

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

BASE FOR ELECTRICAL FIXTURES. L. STEINBERGER, New York, N. Y. The invention relates more particularly to an insulating base used for switchboards and small office work instruments. The construction is such that the binding posts and other metallic members mounted rigidly upon the base cannot be tampered with nor release the wire within the base. By certain means, a slot prevents the members from turning relatively to the insulation. Wires once in position means remain in several parts practically integral and avoid defectiveness of contact within the base. The wire is wrapped around the members, follows contour of grooves, and bends downward into the slot whose depth enables it to engage a portion of the insulation notwithstanding the presence of the wire in the slot.

PRINTING-TELEGRAPH. J. D. WHITE, 50 Clamrourke Gardens, London, Eng. Mr. White's invention has for its object the provision of means for rotating the axle which carries the type-wheel or type-wheels or type-cylinder by electro-mechanical devices controlled by a few circuits, so that the opening and closing of these few circuits separately and in various combinations may be used to rotate the axle to many different degrees and to provide for the printing of many different characters.

CENTRAL ENERGY SYSTEM. W. M. KELLY, and G. E. TRUXELL, Greensburg, Pa. The improvement of these inventors relates to telephony, their particular object being to produce a simple, reliable, and efficient system in which a power-circuit is automatically employed for energizing the individual ringing-circuits and in which an improved contact-box is connected with each individual switch-hook.

Of Interest to Farmers.

AUTOMOBILE PLOW.—H. B. BURDICK, Middleton, Oklahoma Ter. The purpose of this invention is to construct a form of plow in which the motive power is carried upon the frame of the plow and is suitably connected with the bull or driving wheel and to provide means readily accessible to the operator for steering the machine, adjusting it for hillside work, and regulating the depth to which the plow shall enter the ground.

Of General Interest.

FISHING-GEAR.—A. W. WILSON, San Francisco, Cal. This invention relates particularly to that class of fishing devices in which a spoon is connected with the hook and the latter adapted to be trotted through the water, so that the spoon attracts fish, causing the fish to take the hook. In a prior patent granted to Mr. Wilson, a device of this general character is disclosed. The present object is to avoid possible derangement of the spoon with respect to the link and swivel, which end is attained by the construction of the link.

APPARATUS FOR FILLING CASKS OR LIKE VESSELS WITH LIQUIDS. A. B. VOX ECHT, Vienna, Austria-Hungary. This apparatus consists of a system of lifting-pipes which extends from the tank or rather receptacle in the usual way, but is stationary and is provided with a common shut-off device, and also of a lifting arrangement for the cask which for the purpose of enabling it to be filled with the liquid under consideration is raised and pressed tightly against the shut-off device by the lifting arrangement, and finally, of an abutment against which the filled cask is pressed by the same lifting arrangement for the purpose of pressing in the bung.

DRILL CHUCK. C. W. SALINGER, MURRAY, Idaho. In this patent the invention relates, more definitely stated, to chucks for rock-drills; and it consists in a chuck of the character stated having means for securing the bit in the chuck-socket. The improvement is equally adapted to tool-handles in general, having a socket for receiving the shank end of any tool adapted thereto.

ROLLER-SCREEN.—F. M. SPIEGLE, New York, N. Y. The object of the invention is to provide a screen for use on windows, piazzas, and other places desirable to be screened against flies, mosquitos, and other insects and arranged to permit convenient and easy unrolling of the screen for screening purposes, to allow rolling the screen up to be completely out of the way when not in use, and to prevent bulging when in use.

SUPPORT FOR SOUND RECORDS OR BLANKS. L. STEINBERGER, New York, N. Y. This invention relates to supports for sound records or blanks, and admits of general use, but is intended more particularly for records having cylindrical or substantially cylindrical form. By using Mr. Steinberger's support or holder the record is practically rendered so durable that it may be thrown over with considerable force and yet without injuring the delicate blank or record portion or marring the record-surface thereof.

COOLER.—H. REININGER, New Orleans, La. The object of this invention is to provide a cooler for cooling wort, beer, and other liquids and arranged to increase the cooling efficiency of the cooling medium, to allow convenient and thorough cleaning of the various parts, to reduce the loss of the liquid to a minimum, and to prevent the liquid from coming in con-

tact with the atmosphere during the cooling process.

PROCESS OF SEPARATING FLUID PORTIONS FROM SOLID PORTIONS OF FATTY SUBSTANCES. W. B. KEAR, Medford, Miss. In this case the invention relates to a process for separating oily fluid portions from the comparatively solid portions of fatty substances, such as tallow, lard, etc. Mr. Kerr has made the discovery that a solution of papain, a substance made from the papaw-tree and having properties analogous to those of papain, is very useful when employed in a process for carrying out this purpose.

BREECH-LOADING FIREARM. F. FERREIRA, A. CRUCINI, Bahia, Brazil. The purpose of the inventor is to simplify and improve the breech-loading firearm for which a patent had previously been granted him, the construction being such that the pivoted breech block is provided only with a spring-controlled hammer, a sear for the hammer, a firing-pin and a lever-controlled cam for cocking the hammer and holding it locked in cocked position until purposely released, reducing the construction of the frame and block to such few parts as to render possible the arm's repair by any person of ordinary intelligence, in short time and on the field if necessary.

DEVICE FOR HOLDING CANDLES. E. W. CURTISS, Baker City, Ore. The improvement has for its principal object to overcome numerous disadvantages attending the use of other devices hitherto devised, and to provide a device which is simple in construction, inexpensive to manufacture and possessing the capacity for long and repeated service. It is admirably suited for the purposes of miners when at work in mines, as well as to others.

WRENCH.—E. K. ANSGORE, Greenbay, Wis. In this instance the invention relates to a wrench of that class in which the nut-socket is in the form of a ratchet and the body of the wrench carries a dog coacting with the ratchet, so that a step-by-step movement in one direction may be given to the nut through an oscillating movement of the wrench handle. The improvement resides particularly in the novel form of the dog.

BUCKLE.—L. SANDERS, New York, N. Y. The purpose in this case is to provide a buckle especially adapted for use in connection with suspender-straps or cartridge-belts, but which may be used wherever a positively-locking tongueless belt can be advantageously employed, and to so construct the buckle that it will be light and readily applied and when applied whereby the strap passed through the buckle can be quickly and conveniently adjusted and held in adjusted position without applying eyelets to the straps or producing apertures therein.

CORSET ATTACHMENT.—E. J. MONTIGNY, New York, N. Y. In this patent the invention relates to improvements in corset attachments in the nature of a pad or compressor designed to reduce the abdomen of the wearer, an object being to provide a device of this character so constructed as to be readily attached to corsets and as easily detached therefrom when not required for use.

LIFTING-JACK. J. C. HOUSTON, Yazoo City, Miss. More particularly this invention relates to jacks such as are employed for raising a vehicle-axle to permit the removal and replacing of one or both wheels to permit lubrication or repair of the wheels, and has for its object to provide details of construction for a jack which are simple, practical, and inexpensive and that afford a light, powerful jack that may be used to raise one or both ends of the axle engaged therewith.

TRAINING-MACHINE. C. L. HAGEN, New York, N. Y. This invention relates to a machine for facilitating the athletic exercises or training of men and animals. It is preferably applied to a machine for men, although it may be used with equal advantage for the training and exhibition of animals. Its general characteristic is a frame and an endless apron which is held on rollers in the frame, said apron moving under the feet of the person using the machine.

BURNER AND MIXER FOR CAUTERY.—J. P. MÜLLER, New York, N. Y. The object of the invention is to provide a burner and mixer for cautery and arranged to provide a burner for the initial exterior heating of the cauterizing-tool and a mixing-chamber having the same source of gas supply as the burner and arranged to permit minute regulation of the amount of gas and air required to furnish a proper mixture to be burned in the cauterizing tool.

ROCK-DRILL GUIDE. H. P. HUNTINGTON, Sahaon, Idaho. In this instance the invention refers to improvements in guides for rock-drills, an object being to provide a guide with a simple means for adjusting to compensate for wear and to prevent lateral play of the drill in the guide, thus causing the drill to work true and prolong the usefulness of the guide, which ordinarily wears out rapidly.

METER. J. H. CONNELL, Charleston, West Va. Mr. Connell's invention is an improvement in meters for measuring water and other liquids, and has for an object to provide a novel construction of meter which can be easily assembled and taken apart for repairs or for any other purpose and which will operate efficiently without appreciable diminution in the pressure of the water.

EMERGENCY FIRE SCREEN. W. M. GOSMAN, Marshalltown, Iowa. Presuming that the wall carrying the proscenium arch is of fire-proof construction, Mr. Gosman's invention is intended to protect the proscenium opening of a stage and to effectually and instantaneously eliminate the danger of fire passing from the stage to the auditorium, and it is also designed to prevent or modify the effect of gases reaching the audience in the case of an explosion on the stage.

COPY HOLDER. A. R. OLYMPIAN, Birmingham, Ala. The invention relates to a device intended especially for use in connection with typewriter cabinets to hold the copy in position to be conveniently read by the operator. It involves certain novel features of construction with respect to the copy-holder *per se* and novel features of arrangement relatively to the typewriter table and cabinet.

GOLD LEAF CONDENSER. J. D. FORD, Somerset, Ohio. This improvement is in the nature of a condenser for the goldleaf used in fillings. The condenser comprises two sections slidable relatively to each other and provided with opposing shoulders and means for varying the exposed or operating surface of one of the shoulders, whereby it may be conformed to the extent of the opposing shoulder and in the construction Dr. Ford arranges for operating the means for varying the operating surface of one shoulder by the other.

REINFORCE. J. F. FRANCA, 9 Rue Leonard de Vinci, Paris, France. This invention relates to masts, spars, ladders, fishing-rods, oars, and other breakable articles. The features are increased strength; whatever small additional weight is added by the thin steel strips, bindings, etc., is counterbalanced by the safe use of the very lightest woods, such as poplar; the strips being tempered thoroughly and evenly in the coil are much stronger than their equivalent weight in steel tube form; the modes of action can be compared to ship masts stays, with the advantage that they are independent, these "stays" being fixed to the pole ends themselves; and they offer enormous resistance at all sides at once the moment the strain begins.

ATTACHMENT FOR CORSETS. M. H. GEUSTLE, New York, N. Y. The invention pertains to combined garment-supporters and skirt-retainers, and provides a plate having a shank of special construction by which to enable the same to be detachably connected with one of the fastening-studs of an ordinary corset-front, the shank being of further special construction for adjustable connection therewith of a retaining device for the waistband of one or more skirts, the entire structure being exceedingly light in weight and capable of being worn without inconvenience and discomfort.

PACKAGE CARRIER. T. HARRIS and O. E. SCHOBERT, West Pittston, Pa. In this instance the invention refers to improvements in devices for carrying packages, particularly boxes containing dynamite for use in mines, the object being to provide a carrier readily adjustable to the size of load or number of boxes placed in the carrier, thus preventing the shaking about of the dynamite, and consequently preventing accident when lowering the device in a mine. It is compactly foldable when not in use.

LIFTING-JACK. L. E. HOOKER, Montevista, Col. The object of this improvement is to provide a novel construction which will be simple, durable, inexpensive, free from complication, and easily operated and which can be stopped in any desired position to support the load. Mr. Hooker's device can be used for light or heavy lifting and can be easily operated in either instance.

HOSE COUPLING. W. S. JEWELL, Oakland, Cal. This coupling is applicable to all kinds of hose, tubes, or pipes, to which it can be applied for the purpose of coupling the same either to a nozzle or for coupling two sections of hose or for connecting hose to a stationary inlet or outlet pipe or for mending a section, the object being to provide a device which shall do away with wiring, washers, screw-threaded and expensive and complicated parts, as well as special tools used for such purposes, and which shall secure great saving of time, especially in mending or coupling in case of a fire.

COLORING-MATTER AND METHOD OF PRODUCING SAME.—G. J. KAUFMANN, New York, N. Y. The invention relates to mineral paints; and its object is to provide a coloring-matter and method for producing the same, the matter being an equivalent of both raw and burnt terra di sienna and on being mixed with oil, water, or other liquid readily forms a paint for immediate use in graining and staining without any addition of burnt umber, Van Dyke brown, or the like for the painting of houses, etc., for calcimining and tinting or for use as a substitute for ocher.

DETONATING ALARM FIRE EXTINGUISHER. M. A. LORRA, South Berwick, Me. In this patent the invention relates to a combined detonating alarm and fire-extinguisher in which the inventor seeks to produce a construction wherein the loud report or noise following the ignition of a charge of high explosive serves to give an alarm of fire, while the bursting energy of the charge fractures an extinguishing fluid container and scatters it over a wide area in the vicinity of a blaze.

SHOE-LACE.—C. B. ISAKSON, New York, N.

Y. In this patent the invention has for its object the provision of a new and improved shoe-lace arranged to permit of quickly lacing and unlacing a shoe and for holding the lace securely in place on the eyelets, studs, or other lace retainers of the shoe when the latter is laced up.

CLOSURE FOR BOTTLES OR OTHER RECEPTACLES. C. M. YOUNG, San Francisco, Cal. The object of Mr. Young's invention is to provide novel details of construction for a bottle or jar closure which will infallibly show when the contents of the receptacle have been partially or entirely removed, this being exposed by the retention within the bottle of a sealing plug that is an important detail of the improved form of jar closure.

Hardware.

WELL-POINT.—W. PATTERSON, Central City, Neb. The principal objects of the invention are to increase the strength of the strainer part, to so arrange the parts that the screen may be easily reached for repair or renewal, and to obtain a free flow of water through the point. The inventor in attaining these ends wraps one or a plurality of layers of screen spirally around the inner perforated tube, thus getting far greater strength than attained when the screen is put on square, and he forms the outer perforated tube in two or more longitudinal sections removably fastened in place, thus readily reaching the screen for repairs, etc.

PIPE-WRENCH. L. H. PLANK and A. C. PLANK, Rochester, Minn. This invention has reference to improvements in wrenches, and has for its object the provision of means novel in character whereby the tool is rendered not only quick in action to improved degree over all similar devices known to use, but in being adapted for adjustment and more effective gripping of the pipe.

NUT-LOCK.—W. H. BURNETT, Springfield, Ill. The improvement relates to nut-locks of a class in which the nut is held in locked condition on the thread of the bolt by means carried by the nut and adapted for interlocking engagement with a groove in the bolt, and has for its object to provide construction for a lock which adapts it for convenient adjustment either to lock the nut at a desired point on the threaded body of the bolt or release the nut to permit its removal from the bolt without injury to the nut, bolt, or locking device.

DRILL. F. RUSSELL and R. P. RUSSELL, Cripplecreek, Col. The objects of the invention are to provide for the carrying of the cuttings out of the hole and to prevent crookedness in the holes drilled. In operation the drill has about a six-inch stroke, which throws the cuttings back to the shoulders, which keep passing them on out of the hole. The sharp shoulders on the shanks of the drill cut out the sides of the hole if it starts to get crooked or fitchered.

Household Utilities.

REFRIGERATOR.—F. W. WHELDON, New York, N. Y. In Mr. Wheldon's patent the invention relates to improvements in refrigerators or ice-chests, an object being to provide a chest with a plurality of inner walls of textile material spaced apart to form air spaces, whereby there may be a free circulation of air, causing a low temperature and preserving the ice to a considerable extent, and this construction also makes the device comparatively light and inexpensive.

WINDOW-REFRIGERATOR. H. C. McCUNG, New York, N. Y. In this instance the invention pertains to refrigerators, and more particularly to a device such as is suitable for attachment at a point adjacent to a window, the arrangement being such that the refrigerator may be drawn into the window for purposes of accessibility and may be thrown outwardly, so as to not impair the light coming in at the window.

CANDLE-EXTINGUISHER.—C. B. ISAKSON, New York, N. Y. The object of this improvement is to provide an automatic extinguisher which is simple and durable in construction, cheap to manufacture, easily applied to a candle at any point of its length, and arranged to automatically extinguish the candle after a predetermined length of the candle has been burned.

STOVE.—F. J. PROCI, Provo City, Utah. The object in this case is to provide a stove having a down-draft. In operation, a fire having been made in the fire-pot the gases of combustion pass over the end of the pot and immediately between stays, passing downward and circulating around ventilating pipes, heating them thoroughly. The gases next pass into the conical base and are thence drawn upward through a flue formed by partitions, an inner and an outer shell. The up-draft flue formed is entirely within the stove, being encircled by the outer shell. Air within ventilating-pipes being heated passes upward, and cold air is constantly drawn in the bottom ends of these pipes.

SCREEN-BED.—A. L. GILLIS, Salem, Iowa. The purpose of the inventor is to provide a bed that will completely exclude flies, insects, reptiles, etc., and it is designed more especially for children. To this end he provides a bed which has its sides, ends, and bottom formed of screen material, the sides having hinged

sections adapted to fold toward each other to also form a screen top or roof for the bed.

Machines and Mechanical Devices.

COPYING-PRESS.—A. L. SNEED, Clarks, La. The object in view of this inventor is to produce a simple and compact structure wherein provision is made for the application of powerful pressure through a platen upon the work, the construction being such that very little effort is required on the part of the operator and the adjustment of the platen may be secured very quickly. It is more especially designed for press-copying letters, manuscripts, and the like.

HONEY-EXTRACTOR. C. W. METCALF, San Diego, Cal. This invention relates to improvements in machines for separating honey from the comb by centrifugal action, an object being to provide a machine for this purpose of simple construction and having a novel means for limiting the outward swing of the honey carrying baskets.

FRICTION-BRAKE. G. A. ENSIGN, Defiance, Ohio. In this patent the object of the invention is the provision of a new and improved friction brake for use on shafts and other driven parts, to bring the said parts automatically and quickly to a standstill at the desired time. It is a division of the application for Letters Patent of the United States for a mounting machine, formerly filed by Mr. Ensign.

COTTON GIN.—E. R. BARBER, Valdosta, Ga. This invention relates to a gin in which the seed cotton is fed to a rotating drum having peculiarly constructed teeth serving to take up the cotton and pass it to a rapidly-rotating beater, by which the seeds are removed, after which the gin passes it to specially-arranged rocking rollers having cards thereon, the cards of one roller acting to remove the lint cotton from the drum and the cards of the other acting to remove the cotton from the first roller and to discharge the cotton from the machine.

ROCK-DRILL.—F. L. WHITEHEAD, Butte, Mont. The invention has reference to improvements in drills of the type in which the drill is moved in its operating direction by hammer-blows; and one of the objects is to so construct the device as to utilize a portion of the driving force of the hammer to turn the drill and keep the cutting edge at a certain distance from the bottom of the hole.

THEATRICAL APPLIANCE. BELLE LA VERDE, New York, N. Y. The object of this invention is to provide a new and improved theatrical appliance for heightening the attractiveness of theatrical performances and which is designed for use on parts of the scenery on the stage, moving objects, etc., more especially, however, on the costumes of actors, dancers, and other persons appearing in spectacular plays.

ELEVATOR. E. C. NORTHERN, San Jose, Cal. In this case the inventor refers particularly to improvements in devices for elevating boxes of oranges or other fruit and dumping the fruit into a chute leading to a grader, an object being to provide an elevator so arranged as to be practically automatic in its operation of dumping the fruit and carrying off the empty boxes.

BORING-MACHINE. F. C. ZIECK, Muncie, Ind. The invention specifically appertains to a mechanism designed especially for use in boring holes in the joists of ceilings or floors for the passage of concealed electric wires. In carrying out the present invention Mr. Zieck has in view the provision of a mechanism embodying the essential features of durability and convenience, especially the latter, inasmuch as his machine may be placed so as to bore quickly and properly a plurality of openings or holes in joists spaced apart at varying distances.

GUARD BOARD.—J. L. GALLAGHER, Deferiet, N. Y. In this patent the inventor has reference to a guard board for the couch-rolls of a paper-making machine. The object of the improvement is to provide a guard-board which may be made to engage the couch-roll more uniformly than heretofore without, however, subjecting the roll to unnecessarily destructive pressure.

MACHINE FOR PRODUCING CRIMPED OR CORRUGATED METAL STRIPS. W. P. GRAVERON, 82 Elliscombe road, Old Charlton, Kent, England. The mechanism closes to gather corrugations of a corrugated sheet or strip to bring the strip to the desired crimped form, the machine comprising pairs of rolls for corrugating pairs of opposing ends for causing the corrugations made by the corrugating rolls, pairs of propulsion-rolls for forcing the strip against retarding rolls, pairs of accelerating rolls for opening out previously closed corrugations to extent required in final product, takers-off for the strip in passage, means for cutting strips into narrower strips before entering corrugating rolls, and means for automatically severing portions of uniform length from final product as it passes from the machine.

ELEVATOR APPARATUS. J. B. HONOR, New Orleans, La. In this case the invention has reference to apparatus for elevating and transferring various materials, it being more particularly applicable to the coaling of vessels

and the delivery of crushed rock and earth, and the improvement enables the transfer of material to be accomplished very expeditiously.

COFFEE DRIER.—E. PENAGOS, Bucaramanga, Colombia. This invention appertains particularly to an apparatus designed for drying coffee beans and the like. In this instance Mr. Penagos has particularly in view as an object the provision of an apparatus through which the coffee may be passed continuously and subjected to a number of heatings, thus insuring a thorough drying or curing of the beans.

ADDING-MACHINE.—R. CORBIN, Plattsburg, N. Y. The invention relates to a construction of machine capable of being held in one hand and conveniently and readily operated by pencil or styles held in the other to add a column of figures and show correct aggregate or to effect reversal of mechanism, thereby, for example, subtracting the various dials quickly and accurately to normal positions, at which time the zero on each of the dials will be presented to properly-disposed openings in the casing of the device, at which openings the numerals are likewise presented which indicate the sum of addition.

Pertaining to Vehicles.

RUNNER ATTACHMENT FOR VEHICLE WHEELS.—G. F. MEYER, Green Island, N. Y. In this instance the object is to produce a thoroughly practical device which is adapted for ready application to vehicle wheels of different widths, which will not mar the wheel when applied thereto, and which is provided with means for securing it in position upon the wheel in such a way as to prevent any rattling of the attachment upon the wheel. The invention relates to runner attachments for wheels of the type in which a runner attachment is designed for application to each wheel to convert the vehicle into a sleigh.

SAFETY DEVICE FOR ELECTRICALLY-PROPELLED VEHICLES. J. H. SPENCER, New York, N. Y. The object in view of the inventor is to provide an improved safety device for such vehicles as automobiles, trolley-cars, and the like, whereby the motor and the source of electricity are instantly disconnected in case of an accident to bring the motor, and consequently the vehicle, to a stop and insure the safety of the occupants.

SLED. C. E. BURNHAM, Dekalb Junction, N. Y. Mr. Burnham's invention is an improvement in sleds, and particularly in that class of sleds ordinarily known as "bob sleds." The opposite runners work entirely independently, and the beam may support the load on a level as desired. The construction is simple, can be cheaply made, easily applied, will be durable when applied, and can be repaired at slight cost if necessary.

HORSE-RELEASEING DEVICE.—W. E. BOLSTA, Ortonville, Minn. This invention refers to a device for releasing horses or other draft-animals from vehicles or the like, and is designed to be capable of rapid and easy operation for the purpose of preventing accidents. An additional brake may be used and it can be applied to any vehicle. The handle when in normal position, will be a convenient rest for reins.

Prime Movers and Their Accessories.

GAS-COMPRESSOR.—C. FLOHR, Berlin, Germany. Mr. Flohr's invention relates to improvements described in United States Patent No. 669,110; and the objects are, first, to replace the single-acting pump referred to in the patent by a double-acting pump serving as a gas-compressor; second, to replace the means mentioned therein for locking and releasing the suction valve cone by one or two rocking return disk valves placed in a separate chamber which connects the two cylinder ends of the double-acting pump, and third, to provide means for connecting the one or two rocking return disk valves with the floor.

ROTARY MOTOR. M. A. CONGER, Lincoln, Mo. This improved motor embodies a rotary piston provided with valves which are pressed outward by the steam and during a portion of their travel act against inclined surfaces on the case, giving turbine action, the outward thrust against the inclines serving by force of reaction to move the piston forward. Direct action of motive agent is utilized against the piston valves, and when valves reach farthest projection beyond periphery of the body of piston steam is admitted to their outer faces to balance pressure and reduce to minimum the work to be done by motive agent in forcing the valves inward.

Railways and Their Accessories.

AUTOMATIC CAR DISCHARGE VALVE. W. A. HARRIS and R. S. H. HARRIS, Greenville, S. C. In this patent the invention is an improvement in automatic car discharge valves intended and adapted especially for use in train signaling apparatus, and particularly in signaling apparatus wherein the signal is caused to sound by a slight reduction of pressure in the train-line.

SPARK ARRESTER FOR LOCOMOTIVE OR OTHER BOLLERS. J. C. BOWRING, Sydney, New South Wales, Australia. This invention affords greater facilities for preventing escape of sparks and live cinders from locomotives and other chimneys and provides arrangements

whereby the draft may be controlled to suit the requirements of any class of fuel or work, the apparatus occupying but a small portion of space in the smoke box or "combustion chamber" and easily removable for cleaning tubes, etc., and capable of adjustment so that the portion designated the "spark-cage" may be located to suit the needs of any boiler or class of fuel.

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. 5921.—For manufacturers of sand lime bricks.

AUTOS.—Duryea Power Co., Reading, Pa. Inquiry No. 5922.—For manufacturers of solid celluloid for enameling purposes (to put on wood). "C. S." Metal Polish, Indianapolis. Samples free.

Inquiry No. 5923.—For the address of the Fisher Hydraulic Press Co. for cement building blocks; also the address of "Normandie" hand pump system.

For hoisting engines. J. S. Mundy, Newark, N. J. Inquiry No. 5924.—Wanted, to purchase steam turbine outfits like those used on locomotives for head lighting purposes.

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. 5925.—For manufacturers of amateur printing presses. Perforated Metals, Harrington & King Perforating Co., Chicago.

Inquiry No. 5926.—For manufacturers of armor bullet-proof cloth. Handle & Spike Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

Inquiry No. 5927.—For manufacturers of spirit from Indian corn. If it is a paper tube we can supply it. Textile Tube Company, Fall River, Mass.

Inquiry No. 5928.—For firm handling a machine or apparatus to scrub and clean large floors. WANTED.—Addresses of importers and consumers of bamboo. D. F. Mitchell, Jacksonville, Fla.

Inquiry No. 5929.—For parties who manufacture or handle machinery for separating the fiber and pulp of the Agave plant. Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

Inquiry No. 5930.—For good practical dry storage battery to take the place of 3/8 h. p. 120 volt motor, either direct or alternating current.

American inventions negotiated in Europe. Wenzel & Hamburger, Equitable Building, Berlin, Germany.

Inquiry No. 5931.—For some one handling experimental apparatus for wireless telegraph, such as is used for lecture purposes.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company Foot of East 135th Street, New York.

Inquiry No. 5932.—For an apparatus by means of which floors may be cleaned and varnished, instead of using manual labor.

Patented inventions of brass, bronze, composition or aluminum construction placed on market. Write to American Brass Foundry Co., Hyde Park, Mass.

Inquiry No. 5933.—For dealers in necktie makers' supplies.

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. 5934.—For parties who deal in album claps and trimmings, and walking canes and umbrella mountings.

Two patents for sale. Supply tanks for water service, No. 195,622. Valve, a cut-off, for supply tanks, No. 237,341. Can furnish some valves, cut-off, in working order. P. J. Lotthausser, Clarendon, Texas.

Inquiry No. 5935.—For manufacturers of gas line buses, freight and delivery wagons.

English and European Market for American Manufacturers.—W. & R. Leggett Limited, East Parade, Bradford, England, is in remarkably good position for handling any article connected with building trade, and will be glad to act as agent for American firms. Please communicate.

Inquiry No. 5936.—For manufacturers or sellers of... ..

Inquiry No. 5937.—For firms who manufacture gas or machinery for mining and preparing slate for the market.

Inquiry No. 5938.—For firms manufacturing machinery for the extraction of coconut oil.

Inquiry No. 5939.—For parties manufacturing automatic pipe bending machines for bending long pipe as well as short return bends.

Inquiry No. 5940.—For a machine that will pulverize charcoal.

Inquiry No. 5941.—For manufacturers of wagon inner spokes and rims.

Inquiry No. 5942.—For the address of J. Baum Safe and Lock Co.

Inquiry No. 5943.—For manufacturers of woven wire fence.

Inquiry No. 5944.—For parties manufacturing well-drill, gravel and sand pumps, etc., as well as screw cut valves and similar machinery for drilling a large well.

Inquiry No. 5945.—For manufacturers of automatic ventilators and oil heaters.

Inquiry No. 5946.—For machinery for making 2 x 4 x 8 inch concrete brick (sand and cement).

Inquiry No. 5947.—For manufacturers of corn huskers.

Inquiry No. 5948.—For address of agent or manufacturers of a contrivance for conveying rural mail from route to residence.

Inquiry No. 5949.—For manufacturers of carbonyl anhydride refrigerating machinery.

Inquiry No. 5950.—For manufacturers of machinery for hulling coconuts to extract the oil and work the fiber of same.



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.

(9447) W. J. M. asks: 1. Is it safe to run two double covered annunciator wires in the partitions of a house along with the gas pipes, for electric gas lighting? A. Electrical wires should not be run side by side in contact for any purpose. Insulation is liable to be impaired and current lost even if the current is not of a character to set fire. Especially is this true if the wires are held by staples. Two wires should never be put under the same staple. 2. Is there any danger of short-circuiting and thus setting fire to the house? A. Not with wires carrying current from a low voltage battery. If the current is that of a lighting circuit the rules of the Fire Underwriters forbid including two wires in the same fastening, and specify the distance by which they must be separated. 3. How large a coil would be required for lighting one burner at a time? A. A spark coil for gas lighting may be made by taking iron wires 10 inches long and forming them into a bundle 1 inch in diameter, first straightening them very carefully. Fit a spool head of hard wood on each end to hold the copper wire of the coil, and cover the iron core by two or three layers of brown paper to insulate the core from the coil. Two or three pounds of No. 16 or No. 14 cotton covered copper magnet wire may now be wound on the core. The ends of this should be brought out through holes in the head of the spool, and the coil is finished. A covering of pasteboard may be put over the outside as a protection and a finish. 4. What voltage and amperage would the same require and would two gravity cells answer the purpose? A. Three or four dry cells will be sufficient for gas lighting. Three LeClanché cells may be used if more convenient. 5. Is a constant current required when you simply turn on the gas and it lights as with the Advance burners? A. A constant current battery is not used for gas lighting, but an open circuit cell is to be preferred. 6. What is the best way to connect coil, burner, and battery for the best results? A. The coil, burner, and battery are to be connected in series; it matters not about the order. The only important thing to be observed is to connect the coils of the battery in series, since as high a voltage as possibly should be had.

(9448) R. R. S. asks: 1. Are there any electric lamps that use an alternating current, and if so, how is it worked? A. The alternating current is now in more general use for lighting than is the direct current. The same incandescent lamp can be used on either current, if the required voltage is the same for both currents. The alternating current is, however, usually at 52 or 104 volts, while the direct current is ordinarily at 110 or thereabout. An arc lamp is especially constructed for the alternating current. Its two carbons consume at the same rate, while the carbons in a direct current arc lamp consume at different rates, the positive carbon wasting about twice as rapidly as the negative carbon. 2. Would there be any danger from lightning with a mast such as would be used in wireless telegraph experiments? A. There would be the same risk from lightning with a tall mast for wireless telegraphy as for any other purpose. Such a mast should be protected by a lightning rod. The apparatus should be and always is provided with lightning arresters.

(9449) A. J. G. says: 1. What commercial metal will radiate heat the most rapidly? A. Cast iron with a dark surface is the most radiant of heat of the staple metals. 2. Can an alloy be made that will be more efficient? A. There is no alloy known that is more efficient in radiating power than iron. 3. Is there any chemical composition that can be lowered in temperature by agitation? A. We know of no chemical compounds that become colder by agitation alone. Agitation that produces chemical changes may lower temperature. 4. How long will it continue to so do before it will be necessary to renew it? A. Time unknown. 5. Will it attack metals? If so, what metals? A. Not known. 6. Can you give me the formula for a hard copper plating bath same as used on leaded glass windows to strengthen them? A. Use a saturated solution of sulphate of copper and deposit by battery. 7. In order to muffle the exhaust of a gasoline engine what is necessary, to

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