particularly to improvements in ejecting devices for coin-controlled vending machines—such, for instance, as shown in a former application filed by Mr. Lynes—an object being to provide a simple device whereby a cigar or other vended article when raised to discharging position will be thrown forward upon the top of the machine-casing.

APPARATUS FOR PRINTING WARPS ON PRINTING-DRUMS.—F. SCHMIDT, 7 Edisonstrasse, Oberschöneweide, near Berlin, Germany. The present invention relates to an apparatus for printing warps on printing-drums, wherein it is essential that the adjustment of the drum is effected in such a manner that its movement is dependent upon the movement of the adjusting device for the design. In manipulation of the apparatus, the operative places an indicator upon the threads to be printed, and turns the hand-wheel till indicator points to the check to be printed. Printing of warps can be then immediately proceeded with by means of rollers or the like, as the warp-drum has been automatically adjusted at the same time as the pattern-drum.

DOUBLE PRINTING-DRUM FOR WARPS.—F. SCHMIDT, 7 Edisonstrasse, Oberschöneweide, near Berlin, Germany. The subject-matter of the present invention is a double printing drum for warps, wherein it is essential that there be two drums of different circumference which can simultaneously be printed with the same pattern, as both drums receive the same angular rotation. This uniform angular rotation is obtained by the intercalation of gearing. It is furthermore essential that the two warp-drums of different circumference be driven together with a drum containing the design or pattern, the driving thereof being effected in that driving-crowns are provided on the circumference of the drums.

Prime Movers and Their Accessories.

DRIVER-WHEEL.—E. STANCLIFF, New York, N. Y. The invention provides an attachment for a locomotive driving-wheel adapted to economize power and reduce frictional resistance. It consists essentially of an annular ring provided on its outer circumference with a flange and a tread surface, of the usual type, adapted to roll upon a rail. The driving wheel rolls on the inner circumference of the ring, the latter being formed with a groove to receive the flange of the wheel. The construction partakes of the nature of an internal gear.

BOILER.—H. L. DES ANGES, New York, N. Y. The invention relates, first, to a boiler in which water-tubes are provided around which tubes the gases of combustion circulate and through which tubes internal or fire tubes are passed, so that the heating-surface of boiler is very greatly increased; and it relates, second, to a novel manner of fitting the several tubes which holds them securely in place and at the same time allows any one of the tubes to be removed conveniently for repair and other purposes.

COMBINED THROTTLE AND GOVERNOR FOR EXPLOSION-ENGINES.—O. MINTON, New York, N. Y. The principal object of the invention is to provide between a governor of any suitable design and the gas-inlet valve of an explosion-engine a connection whose length may be varied so as to adapt the action of the governor and valve to the load carried by the engine. It has special reference to explosion-engines designed for use upon automobiles and other vehicles.

STEAM-TURBINE.—T. J. MASTERS, 29 St. Mary's street, Cardiff, Glamorgan, England. This improvement relates to a compound reversible steam-turbine or rotary engine designed to utilize both the impact or momentum and also the expansive force of the steam in such manner as to avoid back pressure and economize power in a high degree, the improved turbine or rotary engine being provided also with means whereby the speed and direction of running may be controlled more efficiently than heretofore possible in engines of the same general type.

Railways and Their Accessories.

RAILROAD SYSTEM.—C. MEHRING, Charlottesville, Va. In this instance the invention relates more particularly to single-rail car systems; and the object had in view is to simplify and improve similar railroad systems constructed as heretofore. The inventor's leading idea is the employment of novel trucks, whereby the cars are prevented derailment, and thus rendered secure for speed not safe with railroad systems as formerly constructed.

RAILROAD CROSS-TIE.—S. HOAGLAND, Astor, Fla. The object of the invention is to provide a tie which is simple and durable in construction, cheap to manufacture, and arranged to properly support and securely hold the rails in position, to avoid spreading of the rails, and to allow of conveniently placing the tie and rails in position.

REGISTER SYSTEM.—A. FEVOLA, Yonkers, N. Y. Mr. Fevola's invention relates to systems for registering the number of persons passing some predetermined point, it being especially useful in recording the number of passengers carried by such a public conveyance as a street car. Its principal objects are to provide a convenient apparatus which will operate but once for each passenger, giving a registration of the exact number using the vehicle.

VESTIBULE.—T. A. RYAN, Yonkers, N. Y. In the present patent the invention pertains to vestibules for the fronts of vehicles, it being particularly convenient for use in connection with electric cars. Its principal objects are to provide such a structure which may be readily folded out of the way when not needed and yet will furnish an effective closure when in use.

LUBRICATOR.—J. MCQUEAD, Hunt, Ill. This invention relates to lubricators, and more particularly to those adapted for use in connection with the journal boxes of cars. Its principal objects are to provide such a device which will deliver the lubricant in substantially definite quantities when the car is in motion and will stop this supply when it is at rest.

STOCK-GUARD.—H. A. MIDDAUGH, Seattle, Wash. Mr. Middaugh's invention has reference to improvements in stock-guards, the object being the provision of an absolute guard against the access of stock from the highway to the tracks of a railroad crossing the same, and one which shall be simple, cheap, and easily applied and removed.

Pertaining to Vehicles.

PNEUMATIC TIRE.—G. DEVOLL, Boston, Mass., and G. H. RISLEY, Brielle, N. J. The present invention has reference to pneumatic tires, such as are used on the wheels of vehicles; and its object is to provide a new and improved pneumatic tire arranged to prevent the rubber tube of the tire from being punctured and at the same time afford the desired elasticity.

LAMP-HOLDER.—E. E. HENRY, Georgetown, S. C. This holder is especially useful for supporting lamps on moving vehicles, such as automobiles and bicycles. The object of the invention is to produce a device of simple construction and which will afford means for supporting a lamp movably, so that the rays of light will be always projected in advance of the vehicle and in the direction in which it is advancing.

INNER TUBE AND MEANS FOR INFLATING SAME.—W. A. HOLLIS and H. S. HOLLIS, 1 Palmeira Avenue, Hove, Sussex, England. The invention relates to inner tubes for pneumatic tires and means for inflating the same. The improvement consists in the construction and arrangement of two or more inner air-tubes so that they lie around the rim of the wheel without shifting their relative positions and without bursting when the tire is inflated.

COMBINATION TRUCK AND SCALE-PLATFORM.—P. MORGAN, New Orleans, La. Under the present systems of transferring coffee-bags from the pile to the railway-cars weighing and transferring are two separate operations, each costing about three cents per bag. Mr. Morgan provides means for performing these operations at once, thus making a great saving of cost and time. The invention is capable of use in other connections. It may be used in weighing all kinds of material in sacks or other receptacles and also in bulk.

MOTOR-VEHICLE.—H. SÉCHAUD, Gentilly, Seine, France. The invention has for its object a device which permits of effecting by means of a single appliance changes of direction and velocity, throwing into and out of gear the braking, and also the regulation of motor-vehicles. The combination constituted by this device renders unnecessary all the individual parts hitherto employed for operating the different mechanism, leaves the hands of the driver at liberty, and renders it possible for complete novices to drive motor-vehicles.

WHEEL.—J. B. MCMULLEN, Howard County, Md. In the present patent the invention is an improvement in wheels, and is designed particularly for use on automobiles or other vehicles of that general character; and the inventor's object is, among others, to provide a novel construction whereby the tire may be conveniently applied and removed from the wheel by means of a removable side plate.

FOOT-WARMER.—C. H. WHITAKER, Bordentown, N. J. The foot-warmer is intended especially for use in carriages and like vehicles, and it is of that class in which a base is provided and heated by an ordinary lantern-burner mounted on the base and having heat-communicating means extending from the top of the burner to or into the base.

AXLE-LUBRICATOR.—J. ADEN, Ruralhall, N. C. In this case the improvement pertains to automatic lubricating devices for vehicle-axles of that class in which a reservoir for oil is located on the axle, just back of the axle-collar, from which oil is fed down along the spindle by distributing-grooves. The oil is uniformly fed without obstruction and in a manner to exclude the dust and remove the gummy waste matters.

Designs.

DESIGN FOR A TOILET-POWDER RECEPTACLE.—W. A. BRADLEY, New York, N. Y. This new design for a toilet-powder receptacle shows an oval contour of the box and the radial fluted ornamentation appearing at the top of the box together with the fluted and apertured cap.

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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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.**

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Marine Iron Works. Chicago. Catalogue free.

Inquiry No. 6838.—For manufacturers of brass and wooden tubing.

"U. S." Metal Polish. Indianapolis. Samples free.

Inquiry No. 6839.—For parties making or selling small wooden wheels for toy carts, etc., about 2, 4 or 5 inches in diameter.

Perforated Metals, Harrington & King Perforating Co., Chicago.

Inquiry No. 6840.—For manufacturers of confetti-making machines.

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

Inquiry No. 6841.—For manufacturers of sun motors, or machine that derives its motive power from the sun.

Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.

Inquiry No. 6842.—For manufacturers of the Oddo coat hangers.

Commercially pure nickel tube, manufactured by The Standard Welding Co., Cleveland, O.

Inquiry No. 6843.—For manufacturers of Edison's World's Fair electric silk candy machine.

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

Inquiry No. 6844.—For manufacturers of crude oil burners for stoves and furnaces.

Braze Cast Iron. See our advertisement in this paper. The A. & J. Mfg. Co., 9 S. Canal St., Chicago.

Inquiry No. 6845.—For manufacturers of small water wheels.

I sell patents. To buy them on anything, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.

Inquiry No. 6846.—For manufacturers of well tubing.

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. 6847.—For manufacturers of a machine which will print, cut and punch tags on one impression.

Gut strings for Lawn Tennis, Musical Instruments, and other purposes made by P. F. Turner, 46th Street and Packers Avenue, Chicago, Ill.

Inquiry No. 6848.—For manufacturers of small metal studs, such as are used in new and laundered shirts.

We manufacture iron and steel forgings, from twenty pounds to twenty-five tons. Crank shafts of all varieties. Erie Forge Company, Erie, Pa.

Inquiry No. 6849.—For manufacturers of a pressed steel tub or box 16 x 26 and enameled white, the shape to be same as ordinary kitchen sink.

Models, dies, boxes, metal stampings, patent articles, novelties, manufactured and sold. Printing on aluminum. U. S. Novelty Co., Lily Dale, N. Y.

Inquiry No. 6850.—For manufacturers of automatic pocket knives.

WANTED.—An engineer experienced in the design, construction and use of gasoline motors for automobiles. "Address Pope Manufacturing Company, Hartford, Conn."

Inquiry No. 6851.—For manufacturers of air pistol or rifle which can be used for small game.

WANTED.—Experienced man to take charge of Metal Department. One competent to handle large Dies, Hammers and Presses. Address Federal Casket Company, Bellaire, Ohio.

Inquiry No. 6852.—For manufacturers of duplicating apparatus.

WANTED.—Colonial silverware. Any one wishing to sell any authentic silver made in this country during the eighteenth century, please communicate with C. A. M., Box 773, New York.

Inquiry No. 6853.—For manufacturers of Virgin lace or lace bark of the tropics.

You can rent a well equipped private laboratory by day, week or month from Electrical Testing Laboratories. 548 East 80th Street, New York. Absolute privacy. Ask for terms and facilities.

Inquiry No. 6854.—Wanted, catalogue of railroad cattle guards.

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

Inquiry No. 6855.—For manufacturers of pitch working machinery, namely, splitting, rounding and finishing pitch, from the cane; also machine for bleaching pitch.

Space with power, heat, light and machinery, if desired, in a large New England manufacturing concern, having more room than is necessary for their business. Address Box No. 407, Providence, R. I.

Inquiry No. 6856.—For manufacturers of overhead tracks for handling merchandise and manufactured articles in factories, such as are used in packing houses for beef.

Manufacturers of all kinds sheet metal goods. Vending, gum and chocolate, matches, cigars and cigarettes, amusement machines, made of pressed steel. Send samples. N. Y. Die and Model Works, 508 Pearl St., N. Y.

Inquiry No. 6857.—For manufacturers or parties selling a traction gear on which a 5 to 8 h. p. gasoline engine can be mounted.

☞ 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. 6858.—Wanted, the address of The Daft Electric Light Co.

WANTED.—The patents or sole agency for Britain and France, of new machines and articles used in the Brewing and Allied Trades. Highest references given and required. State best terms with full particulars to "Wideawake," care of Streets Agency, 30 Cornhill, London, England.

Inquiry No. 6859.—For firms' names installing crude oil gas plants.

WANTED.—A first-class Machine Shop Foreman; a man who is capable of producing work at the lowest possible cost. Must be a man of ideas and capable of hiring and handling men. Reliability first consideration. Steady position with opportunity to advance. Factory at Waterloo, Iowa. Address Manufacturer, Box 773, New York.

Inquiry No. 6860.—Wanted, address of makers of very strong glass known as agatine.

Splendid opening for a high-grade mechanical engineer, who has had a broad experience in managing machine shops, the manufacture of machinery, engines and metal specialties. Applicants must be in prime of life and now employed. Preference will be given to applicants who have had modern scientific training in mechanical schools of high standing. Unqualified references will be exacted. All communications received will be regarded as strictly confidential. Address Mechanical Engineer, Box 773, New York.

Inquiry No. 6861.—For manufacturers of plucking machines (fowl).

Parties looking for factory sites should not overlook Maine. We have several towns where we are enabled to furnish factory sites on railroads and seaport harbors free of cost and abate taxes for ten years. We build homes for operatives, and let them pay for them on the rent plan at low interest. This gives the best help and practical protection against labor troubles. Maine labor will produce more per man in our small villages than in any big city in the world, and, being home owners, take more interest in their employers' welfare. We will also furnish you a Maine charter for your corporation, if you need one. Maine Realty Development Company, Bangor, Maine.

Inquiry No. 6862.—For manufacturers of machinery for turning out spoon oars and paddles.

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.

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Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(9632) A. G. L. asks: What is the cause of that buzzing noise when the receiver of a telephone is held to the transmitter? Is it a sign that the line is all right? How is a telephone wired that is used on the central energy system? A. When you hear a sound in the receiver of a telephone, it means that something is going on over the line. It may be someone is talking on that line, which is all right. It may be cross talk from some other line, in which case it is not all right. A central energy system is wired so that all instruments have connection with the battery to ring their bells at all times when the telephones are on the hooks. Diagrams of wiring will be furnished for any system by those who handle and sell the instruments for that system.

(9633) A. B. asks: 1. Can you tell me of a simple test to tell platinum wire? A. Platinum is characterized by its high fusing point, about 3450 deg. Fahrenheit. It cannot be melted by any temperature below that of the oxyhydrogen flame. This is the simplest test. Heating in an ordinary flame does not alter it. It is not soluble in any single acid, but is dissolved by aqua regia. 2. Is it true that there is a salt lake that has a crust of salt on the surface? If so, what is the name of it? A. There is a place called Salton in California where salt is plowed up from the surface of the shore of a lake and purified for the market. Later another crop can be harvested from the same place. Salt does not float on water. There cannot be a crust of salt over the surface of a lake. 3. Why is it that ice is a non-conductor and water is a conductor of electricity? A. Neither ice nor water when pure is a conductor of electricity. Water owes its conductivity to minute quantities of impurity in it. Ice tends to freeze itself pure from impure water. Hence ice is usually a non-conductor of electricity. 4. Can you explain to me what watt and watt-hours denote? A. A watt is the unit of electrical power. One ampere flowing at a pressure of one volt gives power of one watt. One watt working for one hour makes a watt-hour. You would find all such questions answered in Swoope's "Elementary Lessons in Electricity," which we can send for $2.

(9634) W. S. M. says: I want to put an electrical plant on my farm for lighting, water service, etc. We use compressed air for water service. Have plenty of wind. Storage batteries, from my experience, have not been satisfactory during a calm. Has any one tried compressed air as a power during a calm? Do you believe that compressed air could be used to any advantage in generating electricity? A. We know of no experiments or experience with compressed air obtained from windmills for electric lighting purposes, and would not advise its use. Storage batteries are also unsatisfactory in the hands of inexperienced persons. We would advise a gasoline or kerosene engine as the most satisfactory source of power in the majority of such cases as you have in mind.

(9635) E. G. B. says: Would it be possible to revolve an iron plate ¼ inch thick, 6 feet diameter, at the rate of 616 revolutions