MANUFACTURING, MINING, AND RAILROAD ITEMS.

During the week ending October 17, over 1,100 passengers arrived in California by the Central Pacific Railroad.

The London house painters held a meeting recently, for the purpose of forming a society of workmen to promote technical education in connection with house painting and decoration.

It is said that the railroad connecting the Hudson River railroad at Spuyten Duyvil with the Harlem Railroad, and the new Union depot to be built on Fourth avenue, will be begun this fall.

The citizens of Louisville, Ky., have voted on a proposition to subscribe $500,000 in aid of the projected Louisville, New Albany, and St. Louis airline railroad. The motion was carried by a majority of about 500.

The extent of omnibus travel in Paris may be judged from the fact that, during the year 1868, the number of persons carried in omnibuses amounted to 120,000,000, or nearly sixty-five times the population of that city.

Russia has established at Warsaw a mechanical school for women, with the object of training them in all kinds of handicraft that may be pursued without injury to health. The school is to be under the immediate supervision of the government.

It has been discovered by careful experiments in Charleston that the weight of a bale of cotton varies slightly with the temperature. A fall of ten degrees in the thermometer causes a bale of cotton to gain about a pound and a half in weight.

The San Francisco papers say that the first article of tinware manufactured from tin mined in the United States has just been completed in that city. It is a case to contain the Pioneers' certificate of honorary membership presented to the Hon. Wm. H. Seward.

The Austrian Lloyds Steam Navigation Company's fleet, at the end of 1868, consisted of 69 steam vessels of an aggregate tunnage of 62,220, and of 15,800 horse power, and at the present time the total number of vessels has been increased to 73, with a tunnage of 70,000.

The car shops of the Lake Shore Railroad were destroyed by fire on the 17th of October. Passenger and freight cars, lumber, car material, and tools were entirely destroyed. The loss is over $300,000; fully insured. One hundred and fifty workmen were thrown out of employment.

The *Ironmonger* suggests the desirability of constructing trains almost wholly of iron. They might be so constructed of this material as to offer greater resistance in case of collision without materially increasing their weight, while the danger from fire would be almost nil. Durability and economy are other advantages claimed.

The proprietor of an extensive cotton factory near Stockholm, Sweden, has purchased 12,000 acres of land in Dunklin and Stoddard counties, Missouri, where he will build factories, mills, etc., establish colonies, and carry on the cultivation and manufacture of cotton. The enterprise will give employment to 1,300 families. Some of these are on the way from Sweden.

Within the city of Portland, Maine, and a circuit of ten miles around it, there are about twenty brick yards, which produce about 20,000,000 bricks per year. They are all operated in the old-fashioned way, except the steam works at Stroudwater. These works give employment to 30 hands, and turn out about 33,000 bricks per day, which bring in Boston $2 a thousand more than common bricks.

An important experiment is about to be tried at the South Kensington Museum, London, to promote the instruction of women in science. By the permission of the Lord President, Professors Huxley, Guthrie, and Oliver are about to commence a course of lectures on natural science in November. The fees are low, and many ladies of high position in society have expressed their willingness to assist in the experiment.

Professor Maillefert continues his blasting operations at Hell Gate with, so far, very encouraging success. He has raised and carried ashore 1,575 cubic yards of fragments of rock, besides a large quantity which has been washed away after being broken up. Since August 2, the date of commencing operations, 279 blasts have been made on Way's Reef, besides 44 on Shell Drake, and 15 on Pot Rock. The probability is that in a few months longer a depth of 25 feet at low water will have been obtained.

A modification of Thenard's process for the purification of lamp oil is proposed by M. Michaud. He blows air through the oil while sulphuric acid is caused to fall into it, in very finely divided streams, to the amount of 1 or 2 per cent. Agitation is thus produced, and the froth is skimmed off as long as it forms. When the froth ceases to appear the oil is purified, and has only to be washed by a current of steam, so arranged as to keep the liquid at a temperature of 100° Cent., for about half an hour.

Professor Morren states that the actinic rays of solar heat can be thoroughly arrested by a thin layer of a perfectly limpid solution of sulphate of quinine, not more than a few millimeters in thickness. He says that a useful application of this property would be to manufacture double panes of glass which could contain the solution, and replace by them the less efficacious yellow glass used by photographers in their dark room. They would thus be enabled to work in a light instead of a dark room.

Recent American and Foreign Patents.

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

STOVE.—H. Stickney, Cleveland, Ohio.—This invention relates to improvements in magazine or base burning stoves, and consists in the combination with the same of a weight or follower to force the coal down and secure a uniform and reliable feeding of the same. It is well known that although these magazines are made larger at the bottom and gradually tapering to the top, yet where large lumps of coal, or bituminous coal of any size is used, they often fail to feed; in the case of the large coal by reason of the pieces becoming cramped and wedged together, and in the case of the soft coal by reason of the fusing of the parts into a mass, under the action of the heat. It is the object of this invention to overcome this clogging and secure a uniform feed.

PLOW.—Wm. B. West, Utica, Wis.—The object of this invention is to provide an improved rotary mold-board attachment for plows, as a substitute for a part of the common mold-boards, whereby an anti-friction roller may be employed to receive the earth from the front part of the mold-board, and turn it over more easily and without packing as the plows do as now constructed.

WATER WHEELS.—S. H. Barnes, Lanesboro, Pa.—This invention relates to improvements in water wheels designed to provide certain improvements in the gates calculated to facilitate the operation thereof, also the delivery of the water upon the buckets in a manner to have the best effect.

FRUIT DRYER.—R. H. Sipes and D. Defibaugh, Bloody Run, Pa.—The object of this invention is to provide a cheap and economical drying apparatus for fruit and other articles. The invention consists in a peculiar arrangement within a case of a heating furnace, radiating apparatus, and drying pans.

IMPROVED BRICK MACHINE.—John Whiteford, Pond City, Kansas.—This invention has for its object to furnish a simple, convenient, and effective machine for molding brick and distributing them through the yard.

MOWING MACHINE.—Joel V. Strait, Litchfield, Ohio.—This invention has for its especial object to improve the construction of the gearing of mowing machines so that a faster or slower movement may be given to the cutters at the will of the operator, and which may also be applied with advantage to other gearing where a different rate of movement is sometimes required.

RAILROAD CHAIR AND COUPLING.—Frederick Nicklin, Troy, N. Y.—This invention has for its object to furnish a simple, convenient, safe, and reliable chair for coupling the ends of railroad rails.

FLOUR BOLT.—Wm. H. Allen and William Stoddard, Winona, Minn.—This invention relates to the knockers, so-called, of the flour bolts of grist mills.

SLACK BELT ATTACHMENT FOR COTTON GINS.—J. W. Howard, Greenville, Ala.—This invention has for its object to furnish an improved attachment for cotton gins, to be interposed between the pulley of the gin and the driving wheel to bring the belt together and into proper position before it passes to the pulley, and which shall, at the same time, be simple in construction, easily adjusted, and effective in use.

COMBINED PLOW AND HARROW.—Albert Moore and Friederick Wendell, Chillicothe, Ohio.—This invention has for its object to improve the construction of plows, so as to make them more convenient and effective in operation, enabling them to harrow the furrow as it is turned, and enabling them to be adjusted to run deeper or shallower in the ground, even when at work.

TOOL FOR SHARPING HORSESHOES.—Butler, Dunham & Wann, Marshalltown, Iowa.—This invention relates to the sharping of the calks of horseshoes. The invention cannot be here well described without the aid of an engraving.

BOX OPENER.—Henry C. Van Giesen, Paterson, N. J.—This invention relates to a new and useful improvement in an instrument for opening wooden boxes, as, for instance, dry-goods boxes.

WASHING MACHINE.—Wm. Leighty, Ebensburg, Pa.—This invention relates to new and useful improvements in machines for washing clothes, and consists in the construction and general arrangement of parts.

ROTATING CULTIVATOR.—Theodor Uehling, Logan, Nebraska.—This invention consists in forming on a central eye and rotating on a central pivot a number of arms with cultivator teeth, either formed on or attached to their ends.

PUMPING ENGINE.—Robert Allison, Port Carbon, Pa.—This invention consists in so operating the valve gear of the engine, that the jar produced by concussion, which has heretofore proved so destructive to pumping engines, is avoided.

PEAT MACHINE.—John S. Kelly, New York city.—This invention has for its object to furnish a simple, convenient, and effective machine for scarping, or scarifying condensing, and partially drying peat upon the bed and without removing it therefrom, thereby enabling the peat to be prepared for market at trifling expense, by cutting the peat, compressing it, and forcing out the water from the porous, fibrous mass, while still in mass upon the peat bed.

STEAM HEATING APPARATUS.—John H. Clark and John B. Clark, Providence, R. I.—This invention relates to a new apparatus for heating houses of all kinds, and has for its object, first, and chiefly, economy in the use of fuel and in the first cost of the apparatus; also to secure the most efficient heating and radiating surface in a compact and cheap form, as well as safety from accident.

SUGAR-CANE PRESS.—William Aiken and William Bennett, Louisville Ky.—This invention relates to certain improvements in sugar-cane mills, and has for its object to simplify the construction of the whole apparatus, and especially to provide adjustable and good bearings for the rollers and facilities for lubricating and repairing the same.

SEWING MACHINE.—J. H. Butterworth, Dover, N. J.—This invention relates to certain new and useful improvements in the construction of sewing machines and their shuttles, and has for its object to provide a simple means of operating the shuttle, an adjustable and reliable tension apparatus for the needle thread, and a shuttle in which the thread cannot break or become spoiled when drawn from one end of the bobbin.

SLIDE VALVE.—John F. Allen, Tremont, N. Y.—This invention relates to a new equilibrium slide valve, which is so arranged that it forms four openings for the steam inlet, those on top conducting the steam through the body of the valve. The invention consists in the application of a flat valve, which is vertically perforated through the middle, and which rests on an elevated plane of the steam chest, and under a grooved or recessed cap, so as to admit steam at both ends both from top and bottom.

CUT-OFF NOZZLE FOR CANS.—John McLeod Murphy, New York city.—This invention consists of the application to the vertical nozzles commonly applied to the cans at the top, and provided with screw caps, which are removed both for filling and pouring the contents out of a laterally projecting tube or spout, arranged to rotate on the said nozzle to be brought into coincidence with a hole in the side thereof for pouring the contents out through the said spout, or for turning it away and closing the said hole by a ring encircling the nozzle, and to which the spout is connected, the same being arranged to operate without removing the screw cap, and especially adapted for pouring from the cans when inclosed in packing cases of wood, a slot being made in the side of the case below the cover, from which the spout may project when coincident with the hole in the nozzle

MILKING APPARATUS.—Eugene Spedden, Astoria, Oregon.—This invention consists in the attachment to the milking pail by a flexible tube of a funnel provided with flexible wristlets or straps for buckling around the wrists for holding the funnel close up to the udder to receive the milk and ensure the delivery in the pail.

PNEUMATIC PUMP.—J. A. Bailey, Detroit, Mich.—This invention relates to improvements in pumps, such as are actuated by the force of compressed air, and adapted more particularly for use in mining shafts, the object of which is to dispense with the employment of connecting rods of great length or other connecting mechanism, such as has been heretofore necessary to apply the power from the surface of the earth to the pumps located in deep shafts, also to facilitate the location of the pumps in any part of the shaft without reference to the conditions required when connecting rods are used, with respect to the placing and securing the said connecting rods.

WEATHER STRIP.—David H. Horner, Battle Ground, Ind.—This invention consists in an improved arrangements of suspending bracket arm-spring devices in combination with a hinged strip for closing it down over the door sill when the door is shut, and for raising it up to pass over the sill when the door is opened.

CANAL TUGS.—Stephen R. Kirby, New York city.—This invention relates, in part, to that class of tugs used in drawing canal boats, and, in part, to tugs for general traction purposes, and the first part of the invention is applicable only to tugs that have stern or central wells, in which the propeller wheels are placed.

SNAP CATCH FOR BREECH-LOADING FIRE-ARMS.—Wm. Golcher, St. Paul, Minn.—The object of this invention is to provide a simple, convenient, and effective means for fastening down the breech of guns of the class above named, it being so constructed, that it occupies but little space, is cheap, easily applied and operated, and not liable to break or get out of order.

CAN OPENER.—Wm. M. Bleakley, Verplank, N. Y.—This invention relates to a new implement for opening sheet metal cans, and is arranged to cut out larger or smaller pieces, as may be desired. The invention will, in a short time, be illustrated and fully described in the Scientific American.

APPARATUS FOR CUTTING AND DRESSING MILLSTONES.—John Hine, Cockermouth, England.—This invention relates to a new apparatus for facilitating the cutting or dressing of millstones by means of diamonds, or other hard stones or cutters, and consists in a novel arrangement and combination of parts for producing an adjustable and effective apparatus.

SPRING EYE GLASSES. — Louis Black, Detroit, Mich. — This invention consists in connecting the springs to the projections, by means of clamps, either pivoted to the said projections, and provided with eccentric clamping pawls, or with rivets, arranged to be tightened by wedging against wedge-shaped projections, widest at the outer ends, toward which the clamps, when connected around the narrower parts, are drawn, the ends of the springs, in all cases, being placed between the projections and the clamps, and provided with locking devices to prevent sliding out between the clamps and projections.

WATER WHEEL.—J. J. Kimball, Naperville, Ill.—The object of this invention is to provide an improved construction of water wheels, calculated to utilize the power of the water to a greater extent than is done by the wheels now in use, and, also, for more ready and economical application of the said wheels to the flume or pen stocks.

FRUIT DRYER.—J. Harvey, Martinsville, Ind.—This invention consists in an arrangement, in a rectangular-shaped sheet-metal case, of heating flues and ventilating passages, also, fruit-holding shelves.

SAW FILING MACHINE.—Henry C. Bell, Emporia, Kansas.—This invention relates to improvements in saw filing apparatus, whereby it is designed to provide a simple, portable machine, which may be readily attached to any saw for filing the same.

MUSICAL PANORAMA.—Franz Friederich Kullrich, Berlin, Prussia.—This invention relates to a new combination with a music box, of an apparatus for displaying, through a suitable opening, a series of pictures in succession so that, whenever the music is played, the panorama will be in motion.

WATER WHEEL.—José Tort, Mexico, Mexico.—This invention relates to improvements in water wheels, having for its object to utilize both the direct and reacting forces of the water.

WATER WHEEL.—A. J. Jack and D. E. Brand, Des Moines, Iowa.—This invention comprises an arrangement of buckets, whereby they serve the function of gates also, thereby dispensing with the cost of the same. It also comprises a peculiar form of the buckets whereby better results are attained, and, also, an arrangement of operating devices for working the buckets to open or close them whether the wheel is running or not.

CLOTHES-DRYING FRAME.—J. C. Longshore, Mansfield, Ohio.—This invention consists in an arrangement of parallel extensible and contractible frames of "lazy tongs" construction, united by transverse bars, and provided with supports capable of supporting the same when extended horizontally or vertically.

WATER-DRAWING APPARATUS.—L. Taylor, Jordan, Wis., and J. C. Richardson, Prairie du Chien, Wis.—This invention relates to improvements in apparatus for drawing water in buckets from springs or wells situated at long distances from where the water is to be delivered. The object of the invention is to provide simple and efficient apparatus, to be automatically operated by the turning of a crank to draw the water, convey it to the place for delivery, and to deliver it.

STRAW CUTTER.—Wilson Elder, Mill Hall, Pa.—This invention relates to improvements in straw cutters, whereby it is designed to provide more durable and efficient cutters of that class, in which a vibrating knife is worked by hand, than now in use. The invention has reference mainly to the arrangment of the fulcrum pin to prevent the nut from working loose, and the bearings around the fulcrum, whereby the cutter lever and cutter are maintained snugly against the metallic end plate of the box upon the bottom part of which the straw is cut.

ANIMAL TRAP.—Joel Manchester, New York city.—This invention relates to new and useful improvements in traps for killing or destroying noxious animals.

PIPE COUPLING.—Levi Abbott, Lewiston, Me.—This invention relates to a new and useful improvement in the mode of coupling pipes of lead, rubber, other material.

LAMP FILLER.—Henry W. Staples, Saco, Me.—This invention relates to a new and useful improvement in vessels for filling lamps, and consists in an air tube attached thereto.

STABLE HORSE TIE.—E. D. Cramer, Hackettstown, N. J.—This invention relates to a new and useful improvement in a safety device for hitching horses in stables and in other places.

COMBINATION BRAN STOCK BIT.—J. S. Zerbe, Delaware, Ohio.—This invention relates to a new and useful improvement in arranging bitts, and other tools and implements, for boring and performing other operations in wood and metal.

CLOTHES-LINE HOLDER.—Albert Cooper, Harrisburgh, Pa.—This invention relates to a new and useful device for holding clothes lines, and consists in arranging two circular disk wheels on a center piece, and pressing the line between two rigid surfaces, and thereby holding it by means of double reversed inclined planes on the face of the disks.

SOUND AND STRAIN DIMINISHING MACHINE.—Frederick Kohler and A. J. Alsing, New York city.—This invention has for its object to provide a simple mechanism for preventing the noise produced by machinery, or by the splitting of wood, chopping of meat, and other pounding devices, as well as for reducing the strain produced by the striking or pounding process.

SAW.—Hermann Cramer, Sonora, Cal.—This invention relates to a new manner of constructing the blade and handle of a hand saw, so that the same may be employed as a square bevel gage compass and measure as well as for sawing purposes, and also as a spirit level and plumb.

BOAT-DETACHING APPARATUS.—Daniel S. Brown, Astoria, Oregon.—This invention relates to a new device for facilitating the instantaneous detachment of boats from their davits, and consists in such a new combination of retaining jaws, with rods, levers, and catch, that the simultaneous detachment of both ends will be certain, and accidents on account of improper operation impossible.

DEVICE FOR PROPELLING VESSELS.—G. A. Milani, Frankfort, Ind.—This invention relates to a new mechanism for propelling small boats, flat boats, and other small vessels, and consists in the general arrangement of machinery, connected with an oscillating lever, that is worked by persons seated upon its ends. The motion imparted to the lever by the see-sawing process is transmitted to a pair of shafts which are geared together with the paddle wheel shafts.

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 correspondents 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 $1.00 a line, under the head of "Business and Personal."

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

J. S. B., of Md., asks an explanation for the stoppage of an exhaust steam pipe only three inches from the valve, occurring about four years after it had been in use. The deposit was as hard to chip as the iron itself and resisted the action of acids. We have not met with precisely a case of this kind, but presume it was a gradual accumulation of scale until the exhaust became reduced so much as to interfere with the working of the engine when it was discovered. It is a mistake to suppose such deposits may not be formed in the exhaust. Boilers which prime and carry wet steam into the cylinder, are liable to form a scale in the exhaust pipe; or even to throw out a fine floury deposit from the mouth of the exhaust pipe, consisting of an impalpable powder of carbonate of lime. See article on "Formation of Deposits in Steam Boilers," page 282, current volume.

W. C., of Mass.—Perfect exhaustion ought to reduce the pressure on the exhaust side of a piston to atmospheric pressure in a non-condensing engine, worked non-expansively, or to about fifteen pounds per square inch, during the greater part of the stroke. Practically however, there are circumstances connected with the working of steam engines, which make the mean pressure throughout the stroke on the exhaust side somewhat more than than this. It takes time for the steam to escape sufficiently to reduce the pressure to this point, and when compression is used by closing the exhaust before the completion of the stroke; or, when lead is used, the pressure will be increased at the latter part of the stroke. To compute the mean pressure, therefore requires the knowledge of many data, none of which you supply, and which you probably cannot obtain in the case specified.

W. E. S., of Conn.—The oxide of lead is, as explained in the paragraph referred to, litharge, or protoxide of lead. We do not know the proportion in which this is mixed with concentrated glycerin to make the cement referred to on page 235, current volume, but we presume it need only be mixed to give the proper consistence. If you make a trial of this cement, we should be glad to learn how it succeeds with you.