RECENTLY PATENTED INVENTIONS.

Electrical Devices.

ELECTRIC DISPATCH-BOX FOR OVERHEAD LINES.—R. T. PISCICELLI, Naples, Italy. The present invention relates to some improvements in the construction of the dispatch-boxes and of overhead lines to be used in the system of electric mail-service described in a former patent application, which improvements are intended to diminish the resistance of the line and of the air to the translation movement of the dispatch-boxes of the type described in said specification, at the same time diminishing also the trepidations of the line. Many of the improvements may find application in cases where electrically-propelled vehicles shall run at very high speed.

TRACK STRUCTURE.—L. STEINBERGER, New York, N. Y. Mr. Steinberger's invention relates to track structure and admits of general use, but is peculiarly applicable where it is desired to have a rail mounted movably upon its support. His invention is of special value in connection with electric railways, and especially as third rails used for the purpose of distributing electric currents to movable vehicles.

TROLLEY.—W. R. COOPER, East St. Louis, Ill. The trolley comprises a trolley pole consisting of two telescoping members so arranged that to reverse the car it is not necessary to swing the pole around in the usual manner but the motorman needs merely to reverse the motor when the pole will shorten due to the telescoping members sliding one upon the other and it will then lengthen out as it assumes its rearward inclination.

TROLLEY-WHEEL.—J. J. BOUCHARD, Bradford, Pa. In this patent the invention has reference particularly to the lubricating devices of trolley-wheels and the like; and the object of the inventor is to produce an improved construction of such wheels, having in view the efficient lubrication thereof.

Of Interest to Farmers.

FRUIT-GATHERER.—F. D. HENDRICKSON, Amboy, Wash. This invention is an improvement in that class of hand fruit gatherers or pickers which consists of a receiver or skeleton basket suspended and adapted to oscillate in the forks of an extended handle. Means are adapted to receive and detach fruit conveniently and for preventing injury thereto.

ENSILAGE-CUTTER.—M. W. DREW, Bliss, N. Y. In the usual cutting-wheels there are openings at the back of the knives, and while operating the husks or the like pass into these openings, wind around the wheel-spokes, and clog in the corners, thus throwing the wheel out of balance, and consequently requiring an increased power to run the machine. Mr. Drew's wheel obviates these difficulties.

CORN OR GRAIN KNIFE.—L. R. TILLEY, Colorado, Texas. The invention is in the nature of a device employing clipping-blades and adapted to be fastened to the user's hand. The blades are operated by simple closing and opening action of the user's fingers. The object had in view is to provide a simple, inexpensive, and novel device of this character adapted for clipping the heads of standing corn, grain, and for other similar use.

CRATE.—J. H. WINKELMEYER, Eldon, Mo. In the present instance the inventor has made an improvement in crates, especially designed for use in carrying poultry and the like and which can be knocked down for reshipment. Among the advantages means are provided for protecting the locking-bar against damage in piling crates upon each other, and also for securing the crates in knock-down position.

PLOW-WHEEL SCRAPER.—W. J. ROBINSON, Hudson, N. Y. The aim of the inventor is the provision of a new and improved scraper which is simple and durable in construction, easily applied to any type plow, and more especially designed for keeping the peripheral face of the wheel on the plow-beam free of dirt to allow plowing to a uniform depth.

INCUBATOR.—C. E. GOSS and G. W. GOSS, Edith, Texas. When it is desired, the eggs by this improvement may be rotated, as is necessary in artificial incubation, by moving the false bottom of each tray along through the slot in the slide until the end section has been withdrawn. The eggs will all be rotated through substantially half a turn. The hinging of this section permits it to hang vertically from the tray and avoids the closing of the space between it and the walls at its side.

INCUBATOR.—W. H. HUGHES, New York, N. Y. The inlet for fresh air passed through the egg-chamber is removed far as possible from lamp and outlet of heating-casing so as not to become contaminated by fumes of burning hydrocarbon, which if in contact with the eggs would likely injure them. Casing and chamber do not communicate and no danger arises there. Distribution of air about the casing makes it properly heated, and distributers insure even heat to eggs. Two regulators control temperatures, the controlling means for both being situated over substantially the center of the egg-trays, and under influence of average conditions in egg-chamber.

FENCE-POST.—J. M. NARSH, Fort Worth, Texas. Mr. Narsh has devised a post whose central portion web is thinner than its sides, so that while it has due strength and rigidity, adapting it to be driven without bending or buckling, the tongues for holding the fence-wires may be easily cut out of the same in process of manufacture. The post has reinforcements or fillets formed at its inner angles to materially strengthen the same longitudinally and transversely. Improved braces for the post are further devised by the inventor.

PROCESSS OF MAKING BUTTER.—W. A. IRWIN, Dallas, Texas. In this case the invention is in the nature of an improved process of making butter designed to increase the yield of the final product and to provide a wholesome, well-flavored, nutritious, and digestible food product for the table that shall utilize all or nearly all of the valuable constituents of the ingredients.

GATE.—W. H. FUQUA, Roswell, New Mex. This is a gate of the type in which a lever is employed to operate the gate, the lever being actuated by a pull-cord or by the passing of a vehicle. The mounts on the gate opening lever devices for releasing the latch. When the cord is pulled to actuate the gate lever its initial movement actuates the latch controlling device on said lever.

Of General Interest.

NEGATIVE-HOLDER.—A. J. WEED, New York, N. Y. The object in view in this case is the provision of an extremely simple article capable of easy application to the edge portion of a plate for holdiug the latter in a secure manner. A further object is to produce a holder which on application to a plate is bent in a way to produce bearing-points on which the holder when inverted may stand in a washing-bath, whereby the negative may be suspended with the film side facing downward in running water, so as to wash the film without exposing it to lodgment of sediment in the water.

TWINE-HOLDER.—R. L. WEIR, Winnsboro, Texas. The holder will always hold the end of the twine upward in most convenient position. This is attained by providing a body having a rounding bottom portion weighted with respect to the upper part of the body, so that no matter how the holder is thrown it will always roll with the weighted side of the body downward. From the upper side of the body a body is projected preferably in the form of a tube and through which the twine is drawn, so that the end of the twine always hangs from the upper end of the tube.

FIRE-ESCAPE.—H. VIEREGG, Grand Island, Neb. This invention refers to fire-escapes and admits of general use, but is of peculiar value in cases where it is desired to enable persons to escape singly and without assistance from any source by merely descending from a door or window. The invention is in general terms somewhat similar to a former patent granted this inventor for a fire-escape.

STEREOTYPE-CASTING BOX.—F. SCHREINER, Plainfield, N. J. The object of this improvement is the provision of a box constructed in such manner that any size of plates for printing can be cast with cores or legs that will cross each other level and produce type-high plates, so that whether a small or large sized plate is cast it will have level crossing bearings which will resist printing much better than those having lengthwise run-much better than those having lengthwise-running legs, as heretofore formed.

BACKING FOR DISPLAY-BUTTONS.—D. PUDLIN, New York, N. Y. One object in this instance is to construct a backing with a continuous inwardly-turned flange at its inner edge, the flange being turned in direction of the front portion of the backing, within which flange the shank of a pin is secured and concealed, thereby producing a continuous smooth inner edge surface, materially strengthening the backing and preventing the shank of the pin from working loose and projecting at its end to detriment of surface upon which the button may be fastened, as the shank of the pin is held securely throughout its entire length.

BUILDING CONSTRUCTION.—A. MENCZARSKI, New York, N. Y. In this patent the invention relates to fireproof buildings; and it constitutes an improved structure for forming the floors and ceilings of such buildings. This construction provides a maximum dead-air space between floor and ceiling, which is very essential in preventing transmission of heat, which transmission in case of fire would allow flames to spread quickly and also in lessening the weight of construction to the minimum.

PLATE-HOLDER.—W. F. FOLMER, New York, N. Y. The inventor's purpose is to provide a plate-holder which will not leak when a slide is being introduced into the holder or is being withdrawn therefrom and to admit of both movements of the slide being expeditiously and conveniently done. A further purpose is to provide a spring or tension controlled sealing device for the slide of the plate-holder applicable without necessarily weakening the holder and which will be expansive at all times without liability of light being admitted to the plates of the holder.

WATCH-GUARD.—J. A. CRANDALL, New York, N. Y. In this patent the invention relates to a watch-guard; and its main object is to provide means which may be attached to a watch and placed in the pocket of the wearer, whereby any attempt to remove the watch from the pocket will be prevented or the notice of the wearer attracted thereto. The device is not cumbersome nor is it expensive.

METHOD OF PURIFYING WATER.—T. JONES, Acme, Texas. The invention relates to purification of water, especially for domestic uses, the more particular object being to remove gypsum and certain carbonates, together with organic substances, should any be present. It admits of general use, but is of peculiar value in certain sections where housekeepers have been annoyed to a great extent by the presence of impurities in water.

FILE.—F. C. BILLINGS, Macon, Mo. The improvement made by Mr. Billings relates to a file of that class in which a box or case for the papers is provided, this box having an open side and a spring-retained follower to hold the papers snugly yet removably in place. It is designed especially as a means for conveniently holding music-sheets in condition for ready access, but may be useful for filing papers of any sort.

TIME HAND-STAMP.—W. F. BARTHOLOMEW, New York, N. Y. The object of the present invention is the provision of certain improvements in time hand-stamps whereby the handle carrying the pointer is automatically locked against accidental movement. It relates to stamps, such as shown and described in the application for Letters Patent of the United States, formerly filed by Mr. Bartholomew.

BUILDING CONSTRUCTION.—E. MAY, New York, N. Y. The object of this inventor is to produce a building construction or form which is well adapted for building floors, partitions, and for similar uses. When the cement or binding material has dried and become set a very firm and rigid structure results, and this, due to wires imbedded in the cement, is substantially reinforced or braced. The structure presents a very neat appearance, the cement not being exposed to view at the edges of the slabs.

POLE-HOLDER.—W. H. FUQUA, Roswell, New Mex. This invention is an improvement in pole-holding apparatus especially intended for holding heavy poles, such as telegraph, telephone, and other poles. It sets a pole quicker than in the ordinary way, and if bent or crooked small wedges interposed between sections and the pole tilt the pole as required. The pole is elevated about one foot from the ground so that a pole decayed in the ground is in many respects as good as new, and in applying the improvement to a pole in the ground the latter will not have to be moved in any way.

OIL-CUP.—A. UHRI and A. G. HOUCK, Florence, Col. Messrs. Uhri and Houck in this invention have for an object the provision of a cup of few and simple parts that may be more conveniently opened and closed than the ordinary cup and adapted to reliably feed thick oil or grease for lubricating purposes. The cup is specially suited for use in roasters, kilns, etc., where an oil-cup is necessarily exposed to unusual heat.

METALLIC BUTTONING DEVICE.—E. I. RAINS, New York, N. Y. The inventor claims as an object the provision of a device more especially designed for yieldingly connecting a boy's pants with the shirt-waist or blouse and arranged to readily compensate for strains, especially when the wearer bends over in a forward direction, the device yielding sufficiently to prevent breaking or tearing of connected parts.

ADJUSTABLE SUPPORT.—E. T. PALMENBERG, New York, N. Y. The intention of this inventor is to provide an adjustable support for carrying display glass plates, trays, shelf-boards, and the like and arranged to allow convenient adjustment of the support for different widths of the plates, shelf-boards, etc., and to securely hold the same in position. The invention relates to window and store fixtures.

DISPLAY-FIXTURE.—E. T. PALMENBERG, New York, N. Y. In this patent the improvement relates to window and store fixtures; and its object is to provide a display-fixture in the form of a universally-adjustable arm adapted to be moved conveniently into any desired position for the display of the goods to the best advantage.

MOLDING-FLASK.—W. MARSHALL, Lyndon, Kan. The improvement refers to a flask which, although capable of general use for molding plastic substances and casting metals, is especially applicable for the molding of rubber and composition dental plates. The principal objects are to provide a flask of this character which can be readily taken apart, which will have no projections easily breakable, and which will provide a surface which will leave ample room to work on the teeth after they are invested.

TRUNK-FASTENING.—T. J. LIVSIE, Norfolk, Va. In the present case the invention is an improvement in trunk-fastenings, being in the nature of a combined strap-fastening and lock, so arranged that the lock will hold the strap taut and the device for connecting the strap will operate as a lever in tightening the strap in the use of the device.

Heating and Lighting.

COMBINED STEAM-GENERATOR AND GRATE.—J. C. RAYMOND, New York, N. Y. By this invention Mr. Raymond seeks to provide a grate in the form of a tube wound helically, producing a cylindrical grate with the openings between the coils of sufficient size to permit the escape of ashes and at the same time sufficiently small to retain fuel when it is being burned. The grate is designed for use with coal, coke, wood, or the like, and provision is made for introducing the fuel and for removing cinders from time to time.

Household Utilities.

BEDSTEAD.—A. FIELDS, Gilmerton, Va. Briefly stated this invention relates particularly to a novel construction of head and back rest adapted for adjustment to support a person in bed at any desired inclination. It is especially adapted for use in connection with and to form a part of an iron or other metal bedstead; and can also be applied to wooden or other bedsteads as desired.

FOLDABLE METALLIC BEDSTEAD.—C. P. BROWN, Springlake, Mich. The leading feature of this invention is the provision of means by which the bed-frame is balanced without resorting to weights, springs, or the like, thus making the operations of raising and lowering the bed-frame easy and rapid. Means provide for drawing the several parts into firm interlocking relation when unfolded for use. It relates to improvements of the kind disclosed in a prior application filed by Mr. Brown.

Machines and Mechanical Devices.

APPARATUS FOR COATING NAILS.—C. WAGGONER, Kokomo, Ind. The improvement made by Mr. Waggoner in this case has reference to apparatus intended particularly for coating nails with a cement compound, but useful for various other analogous purposes, as will be seen by skilled mechanics. Means provide for suiting the apparatus to handle nails of any size.

LATHE TEST-INDICATOR.—G. G. RIGGS and A. E. BABIN, Waterbury, Conn. The invention relates to indicators used for centering and truing up work to be turned upon a lathe. It presents certain improvements in the construction of such apparatus whereby the same is rendered more efficient, accurate, and sensitive and also whereby it is given a combinational character and admitting of quite a variety of uses readily suggested to those skilled in the art.

STOP MOTION.—H. L. POWELL, St. Marys, Ohio. The improvement refers to a mechanism for automatically stopping the motion of rope or equivalent transmission means upon breakage or other derangement thereof. According to the embodiment of the invention the inventor employs a prime-moving device restrained by the normal transmission means and active upon the derangement of said means, this device when active transmitting movement to devices for throwing out of action the driving mechanism.

TRANSMISSION-GEAR.—A. E. OSBORN, New York, N. Y. In this patent the invention has reference to a means for transmitting motion at different speeds and in different directions. It comprises a system of gearing of the sun-and-planet type especially adaptable to motor-vehicles, but useful in other connections—as, for example, on machine tools. Primarily, the object is to provide a gear of this character having the least number of parts consistent with sufficient strength and efficiency.

VARIABLE SPEED AND POWER TRANSMISSION DEVICE.—C. L. ROSENQVIST, Niagara Falls, N. Y. In transmission of motion and power from a prime mover to a machine or the like which is subjected to considerable variations in load strains it is essential that means be provided whereby compensation is afforded for such variations of load by altering the speed of motion correspondingly, also that slip of transmitting medium be avoided, and that changes in speed be effected either quickly or gradually, while driver and driven machine are in motion. The device affords a very simple practical speed-changer that is very effective and reliable in operation. The inventor states that he has an apparatus in operation.

COIN-CONTROLLED MECHANISM. — H. MEYER, New York, N. Y. The object in this invention is to provide a mechanism designed for starting the motor or other actuating mechanism of a self-playing musical instrument or the like and arranged to utilize the proper coin introduced as a part of the operating device, to prevent spurious coins from being effective, and also to prevent repetition unless a new coin is introduced.

SELF-PLAYING PIANO.—H. MEYER, New York, N. Y. In Mr. Meyer's invention the object of the improvement is the provision of a self-playing piano arranged for the note-sheet to automatically control pneumatic devices for moving either the hammer-rail or the damper-rail into an active position, to hold the same therein the desired length of time, and to then release the rail for the latter to assume its normal position.

VENDING-MACHINE.—F. LYNES, Johnstown, N. Y. The aim of this inventor is to provide, in connection with ejecting devices, novel devices for catching and discharging disks of hard or other magnetic material that may be placed in the coin-chute, for preventing the entrance of coins when the machine is open or in operation, for discharging a disk of lead or similar soft metal, also a novel means for ejecting the articles vended.

SIPHON.—W. P. LOCKE and H. D. MINNICK, Canton, Ohio. That class of siphons which are provided with a starting attachment consist-

ing of air-exhausting mechanism, is improved by this invention. Liquid air is received into a chamber which is provided at one end with a collapsible bulb and at the other with an outlet-valve, other valves being provided for controlling the escape of air.

SHINGLE-CUTTER.—M. KNAPP, Enid, Oklahoma. In this patent the object of the inventor is to produce a device which will efficiently serve the purpose for which it is designed, be rapid in its operation, and easily applied. Mr. Knapp's invention relates to shingle-cutters, and is intended especially for the purpose of trimming or cutting the course of shingles on the comb of a roof.

DOUGH-KNEADING MACHINE. — G. M. EULER, St. Louis, Mo. In the present invention the improvement has reference to dough-kneading machines and analogous devices in which it is desirable to knead or work a plastic substance such as dough and in which it is desirable to shift the same from one pan to another with a minimum expenditure of labor.

FRICTION-CLUTCH.—A. P. BROWN, New York, N. Y. In this patent the invention relates to improvements in friction-clutches for shaftings or pulleys, an object being to provide a simple and novel means for holding the friction parts together with a uniform pressure, thus reducing the wearing away of the parts to a minimum.

MANUFACTURE OF PASTED TUBES FOR CIGARETTES.—A. BENOIT, J. GUÉNIFFET, and J. NICAULT, 7 Rue Déparcieux, Paris, France. It frequently happens by a former arrangement that paste expulsed by pressure becomes deposited on an inner support to such extent that the passage of the paper tube is prevented. The present invention avoids this, because the pressure required for the pasting operation is produced by two means located outside of paper tube with interposition of a supply-surface within the latter. Obstruction of these means is therefore not feared, but occurring, can be removed at once. The device has the effect of flattening the tube between the two pressing parts; but the tube's cylindrical form is restored immediately after pasting by a device located beyond the pressing parts.

WELL ATTACHMENT.—H. W. CLARK, Mattoon, Ill. Mr. Clark's principal objects are to provide means for increasing efficiency of the associated pumping mechanism and for the cleaning of the well-casing. Considerable increase in efficiency results from the production of the vacuum within the casing and it will also avoid the waste of power in pumping air, as is liable to occur when the well is open at the top. The ready and effective means of keeping the casing free also adds to the pump efficiency.

Prime Movers and Their Accessories.

STEAM-BOILER.—J. F. HECKMAN, Hermann, Mo. The invention relates to steam-boilers; and the principal object of Mr. Heckman is the provision of a steam-boiler of a construction by which the collection and removal of all sediment or scale deposits therein are facilitated and the effectiveness and working capacity of the structure materially increased or enhanced.

VALVE-MECHANISM.—H. L. GERKEN, New York, N. Y. In this case the invention relates particularly to improvements in valves and distributing mechanism for radiators, the object being to provide a valve of simple construction and positive in its operation that will permit a supply of steam, hot water, or refrigerating liquid to one or more divisions of a radiator or to one or more radiators at will.

Railways and Their Accessories.

DERAILMENT-GUARD.—E. MUELLER, Alsen, N. Y. The present improvement relates to a safety attachment for the trucks of railway-cars, the same being adapted to slide upon the rails and afford support for the trucks and also automatically apply the air-brake when the wheels of the truck are derailed.

Pertaining to Vehicles.

VEHICLE.—P. A. LINDROSE, Hattiesburg, Miss. The invention relates particularly to improvements in trucks to be used as a part of an eight-wheel wagon for carrying heavy loads, such as timber and the like, an object being to provide a truck that will be very strong and of comparatively simple construction. By ball-and-socket connections the front and rear axles are permitted vertical movement to a certain extent one relating to the other in passing over rough ground. The formation of an eight-wheel wagon is secured by the provision of a loop-plate by which two trucks may be hooked. In backing, means are provided when necessary to lock a bolster to prevent the latter turning.

VEHICLE-WHEEL.—E. GASTAL, Pelotas, Brazil. The object of this invention is to provide a wheel which is simple and durable in construction, more especially designed for use on railroad-cars, street-cars, wagons, and other vehicles, and arranged to reduce noise and the vibration incident to the wheel traveling on the rail or road to a minimum.

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Inquiry No. 6215.—For makers of a small watch charm monkey wrench and novelties of this character.

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(9479) H. W. L. asks: 1. Will dipping a razor into boiling water affect the temper in the least? I find that it gives a much smoother shave by so doing, and attribute it to the possible melting of microscopic saw edge. Nearly every barber, however, will tell you that it will soon ruin a razor by taking out the temper. A. We have supposed that the improvement in the edge of a razor, which is brought about by dipping it into hot water just before shaving, is caused by the heat expanding the edge and thus closing up the fine serrations of the edge, and rendering the edge smoother than before. This does not bring the steel up anywhere near the temperature required to draw the temper. We cannot believe that it has any effect upon the hardness of the blade. We have done it on razors for years, and never thought they grew soft. When a razor becomes soft, it seems more reasonable to suppose that the edge was at first harder than the blade farther back, and by honing and grinding the hard edge is worn off, bringing the wear down to the softer part of the blade. 2. How can I make the white paste that the several ink manufacturers put up, both in tubes and jars? A. For a durable white paste, dissolve white glue in water of twenty times its weight. Stir, and while hot add four times the quantity of starch paste, boil and stir. When cooling, add a few drops of carbolic acid. We can look up the patents on so-called "library pastes," and send you three or four copies for $1.

(9480) H. L. C. asks: I wish to know of some simple method of sensitizing paper or cloth for blue-print work. My idea is to make blue prints on letterheads, handkerchiefs, etc., and I wish to get the formula for sensitizing same. A. To prepare blue-print paper, take potassium ferricyanide, red prussiate of potash, 1 ounce, and dissolve in 5 ounces of water. Make a second solution by dissolving 1 ounce of citrate of iron and ammonia in 5 ounces of water. Keep the two solutions in well-stoppered bottles. They will keep indefinitely. For use take equal parts of the two solutions, and mix in a dimly-lighted place; pin the sheet of paper to be coated upon a board and apply this mixture, by lamplight, to the paper, with a soft brush, a swab of cotton, or a small sponge, as rapidly and evenly as possible, in strokes first lengthwise and then crosswise, then pin up to dry in the dark. The work must be done in the dim light, since the liquid is sensitive to the light as soon as the two solutions are mixed. Be very careful in the use of these liquids, as all cyanides are poisonous. See SUPPLEMENT Nos. 584, 679, and 1385, price 10 cents each, mailed.

(9481) H. O. N. asks: 1. Have a small hand dynamo which is rated at 10 volts, 1 ampere. Could this be used to recharge a small dry battery, and how long would it take to recharge one battery? A. Your hand dynamo will charge five dry cells in series. We cannot tell how long it will require to recharge the cells; a long time with one ampere of current. You cannot charge one cell alone with the dynamo, the voltage is too great. Allow two volts per dry cell, or five cells in series for ten volts. 2. On page 468, Vol. 2, "Experimental Science," Prof. Trowbridge speaks of attaching Leyden jars to the poles of his storage batteries. What effect would a Leyden jar have on the voltage and amperage of a voltaic cell? A. The battery which Prof. Trowbridge describes has 10,000 cells in series or 20,000 volts in direct charge. This is sufficient to charge a condenser or Leyden jar, so that a heavy shock would be had from it. A Leyden jar would not be appreciably charged by a single cell of battery. 3. What is the usual height from crest to hollow of a wave on the Atlantic during an ordinary storm, and what is the highest that has ever been recorded? A common phrase in descriptions of a storm at sea, "when waves run mountain high." Is this exaggeration, or is this the appearance of the waves when on board a ship? A. Storm waves on the ocean are from 30 feet to 40 feet in height, and seldom exceed 50 feet. These numbers are on the authority of Prof Davis's "Physical Geography," which we can supply you for $1.50 by mail. Such a wave would look "mountain" high if you looked up at it from its trough, expecting it to break over you.

NEW BOOKS, ETC.

MAXWELL'S THEORY AND WIRELESS TELEGRAPHY. New York: McGraw Publishing Company. 12mo.; pp. 247; 145 illustrations. Price, $2.

This excellent work contains, in a single volume, two distinct parts entitled, respectively, "Maxwell's Theory and Hertzian Oscillations," by H. Poincaré, translated by F. K. Vreeland, and "The Principles of Wireless Telegraphy," by Vreeland.

The part of the book entitled "Maxwell's Theory and Hertzian Oscillations" comprises a popular version of Maxwell's great treatise divested of its abstruse mathematics, together with a graphic account of the confirmation of Maxwell's theory by the subsequent experiments of Hertz and his followers.

This portion of the book certainly fills a long-felt want. To the person of average training Maxwell's writings have little or no meaning, because of their mathematical nature. In this book Maxwell's theory is presented in the light of mechanical analogues or models, accompanied by simple explanations. The experiments of Hertz are also portrayed so as to be readily understood.

The second portion of the book is devoted to the principles of wireless telegraphy, and to some extent follows the style of similar publications. Two noticeable improvements, however, are made, to wit, the elimination of much threadbare literature of a historical nature, and the omission of the usual misleading accounts of the alleged commercial success of the various "wireless systems," used principally for the sale of stock to the public.

GETTING A LIVING. The Problem of Wealth and Poverty—of Profits, Wages, and Trades Unionism. By George L. Bolen. New York: The Macmillan Company, 1903. 8vo.; pp. 769. Price, $2.

Immediately the question thrusts itself upon us, From what standpoint does the author write—from that of labor or of capital? Of employer or of employe? And until that question is satisfactorily answered, we shall all be inclined to regard the discussion with suspicion. Mr. Bolen defines his position in a convincing preface. He has been, at different times of his life, employer and employe, both in small industries and in large; has been a striker, and has been struck against. His experiences cover North and South, country districts, great cities, and large mines. To do him justice, the volume gives both sides of the case with commendable impartiality, and presents, aside from any personal opinions of the writer, a mass of facts that are matters of record. No man will be the worse for reading the book, and no man can read it without profit and enlightenment. Mr. Bolen seems to have no pet scheme or pet theory to advance, but simply states and discusses facts as they appear to him, with a view to opening men's eyes to actual conditions, and leading them to see that measure of right which is usually to be found on both sides of most vexed questions.

WHAT HANDWRITING INDICATES. An Analytical Graphology. By John Rexford. New York and London: G. P. Putnam's Sons, 1904. 12mo.; pp. 142; illustrated. Price, $1.25.

Nothing strikingly new or original is claimed for this work, but the author has presented his material in such a way that it is readily accessible to the student, whereas in most works dealing with graphology one has to memorize all the signs and their significations before accomplishing much in the way of actual analysis. The specimens of handwriting offered as illustrative of different styles and traits are numerous, and include facsimiles of writing from the pens of authors, statesmen, criminals, lunatics, and men half asleep.

MECHANICAL DRAWING SIMPLY EXPLAINED. By F. E. Powell. London: Percival Marshall & Co., 1904. 12mo.; pp. 78. Price, 25 cents.

This pamphlet is a reprint of articles published in the Model Engineer, and in it the author attempts to show the student, apprentice, and amateur engineer briefly how to set about such drawing-office work as his case requires, besides enabling him to understand mechanical drawings and assisting him to prepare practical drawings or sketches of his own. The chapter on "Drawing for Reproduction" gives some useful hints to the tyro. The book is illustrated by nearly fifty cuts, giving samples of drawing, methods, and instruments.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending November 8, 1904

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Abrading material and mounting therefor, R. Gardner 774,513
Advertising, etc., apparatus for, H. J. Chart 774,647