pede to run on one rail of a railroad, and thinks it can be propelled at a rate of a hundred miles an hour.

Professor "Ab" Brady, of Hanlon's, announces that the challenge of Fred. Hanlon will be kept open only one week longer, and if not then accepted Fred. will claim the championship.

It is stated that a velocipede clock has been invented, having numbered pins to correspond with the numbers of the velocipedes used in the schools and halls. These pins are stuck in holes drilled in the face of the clock, and prevent disagreements about time, as they indicate exactly when the time for which a machine taken has expired, and thus provide against slips of memory said to be common among velocipede learners.

Editorial Summary.

BROADWAY RAILROAD.—We had occasion a few days since to visit Albany, in reference to some matters pending before the Legislature, affecting the interests of our citizens, and we are obliged to confess that the atmosphere about the legislative halls was anything but wholesome. It was commonly believed that schemes of the most villainous character were "put up" and parceled out among members to secure their votes. The proposition of Mr. A. T. Stewart, of this city, offering to give $2,000,000 for the franchise of the "Broadway Surface Railroad," was deliberately voted down in the Senate —that body evincing a determined purpose to rush the bill through, regardless of the rights and interests of citizens and property owners. Governor Hoffman, however, has put a check upon these corrupt proceedings by vetoing certain railroad bills, and showing by able arguments that the franchises of this city are too valuable to be voted away without affording our heavily taxed citizens some remuneration. We honor the Governor for his high and statesmanlike action. The people will sustain him in the position he has taken.

YEAST FOR HOT CLIMATES.—*Morgan's Trade Journal* gives the following recipe for yeast adapted to hot climates: Boil two ounces of the best hops in four quarts of water for half an hour; strain it, and let the liquor cool down to new milk warmth. Then put in a small handful of salt and half a pound of sugar (brown); beat up one pound of the best flour with some of the liquor, and mix all well together. The third day add three pounds of potatoes boiled and mashed, and let it stand until the next day. Then strain, and it is ready for use. Stir frequently while making, and keep near a fire. Before using, stir well; it will keep two or three months in a cool place. I kept this two months in the cellar, where the thermometer ranged between 90 and 104 degrees. This yeast is very strong; half the usual quantity necessary for a baking is sufficient.

PRESCRIBING IN CHEAP PERIODICALS.—A most dangerous practice prevails of publishing in some of the cheap literature of the day various receipts for the cure of minor ailments, and it is one that is certainly upon the increase. Many of the prescriptions so given are absurd, and even dangerous; and this is not to be wondered at if we consider that the writer is often very deficient in all real knowledge of medicine, and that he is assisted by the errors of the printer, to whom the symbols of quantities are so many hieroglyphics. Our attention has been called to the following prescription, for instance: "Syr. of poppies, one ounce and a half; syr. of squills, half an ounce; of tincture of digitalis, thirty drops; a teaspoonful to be given to a child frequently." We can quite imagine a fractious baby being dosed into the effectual quietness of death by such a mixture.—*Lancet.*

CHARGED SILK.—It has recently been found that what is called charged silk, is very liable to spontaneous combustion. This article, some of our readers are aware, consists of silk, which, after having been exposed to the operations of bleaching, cleansing, etc., and losing considerable weight, is brought back to its original condition by the addition of certain astringents, such as catechu, gall nuts, and various salts, especially the sulphate of iron, by which means an increase in weight from one to two or three hundred per cent is sometimes effected. When dried, at about 212 or 225 degrees, this silk has been known to take fire spontaneously, as soon as the air had access to it. The result appeared due to the rapid absorption of moisture and an attendant oxidation.

FALSE diamonds always contain silicon. Their true character may be determined by putting them into a lead or platinum crucible with pulverized fluor spar, and pouring thereon sulphuric acid. The hydrofluoric acid generated by the reaction will corrode or wholly destroy the imitation, while a genuine diamond will be totally uninjured. The experiment should be performed in the open air or under a hood, as the fumes of the gas are highly deleterious. The operator should keep at a distance until the reaction has ceased, to avoid inhaling the poisonous gas. He should be careful also to avoid getting the hydrofluoric acid on his hands, as otherwise they may be severely injured.

CURIOUS PRODUCTION OF COLD.—Dr. Phipson has recently discovered that an intense degree of cold is produced by dissolving sulphocyanate of ammonium in water. Many salts, especially salts of ammonia, lower the temperature of water while dissolving; but, according to Dr. Phipson, no compound produces this effect in so marvelous a manner as sulphocyanate of ammonium. In one experiment, 35 grammes of this salt, dissolved rapidly in 35 cubic centimeters of water at 23 degrees Centigrade, caused the thermometer to descend in a few seconds to —10 degrees Centigrade. The moisture of the atmosphere instantly condensed itself on the outside of the glass in thin plates of ice.

HOP STEMS AS A MATERIAL FOR PAPER.—A Brussels correspondent of the *Organe de Mons*, a Belgian paper, says a gentleman from Marseilles, traveling through the country last autumn, purchased large quantities of a valueless substance which farmers were in the habit of burning in heaps to get rid of it, and has succeeded in making an excellent, strong, pliable paper, the most important qualification of which is that it costs a mere trifle. A capitalist has joined him, and a large factory is now being erected to make paper from this substance, which is nothing more or less than the old hop stems after the crop has been gathered.

NEW METHOD OF PILE DRIVING.—At a recent meeting of the Franklin Institute, a new method of driving piles was described. It substitutes gunpowder for steam in working the drop weight. A charge of powder is used to elevate the weight, and another charge throws it down again with greater force than it would acquire by falling alone. Ordinary musket charges are said to be sufficient to work a four hundred pound hammer in this way, and the strokes are made with greater rapidity than in the old method.

HON. ELISHA FOOTE retires from the office of Commissioner of Patents enjoying the respect and confidence of all who know him. He was an upright, faithful Commissioner, and had already cleared off a portion of the obloquy that attached to the office. Had he been permitted to remain we have no doubt that the character of the office under his administration would have greatly improved. Judge Foote was an honest official, and escapes from political life without a stain upon his honorable character.

DEATH TO CROTON BUGS AND ROACHES.—The *Journal of Applied Chemistry*, gives the following remedy against croton bugs and cockroaches: Boil one ounce of poke root in one pint of water until the strength is extracted; mix the decoction with molasses and spread it in plates in the kitchen or other apartments which are infested by these insects. All that have partaken of this luxury during the night will be found "organic remains" the next morning.

TO RESTORE FADED WRITING.—When writing by common ink has become faded by age so as to be nearly or quite illegible, it may be restored to its original hue by moistening it with a camel's hair pencil or feather dipped in tincture of galls, or a solution of ferro-cyanide of potassium, slightly acidulated with hydrochloric acid. Either of these washes should be very carefully applied, so that the ink may not spread.

ELDERBERRY INK.—A correspondent says: 'I write these lines with ink made of elderberries. My mode of making it is as follows: one-half gallon of juice of elderberries, as described in your paper; 1 ounce copperas, 2 drams alum, 20 drops creosote dissolved in a small quantity of alcohol. The ink kept the violet color several years, now it has a brownish appearance. It makes a fair copy.

A PITTSBURGH firm have recently made a steel roller for rolling metals at the Philadelphia mint, which, after a test of several weeks, has been pronounced superior to the Prussian. It is said to have been hardened by a new process, discovered by the manufacturers. Another roller has been ordered of the same firm for the same mint, to be used in rolling nickel.

ONE of the most forcible sayings that has ever emanated from the pen of Horace Greeley, is the following: "The darkest day in any man's earthly career is that wherein he fancies that there is some easier way of gaining a dollar than by squarely earning it."

PATENT CASES IN COURT.

THE ELLIPTICAL SUSPENDER CASE.

The United States District Court at Baltimore, Hon. Judge Giles, recently heard the evidence in the case of Chas. H. Cleveland *vs.* William P. Towles, being an action to recover from the defendant damages laid at one hundred and sixty-five thousand dollars for an alleged infringement of the patent granted to Cleveland in the manufacture of what is known as elliptical suspenders. Some six months ago the plaintiff applied to Judge Giles for an injunction restraining Towles from manufacturing or selling the article in question, which was refused; Cleveland then brought suit for the sum above named, and the case was called for a hearing in November last, but the plaintiff failing to respond, it was continued until the present term. Quite a number of witnesses were examined, and the case was argued by Wm. Henry Morris, Esq., on behalf of Towles. The plaintiff was represented by the Messrs. Brent. After hearing the testimony, Judge Giles directed that the following issues be tried by the jury: First, whether the patent granted to the complainant is for a new and useful improvement. Second, whether the patent granted to the defendant is an infringement in whole or in part upon the patent of the complainant. Third, whether the defendant has manufactured and vended suspenders in violation of the exclusive right conferred on the complainant by virtue of his patent. The case was then given to the jury, who decided all the issues in the negative, thus establishing the right of Towles to the entire use and profit of the patent under which he manufactures the elliptic suspender. The article manufactured by Towles and that of Cleveland are constructed on entirely different principles.

The Towles suspender is illustrated on page 56, Vol. XIX, SCIENTIFIC AMERICAN.

DIAMOND MILLSTONE DRESS.

Judge Olin, of the Supreme Court of the District of Columbia, has rendered a decree, declaring the letters patent of the United States, No. 73,542, granted to Samuel Golay on the 21st of January, 1868, for improvement in millstone dressing, invalid, inoperative, and void as to that part of the alleged invention set forth in the specification in the following words: "The main feature of my invention consists of a cutting tool, armed with a diamond or other hard stone, and so constructed and operating as to pick or cut grooves in millstones by a series of blows delivered in quick succession," and as claimed in the first and third claims. The proceedings in this case were instituted by a bill filed by James T. Gilmore against Samuel Golay—Henry B. Sears, assignee, and Sewell Brothers, licensees under Golay's patent—claiming that said Golay's patent should be declared null and void so far as it interferes with letters patent granted to said Gilmore on the 23d of May, 1863, about five years previous to Golay's patent.

Messrs. Riddle and Laski for complainant; Gifford and Bradley for defendants.

"THE HOOK-HEADED SPIKE CASE" DECIDED.

The hook-headed spike case, commenced in 1841 by Henry Burden, proprietor of the Troy Iron and Nail Factory, to recover damages of Corning & Winslow, proprietors of the Albany Iron Works of Troy, for the infringement of Mr. Burden's patent upon the machine for the manufacture of railroad spikes, has at length been finally adjudicated, and an award made to the complainant for his damages. The case has been twenty-eight years in the courts, during a large portion of the time, however, in the hands of the late Chancellor Walworth, of Saratoga Springs. It has become one of the *causes celebres* of the country. It was originally commenced by the late Samuel Stevens, of Albany, and upon his death, Judge Elisha Foote, ex-Commissioner of Patents, assumed charge of it for the complainant. The total amount awarded to the complainant, including about $50,000 costs, is $80,000—a very good offset to the water-power suit recently determined against Mr. Burden and in favor of Messrs. Corning & Winslow. Chancellor Walworth commenced taking proof on the 5th of April, 1854, and finished and filed his report in May, 1863. In October, 1867, Hon. Wm. D. Shipman, of New York, was appointed to review and pass upon Walworth's report. His decision, concurred in by Judge Nelson, as stated, has just been received.

MANUFACTURING, MINING, AND RAILROAD ITEM

MANUFACTURING IN RHODE ISLAND.—The Boston *Commercial Bulletin* says that the region including Woonsocket and vicinity—Cumberland, Smithfield, Blackstone, and Bellingham, has seventeen cotton mills, employing 3,500 hands, running 207,000 spindles, 4,030 looms, using 10 000,000 pounds of cotton, and making 40.000,000 yards of cloth per annum; eight woolen mills employing 2.050 hands, running 11 4 sets of cards and 450 looms, using 5,300,000 pounds of wool, and making 2,900,000 yards of fancy cassimere per annum Other cotton mills, which will have 55,000 spindles, are in process of construction. Just beyond the limit of three miles from Woonsocket are two more cotton mills with 30,000 spindles, and a woolen mill with 19 sets Other branches of manufacture are represented in this region by a rubber factory, which employs 150 hands and produces $500.000 worth of goods annually, machine shops, founderies, one boiler shop, one scythe shop, two manufactories of agricultural implements, one glue factory, two roof factories, one bobbin, one shuttle, one worsted mill, one tape mill, four or five sash and blind shops, contractors and builders, etc.

The mills now in operation in the White Pine silver districts are the Oases, ten stamps; Moore's, eight stamps, and the Metropolitan, fifteen stamps, at Silver Springs; the White Pine Silver Mining Company's ten stamps, and Felton's five stamps, at Hamilton. A thirty-stanip mill is being erected to crush ores from the Aurora mine. A twenty-stamp mill is being removed from Smoky Valley, and three other mills, numbering about fifty stamps, are being brought from Virginia City. But there is work for five times these one hundred and fifty stamps. The miners charge $50 a tun for reducing ores.

Senator Sprague, of Rhode Island, who is the largest cotton manufacturer in the United States, having 10,000 hands in his employ, says that the business is not profitable and the operatives are poorly paid. If there is not soon a change for the better, he predicts that the cotton factories will be suspended.

An Indiana speculator went to Chicago in the early part of the past winter and harvested 20,000 tuns of ice. During the panic among the ice dealers in the subsequent warm weather he sold his stock at $17,000 profit and went home. Since that time the price of ice has greatly declined on account of the cold weather and the gathering of a full supply.

The Wamsutta mills corporation at New Bedford, Mass., paid over $30,000 monthly internal revenue taxes in 1868.

A Fitchburg, Mass., manufacturer of bird traps, recently received a single order for 50,000.

A passenger car for the Erie Railroad, to cost $60,000, is building in Jersey city. It will be, it is said, the largest, costliest, and perhaps the most elegant car in the world.

It is said that more cotton will be planted in Texas this year than in any year since the war.

A letter from an old Nevadaminer, now in Japan, says that the Japanese islands contain as rich gold and silver mines as any in the world, but the policy of the government represses their proper development.

St. Louis has forty-three miles of street railroad, ten miles of Nicolson pavement, one hundred and thirty miles of macadamized road, and over one hundred miles of sewers.

Nevada boasts of still another mining district 125 miles south of White Pine, said to be as rich as anything yet found on Treasure Hill.

The Warren Thread Company of Worcester, Mass., was inaugurated by the late Hon. Ichabod Washburn. The present capacity is 1,200 dozen spools daily which will shortly be doubled.

The work on the Missouri river bridge at, St. Louis, is progressing favorably. The engineers expect soon to commence work on the center pier.

A large cotton seed oil mill is erecting at Mobile.

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; beside, 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 advertisemets at $1·00 a line, under the head of "Business and Personal."

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

S. S. G., of Mass.—We know of no recipe for preventing damp woods from splitting when exposed to heat. Such a discovery would be valuable.

J. M. B., of Mass.—The most fusible alloy with which we are acquainted is made of 8 parts of lead, 15 parts bismuth, 4 of tin, and 3 of cadmium. It is called "Woods metal," and is we think patented. It melts at 140 degrees Fah. and has a specific gravity of 9·4.

F. G. D., of Ill.—Two theories of the origin of the earth's magnetism have prevailed. The older, that of Hansteen, conceives the earth to be possessed of independent magnetism having its focus near the earth's center. It is now claimed that the crust of the earth and not its interior is the seat of terrestrial magnetism. To account for the pointing of the magnetic needle to the north, would be to assign a cause for the attraction, a positive pole for the negative pole of a magnet. This has never been determined.

P. R., of ———If you will refer to page 20, Vol. XIX, SCIENTIFIC AMERICAN, you will find your question in relation to apparent variation between position of crank and piston of an engine fully answered, and illustrated by a diagram.

J. P., of Ontario.—Securing belt splices by shoe pegs is not objectionable when rivets are not at hand; we have frequently practiced it with as good results as when sewed with lace leather. In "butting" or meeting belts the crossings of the lacings should be on the outside of the belt; the straight stretches on the inside next the pulley face.

W. H. P., of N. Y.—Case hardening to be quickly performed is done by the use of prussiate of potash. This is powdered and spread upon the surface of the piece of iron to be hardened, after the iron is heated to a bright red. It almost instantly fluxes or flows over the surface, and when the iron is cooled to a dull red it is plunged into cold water. Some prefer a mixture of prussiate of potash 3 parts, sal ammoniac 1 part; or prussiate 1 part, sal ammoniac 2 parts, and finely powdered bone dust (unburned) 2 parts. The application is the same in each case. Proper case hardening, when a deep coating of steel is desired, is done by packing the article to be hardened in an iron box with horn, hoof, bone dust, shreds of leather or raw hide, or either of these, and heated to a red heat, for from one to three hours, then plunged in water.

D. S., of Minn.—Common yellow brass for turning may be made of copper 2 zinc 1. For heavy work, tin, copper, and zinc are used in the proportions of tin 15, copper 100, and zinc 15, or tin 13, copper 112 zinc 1.

J. G. S., of Va.—The magnetic meridian does not correspond with the geographical meridian, except in very few places. It also is subject to variations. The magnetic needle is also subject to so many variations that an attempt to establish the true meridian by its use, would cause you considerable trouble. You can get it near enough for your purpose, by allowing the sun to shine through a vertical slit at noon when the sun is neither fast nor slow of clock, provided you can take time from a clock which is right with the sun or varies from it by a known rate. Or you may get it quite accurately by describing a circle on a level surface and placing a vertical wire, seven or eight inches long, in the center Through the top of the wire should be drilled a small hole to permit the

sun to shine through. The beam of light passing through the hole will cross the circle once before noon and once in the afternoon. Watch when it crosses the circle in the morning, and mark the point of intersection. Repeat the operation in the afternoon. The points of intersection will lie at equal distances from the true meridian. Join the two points by a line, and bisect it to find its middle point. A line joining this middle point and the center of the vertical pin will lie on the meridian. It is better to draw several concentric circles and perform the same operation with each to secure accuracy. They should be so drawn that the beam will cross them between the hours of 9 and 12 in the morning. The best time to do this is about the summer solstice. It will be sufficiently accurate for your purpose, however, to do it now. Glass lamp chimneys should be annealed at the time they are manufactured. We do not think you will succeed in annealing them in a stove oven.

E. P., of Ind.—We believe there are a number of makers and dealers in india-rubber tires for velocipedes, but we cannot remember their address. Better advertise for what you wish in our "Business and Personal" column.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per line will be charged.

Wanted.—A young man desires a situation to do repairs, keep the machinery in order, etc., in a hardware manufacturing establishment. I think I can give satisfaction. Address J. P. Link, Troy, N. Y.

Velocipede—$150 due-bill of $350 piano for one. Address N. F. P., box 182, Paterson, N. J.

Wanted—A good 2d-hand milling machine. Address, stating price, D. E. Whiton, West Stafford, Ct.

New patent side-delivery harvester rake, for one or two-wheeled harvester, for sale. Address Ed. Stewart, Fort Madison, Iowa.

A practical engineer and machinist, sixteen years' experience, desires a position as master mechanic or foreman. Very best of references furnished. Address J. H. Lord, Box 773, New York.

S. S. Pollard's celebrated Mill Picks, established 1837, 137 Raymond st., Brooklyn, N. Y.

Stock, Stencil,& Dies. E.H.Payn, Payn's Block, Burlington, Vt.

Wanted—Crushed Asbestos. Address E. A. Morgan, care D. U. Morgan, No. 832 Market st., Philadelphia, Pa.

Wanted—A competent man to run a veneer machine. Address P. O. Box 6,166, New York city.

Patentees and inventors of really valuable improvements of general utility, who wish to dispose of same, address, with full particulars, Postoffice Box 3,322, New York.

Wanted—Steady employ for portable saw mill, 3 to 5 years' contract, by the thousand. Address Box 8, Albion, Erie Co., Pa.

Manufacturers of soft gray iron, suitable for small castings, please send address to Miller & Kelrnan, Weedsport, N. Y.

J. D. Borin, Scottsboro, Ala., wants a first-rate Brick Machine.

Pickering's Velocipede, 144 Greene st., New York.

A. B. Fisher, practical millwright, 9 Ross st., Brooklyn, E.D., N.Y.

$1 per year.—Inventors and Manufacturer's Gazette. The cheapest, best, and most popular journal of the kind published. Send stamp for specimen copy. Sahiel & Co., Publishers, P. O. box 448, or 37 Park Row, New York.

Machine for bending fellies—Patent for sale—the whole, or State Rights. Address DeLyon & Werner, Canton, Miss.

To velocipede makers—a thoroughly competent carriage maker, who has applied for two patents—good especially for ladies—two-wheelers wants a situation. Has had large experience in first-class carriage shop as foreman. Best city references. Address G. W., foreman, 5492d Avenue.

Patentee of Dunbar's packing please address Dormit A. Johnson, St. Louis, Mo., till May 10, then at Springfield, Mo.

Peck's patent drop press. Milo Peck & Co., New Haven, Ct.

Wanted—Scientific American, First Series, Vols. 2, 3, 4, 5, and 6. Address W. Elliot Woodward, Boston Highlands, Mass.

Rights, or whole interest for sale—guide attachment for boring instruments. Address A. A., Postoffice box 4769, New York.

Diamond carbon, formed into wedge or other shapes for pointing and edging tools or cutters for drilling and working stone, etc. Send stamp for circular. John Dickinson, 64 Nassau st., New York.

A milling machine for sale, price $210. Also, 5-ft. floor drill lathe, price $75. Are Lincoln's make and used but few months. E. S. Miner, Burrville, Conn.

The new method for lighting street lamps! For illustrated circular, with letter from President Manhattan Gas Light Co., and Sup't of Lamps N. Y. City. Address J. W. Bartlett, Patentee, 569 Broadway, N. Y.

The Tanite Emery Wheel.—For circulars of this superior wheel, address "Tanite Co.," Stroudsburgh, Pa.

The manufacture and introduction of sheet and cast metal small wares is made a specialty by J. H. White, Newark, N. J.

The Magic Comb will color gray hair a permanent black or brown. Sent by mail for $1·25. Address Wm. Patton, Treasurer Magic Comb Co., Springfield, Mass.

For coppered iron castings address J. H. White, Newark, N. J.

W. J. T.—We think the patent asbestos roofing manufactured by H. W. Johns, of this city, is the best substitute for tin or slate. It is cheap and easily applied.

Tempered steel spiral springs. John Chatillon, 91 and 93 Cliff st., New York.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Machinists, boiler makers, tinners, and workers of sheet metals read advertisement of Parker's Power Presses.

Mill-stone dressing diamond machine, simple, effective, durable. Also, Glazier's diamonds. John Dickinson, 64 Nassau st., New York.

Winans' boiler powder, N. Y., removes and prevents incrustations without injury or foaming; 12 years in use. Beware of imitations.

The paper that meets the eye of all the leading manufacturers throughout the United States—The Boston Bulletin. $4 00 a year

Recent American and Foreign Patents.

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

SPRING SCISSORS.—Albert Murdock, North Bridgewater, Mass.—This invention has for its object to construct scissors which can be constantly kept in the hand without being in the way of other work to be done, so that they may be used on sewing machines for clipping threads, and the like purposes, without requiring the machine to be stopped, and also for other purposes. The invention consists in arranging on one blade, which is provided with a ring handle, another blade without a handle and held open by a spring.

VELOCIPEDE.—W. S. Hill, Manchester, N. H.—This invention relates to a new three-wheeled velocipede, which is so constructed, that it will, when passing over uneven ground or when describing a curve, not lose its balance, but will be adjustable to retain the center of gravity in the proper position.

SAW FILER AND JOINTER.—C. G. Miller, Brattleborough, Vt.—This invention relates to a new apparatus for filing and jointing circular saws, and has for its object to produce an instrument, which can be adjusted to all kinds of saws in any suitable position, and for files of any suitable length.

COTTON GIN.—R. W. Stough, Griffin, Ga.—This invention relates to an improved arrangement of means for communicating a lateral movement to the cotton, as it is fed up to the saws, in order to produce a more uniform action of the saws thereon.

HARROW.—B. B. Williams, Laclede, Mo.—This invention is designed to arrange harrows so that they may be readily folded into such a shape that they may be drawn over the ground, when it is required to remove them from one place of operation to another, without the teeth being in contact with the ground.

VALVES AND VALVE SPRINGS, FOR MELODEONS, ORGANS, ETC.—A. L. Swan, Cherry Valley, N. Y.—This invention relates to improvements in valves and the springs employed for closing them, such as are used in melodeons, organs, and other similar instruments, designed to produce valves which will close more tightly, and more durable and sensitive springs.

CARRIAGE COUPLING.—Henry J. Pringle and William Pringle, Columbus, Ohio.—This invention has for its object to furnish an improved coupling for connecting the forward axle to the reach, and other parts of the carriage, which shall be simple in construction and reliable in operation.

INSECT DESTROYER.—Jacob Hinds, Hindsburg, N. Y.—This invention relates to a new and useful composition for destroying insects on vines, trees, and shrubbery, and which composition, when used in connection with coal tar or pine tar, is a specific against the ravages of the "wire worm."

HAND TRUCK FOR SACKING GRAIN AND MOVING THE SAME.—Wm. Brocklesby, Jr., Caledonia, Ohio.—The object of this invention is to provide a simple and efficient hand truck, whereby grain, or other analogous matter, may be sacked and transported to any part of a warehouse, mill, barn, or other building, with convenience and dispatch.

WELL AUGER.—A. A. McMahen, Oxford, Miss.—The object of this invention is to provide a simple, and effective apparatus for boring wells and deep holes for other purposes.

HOUSEHOLD MACHINE.—William W. Wilson, Geneva, Wis.—The object of this invention is to produce an improved household machine, by combining, in the same machine, a washing machine and churn, and in so devising the mechanism of the same that they can be operated separately or together in a simple and effective manner.

DUMPING WAGON AND CAR.—Thomas H. Gary, Bristol, Md.—The object of this invention is to simplify and improve the device allowed to me January 22d, 1869.

PICKER.—A. H. Carroll, Baltimore, Md.—The object of this invention is to construct the picker in such a manner that it will keep the rod more constantly and uniformly lubricated than heretofore, and will not spatter the oil upon the cloth.

BROOM HEAD.—W. C. Spellman, Baltimore, Md.—The object of this invention is to provide a new and improved mode of fastening the brush to the head.

ADJUSTABLE BREAST COLLAR.—George W. Blaksley, Rockford, Ill.—The object of this invention is to provide for public use a breast collar so constructed as to be easier for the horse and to be adjustable in position.

PICTURE AND ADVERTISING FRAME.—W. H. Sadler and J. M. Drysdale, Baltimore, Md.—The object of this invention is to provide for public use, a cheap, convenient, and ornamental device for holding and displaying pictures, cards, or advertisements, and so constructed that at any time one or more of the pictures, cards, etc., may be removed or introduced without disturbing the others, and without the necessity of taking the frame down from the wall, or removing its glass or back, while at all times its contents are securely held, and cannot be tampered with by any one but the proprietor.

SELF-ADJUSTING WATCH KEY OR HOLDING TOOL.—John S. Birch, New York city.—The nature of this invention consists in so constructing a watch key, or instrument for holding small objects, that it shall accommodate itself to the size of the object held, holding it firmly and securely. This is very important in most of the manipulations connected with watchwork and in manufacturing and repairing jewelry, and is especially important in the winding and setting of watch movements, the arbors of which are usually dissimilar in size, and yet in all cases, from the delicacy of the mechanism requiring that the key should exactly fit the arbor.

CLOTHES DRYER.—Louis Winterhalder and David Wilson, New York city.—This invention relates to a new clothes dryer of that class in which a series of bars are pivoted to a frame in such manner that they can be folded apart to form the dryer or together when not to be used.

COMBINED WASHING AND WRINGING MACHINE.—H. O. Reddish, Linden, N. Y.—This invention has for its object to furnish an improved machine, simple in construction, easily operated, and effective in operation, and which shall be so constructed and arranged that the clothes may be thoroughly washed, and, at the same time, wrung out so as to pass from the machine into the clothes bucket or other receptacle prepared to receive them ready to be hung out to dry.

SEED PLANTER.—I. F. Herrin, San Antonio, Texas.—This invention has for its object to furnish a simple, convenient, effective, and accurate machine, by means of which the planting may be readily done in exact check row, and which will allow the dropping device to be instantly thrown into or out of gear when desired.

CULTIVATOR.—James B. Sexton, Pella, Iowa.—This invention has for its object to improve the construction of the parts of a cultivator, by means of which the plow beams and draft are connected with the truck so as to make the plows readily adjustable, and so as to enable the draft to be readily adjusted, according to the comparative strength of the two horses.

HAT SHAPING MACHINE.—George W. Gallagiere and E. W. Ruby, New Milford, Conn.—This invention has for its object to furnish a simple, convenient, and effective machine for "curling" hats, which will do quickly, accurately, and well, work that has heretofore been done only by hand.

VISE.—J. D. Beck, Liberty, Pa.—This invention has for its object to furnish an improved vise, which shall be so constructed and arranged as to securely hold irregular, beveled, or plain work, and which shall, at the same time, be simple in construction and easily adjusted.

APPARATUS FOR FORCING LIQUIDS FROM CLOSE VESSELS.—J. L. Treat, New York city.—This invention has for its object to furnish a simple, convenient, and reliable apparatus, by means of which beer or other liquids may be forced out of close casks, and raised to the desired position by the pressure of atmospheric air.

SLED BRAKE.—Samuel W. Barber, Heath, Mass.—This invention has for its object to furnish an improved self-applying sled brake, which shall be so constructed and arranged as to be applied by the action of the team in holding back, and which shall steady the load at the same time that it relieves the horses.

FANNING MILLS.—Harvey F. Siebert, Brady's Bend, Pa.—This invention has for its object to improve the construction of fanning mills so as to make them more effective and reliable in operation.

WEATHER STRIP.—E. Mears, Battle Ground, Ind.—This invention relates to a new weather strip for doors, said strip being so arranged that it will be closed over the outer edge of the sill, and still allow the door to be opened to the inside. The invention consists in the use of a hinged weather strip, provided with a spring in such manner, that it will, by the said spring, be swung up, and out of the way of the sill whenever the door is open, but when the door is closed, the weather strip strikes against a fixed bracket or stop provided on the door frame, and is thereby folded over the outer edge of the sill to securely close the crevice formed between the door and sill.

LOCK NUTS.—Almon Roff, Southport, Conn—The object of this invention is to so arrange a system of nuts on screws or bolts, that when the said nuts have been adjusted on the screws, they cannot be displaced spontaneously by jarring or other motion. The invention consists in the combination of set screws, with a right and left-hand nut, working on separate threads, or of one nut and one screw working in opposite directions for locking the nuts together when they are adjusted.

VELOCIPEDE.—John J. White, Philadelphia, Pa.—This invention relates to a new velocipede, which consists entirely of two wheels and their connecting axle, the axle supporting a frame in which the seat and driving gear are arranged so that they can be conveniently operated. The wheels can, with this arrangement, be made very large to obtain great velocity, and the whole apparatus can be made light and convenient.

CIGAR MACHINE.—R. M. Cole, Burlington, Vt.—This invention has for its object to construct a machine for rolling cigars in which both right and left-handed wrappers can be used, in which the cigar can be seen while it is being formed, and which can be retained in motion continually, even when no tobacco is rolled in it. The invention also consists in rolling the cigar within an endless apron, which is so held between suitable forms or molds that it imparts to the cigar the requisite shape. The apron is guided over rollers, which impart continuous motion to it, and of which some can be shifted without straining and interfering with the motion of the apron.

ELECTRIC ORGAN ACTION.—Holborne L. Roosevelt, New York city.—The object of this invention is to apply electricity from a battery or other source to the operation of organs, so that the keys can be played at a suitable distance from the organ and without any difficulty. The invention consists in a novel manner of connecting the wires with the keys and pallets, by dropping them into cups that are partly filled with mercury, the wires on the keys being held away from the mercury by means of springs as long as the keys are not touched. When, however, a key is depressed, this wire is dropped in the mercury, and a current thereby established by which two coils are charged, to cause them to attract an armature.

BREECH-LOADING PISTOL.—John McGoveren, New York city.—This invention consists of an improved method of maintaining the barrel in its position in the stock, and of restoring it to the said position when displaced for loading.

NURSING TABLE.—Jeremiah Larkin, Unionville, S. C.—This invention relates to improvements in tables, to render them useful for sick persons, in helping themselves when unattended by nurses.

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88,767.—MOTIVE POWER.—John B. Atwater, Chicago, Ill.
88,768.—FEEDING TROUGH FOR HORSES.—Addison D. Barrett, Cambridgeport, Mass.
88,769.—KROUT-CUTTING MACHINE.—W. K. Baylor and Conrad Rapp, Batesville, Ind.
88,770.—GATE.—Jacob Behel, Rockford, Ill.
88,771.—STEAM ENGINE VALVE GEAR.—Riley Bowers, Chillicothe, Ohio.
88,772.—BED BOTTOM.—Charles A. Brigham, Cleveland, Ohio.
88,773.—GATE.—Lorenzo D. Brooks, Syene, Wis.
88,774.—AUTOMATIC BOILER FEEDER.—Daniel L. F. Chase, Boston, Mass.
88,775.—BALING PRESS.—Peter K. Dederick, Greenbush, N. Y. Antedated April 8, 1869.
88,776.—FOLDING CHAIR.—Carl Dieterich, Roslindale (West Roxbury), Mass.
88,777.—HOLDER FOR STOVE LIDS.—Lindley M. Doudna, Washington, D. C.
88,778.—ANIMAL TRAP.—Josiah W. Ells, Pittsburgh, Pa.
88,779.—MODE OF ORNAMENTING CANDLES.—Arthur Field, Upper Marsh, Lambeth, and William Bryer Nation, No. 394 Old Kent Road, England; (said Nation assigns his right to said Field).
88,780.—TUCK-CREASING ATTACHMENT FOR SEWING MACHINES.—H. W. Fuller, Brooklyn, N. Y.
88,781.—ANCHOR.—J. Durrell Greene, Cambridge, assignor to himself and Charles H. P. Plympton, Boston, Mass.
88,782.—PORTABLE FENCE.—Frank W. Groff, Indianapolis, Ind.
88,783.—BOLT MACHINE.—Moore Hardaway, St. Louis, Mo.
88,784.—LAMP FOR COOKING PURPOSES.—Mary E. Hatch, Beloit, Wis.
88,785.—EARTH SCRAPER. — John Y. Herston, Warrick county, Ind.
88,786.—MANUFACTURE OF RAILS FOR RAILROADS.—Charles Hewitt, Hamilton township, N. J.
88,787.—SEEDER AND CULTIVATOR.—E. W. Hewitt and Geo. Gorgam, Pecatonica, Ill.
88,788.—CASTING TWEERS.—Wm. M. Johnston (assignor to himself and David P. Estep), Pittsburgh, Pa.
88,789.—CARRIAGE JACK.—A. W. Keeler and Jacob Eckert, Lafayette, N. Y.
88,790.—CORN SHELLER.—Elisha Kelley, Locust Grove, Ohio.
88,791.—COMBINED KNOB LATCH AND LOCK.—J. B. Kelley, Brandon, Vt.
88,792.—FLOUR BOLT.—Ira B. Ketchum, Rochester, Minn.
88,793.—HAIR DYE.—Joseph Lory, Memphis, Tenn.
88,794.—PLOW.—Benjamin F. Masters, Middleport, Ill.
88,795.—MACHINE FOR MANUFACTURING ROOFING TILE.—Charles Messenger, Cleveland, Ohio.
88,796.—WAGON BRAKE.—C. H. Mills, Ravenna, Ohio.
88,797.—SLED BRAKE.—S. A. Mitchell, Alstead Center, N. H.
88,798.—PLATE FOR ARTIFICIAL TEETH.—George Morrison Lockport, Ill.
88,799.—METAL BIRD HOUSE.—John Murdock, Jersey City, N. J., assignor to John Savery's Sons, New York city.