RECENTLY PATENTED INVENTIONS.

Electrical Devices.

CABLE-LAYING IMPLEMENT.—W. C. STEVENS, Melrose, Mass. The invention relates to improvements in implements for laying electric cables or conductors either on the surface or below the surface of the ground, an object being to provide a device by means of which cables or the like may be quickly laid and covered when under ground, thus making the device particularly useful in military operations and for private and municipal uses.

RENT-COLLECTING MEANS FOR TELEPHONE SERVICE.—J. L. PEAVEY, Meridian, Miss. Mr. Peavey's invention is in the nature of an improved means especially designed for collecting the regular monthly, quarterly, or annual tolls from a subscriber for telephone service, of a simple and inexpensive character, that can be readily coupled up with the ordinary telephone-signal-bell housing, and which can be adjusted for use without disorganizing the usual arrangement of the telephone service.

ELECTROMAGNETIC APPARATUS.—J. MCINTYRE, Jersey City, N. J. The aim of this invention is to provide an apparatus designed for stimulating and vitalizing live animal, live vegetable, and other objects and matter by saturating, for instance, the whole human or animal object or the bed-soil of the plant-bed and the plants uniformly with electricity in its normal condition magnetism by the employment of frequency magnetism derived from an electric cable-coil in circuit with a source of variable electric energy or frequency electric current.

Of Interest to Farmers.

WIRE-STRETCHER.—J. MCD. SHAW and S. B. GOODE, Fannin, Miss. The object of this invention is the provision of a construction which will be simple, efficient, and cheap to manufacture and which can be made by an unskilled mechanic out of material which is usually at hand on any farm. It combines in one structure a wire-stretcher and a wire-splicer, as well as a post-puller. It can readily be knocked down and formed into a compact bundle to be transported from place to place.

INCUBATOR.—W. H. PHILLIPS, Belleville, N. Y. In this patent the invention relates to improvements in incubators for hatching the eggs of fowls, an object being to provide an incubator with a novel means for maintaining a constant circulation of air at an even temperature and in a proper moist condition.

TONGUE-SUPPORT AND SIDE-DRAFT CHECK FOR GRAIN OR GRASS HARVESTERS.—C. F. ORTMAN, Martinton, Ill. This invention relates to means for supporting the tongue or draft pole of a grain harvester and binder or a wide-cutting grass-mower, and has for its object to provide novel details of construction for a device of the character indicated, and particularly for a former patent granted to Mr. Ortman, which render this device more simple and effective.

MOTOR-PLOW.—S. E. KURTZ, Sac City, Iowa. One of the objects in view of the inventor is the provision of a self-contained agricultural implement in which the motor mechanism is so combined with the plowing or soil-stirring devices that the machine is capable of propelling itself and digging the soil at one and the same operation, these ends being secured without the use of traction wheels or other motor-driven devices that are liable to slip on the ground and fail to secure the draft necessary to make the gang of plowing devices operate in the soil.

EGG-PRESERVING CASE.—N. A. WIERMAN, Troy, Ohio. This is an improvement in the class of cases in which the eggs are held in cells in a case suspended on trunnions or journals whereby the case can be turned from time to time to prevent the yoke from settling to one side of the shell, in which position it soon spoils. Cell-partitions permit the eggs to be compactly stored, firmly held, and thoroughly ventilated and turned over without shock or jar.

CANE-CARRIER FOR SUGAR-MILLS.—H. FROEHLICH, Lihue, Hawaii. The more particular object in this case is to cause a uniform and even feed of cane to the crusher, whereby dispensing to a great extent with the necessity of manipulating the cane by hand. There are certain details of mechanism whereby the deposit of cane upon the carriers is effected uniformly and automatically and whereby the distribution of the cane after reaching the carriers and before reaching the crushers is rendered as uniform as possible.

Of General Interest.

APPARATUS FOR MAKING MOLDED COVERINGS.—J. W. WALLACE, Rutherford, N. J. The aim of this inventor is to provide an improved apparatus for making molded coverings for use on elbows, T's, valves, and other fittings on steam-pipes, brine-pipes, and other pipes and articles requiring insulation, the arrangement being such that the coverings can be quickly and cheaply manufactured and when finished can be conveniently applied and securely fastened in position.

CREDIT-BOOK.—T. G. KNIGHT, New York, N. Y. In this instance the improvement relates to blank books for the use of business-houses; and the object of the inventor is the provision of a new and improved credit-book arranged to contain credit information normally hidden from view, but readily accessible to the user of the book. It is preferred to have the leaves arranged in book form; but this may also be kept individually.

JEWEL-SETTING TOOL.—J. MCN. STEELE, Atlanta, Ga. The invention is particularly adapted for the setting of jewel-pins in the roller-tables of balance-wheels. The work can be done without removing either the hair-spring or roller-table, the balance-wheel and jewel-pin are held firmly in place while the shellac is flowing and setting, and the correct positioning of the jewel-pin is assured. Moreover, the heat can be so applied that it will raise the temperature of the balance-wheel but slightly, and thus avoids any injury from this source.

FOLDING UMBRELLA.—T. SUSEMIHL and R. L. SUSEMIHL, New York, N. Y. This invention has reference to umbrellas which may be folded for convenience in carrying, particularly when traveling. The handle sections being assembled the runner may be drawn down, and at the same time a slight shake will cause the outer rib-sections to fall into alinement with the inner sections. The frame may now be raised by the runner in the usual manner. The umbrella is closed in the customary way; and to fold the device the operations are substantially reversed.

MANUFACTURE OF CONCRETE ARTICLES.—J. L. SHOUGH and R. W. LEVITT, Somerset, Ohio. In this case the object of the invention is to provide certain new and useful improvements in machines for molding concrete articles—such as building-blocks, caps, sills, and the like—whereby the articles are pressed accurately to the desired shape and provided with an ornamental face.

SHOULDER-BRACE AND SUPPORT.—ANNIE STINTON, North Williamstown, Victoria, Australia. The invention is an improvement in shoulder-braces and supports, and has for an object to provide a construction designed to support the body, assist in the carriage, and supplement or replace corsets. In practice the straps may be of webbing, leather, or other suitable material, and buckles may in some instances be used in lieu of tapes as fastenings; but tape or ribbons are preferred, because of the ease with which the user can secure and adjust the device upon the body.

WATCH-FOB-ATTACHING DEVICE.—S. J. PERRY, Spokane, Wash. Mr. Perry's object in this invention is to provide a device that will be simple in construction and so arranged as not only to serve for attaching a fob chain or ribbon to a watch, but to secure the watch in a garment-pocket, thus preventing loss of the timepiece by accidental dropping out of the pocket or through the manipulations of a pick-pocket.

REGISTERING-TARGET.—J. N. MICHEL, New York, N. Y. The object of the invention is to produce a target of improved form at which a projectile, such as a ball, may be thrown by hand and to provide in connection with such a target a registering mechanism by means of which the point at which the projectile strikes may be indicated.

TEMPORARY BINDER.—S. H. MCVITTY, Bryn Mawr, Pa. In carrying out the invention Mr. McVitty has in view so constructing the binder that it will be adapted to retain a number of periodicals without tearing or marring the same, thus enabling the periodical to be removed from the binder at any time and permanently bound. He provides a binder which will always leave a full view of every part of the periodical; a great advantage over binders now generally in use, in which the middle portion of the periodical is obscured by binder-fastenings.

METAL STRUCTURE AND ANCHORAGE THEREFOR.—J. L. HOLMES, Butte, Mont. The aim of the inventor is to provide a structure and anchorage therefor more especially designed for forming reservoirs, dams, and the like and arranged to withstand the pressure of the water without the use of abutments and other costly masonry and to allow of quickly erecting the structure and in the case of a dam to permit its erection without interfering with the flow of the water.

HYGROMETER ATTACHMENT.—J. H. GERRER, Elreno, Oklahoma Ter. The intention of this inventor is to provide an attachment to be applied to glass inclosures in such a way as to indicate the degree of moisture inside without having to open the inclosure—that is to say, the hygrometer is so formed as to be attached directly to the inside surface of the glass and to show the hygrometric scale throughout the glass, so that it may be conveniently read from the outside of the case or inclosure and without taking up any valuable space within the case. Designed more especially for cigar-cases, it may be for use in incubators, hothouses and the like.

MUZZLE.—W. A. FOSTER, Goreville, Ill. The invention refers particularly to improvements in muzzles for horses, mules, or the like, the object being to provide a muzzle of simple and light yet strong and lasting construction that may be readily adjusted as to size and when in position will not interfere with the portion of the bit in the animal's mouth and also to provide a close-fitting muzzle which cannot be removed by the animal when in use.

PIANO DAMPER-ACTION.—W. A. EARHART, Pittsburg, Pa. In this patent the object of the invention is to provide a new and improved piano damper-action for both grand and upright pianos arranged to automatically damp the strings not sounded at the time to keep the unused strings from vibrating in unison with the strings sounded by the hammers.

SWING.—H. H. DEFRANCE and C. O. GARRISON, Golden, Col. The swing is suspended from a carriage running on a track supported on a frame. It further consists of means for locking the carriage at one end of the track and holding it there until the swing moves to a predetermined height, when it automatically unlocks the carriage by its momentum on the forward movement after the swing has passed a perpendicular line through the center of the carriage moves the carriage to the other end of the track, where it is again locked in a similar manner.

MAIL-POUCH FASTENER.—A. L. DAVIDSON, Lesterville, S. D. Mr. Davidson's invention has reference to novel means for the purpose stated, and has for its object not only to improve and simplify the fastening device, but to provide means whereby the pouch or sack may be quickly closed and secured or locked closed in one operation.

GAME APPARATUS.—W. H. CLAGETT, New York, N. Y. This invention relates to a game apparatus particularly adapted for indoor use and by which a friendly racing game may be played by two or more players and also through the medium of which the various possibilities in a running, trotting, or steeplechase race may be made apparent and properly counted.

PLAYING ATTACHMENT FOR MUSICAL INSTRUMENTS.—J. A. CAMERON, New York, N. Y. The aim of the inventor is to produce an attachment which can be connected with an automatically-playing instrument in such a manner that the player is not depending upon any controlling device, such as a perforated music-sheet, and whereby a person even without ability to play on the keys in the usual way can control the playing of proper notes by means of a mouth-piece somewhat resembling an ordinary mouth-harmonica.

DISPLAY-CARD HOLDER.—C. C. GOETZ, Natchez, Miss. While this device is intended, primarily as a holder for a display-card, it affords means also for supporting a small belt of the material to be sold, from which belt or roll small samples of the material may be detached. It combines two very useful features, namely: marks for the identification of the goods, and a suitable and handy receptacle for the samples. The fixtures are easily attached to the belts and sample after sample may be cut without removal of goods from the shelving.

HAIR-DRYING COMB.—A. WALLACE, JR., New York, N. Y. The invention has for its object the provision of an effective device by means of which women may conveniently dry their hair after shampooing or washing the same without the inconvenience of exposing the hair to air-currents or to the action of the sun, and without excessive rubbing with towels or the like.

NON-REFILLABLE BOTTLE.—F. L. SHORT, St. Louis, Mo. This device provides a closure which may be manufactured at a low figure, will not get out of order, and effectually prevents the refilling of the receptacle with liquid after the original contents have been poured out. Moreover it does not materially interfere with the free delivery of the liquid. After emptying the bottle to which the device is applied the former may be broken to release the closure, which may thus be used repeatedly.

SHOE-SUPPORTING BRACKET.—F. J. SIMS, New York, N. Y. The principal object of the invention is to provide a bracket formed of wire and characterized by great cheapness, while possessing great durability and high efficiency. A further object is to provide a bracket which is attractive and will grip a shoe very securely without injuring or marring the shoe in any way.

MILEAGE-DETACHER.—J. SHARKEY and J. A. MENEFEE, Eaton, Ohio. The purpose of the inventors is the provision of an instrument for measuring and severing railroad-scrip, particularly mileage-scrip, and to so construct the instrument that it will be light and compact and may be conveniently carried, which will be accurate in operation, and can be readily and expeditiously operated.

Heating and Lighting.

INCANDESCENT GAS-BURNER.—A. A. PRATT, New York, N. Y. The inventor's object is to provide a burner arranged to allow minute adjustment for producing a proper mixture of the gas and air, especially by preventing loss of force in the stream of the gas and a swaying thereof from an axial direction to prevent carbonization of the mantle and backflashing of the flame, also to regulate the amount of the light more or less without using the ordinary cock of the gas-fixture.

STEAM-HEATING APPARATUS.—W. SHURTLEFF, Moline, Ill. In this instance the inventor has devised an improvement comprising means connected with the usual steam-heating apparatus whereby air and surplus steam are drawn off from the radiators and boiler automatically, this operation occurring intermittently at any predetermined steam-pressure.

FURNACE ATTACHMENT.—G. WOLF, New York, N. Y. This invention relates to improvements in attachments for heating-furnaces for supplying atmospheric air to the interior or combustion chamber of the furnace, an object being to provide a device for supplying air in a highly-heated condition directly over the products of combustion, whereby there is a complete mingling of the air with the gases, the combustible gases being burned.

GAS-GENERATING FURNACE.—J. H. FOSTER, New York, N. Y. The object of this invention is to secure a perfect impact of the products of combustion on the boiler-tubes, and to provide a perfect combustion at high temperature, insuring a perfect oxidation of the fuel. The prime features are to provide a burner or retort that fires its gases parallel with its base and against highly-heated walls, which by radiation and deflection conduct the products of combustion uniformly to the boiler, dispensing with all baffle-plates, as the side walls act largely in such capacity.

Household Utilities.

DISAPPEARING WINDOW.—J. J. MULLER, New York, N. Y. In this case the improvement refers to the construction of window casings and sashes, together with their attachments, the object of the invention being to produce an arrangement whereby the sashes may disappear in the casement of the window or in a wall in order to increase the area of the opening of the window.

COMBINED SHADE AND CURTAIN HANGER.—T. V. EDWARDS, St. Louis, Mo. The inventor employs substantially duplicate horizontal members with means for attachment thereof to opposite sides of the facing of an ordinary window-frame and having stationary supporting means for the ends of an ordinary shade-roller. Mounted upon said horizontal members are adjustable members, also having means for supporting ends of a roller or the like, while additional adjustable members are mounted upon the horizontal members and with means for supporting the ends of a curtain rod or pole. The elements employed are strong, durable, light in weight and easily applied for use.

METALLIC WINDOW FRAME AND SASH.—P. A. TRACY, New York, N. Y. The invention has for its object the provision of a thoroughly fireproof window-frame and sashes cooperating therewith of durable and simple construction, in which the parts are so designed and arranged that the window-frame occupies a minimum amount of space and is adapted for use under a great variety of conditions.

Machines and Mechanical Devices.

LIFTING AND DROPPING MECHANISM.—A. D. DUCHOW, Sonora, Cal. Mr. Duchow's invention relates to improvements in lifting and dropping mechanism—such, for instance, as the lifting and dropping of weights for pile-driving, drop-hammers, pumps, well-drills, etc.—an object being to provide a machine of this character that will be simple in construction and positive in action.

MACHINE FOR PLACING BRUSH MATERIAL IN BRUSH-BACKS.—C. W. SMITH, New York, N. Y. This inventor provides a machine practically automatic, wherein the brush-back is manually presented to receive brush material, and so constructs the machine that it separates bunches of material from the mass contained in the general receiver and which conveys the separated bunches to staples previously cut by the machine and placed in receiving position. A fork acts to force the brush into the staple, certain means close the staple over the bunch at a point between ends of the bunch. The fork delivers a bunch to a staple and finally combs the brush material upward from the staple. Nippers engage the combed bunch and hold it in combed position for a predetermined time.

SAW-TABLE.—C. SEYMOUR, Defiance, Ohio. Mr. Seymour's object in this invention is to provide a new and improved saw-table arranged to permit convenient and accurate adjustment to allow the saw band or blade of the swinging-machine to make straight or beveled cuts on the work. The present is a division of the application for Letters Patent of the United States formerly granted to this inventor, and it has many advantages in operations which include unlocking, swinging, locking or tilting of the work-table.

TYPE-WRITING MACHINE.—S. A. THOMPSON, New York, N. Y. The machine comprises a base upon which is mounted a fixed support for a type wheel, the support being of special construction whereby the type wheel is held inclined with reference to the platen and also whereby the same is returned to normal position on each release of pressure applied thereto for spacing purposes. The platen and paper-feed devices are mounted in a traveling carriage comprising a movable member constituting a guard for the paper passing over the platen, the member being of special embodiment whereby longitudinal step-by-step movement of carriage is effected and also whereby paper-feed devices are operated.

MACHINE FOR IMPRESSING OR EMBOSSING AND DRYING STEREOTYPE-MATRICES.—F. SCHREINER, Plainfield, N. J. Stated in general terms, the object of this invention is to provide a machine characterized

by simplicity of design, durability and inexpensiveness of construction, and by means of which perfect stereotype-matrices may be simultaneously impressed or embossed and dried, thereby effecting a material saving of time and expense in the production of such matrices.

AUTOMATIC DUMPING ORE-ELEVATOR.—D. B. McTaggart, Butte, Mont. In carrying out the present improvement the inventor has particularly in view providing an automatic side-dumping elevator or skip for hoisting, lowering, and automatically discharging coal, ore, or other materials in mines, which skip shall embody the essential features of simplicity, durability, and economy in installation. The safety-clutch mechanism prevents the car being dashed to pieces at the bottom of the shaft in case the cable parts.

MOLDING-PRESS.—C. H. Darling and H. Rhead, Trenton, N. J. The invention refers to a molding-press capable of use for molding all plastic substances, but especially applicable for the manufacture of tiles from clay. The object of the inventors is the provision of a power-operated molding-press with means whereby the operations ordinarily performed in hand-presses may take place automatically and without the intervention of any manual control.

SHIP'S WINDLASS.—C. W. Blake, Norfolk, Va. The principal object in this case is to provide means for overcoming the effects of pulls upon the anchor chains or cables, hawser chains or cables or other chains or cables of the vessel caused by undue surging of the vessel produced by motion of the sea, more especially when the vessel is at anchor, or being weighed, or when the vessel is being towed in a heavy sea or swell. The invention refers more especially to windlasses, hoisting-drums, winches, capstans, towing-machines, steering-gears, etc.

Prime Movers and Their Accessories.

SANDER FOR LOCOMOTIVES.—G. W. Frazier, Alamogordo, New Mexico. In this patent the invention has reference to sanding devices for use on locomotives to prevent slipping action of the drivers upon the rails. The invention has for its object to simplify and improve certain details of construction, more particularly the sand feed or cut-off valve devices.

ENGINE FOR OPERATING CLAM-SHELL BUCKETS.—J. G. Delaney, Newark, N. J. This invention relates to an engine for operating clam-shell buckets, the same being equipped with a traversing and a non-traversing drum and applicable to machinery for dredging and for excavating purposes generally, although the invention in whole or in part may be used at will in the arts.

BACK-PRESSURE RELIEF-VALVE.—C. A. Cunningham, Brainerd, Minn. The object of the inventor is to provide a valve arranged to completely relieve the piston on the steam-cylinder of all pressure over and above steam-chest pressure, thus insuring a steady running of the engine and utilization of the motive agent to the fullest advantage and relieving the piston of all pressure when the engine is drifting.

ROTARY INTERNAL-COMBUSTION ENGINE.—T. Wright, Jersey City, N. J. Mr. Wright's improvement relates to that class of internal combustion engines in which one or a plurality of cylinders and pistons are arranged to turn around a stationary crank-shaft, the piston-rods being connected to the crank and power being taken from the outer ends of the cylinders or from some part in connection with the cylinders.

BOILER-FURNACE. G. Wolf, New York, N. Y. This invention relates to improvements in attachments to tubular steam-boilers for supplying air in a heated condition to the boiler-furnace for promoting combustion and the burning of the gases. In certain devices air is so admitted as to pass off with the draft through the combustion-chamber, and does not effect the purpose designed. The object here is to provide a boiler attachment so arranged as to practically direct hot air into a portion of the combustion-chamber, causing a thorough mixture with and complete burning of the gases, resulting in intense heat, and economy in fuel.

FEED-WATER HEATER AND PURIFIER.—T. O. Organ, Philadelphia, Pa. In the present patent the invention has reference to an apparatus for heating boiler feed-water by the aid of exhaust steam, for filtering the feed-water, extracting the oil from the exhaust-steam, and also for receiving the drip from the heating system.

Railways and Their Accessories.

CABOOSE-LIGHT.—R. L. Massey, Grand Island, Neb. Mr. Massey's invention relates to lights adapted for indicating "safety" or "danger," and has for its objects ready and simplified means adapting the light to be set from within the caboose and which means shall operate automatically, restoring the light from "safety" to "danger" upon withdrawing the safety-signal and *vice versa* when the danger signal is withdrawn.

RAPID-TRANSPORTATION SYSTEM.—E. W. Curtiss, New York, N. Y. Broadly stated this invention comprises two platforms constantly rotating in contact with an endless train of cars, the object being to have platforms large enough so that while they travel at the same rate as a train of cars at their circumference—say fifteen miles an hour—their rate of motion near the center will be much smaller—say two an hour—so that people can board platforms near the center and proceed to the circumference, where they can board cars without any difficulty due to change in speed between any two moving parts.

RAIL-JOINT.—T. E. Laroy, Ehrmandale, Ind. The object had in view by this inventor is to provide means in the make-up of joints for railway rails whereby improved fastening of the rails may be effected by means which shall also brace the rails against spreading action. The rail-joint has advantage over similar joints in the means employed for locking the chair and braces to the rail and in the special construction, arrangement, and combination of parts forming the joint.

RAIL-JOINT.—W. J. Forsyth, New Iberia, La. The aim of the invention is to provide a rail joint or union which will form a very substantial and secure connection between the abutting extremities of adjacent rails for the purpose of increasing rigidity and preventing the undesirable jars or shocks which may occur at rail-joints as the wheels pass over them.

BRAKE-RIGGING.—J. M. Davies, Jr., Plattsburg, N. Y. In its preferred embodiment this invention comprises a combination with connections for transmitting the braking force, said connections including a shiftable part and devices for operating the part, the operating devices being themselves actuated by the relative movement of the car-body and trucks due to the absence or pressure of a load on the body. The present is a combination of a co-pending application filed by this inventor.

CAR-COUPLING.—J. Anson, Cooper, Canada. The object of the inventor is to provide features of construction for a car-coupling of the Janney type, which enable the use of the car-coupling when the knuckle-jaw is broken and, furthermore, which permits the improved knuckle to be employed as a coupling-link in case the car-coupling is to be coupled with the draw-head of an ordinary link-and-pin car-coupling or a Janney coupling having a broken knuckle.

RAILWAY-SWITCH.—W. K. Smith, Denver, Col. Mr. Smith's invention refers to improvements in switches for street-railways, his object being to provide a switch mechanism of novel construction adapted to be operated by a motorman on a car while the car is moving. Among the many advantages are those in relation to weather conditions. The opposite edges of a shifting-plate are sharpened so that when sliding on the cover any ice or snow thereon will be readily cut by the sliding plate. This cover is provided with an opening through which the tapered rail may be passed into position. This opening, however, is normally closed by another cover seated on a gasket of rubber or the like, to prevent the entrance of water.

Pertaining to Vehicles.

VEHICLE-BRAKE.—A. J. Jacobs, 33 Salisbury road, Redland, Bristol, England. The object in this instance is to provide perambulators, mail-carts, and other three or four-wheeled vehicles propelled by hand with means whereby on the release of the handle-bar or shafts a brake will be automatically applied to the wheels, the construction being such that the brake will be automatically held off whether the vehicle is propelled by means of handles either in the forward or backward direction or is tilted backward as in mounting a step or curb in the forward direction, or is tilted forward, as in mounting a step or curb in the rearward direction.

AUTOMOBILE.—Area Holmes and Albert Holmes, Carroll, Iowa. The invention of the Messrs. Holmes relates particularly to a knuckle-joint construction designed especially for use in connection with wheels of automobiles. The inventors have improved a joint of this character in certain particulars largely with a view of incasing the same and protecting it from dust and moisture and incidentally to provide an oil cup within the casing.

WHEEL.—J. C. Raymond, New York, N. Y. The invention is an improvement in wheels, and particularly in the means for securing the tire in place, and has for an object the provision of a simple novel construction by which the tire may be securely held and may be readily removed and replaced whenever desired. When the tire is inflated the parts are arranged to operate to prevent any displacement of the tire and yet permit the same to be quickly removed and repaired and replaced or another substituted, thus avoiding delays in use of the invention.

CHILD'S CONVERTIBLE CARRIAGE.—J. A. Crandall, New York, N. Y. In this instance the improvement has reference to a child's carriage; and the particular objects of the invention are to provide means for converting such carriage at will into a go-cart or a crib and the provision of means for permitting such changes to be made readily and without complicated adjustment of the parts or the use of instruments of any kind.

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.

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Handle & Spoke Mchy. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

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Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

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Special Machinery to order, manufacturing, metal stampings, etc., Brickner Machine Co., Tiffin, Ohio.

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Robert W. Hunt & Co. bureau of consultation, chemical and physical tests and inspection. The Rookery, Chicago.

Inquiry No. 6529.—For makers of the mechanical parts for loose-leaf ledgers.

If you wish to buy patents on inventions or sell them, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.

Inquiry No. 6530.—For manufacturers of printed cloth labels.

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

Inquiry No. 6531.—For makers of portable compressed-air house-cleaning machines.

I have every facility for manufacturing and marketing hardware and housefurnishing specialties. Wm. McDonald, 190 Main St., East Rochester, N. Y.

Inquiry No. 6532.—For information concerning the manufacture of a pressed-steel barrel of any description.

The Scientific American Supplement is publishing a practical series of illustrated articles on experimental electro-chemistry by N. Monroe Hopkins.

Inquiry No. 6533.—For a machine for removing chaff from the inside of the coffee bean, while the coffee is being ground in an ordinary mill.

U. S. Patent No. 779 301 on a pipe wrench, good investment, sale rights to purchaser.
Address F. U. McNabb, Box 296, Parry Sound, Ont.

Inquiry No. 6534.—For a machine for polishing wood-cutting and other saws.

Any metal, sheet, band, rod, bar, wire; cut, bent crimped punched, stamped, shaped, embossed, lettered. Dies made. Metal Stamping Co., Niagara Falls, N. Y

Inquiry No. 6535.—For makers of fine woolen yarns of various colors, also fine cotton yarns; also yarns of cotton and wool, mixed; the yarns to suit hand knitting machines of 120 or 144 needles.

We manufacture gasoline motor and high-grade machinery, castings best quality gray iron. Select patterns, and let us quote prices. Frontier Iron Works, Buffalo, N. Y.

Inquiry No. 6536.—For manufacturers of bicycle pumps.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 6537.—For a candy machine to make "cotton candy."

Wanted.—Articles to manufacture requiring heavy iron casting, where little or no machine work is involved. Will purchase or manufacture under royalty. Eureka Foundry Company, Rochester, N. Y.

Inquiry No. 6538.—For manufacturers of envelope-making machines and paper-cutting machines.

Wanted.—Revolutionary Documents and Autograph Letters Prints, Washington Portraits, Eighteenth Century Illustrated Magazines and Books, Early Patents signed by Presidents of the United States. Valentine's Manuals of the early 40's. Correspondence solicited. Address C. A. M., Box 773, New York.

Inquiry No. 6539.—For a machine for cleaning and dyeing clothes; also a plant for remodeling and cleaning hats.

Wanted, novelties to manufacture. The Mitchell Mfg. Co., Portsmouth, Ohio, manufacturers of specialties. Ideas developed. Inventions perfected and made patentable. Experimental work a specialty. Designs and models made. Manufacturers of slot machines of every description and wooden and metal novelties. Light machinery of all kinds.

Inquiry No. 6540.—For manufacturers of a spool-winding machine.

Manufacturers of Hardware Specialties Contract, Manufacturers and will market articles of merit.
Larimer Manufacturing Company,
153 S. Jefferson Street, Chicago, Ill.

Inquiry No. 6541.—For machinery for loading sand from the bank to railroad cars; also for machinery for screening and washing sand.

Wanted.—Position by man with 20 years' experience in erecting, repairing, and supervising heavy machinery. Prefer supervision large plant. Machinery, box 773, N. Y.

Inquiry No. 6542.—For manufacturers of art metal.

Inquiry No. 6543.—For makers or jobbers of red strawboard.

Inquiry No. 6544.—For manufacturers of tacking machines.

Inquiry No. 6545.—For makers of leather-carving machines.

Inquiry No. 6546.—For makers of stationary engines and elevators.

Inquiry No. 6547.—For makers of briquetting machinery.

Inquiry No. 6548.—For makers of carpet-cleaning and rug-weaving machinery.

Inquiry No. 6549.—For a machine for gumming envelopes when manufacturing them; also for machines for making envelopes, complete.

Inquiry No. 6550.—For makers of marine engines, such as used in battleships and ocean vessels; also for firms who build large vessels.

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.

(9536) X. Z. says: 1. Is there any system in use where electricity is used under hot water or steam boilers for heating purposes? How much more expensive would it be than egg coal at $6 per ton of 2,000 pounds? In the case I have reference to, it could not be applied direct, as there would be too much danger from fire, and besides it is too dry a heat. A. In reply to your questions, we would say that it would never be feasible to use electricity under hot-water or steam boilers for heating purposes unless the quantity of heat desired was very small indeed, or the cost of the electricity almost nothing. As a rule, steam is required to generate electricity, and only from 1-6 to 1-10, or in some cases 1-20, of the heat required to generate electricity could be again utilized for heating purposes. It would also be difficult to obtain electrically a temperature hot enough to generate steam. 2. Which is the most economical for heating—hot water under 2 pounds pressure or under 40 pounds pressure? A. There is no difference in the economy of hot-water systems between those which operate under high pressure and those which operate under low pressure. With a high-pressure system there is slightly less heating surface required. 3. Which is the most economical from a *fuel* standpoint (for heating a building say 10 x 50, even span, sides 4 feet, ridge 10 feet) steam or hot water? Are there any records of experiments carried on in a first-class, practical way regarding steam versus hot water? A. There is no difference in economy between hot-water and steam systems, both giving the same results when properly installed.

(9537) H. A. Wright says: Will you kindly advise as much in detail as possible, what is known about the tempering of bronze and copper? A. Bronze and copper cannot be tempered in the ordinary sense of the word. Suddenly cooling them in water does not produce the same character of change that is produced in tool steel when subjected to the same treatment. Both copper and bronze, however, can be hardened to a considerable degree by hammering or by rolling them when cold, but the character of this change is similar to the change that is produced by cold-rolling steel shafting or wire, excepting that perhaps it is somewhat more pronounced. Bronze is a composition of copper, tin, and zinc, and varies very much in hardness according to its composition. By using just the proper portion of copper and tin, an extremely hard metal may be obtained: but such a metal cannot be obtained by any process of tempering or hardening from the soft varieties of bronze without remelting and changing the composition.

(9538) U. M. C. says: Can you furnish me with a rule for finding approximately the M. E. P. of a steam engine, without the use of an indicator? A. The M. E. P. of a steam engine can be estimated only very roughly without the use of an indicator. If the point of cut-off is known, and the point of compression is known, it is possible to draw to any convenient scale an indicator diagram which will very roughly approximate the true indicator diagram. This can best be done by comparison with the indicator diagrams of similar engines. By measuring the area of such an assumed diagram, dividing this area by its length, and multiplying this result by the proper scale, the M. E. P. may be approximately obtained.

(9539) M. & L. say: Some time since we purchased of you at your suggestion a work entitled "The Brass and Iron Founder's Guide." We cannot find therein the formula and particulars of a certain bearing metal entitled "French automobile bronze," the peculiarities of which are hardness in the extreme with good working qualities, nevertheless, and also a certain resistance to friction heat. Could you oblige us by giving us this formula? If you do not know it, could you furnish us with a formula for a metal of this character? A. There is no special peculiarity in the bronze bearing metal used in French automobiles over any other first-class bearing metal: the composition is just the same. A good formula to use for such a bearing is: 88 per cent pure copper, 10 per cent tin, 2 per cent zinc. A very slight variation in the proportion of any of the above percentages