphorus—the result of an experiment in match making last spring. Allow me, if you please, to ask information." Certainly; but it would, perhaps, be more satisfactory to you and us if you had described your liquid phosphorus and denoted the sort of information required.

F. K., of Mo.—"Could you give a simple and cheap recipe for softening hard water for washing purposes; the wells are in limestone rock?" We knew of nothing simpler and cheaper than sal. soda or wood ashes.

L. M. T., of Mo., desires to know the process of preparing birds and other specimens of animal life by retaining the bones and flesh. Probably D. Van Nostrand, 192 Broadway, can furnish a treatise on the art of the taxidermist.

G. McD., of N. Y., cannot succeed in depositing a film of pure silver upon silver. The battery fails him entirely. Certainly the battery may be made to give an even deposit of pure silver. Probably your failure is due to lack of skill or imperfection in the materials employed.



## EXTENSION NOTICES.

William H. Sweet, administrator of the estate of Henry L. Sweet, deceased, of Foxborough, Mass., having petitioned for the extension of a patent granted to the said Henry L. Sweet, the 20th day of December, 1853, for an improvement in guides for sewing on binding, for seven years from the expiration of said patent, which takes place on the 20th day of December, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 2d day of December, 1867.

Joseph Nason, of New York city, having petitioned for the extension of a patent granted to him the 2d day of January, 1854, for an improvement in arrangement for cutting screws in lathes, for seven years from the expiration of said patent, which takes place on the 2d day of January, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of December next.

Hezekiah B. Smith, of Smithville, N. J., having petitioned for the extension of a patent granted to him the 10th day of January, 1854, for an improvement in mortising machines, for seven years from the expiration of said patent, which takes place on the 10th day of January, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 23d day of December next.

## Inventions Patented in England by Americans.

[Condensed from the "Journal of the Commissioners of Patents."]

PROVISIONAL PROTECTION FOR SIX MONTHS.

2,262.—MANUFACTURE OF WHEELED VEHICLES, ETC.—John S. Campbell, Newton, N. J. Aug. 5, 1867.

2,403.—APPARATUS FOR RAISING WATER, ETC., BY STEAM POWER.—Wm. L. Horne, Batavia, Ill. Aug. 22, 1867.

2,475.—CARPET STRETCHER AND TACK DRIVER.—Wm. Brown, New York City, Aug. 31, 1867.

2,438.—MANUFACTURE OF IRON AND STEEL.—Alexander L. Holley, New York City. Aug. 27, 1867.

2,466.—APPARATUS FOR SUBMARINE EXPLORATION.—George Wrightson, New York City. Aug. 29, 1867.

2,506.—PADDLE WHEELS FOR WATER CRAFT.—Wm. R. Manley, New York City. Sept. 4, 1867.

2,551.—WIRE HEDDLES FOR LOOM HARNESS.—Darius C. Brown, Mass Sept. 9, 1867.