ROTATING CRANE.—John S. Coffman, Greenville, Ind.—This invention relates to a method of constructing cranes, or derricks, whereby they are more easily manipulated and more simply and economical constructed. It consists of a frame, or stand, on the top of which is a revolving windlass and windlass frame, around the axle of which windlass is the cord or rope by means of which merchandise is raised.

BLIND AND SASH FASTENER.—Andrew H. Wemple and Thomas D. Richardson, New York city.—The object of this invention is to provide a cheap and efficient fastening for outside blinds, shutters, and windows, whereby the same are securely fastened by one operation.

LUBRICATOR.—John L. Whipple and Adolphus Bonzano, Detroit, Mich.—This invention relates to a method for lubricating slide valves, cylinders, lift rod and wearing surfaces in other situations.

DRAWING WICKS THROUGH BURNERS.—F. A. Blaetterlein, West Meriden, Ct This invention relates to a device for clamping and drawing wicks through the tubes of lamp burners, and consists in the use of a flattened sheet metal bar, doubled up in the center and provided at one end with teeth for biting the wick, and perforated to pass over the teeth of the ratchet, or wick elevator.

SAFETY ATTACHMENT TO RAILROAD CARS.—Samuel Pennock, Kennett Square, Pa.—This invention relates to a device for absorbing the momentum or shock of colliding railroad cars, and consists in connecting the inner end of the draft bar of each car with a wedge, which rests upon a spring bed. During a collision the draft bar is thrown in, and the wedge is pushed over the elastic bed, depressing the same, and thereby transferring the shock from a horizontal to a vertical line; the crushing of railroad cars is thus prevented, and even the disagreeable shock is overcome.

OAR LOCK.—Michael A. Lanagan, Brooklyn, N. Y.—This invention has for its object to furnish an improved oar lock that will allow the oar to be moved freely in every direction, from which it will be impossible for the oar to escape should it be dropped, in which it may be quickly placed, and from which it may be quickly removed.

DETACHER AND ANCHOR STOPPER.—Michael A. Lanagan, Brooklyn, N. Y.—This invention has for its object to furnish a simple, safe, and effective device designed especially for use as a boat detacher and as an anchor stopper, but equally useful for other purposes wherever it is desired to detach a suspended object.

PORTABLE MILL.—Silas Dodson, Jersey City, N. J.—This invention has for its object to furnish an improved grindstone mill, simple in construction, convenient of adjustment, and which will do its work faster and better than the mills constructed in the usual manner.

WELL TUBES.—Wm. B. Hutchinson, Newbern, N. C.—This invention consists in combining with a malleable, cast, solid-jointed, perforated cylinder, having an oval-shaped bottom, to enable sand to wash or pass out rapidly, a diamond-shaped, perforated, self-discharging, conical or oblong-shaped sand basket, placed within the said perforated cylinder, and provided with a conical or oblong wire-guaze filterer.

PORTABLE FENCE.—A. Labair, Pewaukee, Wis.—This invention relates to an improved portable fence, and consists of a fence of upright, horizontal bars, having a foot or abutment at each end of each length on opposite sides thereof, which may be made of the same lumber as the uprights or horizontal bars.

BAG HOLDER.—C. D. Brainerd, Dansville, Vt.—This invention consists in a novel manner of hanging or arranging two jaws, or arms, for holding the mouths of bags open while being filled, by means of which the jaws, or arms, can be drawn together, or toward each other, to admit of the mouth of the bag being easily placed upon and over them, as well as also to accommodate bags of different widths; the jaws, or arms, when released, immediately springing apart, and thus tightly grasping and firmly holding the bag in its place or position. Also, in a novel construction or arrangement of the bag-holder frame, whereby it can be adjusted and set to accommodate bags of different lengths.

STREET CAR BRAKE.—Jacob Katzenberg, New York city.—This invention has for its object to furnish an improvement in the manner of applying the brake, which shall be simple in construction and effective in operation, and which will allow the brake to be applied with full force by the driver, while at the same time both his hands may be free to manage his horses.

STONE BOAT.—Thomas V. Cook, Lanesboro', Pa.—This invention consists of a cast iron shoe, in proper form, provided with suitable uprights or plank holders, to which are fitted planks or similar supports for stone or other materials, said planks being bolted to the said shoe in such a way as to form a very strong and durable apparatus for the drawing of stone or other materials upon the ground.

BENDING HARNESS AND OTHER IRONS.—Wesley Malick, Tidioute, Pa.—This invention relates to an improved device for bending harness irons.

FIRE-ARM.—L. Conroy, New York city.—This invention consists in a novel arrangement for extracting or removing the waste cartridge shell from the bore of the barrel, which extractor for the cartridge is connected with the breech block of the gun, and operates in conjunction therewith.

CAR COUPLING.—John T. Stoakes, Parish of New Church, England.—This invention has for its object to furnish an improved car coupling, which shall be self-coupling; which cannot become accidentally uncoupled while the cars are upon the track, which will at once uncouple itself should the car or cars be thrown from the track, and which can be easily and quickly uncoupled when desired, even should the train be in rapid motion.

SAW MILL.—Philip Estes, Leavenworth, Kansas.—This invention relates to an improvement in head blocks for saw mills and consists in an open rack and pinion connected with a lever having a clamping eccentric and carrying four pawls and a ratchet wheel having two dogs.

ROTARY FEED FOR SAW MILLS.—James M. Scott, Kinsman, Ohio.—It has hitherto been found impossible to procure a rotary motion from the pitman of a saw mill. This is obtained by this invention and is intended to be applied to feed the mill.

MILLSTONE BUSH.—C. Custer, Philadelphia, Pa.—This invention relates to improvements in boxes for bushing the spindles of millstones, whereby a spindle may be adjusted with perfect accuracy by means of thumb screws and wedges operating in loose wedges lying against the spindle which wedges are made of iron, brass or wood, or may be faced with Babbitt metal, leather, or any other anti-friction material.

CULTIVATOR.—R. Garter, Lowell, Mass.—This invention relates to an improvement in cultivators mounted on wheels and adapted to the working of corn, cotton and other crops and general field work and consists in forming a truck frame inside of the side beams so connected that the frame may be raised and lowered readily for giving more or less depth to the teeth or plows.

TABLE LEAVES SUPPORT.—N. Long, Eaton, Ind.—This invention relates to an improvement in table leaves and consists in an arrangement of the supports in connection with springs, whereby they are rendered self-acting and when the leaves are raised will take their place under them to hold them up in the usual way.

CHILDRENS' CARRIAGE.—A. D. Fowler, Newark, N. J.—This invention has for its object to improve the manner of attaching the fore wheel to the arms of the frame of children's carriages, wheel barrows, etc.

SASH ADJUSTER.—P. H. Hardy, Terre Haute, Ind.—The object of this invention is to provide a substitute of the expensive box window frame in common use by adjusting the sashes with cords and pulleys attached to the sashes and to the frame in another and simpler manner, and it consists in so attaching the cords and adjusting them that the sashes shall balance each other.

GATE.—C. H. Platt, North Fairfield, Ohio.—This invention has for its object to furnish an improved gate, simple in construction, durable, and not liable to get out of order and which may be adjusted to swing at a higher or lower level or secured in such a position as to allow sheep or small stock to pass freely beneath it.

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 advertisemets at 50 cents a line, under the head of "Business and Personal."

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

J. D. M., of Ga.—The Electric Gas Lighting Apparatus manufactured by Cornelius & Baker, of Philadelphia, are very convenient. The appliance is attached to each bracket and by simply lifting an india-rubber plunger which fits inside a cup lined with silk, the electricity is communicated by a chain or wire to the burner. We have the article in use at our home. An engraving of the Eledtric Bracket may be found on page 328, Vol. XI., 1864, or probably Messrs. Cornelius & Baker will send a circular illustrating the invention by addressing them at 710 Chestnut street, Philadelphia.

W. D.—The Patent Reports are not on sale. Apply for them to the Member of Congress from your district. They are printed for public, free distribution by the Members.

C. B., of Pa.—Hemlock bark extract is made by some perating machine, of which several forms have been patented. The special of machine, however, is of less consequence; the principal tools for an economical preparation are proper grinding mills, strong pressure to expel the last and best liquid from the fibers, and kettles, etc., to boil the extract down to a lesser bulk and make it more fit for transportation, for which the bark itself is entirely unfit, and therefore the skins have usually been brought to the bark region being less bulky than the bark required to tan them. There is a market in New York for the extract, but the success of its manufacture depends not in having plenty of bark, but like many other enterprises, mining operations, etc., on a sufficient capital to be invested in proper machinery.

A. M., of N. J., asks for a simple recipe for producing soluble glass, and a composition to coat walls previous to their being papered and varnished. A quite extensive description of the preparation of soluble glass (liquid flint) will be found in one of the last numbers of the SCIENTIFIC AMERICAN of 1866. As to the composition for coating walls we presume that soluble glass will do all that is wanted.

J. F. R., of West Castleton, says: "Explain to me the reason of the change of the atmosphere in the fall of the year. During the day a lead-color haze overspreads everything, but at night as a general thing it is perfectly clear." The color of the sky depends greatly upon the state of the atmosphere, and particularly upon its dampness, which is greater in cold than in warm seasons. We do not mean to say, however, that the amount of moisture in the air is greater in winter than in summer, but in winter the vapor of the atmosphere will condense but at a slight decrease of temperature, while it will not do so in summer. The clearness of cold winter nights is explained by the fact that the moisture freezes and little evaporation is taking place.

W. C., of N. Y., is asking how cascarilla bark is prepared for introducing into matches and tobacco. The odor of the bark resembles that of musk. For matches the bark is reduced to powder, and mixed with the dipping composition. For tobacco a decoction is applied, but it is said to occasion vertigo and intoxication. In medicine this bark was formerly often prescribed as a substitute for Peruvian bark, but it has lost much of its reputation.

G. D. J., of Conn.—"Can you inform me of any ingredient that will render rubber or leather impervious to oil, or anything that can be mixed with oil that will produce the same result. The rubber or leather will be continually in contact with the oil and the object is to preserve them from being destroyed by the oil." The following composition if properly applied will answer your purpose: Dissolve in an iron pot 1 part of finely cut gum elastic in a mixture of 4 parts of linseed oil and 8 parts of "solar stearin," apply gentle heat, and stir in 12 parts of amber varnish when the gum is all taken up.

B. H. L., of Pa.—"Can you give me some information in regard to deodorizing benzine; there is an article in our market that is free from offensive odor." A chemist lately recommended to digest it with a solution of oxide of lead in caustic soda. Try it.

H. M., of Ala., wants to know if there is a good market for hemlock extract and if there are any patents covering machines for its preparations. The extract is not so much in demand as the ground bark: tanners prefering the latter. There exist several patents for extracting tannin from the bark which you will find by referring to the SCIENTIFC AMERICAN.

W. G., of Pa., asks for information about the manufacture of sulphate of iron from iron pyrites. We do not know of its being prepared directly from them and doubt whether it will pay to do so, as copperas is quite largely obtained as a waste product in the boiling of the crude lye in manufacturing alum.

J. M., of Ala., seeks for information about the preparation of crystallized candy. Prepare a solution of loaf sugar in lime water and boil it down very cautiously until threads can be drawn from it. Transfer then the sirup into broad vessels, cover them well and keep them in a warm room. Crystillization will have set in in a week or ten days.

J. L., of Ind.—"Do you know of an invention for opening, closing, and fastening the upper swing casement of Gothic church windows, to be operated by a person standing on the floor 20 or 30 feet below the top of the window?" We think such contrivances, managed by a cord and spring, are in quite common use. Such a device could be easily contrived.

J. W. H., of Minn., asks the following question of practical millers: Will it take any more power to grind a certain amount of wheat per hour—say eight bushels—on a pair of millstones four feet diameter than it will to grind the same amount on a pair of three-and-a-half or three feet diameter?"

D. S., of N. Y., wishes to have information on setting up stationary engines; more particularly where he is to find the lines for "lining up" an old engine. He wishes a diagram published. The setting or lining up of an engine is so simple a process that it seems puerile to publish diagrams to explain it. The center of the piston, center of the cross-head, and center of crank shaft should be in one line. Usually one or more "spiders" of wood—merely crosses with a hole through the center where the two arms intersect—are fitted to the bore of the cylinder and a line drawn through to the center of the pillow block bearing. Proper measurements and gaging, with an ordinary amount of skill, can do the rest. After all, the practice of the shop is better than the information given through the medium of our columns. There is no royal road to a practical knowledge of the steam engine.

L. D. M., of Tenn., requests a recipe for hardening mill picks to stand on hard burrs. He finds great difficulty in getting a durable edge. The question has already been answered through our columns. We cannot repeat answers an indefinite number of times to oblige a single inquirer. Pallett's "Miller and Millwright" gives the following as a pickle: 8 galls. rain water, 8 oz. spirits niter, 3 oz. hartshorn, 3 oz. white vitriol, 3 oz, sal-ammoniac, 3 oz. alum, and two handsfull of horse-hoof parings; to be kept closed from the air.

J. L., of Ill.—"Take a pulley 4 feet diameter, 8 inches face, 6 arms, weight, 225 lbs., at what velocity will the centrifugal force overcome the force of cohesion, the wheel to be evenly balanced and rotate true on the shaft?" No rule for such a case can be laid down, as the quality of iron varies greatly and the weight may be so distributed in the rim, arms, and hub as to either greatly strengthen or weaken the wheel.

O. A., of N. Y., asks what is better to coat chills for coring castings than shellac varnish or oil. He uses oil and fine sand baked on in an oven. We know of nothing better than his plan. Perhaps some molder may furnish a better recipe.

T. W., of R. I., wishes to know how to lay out the holes through floors for a quarter turned belt. He says the information received through the SCIENTIFIC AMERICAN was not quite satisfactory, and hopes some correspondent will reply. We regard the laying out of belt holes for any sort of belt as a perfectly simple process and have given such explanation as appeared to us to be easily comprehended; but if a correspondent can make it clearer we shall be glad.

R. J. E., of Wis.—"Would the weight on the step of a perpendicular shaft with a large fly wheel be any less when the wheel and shaft was rotated than when at rest; or is the weight on the standard of a governor diminished when the balls are raised by centrifugal force?" In both cases the answer is, No.

O. H., of N. Y.—"If 33,000 lbs. falling 60 feet will work up to one horse-power for one hour, less the friction, will coiled springs that require the same power to wind them up produce the same result?" Theoretically the result will be the same. Imperfection in the springs or the medium of transmission of the power may affect the result, but the principle of the indestructibility of force is consonant with the above statement.

P. D., of Canada.—"You have mentioned that good turbines realize 80 per cent of the theoretical power of the water. Am I to understand that such a wheel with proper appliances would raise four-fifths of the water used in driving it to the same hight as that from which it acted on the wheel?" No. The driving water would balance the column to be raised. 2d. We have no data from which to give the amount or value of coal used by this government for steam purposes. It has varied greatly within two years.

Business and Personal.

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

EXTENSION NOTICES.

Lavinia L. Bartlett, administratrix of the estate of Russell D. Bartlett, deceased, of Bangor, Me., having petitioned for the extension of a patent granted to the said Russell D. Bartlett the 14th day of March, 1854, for an improvement in machines for making shovel handles, for seven years from the expiration of said patent, which takes place on the 14th 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.

B. G. Fitzhugh, of Elliott City, Md., having petitioned for the extension of a patent granted to him the 28th day of March, 1854, for an improvement in harvesters of grain, for seven years from the expiration of said patent, which takes place on the 28th day of March, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 9th day of March next

Wm. H. Seymour, of Brockport, N. Y., having petitioned for the extension of a patent granted to him the 28th day of March, 1854, for an improvement in havesters, for seven years from the expiraton of said patent, which takes place on the 28th day March, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 9th day of March next.