

RECENTLY PATENTED INVENTIONS. Electrical Devices.

BATTERY-CELL.—E. WHITMAN, Lynn, Mass. This invention relates to cells admitting of general use, and more particularly to a form of cell serving as a cathode and also as a containing vessel. The outside portion of the cell is applied while in a liquid state and permeates the pores of the porous carbon. The effect of the glass is to prevent leakage of the battery fluid through the porous carbon, and to fill its pores. The interior of the porous carbon is provided with ribs to increase the internal surface of the cell. The bottom of the cell is rendered comparatively thick, so as to confer greater strength.

STORAGE BATTERY.—A. V. MESEROLE, New York, N. Y. In this case the object of the invention is to make an efficient and desirable battery of comparatively light weight in which the mechanical strain is distributed by a novel arrangement of the electrodes and their supporting devices. The invention relates to storage batteries and further to the composition of the active material to be used therein.

Hardware.

IMPLEMENT FOR DETACHING BOARDS FROM STRUCTURES.—F. GUENTHER, Springfield, Ill. In the present improvement the object is to provide a practical device having features that adapt it for easy use to remove boards that have been nailed to studding, joists, or the like, the work being greatly facilitated and accomplished with little exertion in a superior manner without injury to the material or bending the nails.

Machines and Mechanical Devices.

COIN COUNTING AND DELIVERY MACHINE.—L. SALKER, Colorado Springs, Col. The present invention relates to counting and delivery machines for coins. One of the principal objects is to overcome numerous disadvantages and objections found to exist with many machines hitherto devised for similar purposes and to provide a comparatively inexpensive machine of this kind which is accurate as well as effective and reliable, and which may be easily manipulated and quickly regulated according to requirements.

BOLTING-MILL.—A. RENAULT, Chateauroux, and G. CUSSON, St. Genou (Indre), France. This apparatus comprises, essentially, a certain number of smooth-surfaced cylinders arranged horizontally and placed one above another. It is based upon a particular property of powdered impalpable substances, such as flour, which being thrown upon a smooth-surfaced rotating cylinder partly adheres to this surface, which carries them, while the least fine portions and the impurities do not possess this property and are thrown off with the portion of the flour not carried along. The apparatus purifies and sifts flour, cement, lime, phosphates, etc.

CRANE.—L. S. FLECKENSTEIN, Easton, Md. Mr. Fleckenstein's invention is more particularly an improvement upon a former crane for which he received Letters Patent. The present improvement pertains particularly to the friction-clutch by which the power mechanism is engaged with or disengaged from the hoisting mechanism, also to the means for engaging and disengaging the clutch and the arrangement of the winch or drum with certain connected parts forming the hoisting mechanism.

BALLOTING-MACHINE.—W. M. DOUGHERTY, St. Joseph, Mo. In this patent the invention relates to certain improvements in the balloting-machine disclosed in a prior patent granted to Mr. Dougherty. The present improvements lie in the devices for operating the numbering or counting means, and by these improved devices he provides against the possibility of casting a vote for more than one candidate for an office by a single voter.

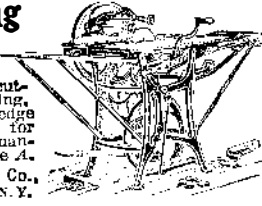
DRAIN-PIPE ATTACHMENT FOR REFRIGERATORS.—MARTHA McNAMARA, New York, N. Y. The intention in view in this case is to provide means for preventing the overflow of the usual drip-pan by the continued accumulation of water after the pan shall have become filled. Further, to provide means for automatically opening a valve when the pan is placed in position below a refrigerator, the valve being closed by automatic devices when the water in the drip-pan reaches a certain level.

MACHINE FOR REGISTERING MAIL-MATTER.—D. Di BRAZZA SAVORGNAN, Rome, Italy. Mr. Savorgnan's purpose is to provide a machine easily operated by a person sending the mail-matter after the proper coin or coins shall have been inserted or after the postage shall have been otherwise paid, and, further, to so construct the machine that a copy or copies of the original receipt delivered to the sender will be retained in the machine and bound in book form, the retained copy or copies for use of the postal authorities. The mail-matter deposited will be consecutively numbered and numbers printed on receipts to correspond with numbers on the mail deposited.

ICE-CREAM FREEZER.—J. PRABE, Waco, Texas. Primarily the invention seeks to provide an apparatus in which the operation of freezing the cream may be continuous, and in its generic nature it comprehends a peculiar construction of a freezing-cylinder and means for feeding the refrigerant and the cream thereto and in which the several parts are so designed and co-operate whereby power is saved by

Wood-working Machinery

For ripping, cross-cutting, planing, grooving, boring, scroll-sawing, edge routing, mortising, for working wood in any manner. Send for catalogue A. The Seneca Falls M'g Co., 675 Water St., Seneca Falls, N. Y.



ENGINE & FOOT LATHES. MACHINE SHOP OUTFITS. TOOLS & SUPPLIES. SEBASTIAN LATHE CO. CINCINNATI, O.

Foot and Power and Turret Lathes, Planers, Shapers and Drill Presses. SHEPARD LATHING CO., 135 W. 2d St., Cincinnati, O.

The Expenditure of a Dollar—More or Less—In The Getting Of Good Belting

is of very little consequence. The thought should be, a good belt first, and price afterward, and when the combination of good belting and reasonable price obtains as in the case of SCHIEREN BELTING, there's no excuse for using anything but the best. Dixie Belt Leather Book Free. CHAS. A. SCHIEREN & CO., New York: 55 Ferry St. Chicago: 92 Franklin St. Boston: 192 Lincoln St. Pittsburgh: 243 Third Av. Philadelphia: 228 N. Third St. Hamburg: Pickhuben 4.

GIANT STEAM SHOVELS. Toledo Ohio, USA. The Vulcan Iron Works Co. Includes an illustration of a steam shovel.

Tis Misplaced Confidence to Niggle with an Old Style Brake. The relish of safety to life, limb, and gear is in The "Forsyth" Coaster Brake. It spins as free as a plain hub. Is adjustable and has less parts. Forsyth Hand Brakes, Chain Guards, Chain Guard Braces and other bicycle parts are the best and cheapest. Forsyth Man'g Co., Buffalo, N. Y.

PUNCTURE PROOF HEDGETHORN BICYCLE TIRES. TO INTRODUCE WE WILL SELL YOU A SAMPLE \$4.80. REGULAR PRICE \$8.50. STRONG, DURABLE, EASY RIDING, SELF-HEALING. NO MORE TROUBLE FROM PUNCTURES. MEAD CYCLE CO., Dept. T-22 Chicago, Ill.

ELECTRICAL BARGAINS. "Magic" Search Light (like cut) \$2.00. Vest-Pocket Electric Light 1.50. Telephones, complete 2.00 to 5.00. Door-Bell outfit, complete 1.00. Telegraph outfits, complete 2.00. Home Medical Batteries 90c. to 6.50. Battery Motors 75c. to 12.00. Bicycle Electric Lamps 3.50. Electric Hall and Porch Lamps 3.00. Electric Carriage Lamps 5.00. Electric Reading Lamps 3.25. Miniature Electric Railways 3.25. Electric Scarf Pins 1.50. J. W. SCRIBNER & CO., 145 Niagara St., Tonawanda, N. Y.

Engineering TAUGHT BY CORRESPONDENCE. The Science of Building the Rail Road. The Science of Building the Steam Engine. The Science of Building the Ship. The Science of Building the Bridge. The Science of Building the Machine. The Science of Building the House. The Science of Building the City. The Science of Building the Nation. E. H. BROWN, 100 West 11th St., New York.

SAFETY H & R Revolvers. SIMPLICITY DURABILITY. HARRINGTON & RICHARDSON ARMS CO., PATK AVENUE, WORCESTER, MASS.

TEMPLE-CLASPEYE GLASSES. Are the only glasses that really help the sight, the only glasses that do not pinch the nose, or pull the ears. Temple Claspeye Glasses revolve on a rigid yet very fine frame. They are the only glasses exactly adjustable to pupil-distance and line of vision, either up or down. They give perfect comfort and exact focus for reading, writing or sewing and all close work. When you look through any other glasses you look either across the edge, or diagonally. You look straight through the center of Temple Claspeye Glasses all the time. They touch no sensitive spot; being supported by a flexible fly foot at the temple. The weight is entirely on the cheek. You do not feel that you are wearing glasses, yet it is almost impossible for them to fall off. They are the only perfect eye glasses made, yet they cost even less than the old kind. Only the finest lenses are used. If you want perfect eye-glass comfort, and a stylish glass that really helps the sight, write for OUR FREE BOOK, "EYE LOGIC." It contains instructions from physicians, ministers and prominent people in every walk of life. It will tell you how you can preserve your sight and secure relief if you suffer from weak eyes. Address BRIGGS OPTICAL CO., Dept. 344 GA., ROCHESTER, N. Y.

ROYAL 4-CYCLE GASOLINE ENGINES. MARINE AND STATIONARY. We make a Special Reversible 3 H. P. Engine FOR LAUNCHES. ROYAL EQUIPMENT CO., 45 Golden Hill St., Bridgeport, Conn.

New 7 in. BENCH SHAPER. The best of its kind on the market. Furnished mounted on a column if desired. Special machinery built to order. Inventions Developed. Send for Catalog. L. E. RHODES, HARTFORD, - CONN., U. S. A.

BARKER MOTORS. Have more good points, fewer parts and require less attention in operation than any other. Launches, Valves, Specialties. C. L. Barker, Norwalk, Ct.

MORRILL'S "HERCULES" PUNCH. WILL PUNCH A 1/4 INCH HOLE THRU #18 GAUGE SHEET IRON IN SIMPLE OPERATION. INEXPENSIVE DURABLE INTERCHANGEABLE CONVENIENT. THREE SIZES OF DIES WITH EACH PUNCH. WRITE FOR FURTHER INFORMATION TO CHAS. MORRILL, 271 BROADWAY, NEW YORK.

FISHING TACKLE. We make everything dear to the Fisherman. The quality of Our Goods is most remarkable. You are consulting Experts when you consult us. Our Prices are Very Low. Send 5c. for 170 page illustrated catalogue. CLARK-HORROCKS CO., UTICA, N. Y.

Brown Folding Stools. The only perfect FOLDING STOOL ever put on the market. Suitable for use of salespeople behind counters, dining rooms, elevator cars, telephone booths, on the end of roll top desks, engine rooms, and all contracted quarters where a seat is occasionally required. BROWN FOLDING STOOL CO., 27 Dock Square, Boston, Mass.

scraping and stirring and discharging the cream before too much of the same accumulates within the freezing-cylinder.

Metallurgical Improvements. CONCENTRATING SLUICE-BOX.—C. M. CARTER, Sultan, Wash. The objects of the invention are, first, to insure the accumulation of the metallic particles in the riffles with a minimum agitation of water and without packing of the sand or gravel, and, second, to allow the collected minerals to be quickly removed or washed from the riffles without causing practically a cessation in the operation of the sluice-box.

GOLD-SEPARATOR.—J. W. KORPHAGE, Denver, Col. In this patent the invention refers to improvements in machines for separating and amalgamating free-milling gold from gravel, clay, and from pulp. In placer-mining clay containing gold and also clay with gravel containing gold are found, and great difficulty arises in separating the metal from the sticky clays. The object is to produce a device adapted to work under such conditions and make a thorough separation.

Of General Interest. HAIR-CLAMP.—W. J. KOENIG, New York, N. Y. The invention relates to a device for holding and ornamenting hair braids; and it constitutes an improvement over two former patents granted to Mr. Koenig. The prime object is to simplify prior devices in this class, so that they may be made and sold at a low cost. The clamp may be fitted to braids of any size within a reasonable range. It is easily applied.

ARTIFICIAL LEG.—L. DUGGAN, Rocky Mount, N. C. An object, among others in this case, is to provide a novel construction at the knee-joint and also to provide means in the foot whereby to render the cushioning operation more effective in the use of the device. No disagreeable click will be heard as the leg straightens into standing position.

PNEUMATIC MASSAGE APPARATUS.—F. H. CRABTREE, Anacosta, Mont. The inventor has especially in view the provision of a massage apparatus which may be used with convenience and safety and which through the peculiar correlation of its parts will when in operation cause the tympanum of the ear and small bones of the inner ear to vibrate or move, this movement being produced by the apparatus alternately creating a pressure and a vacuum.

HAT-RECEPTACLE FOR AUDITORIUMS.—J. T. HENDERSON, 312 Suydam Street, Brooklyn, N. Y. This receptacle is connected with theater chairs and the like. The body forms a square connected with a wire to the under part of the seat. A hat, cape, or light coat may be put into the opening in front. The main object is to avoid the necessity of ladies holding their hats in their laps and thus escaping cloak room annoyances. Silk hats and other articles are kept absolutely safe and sound, and against any interference from persons seated in the rear. Any size hat is held. In panics the boxed articles are not encumbrances, and conduce to speedy exit.

DISPLAY-STAND.—W. G. WINANS, Spokane, Wash. In this instance the invention is an improvement in display-stands for use as a medium for exhibiting articles offered for sale. The advantage in this over the stands in common use consists in the apparatus being adapted to be held at any point of a store or shop counter, or slid along to any required place, or clasped firmly while the top portion may be revolved at will for showing goods or obtaining easy access thereto.

VEST AND DRAWERS HOLDER.—A. LUSTIG, Corsicana, Texas. This invention is an improvement upon that for which Mr. Lustig received a former Letters Patent. The clasp arm is pivoted to the main bar, so as to swing free thereon, the bar being provided with a slidable extension, whereby its length may be varied, also with fixed pins, projecting oppositely, whereby the device may be quickly attached to and detached from a vest and held by tension of arm carrying the clasp. In one of the forms the device is without pins or attachment means and adapted to be inserted and held in a pocket formed in the vest's inner side next its front edge.

CAMERA.—W. F. FOLMER, New York, N. Y. The stereoscopic camera is so constructed that in focusing the object will be perfectly blended, appearing with all depth, detail, and definition obtainable when the object is viewed through a proper instrument. The camera is provided with focusing mirrors having means to prevent any light except that entering through lenses to reach the plate. There are means for bringing mirrors simultaneously to focusing position and holding them there, and means for releasing mirrors from focusing position and carrying them to an upper light-tight position out of the cone of light of the lenses.

ATTACHMENT FOR WINDOW SHADES.—G. F. DICKINSON, JR., Morristown, N. J. The particular application of this improvement is to an article adapted to be attached or fastened to the stiffening strip or stick placed at the bottom of a shade, whereby the cord connected to such stick is so arranged that it may stand the strain without tearing the shade. The practice is to insert a screw-eye or hook in the lower edge of a curtain stick and to connect the shade-cord to such eye, but after short use the hook

will be pulled from the stick and the curtain damaged. The present invention overcomes this disadvantage.

DENTAL HANDPIECE.—L. H. CRAWFORD, Dallas, Texas. This handpiece is adapted for holding a bur or other form of abrading-tool for preparing teeth for filling, crowns, etc., the same being so constructed that the bur may be adjusted at various angles ranging from naught to one hundred degrees and still work steadily. Dr. Crawford provides for this purpose an adjustment easily and quickly made, and the instrument may be clamped for holding the bur fixed at the desired angle. The adjustment reduces friction and wear.

HEATING-STOVE.—J. COCKRELL, Fargo, N. D. In this patent the invention relates to heaters designed to warm and ventilate rooms of buildings; and the object is to secure the greatest heating results and also economy of fuel. The improvement consists of the particular arrangement of the cold-air jackets, in which cold air is heated and discharged into the hot-air pipe to be carried to the most remote parts of the house.

SKATE.—T. SPACIE, Globe, Ariz. Mr. Spacie's improvements are intended more especially for use with ice or "runner" skates, though applicable in part to "parlor" or roller type; and an object is to provide a skate with effective and reliably-operating devices for enabling the same to be readily fitted to the soles and heels of shoes of different sizes and again detached therefrom and also to provide these devices with the capacity for long and repeated service.

SAFETY-PIN.—E. L. SANDS, Webb City, Mo. This pin is formed of a single length of wire, bent substantially at its center forming back and pin members, an inwardly-extended eye midway of the bend between the back and pin, a portion of the back member at the end opposite the eye being curved to form double loop members, and the end of the wire coiled around the back member and having a flattened portion extended between the loop members.

SUSPENSORY BANDAGE.—W. A. TAINSH, Portland, Me. The object in this case is to provide details of construction for a supporting appliance for male generative organs which adapt it for convenient application, afford means for adjustment of support to suit the physique of the wearer under all conditions of its service as a support, and permit an exchange of the suspensory sack to replace a soiled sack with a clean one when required.

HITCHING-POST.—T. C. BUTTERWORTH, San Francisco, Cal. When not in use this post will be nearly flush with the surface of the pavement, so as to involve no obstruction to traffic or injury to itself. It may be conveniently lifted and erected by a telescopic action from an underground chamber to an altitude for hitching teams or automobiles or support of bicycles, the parts being so designed as to avoid much leakage of water and the danger of freezing up and from which foreign matter may be easily removed.

TALLY DEVICE.—L. L. FROST, Highland, Kas. It is sought in this invention to provide a construction by which figures can be carried from a lower to a higher order without resorting to the use of subordinate figures, thus simplifying the device and the method of making calculations thereby. The present is an improvement on the tally device disclosed in a prior application for Letters Patent filed by Mr. Frost.

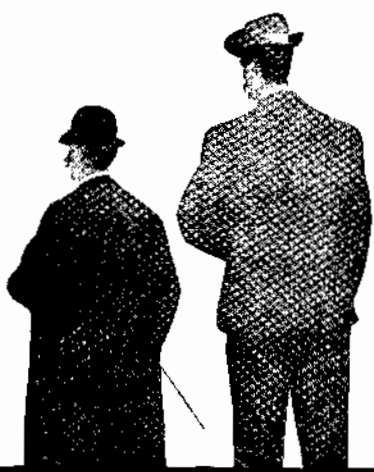
HOSE, ROD, OR PIPE COUPLING.—A. W. HUSMAN, Staunton, Ill. The intention of this improvement is to provide a coupling which will be exceedingly simple and economic, and wherein the parts of the coupling are capable of being expeditiously and conveniently brought into locking engagement and rapidly disconnected, the coupling practically comprising two main parts and a locking-ring for these parts.

HOTEL-REGISTER DESK.—J. I. HAYCRAFT, Linneus, Mo. This contrivance is an improvement in desks for holding registers or similar books in hotels or other places. In operation the register-desk is used upon a desk or counter, and it is desirable to turn the register so it can be made to face the clerk or the guest, and to facilitate this the top is mounted rotatably upon the base and means are provided to connect the parts. Spaces for advertisements will not only cover the initial cost, but will prove a source of income.

BLOTTER ATTACHMENT FOR DESKS.—J. I. HAYCRAFT, Linneus, Mo. This attachment is especially for use on desks employed for supporting hotel-registers and similar books. The blotter is always in position, cannot get out of the way, is retracted and incased when not in use, and can be quickly drawn to position for use upon a book or sheet of paper, or envelope, or otherwise.

KRAUT-DISPENSING BARREL.—T. W. MCFARLANE, Jackson, Mo. The object in view in this case is to provide a barrel or receptacle with a press mechanism which is adapted for holding the kraut below the level of brine or other preservative liquid, whereby the kraut may be kept in a submerged condition without the necessity of inverting the barrel or cask in which the commodity is packed.

GAME-BOARD.—D. STANGER, Glassboro, N. J. The invention relates to that class of game-boards comprising a table having an inclined top with projecting pins, ball-receiving pockets, and side alley-ways. The invention consists in the peculiar arrangement of projecting pins, ball-receiving pockets, and other features. The



Wouldn't You Like To Be Taller

WOULDN'T YOU LIKE TO BE TALLER, TO ADD FROM TWO TO FIVE INCHES TO YOUR HEIGHT,

to improve the general symmetry of your figure, to add to your general appearance! There is no longer any reason why any one should be short-statured. Mr. K. Lee Minges has at last perfected the work of his life in discovering a safe, sure and permanent method by which anyone can get taller without any inconvenience. It is such a simple method that one wonders why it was not thought of before. Yet it took a lifetime of study to perfect. Anyone can now enjoy these benefits; to do so necessitates no application of drugs; no internal treatment; no operation; no hard work; no big expense. Mr. Minges' method has been adopted by the leading educational institutions and gymnasia in Rochester and elsewhere. Anyone can now take it up.

Free To Any Short Person

The secrets which Mr. Minges has discovered will enable you to get taller, more graceful, and improve the symmetry of your figure, and this can be accomplished in your own home, no matter what your age, your sex, your height may be. And in order to put these benefits within the reach of all there has been prepared for free distribution among short people a limited edition of a book explaining this discovery in detail. If you wish to add from 2 to 5 inches to your height, if you want to be graceful and have a symmetrical figure, if you want to be a "proper height to dance with," to be able to "see in a crowd," and to reach the correct height, you should write for this book at once. It fully explains how you can obtain these benefits, and is free.

Write to day, addressing THE CARTILAGE CO. Dept. 344 B, ROCHESTER, N. Y.

WONDER Acetylene Burners. Price ARE THE BEST 40c. each. Sold by good dealers or write THE STATE LINE MFG. CO. 9th & 10th Sts., Chattanooga, Tenn., U. S. A.

AERIAL NAVIGATION.—THEORETICAL and Practical Discussions. Pictures and descriptions of actually-built dirigible balloons and aeroplanes will be found in SCIENTIFIC AMERICAN SUPPLEMENTS, 1461, 1449, 1450, 1451, 1404, 1405, 1413, 1455. Price 10 cents each, by mail. Munn & Co., 361 Broadway, New York City, and all newsdealers.

Saved \$80 Per Day. That's one record of the DEAN BOILER TUBE CLEANER



the only device that will remove all scale from the tubes of a water tube or return tubular boiler. Our pamphlet "Economy in the Boiler Room," is most interesting to the man who "pays the bills." Write for it to-day.

THE WM. B. PIERCE CO. 319 Washington Street, Buffalo, N. Y.

MILLS FOR ALL MATERIALS. OUR BUSINESS IS TO MAKE MACHINERY FOR GRINDING GRAIN, CRUSHING ROCKS AND PULVERIZING ALL HARD SUBSTANCES. WE HANDLE ALL KINDS OF MATERIALS FROM GUN-TON-SEED TO ROOTS AND HERBS. BY AN UNEXCELLED PROCESS, IF YOU WANT ANY KIND OF A MILL OR GRINDING MACHINE, COME TO US AND YOU WILL GET THE BEST AND STILL SAVE MONEY. DEAL WITH US ONCE AND YOU WON'T CHANGE. SPROUT, WALDRON & CO. SEND FOR CATALOG NO. 4. MUNCY, PA.

We Challenge the World to Produce Our Equal! THE "U. S." FIRE EXTINGUISHER MFG. CO. Sole Manufacturers of the U. S. "AUTOMATIC" HAND FIRE EXTINGUISHER. Each U. S. Machine guaranteed tested to 350 lbs. Most efficient, durable and economical fire extinguisher in the world. It is absolutely safe, reliable. No other extinguisher like it. Safe, sure, simple, quick. CAN NOT get out of order. 134 WEST 23d STREET, N. Y. The offices of Scientific American are equipped with our "U. S." AGENTS WANTED EVERYWHERE

When You Go On Your Vacation Take An Ingersoll Dollar Watch. It is the best watch for travelers, on business or pleasure—it removes one worry—about the injury or loss of a valuable timepiece. The time has passed however, when its usefulness is limited to Sportsmen and Children, as it is being carried habitually by every class of people, fully meeting the average requirement for accuracy, appearance and durability. IT IS AN "EVERYDAY WATCH FOR EVERYONE." Sold by 50,000 dealers or postpaid by us. See that "INGERSOLL" is on the dial. 1004 B. Ingersoll & Bro. Dept. 25-31 Maiden Lane, N. Y.

ARMSTRONG'S PIPE THREADING AND CUTTING-OFF MACHINES. Both Hand and Power. Sizes 1 to 6 inches. Water, Gas, and Steam Fitters' Tools, Hinged Pipe Vises, Pipe Cutters, Stocks and Dies universally acknowledged to be the BEST. Send for catalog. THE ARMSTRONG MFG. CO. Bridgeport, Conn.

POWER. For any power purpose we offer The American Gas & Gasoline Engine, in actual service, it will be found simple, durable, economical of fuel, and a most satisfying power, easily operated, without the aid of skilled help. A modern up-to-the-minute explosive engine. We also build Vertical Engines. Catalogue sent of either, or both, to interested parties. AMERICAN GAS & GASOLINE ENGINE CO., Portland, Maine, 70 Kennebec Street.

ORIGINAL BARNES Positive Feed Upright Drills 10 to 50-inch Swing. Send for Drill Catalogue. W. F. & JNO. BARNES CO. (Established 1872) 1999 Ruby St., Rockford, Ill.

Patents, Trade Marks, COPYRIGHTS, etc., Address MUNN & CO., Solicitors of Patents. Office of the SCIENTIFIC AMERICAN 361 Broadway, New York. Branch Office: 625 F St., Washington, D.C. Hand-book Sent Free on Application.

CRESTMOBILE \$800. The BEST CAR Built in America. Proved by its Splendid Records. Tonneau for Four, \$850. Other LOW Priced Models. Export Prices \$80 Extra. CREST MFG. CO., Cambridge, Mass., U.S.A.

THE EUREKA CLIP. The most useful article ever invented for the purpose. Indispensable to Lawyers, Editors, Students, Bankers, Insurance Companies and business men generally. Book marker and paper clip. Does not mutilate the paper. Can be used repeatedly. In boxes of 100 for 25c. To be had of all booksellers, stationers and notion dealers, or by mail on receipt of price. Sample card, by mail, free. Manufactured by Consolidated Paper Pin Co., Box 121, Bloomfield, N. J.

1/4 H. P. Gas Engine Castings FOR \$15 WITH BLUE PRINTS. Cylinder bored and faced-off. Runs by gas or gasoline. Water-jacketed. 1/4 H. P. Castings—not bored or faced—\$16.00. Send for catalogue of engines, dynamos, electrical supplies. L. W. GILLESPIE & CO., 232 E. 4th St., Marion, Ind.

The CURTISS double cylinder 5 horse-power MOTOR. Weight 60 lbs. List price \$150.00. The most powerful cycle motor in the world. Holds World's Record of 10 miles in 5 m. 54.5 sec. Catalog of motors and complete motor cycle free. G. H. Curtiss Mfg. Co., HAMMONDSPORT, N. Y.

SIMPLICITY combined with HIGH POWER and DURABILITY "One Lever Drive" For particulars write Monroe Engine Co. 19 Harvard Place BOSTON, MASS.

special object is to provide a game-board to admit of the game of base-ball being played thereon and making a complete score from the game, such as the record of the outdoor game of ball.

Of Interest to Farmers. BEET-HARVESTER.—H. M. HELBIG, Tecumseh, and M. H. REED, Blue Springs, Neb. The invention refers to improvements in beet-harvesters; and the objects in view are first to provide means for digging embedded beets from the soil, and second, to provide means which insure the loading of beets on a suitable elevator or conveyor and also tend to loosen the dirt adhering to the beets. These inventors have also invented another beet-harvester, the object being to provide means for removing the tops of beets, while in the ground. An automatic adjusting mechanism makes the cutter devices slice the tops uniformly, however high they may project. The position of the cutter devices is regulated by hand. Means are included for ejecting cut tops and refuse out of the machine's path. Active parts of certain devices are kept from being obstructed by vegetable matter and the devices are arranged to automatically adjust and clear themselves from clods, earth and stones in the path.

Pertaining to Vehicles. SUPPORT FOR BICYCLE HANDLE-BARS.—R. H. TATE, Portland, Ore. The main purpose in this instance is to provide means of throwing the handle-bar in a line position with the front wheel or parallel with the line of travel of the wheel and automatically locking it in such position and returning the handle-bar at right angles to the line of travel of the front wheel or at right angles to its axle-support with equal ease, where the bar is again automatically locked in riding position.

VEHICLE-WHEEL.—L. LANGE, New York, N. Y. The present invention relates to a class of vehicle-wheels wherein the peripheral portion of the wheels is held to rotate upon the body of the wheel, and has for its object to provide details of construction for a wheel that adapt a rubber tire and its shoe to receive anti-frictional support on the wheel-rim, that is held concentric with a wheel-hub by a series of spaced radial spokes.

FASTENER FOR CLIP-BANDS.—C. L. POPE, Ely, Nevada. Mr. Pope's invention has for its aim the provision of features of construction for a clip-band fastener that may be readily applied to secure attachment of clip bands or rings upon wagon running-gear or the like, so as to hold in place trace-hooks or ring-eyes on the ends and centers of neck-yoke bars, whiffletrees, or on the ends of wagon-poles as may be desired.

RUNNER ATTACHMENT FOR AUTOMOBILES.—W. H. ANDERSON, New York, N. Y. The inventor's purpose is to provide a form of runner adapted to be fitted to the rear axle as a substitute for wheels and to provide the runners with propelling mechanism and driving devices for the mechanism, together with means for operating the devices from the driving axle of the automobile, the mechanism including means whereby the runners enter the snow or pierce the ice so as to sufficiently grip when the propelling-chain is operated to force the machine forward.

Prime Movers and Their Accessories. BOILER.—H. W. WHITE, Youngstown, Ohio. In this patent the invention relates to boilers, and more particularly to a type of boiler adapted for use in connection with waste gases from which it is desired to extract the heat. The construction includes an inner shell rising centrally and an outer shell spaced from the former. Horizontal tubes connect the space outside of the outer shell with the interior of the inner shell, and on the upper section of the outer shell a head of special form is provided. Ashes, cinders and scale are easily removable.

STEAM-ENGINE.—F. LANE, Carthage, and E. E. OAKES, Joplin, Mo. This is a new and useful engine of the type known as "flashers" or steam-engines which have no boiler proper and carry no permanent body of steam, but inject upon heated surfaces small quantities of water at each piston movement, which quantity is instantly expanded into steam to give a single impulse to the piston and which injections of water and steam impulses are repeated at every movement of the piston.

ROTARY MOTOR.—T. EASTMORE, Jacksonville, Fla. In this instance the invention has reference to improvements in rotary motors of the turbine type, one of the objects being the provision of a rotary motor of simple and durable construction, easily reversed, and arranged to utilize the motive agent to the fullest extent.

Railways and Their Accessories. CAR-STAKE.—J. E. PUCKETT, Richmond, Va. Mr. Puckett's invention is an improvement in flat railway-cars, and particularly in the stakes thereof for use in securing lumber, timber, and the like upon the flat platform. He provides a locking-rod adjustable or movable so it may be set to and secured in position to lock the stakes in their places or to position to release said stakes, so they may be adjusted out of the way, the locking-rod serving to secure the stakes to the car in the latter position and position for use.

AUTOMATIC PIPE-COUPLING.—C. O. COLE, Whatcom, Wash. Mr. Cole's invention relates to pipe-couplings for connecting air, steam, or other pipes of cars in a train with each other to form continuous pipe-lines. The object is to provide a coupler which is completely automatic in operation and insures a firm coupling of the pipes for the various lines without danger of leakage, allows automatic uncoupling on moving the uncoupled cars apart, and permits a manually-controlled release of the coupling members by the operator.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. **In every case it is necessary to give the number of the inquiry.**

MUNN & CO.

- Marine Iron Works, Chicago. Catalogue free.
- Inquiry No. 5460.**—For manufacturers of road graders, also of hand power drills for quarries.
- AUTOS.—Duryea Power Co., Reading, Pa.
- Inquiry No. 5461.**—For makers of gasoline or hot air engines of about $\frac{1}{2}$ horse power.
- "U. S." Metal Polish. Indianapolis. Samples free.
- Inquiry No. 5462.**—For makers of elastic webbing, such as used in suspenders.
- Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.
- Inquiry No. 5463.**—For parties desirous of putting a new article on the English market.
- WANTED.—Address of Manufacturers of Quaker Shade Roller. L. I. Manning, Morganfield, Ky.
- Inquiry No. 5464.**—For addresses of manufacturers of hardware specialties.
- Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.
- Inquiry No. 5465.**—For a cheap device for cutting paper 6 and 8 foot down to 2 foot pieces.
- American inventions negotiated in Europe. Wenzel & Hamburger, Equitable Building, Berlin, Germany.
- Inquiry No. 5466.**—For manufacturers of paper box machines.
- Novelties made in all kinds of metals. Special machinery for making of dies and wire forming. Estimates free. Metal Stamping Co., Niagara Falls, N. Y.
- Inquiry No. 5467.**—For manufacturers of peat machinery.

In buying or selling patents money may be saved and time gained by writing Chas. A. Scott, 340 Cutler Building, Rochester, New York.

Inquiry No. 5468.—For makers of thermostats for dry kilns.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway New York. Free on application.

Inquiry No. 5469.—For manufacturers of sporting gun and ammunition.

FOR SALE.—Patent machine for wrapping laundry soap. Will do the work of eight people. Ed. Nelson, 1104 Cherry Street, Kansas City, Missouri.

Inquiry No. 5470.—For manufacturers of electric runabouts.

We manufacture anything in metal. Patented articles, metal stamping, dies, screw mach. work, etc. Metal Novelty Works, 43 Canal Street, Chicago.

Inquiry No. 5471.—For manufacturers of self-registering turnstiles.

The largest manufacturer in the world of merry-go-rounds, shooting galleries and hand organs. For prices and terms write to C. W. Parker, Abilene, Kan.

Inquiry No. 5472.—For makers of steam excavators or navies, for trenching for sanitary work, about 4 feet wide by 16 feet deep.

The celebrated "Hernby-Akroyd" Patent Safety Oil Engine is built by the De La Verne Refrigerating Machine Company. Foot of East 138th Street, New York.

Inquiry No. 5473.—For a machine for hulling strawberries.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 13 South Canal Street, Chicago.

Inquiry No. 5474.—For makers of working model engines.

WANTED.—Man capable of taking charge of factory making special machinery, who can also take \$2,000 or \$3,000 interest in established plant. N. B. Harrington & Co., 106 Broadway, Buffalo, N. Y.

Inquiry No. 5475.—For manufacturers of glass novelties.

Manufacturers: We can satisfactorily represent and handle your account. Correspondence invited. Welbener-Patrick Company, Manufacturers' Agents, 172 Washington Street, Chicago.

Inquiry No. 5476.—For makers of hollow brass wire.

FOREMAN WANTED.—A thoroughly capable man to take charge of brass shop employing about fifteen men. Must be between 30 and 40 years of age, married. Reply by letter only, stating experience and references to Wm. H. Wilkinson Co., West Medway, Mass.

Inquiry No. 5477.—For makers of handles for artists' pencils, also parties making the machinery for making the same.

Inquiry No. 5478.—For manufacturers of or dealers in a patent dishwasher.

Inquiry No. 5479.—For machinery for making cotton batting.

Inquiry No. 5480.—For the manufacturers of the cigar lighter which was patented by Clyde J. Coleman, or makers of any other electric lighter.

Inquiry No. 5481.—For manufacturers of metal, nickel or aluminium egg shells.

Inquiry No. 5482.—For automatic vending machines for selling liquors.

Inquiry No. 5483.—Wanted, to purchase a hardware store.

Inquiry No. 5484.—For machines for perforating paper patterns.

Inquiry No. 5485.—For manufacturers of metal garter trimmings, as hooks, slides, supporters and non-elastic garter web.

Inquiry No. 5486.—For makers of paper chair bottoms, imitation leather chair bottoms, also fiber and other material used for the same.

FOR ALL KINDS OF FACES

WILLIAMS' SHAVING SOAP

Who Are We?

On receipt of your address and a 2-cent stamp we will send a correct list of the distinguished men shown here—and also a useful and ingenious little tool called the Triplet—a key-ring, letter-opener, paper-cutter and screw-driver combined, and an article that every man and boy will find many uses for every day.

What is Said of the Triplet

"I would not take a dollar for the Triplet. As a screw-driver it saved me a very serious accident two days ago."—KOLLIN W. MULFORD, Lebanon, Ohio.

"The Triplet has become like my pocket-knife, or watch or pencil—a necessity, and I would not care to be without it."—JAMES F. MCCARRIAR, Baltimore, Md.

ADDRESS

The J. B. Williams Co., Dept. 38, Glastonbury, Conn.

Williams' Shaving Sticks, Shaving Tablets, Toilet Waters, Talcum Powder, Jersey Cream Toilet Soap, etc., sold everywhere

What Do You Want To Buy?

We can tell you where to buy anything you want.

Write us for the addresses of manufacturers in ANY line of business.

Novelties, Special Tools, Machinery, Equipments, New Patent LABOR SAVING DEVICES.
MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, 361 BROADWAY, NEW YORK.

G. J. WEBER

SUCTION GAS PRODUCER



SIZES RANGING FROM 4 TO 400 H. P.

THE WEBER CHARCOAL SUCTION GAS PRODUCER

The Most Economical, Easily Operated and Durable Power Producer for Mining, Smelting and Manufacturing Plants. Leads All Others in Effective Working Force.

THE WEBER GAS ENGINE AND THE WEBER GAS PRODUCER COMBINED

100 HORSE POWER OPERATING 10 HOURS AT A COST OF \$5.00. Delivers 1-h. p. Per Hour on Consumption of One Pound of Charcoal, costing one-half cent per horse power per hour. Other Fuels may be used.

SOLD UNDER A POSITIVE GUARANTEE.

Engines, Hoists, Air Compressors and Pumping Plants. Double and Triple Cylinder Vertical Engines in Large Units. Engines to Operate Gasoline, Distillates, Naptha, Etc., Etc. State your power requirements fully; we will save you money.

THE WEBER CHARCOAL SUCTION GAS PRODUCER IS BUILT EXCLUSIVELY BY US.

There are many thousands of our Engines in use. Established 1884.

WEBER GAS & GASOLINE ENGINE CO.,
P. O. BOX 370 KANSAS CITY, MO., U.S.A.

Notes and Queries.

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(9380) L. E. G. asks: 1. How is a hand lead marked; that is, how are the marks and deeps laid off and how shown, also length of line? A. Sounding leads are generally laid off in fathoms below 5 and at 7, 10, 13, 17 and 20 fathoms, which latter is the usual length of the line with from 7 to 11 pounds weight. Deep-sea lines are usually 200 fathoms in length with 28-pound weights and marked at each 2 to 10 fathoms with leather and bunting tags so combined as to readily measure the fathoms as the line passes out. 2. How is a hand log marked? What is distance between marks, in feet or inches, on a log line to be used with a 30-second sand glass, or a 15-second sand glass? A. The hand log line is usually 150 fathoms long and should have 10 fathoms between chip and first knot for stray line. With a 30-inch glass the knot tags are 50 feet 8.03 inches apart and indicate sea miles or knots per hour. With a 15-inch glass the knot tags should be at one-half the above distance parts. 3. How is a 4 or 8 point bearing taken to tell distance of ship from land; that is, taken from bow to beam, or beam to quarter? A. The bow to beam or beam to quarter, or better, from bow to stern, may be taken as a measured base line and the angle of each end simultaneously taken from a shore mark, from which a triangle computation will give the distance. 4. What is the best material for a marine compass needle—ordinary soft iron or Norway iron? The compass cards I wish to use are 6 inches diameter and 1-32 inch thick pasteboard. Would needle $6 \times \frac{1}{2} \times \frac{1}{16}$ inch be about right size? Being a marine compass, needle will be glued fast to card, of course. A compass needle should be made of tool steel, hardened and tempered. The card should be drawn on fine drawing paper and pasted to a thin piece of mica. Fasten to the needle with small lead rivets.

(9381) H. F. H. asks: Is the althea the true "Rose of Sharon"? Or which is the true or original "Rose of Sharon" mentioned in the Bible? Some claim the althea, others narcissus, and some again *Scilla maritima*. Is there any place where a person could get a copy of the flower as it grew or grows on the plains of Sharon? A. The article upon the "Rose of Sharon" in Smith's "Bible Dictionary" begins: "There is much difference of opinion as to the particular flower intended." If this is the case we cannot decide. There are no pictures dating back to the time of the writing of the Canticles, and no way whatever of determining the species of plant denoted by the name.

(9382) A. M. W. asks: A trolley car leaves the track a few feet. The trolley pole can reach the overhead wire. In running it back upon the tracks, the conductor made a connection between the rail and car wheel with the iron rod used to turn the switch: was it of any use? With a stated current carried by trolley wire, will the motors of a car show more power by having the rails of the track wired together, or is the bonding of the rails to prevent damage by the return current to other structures? A. The intention is to use the rails of the street-car lines for a return circuit of the current to the dynamo. If the rails are well bonded together this will result. If they are loosely connected the current will leak off and go by some easier path. On the way, it will take to pipes, water and gas, and destroy them. The bonding is to keep the return current in its proper place. When the conductor used a bar of iron to connect the rail to the wheel of the derailed car, he closed the circuit between the motor and the return path in the track, thus enabling the motor to get power from the line. With the earth connection only the resistance would be too high to allow enough current to flow to run the motor.

(9383) R. S. L. asks: Is it not a fact that the battleships and armored cruisers of our navy are built and are building without armored smokestacks? Are not the extremely lofty stacks of our later construction designed to obviate the necessity of forced draft? Would not these tall stacks be immediately riddled in an engagement, and thus deprive the vessel of a large part of her steam power when most