RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

COFFEE-PULPING MACHINE.—RICHARD T. RICKARD, Honokaa, Hamakua, Hawaii. This machine consists principally of a diagonally-grooved pulping-roller mounted to rotate over a segmental bed-plate having ribs. In the machine there is also included a pair of rollers for separating the berry from the pulp, one of the rollers being plain and the other grooved to feed the berry bodily forward, at the same time allowing the pulp to pass down betwen the rollers.

SEED-DRILL. — ROBERT H. SLEISTER, Nebraska City, Neb. The device provided in the present invention is designed to be attached to drills or other agricultural implements as a substitute for the usual seed-planting mechanisms. The device is supported from a draw-bar. To this bar a furrowing device is secured, having a rotatable disk. A seed-conveying spout extends downwardly alongside of the disk, and is pivoted at one side of the disk-journal. A cap is carried by the spout, and covers the hub of the disk to form a guard or sand-band therefor. In use the seed will be deposited through the spout, and will fall in the furrow made by the furrowing device. The seed will then be covered by the soil as it falls back in place.

CULTIVATOR.—JOHN U. G. MORRISON and ANDREW A. KREGNES, Hooker, S. D. The cultivator is designed particularly for cultivating corn-land, and is broadly characterized by one or more revolving blade-cylinders, the cutting edges of which move in the plane of the surface of the ground and pass lightly below the surface. so as to sever the roots of the weeds.

FRUIT-GRADER.—WALTER MORLEY and ALBERT M. PATRICK, Salem, Ore. It is the purpose of this invention to provide a machine which shall grade or select fruit according to its size, and which shall furnish within a comparatively short space a considerable length of screening devices having both a vertical and longitudinal reciprocating movement. The screen-trays are carried in a frame and supported one above the other. Links connect the ends of an upper and lower tray, and serve to move the two trays in opposite directions. The fruit runs from one screen to another, in order that the various sizes may be separated by the different meshes of the screens. During this operation the screen-trays will be reciprocated in order more effectually to separate the fruit.

AUTOMATIC SWINGING STACKER.—CARROLL D. CLIFFELL, Redwood Falls, Minn. This invention provides an improvement in straw-stackers attached to threshing machines of that class which are swung upon their pivots so as to deposit the straw in a circle. The stacker comprises a straw-elevator pivoted at its lower end to swing horizontally; a curved bar carried by the stacker and having teeth upon its upper and lower edges and about its ends; a shaft having a pinion engaging the teeth of the curved bar, and a pivotal driving connection; and fixed vertical guides engaging the swinging end of the shaft and limiting its movement to a vertical plane.

Electrical Apparatus.

TELEPHONE-CALL REGISTER.—BRUNO KRAUSSE, Wilmersdorf, Germany, The present invention provides a device for registering either the length of time a telephone-subscriber uses his instrument in actual conversation with other subscribers, or the number of conversations, so that the time consumed in talking with the central office will not be registered. By means of a circuit-closing device operated from the station called up when the receiver is taken from its hook, both stations are connected in such a manner, for a short time, that the current then passing is strong enough to operate at the call-end a clock or registering apparatus, or both together.

ELECTRIC SWITCH. — ANDREW H. MILLER, 35 Bank Block, Denver, Col. The present invention pertains more particularly to switches for electric lamp circuits, and provides a switch by means of which the lamps in two circuits may be readily placed in series of multiple distribution. The switch may be so manipulated as to throw the whole voltage into one circuit to produce the full power of light in the lamps of the circuit, or to divide the current and distribute the voltage in the two circuits, thus causing the lamps to burn low. When the lamps are turned down, the inventor claims that a saving of seventy-five per cent in current is effected. The apparatus is characterized by the simplicity and inexpensiveness of its construction, as well as by the effectiveness of its operation.

ELECTRICAL TRANSMISSION OF SOUND.—FRANK M. BELL, assignor to J. DOZIER POU, Columbus, Ga. Connected with a telephone-transmitter is a beam operated by the sound-receiver and provided with adjustable weights and a movable contact. A parabolic reflector, containing a lamp in circuit with the contact and beam, is provided and confronted with a selenium plate in connection with a battery. When the receiver is set in motion by sound-waves, an up-and-down movement is imparted to the balance-beam, which movement becomes that of the resistance. Variation of the resistance produces variation in the lamp-light. These variations in light produce corresponding variations in the conductivity of the selenium plate, which variations are transmitted to the line or cable-conductor.

Engineering Improvements.

ROTARY ENGINE.—ROBERT O. DOBBIN, Waterloo, Canada. This engine comprises an annular cylinder-chamber having a rotating disk forming one side thereof. The cylinder has fixed abutments projecting inwardly from opposite walls, but reaching only part way to the center. The rotating disk has a flange formed in segments of a width to fit between the abutments, and carries rotary piston-heads formed as short segments, similar in thickness to the flange, and rotatable upon their axes in such a manner that they extend at all times in the same direction.

PUMP.—ADOLPH RICHTER, Manhattan, New York city. A slide is rigidly connected with the pump-piston; and upon the slide a transverse shaft carrying a pinion is journaled. A stationary rack engages the pinion to rotate the shaft. Upon the shaft, valve-operating projections are located. As the pump-piston reciprocates, it imparts a like motion to the slide, and the pinion rolling upon the stationary rack bar will, in addition to the reciprocating movement, receive a rotary movement. The parts are so arranged that, as the piston nears the end of its stroke, an arm will come into contact with one of the projections above referred to, and will shift the valves by throwing the arm and connected parts.

Mechanical Devices.

MUSIC-LEAF TURNER.—ALFRED G. LAMB, Cresco, Iowa. The music-leaf turner is provided with mechanism whereby, through the medium of compressed air, spring-controlled leaf-turning arms may be operated by a performer to turn the pages successively, it being possible to control the compressed air either by pressure of the foot or by pressure of the hand. The device is thoroughly automatic in its action, and its mechanism acts immediately upon the application of the air power.

BICYCLE-PATH OR SIDEWALK LEVELER AND ROLLER. — SAMUEL P. HEDGES, Greenport, N. Y. This machine is designed to be controlled by a single man, and is so constructed that, when the scrapers are to be brought in contact with the ground, the movement of the controlling-lever will be toward the operator, thus enabling him to work the scraper-blades to great advantage at the least expenditure of power. At the front portion of the machine, shoes are pivoted which tend to support this portion of the machine. These shoes are shaped so as to carry the machine over small or moderately large depressions in the path or sidewalk, enabling the scraper-blades to act evenly upon the ground.

Miscellaneous Inventions.

WRITING-TABLET HOLDER.—RUTHERFORD H. PAXTON, Florence, Colo. This paper-pad holder is designed to be hung vertically on a door or wall, so that visitors may leave messages upon the pad. To a body-plate, a spring-tongue is secured which is capable of engaging the stiff back of the paper pad. A clamping-frame is mounted to swing toward and from the body-plate.

CORSET.—JULIA C. MACKEY, New Castle, Pa. The corset, on its body portion adjacent to the busks, is provided with holding devices, each consisting of a strip of fabric secured along its outer edge to the body portion, and also transversely at intervals to form flaps adapted to be taken hold of by the wearer to draw the busks together. The corset may hence be closed without danger of injuring the fingers on the sharp edges of the steels.

DREDGING-BUCKET. — HARALD J. KROMANN, Manhattan, New York city. This dredging-bucket is especially adapted for dredging sand. The bottom of the bucket may be readily opened or closed. The invention provides means whereby the bucket may be dropped perpendicularly, carried over any desired spot where dredging is to be done, and readily inclined so that its spout will enter the surface from which material is to be removed.

BARREL.—ROBERT T. HARGROVES, Churchland, Va. This inventor has devised a ventilated barrel for use in conveying garden truck. In carrying out the invention the staves are made wedge-shape and uniform in size, and are formed from the blank of veneer without any loss of material. Each stave reinforces the other, and affords ample ventilation. The barrel is strongest at its ends, the staves being so formed as to facilitate the formation of the bilge without producing a weakening effect.

POLISHING-DEVICE.—JAMES WHITTENHAM, Manhattan, New York city. The polishing devices comprise a base and a beveled rocking member pivoted to side flanges on the base. The rocking-member and base are provided with surfaces of emery. In operation, one hand of the operator is to be placed palm down upon the upper surface of the rocking-member. By pressing with the fingers rearwardly of the pivotal point, the member will be rocked. A knife-blade is then inserted and the rocking-member moved thereon, after which the blade is moved back and forth to polish the sides and also the back.

SHEARS FOR RIPPING SEAMS.—LEMUEL MERRILL, Melrose, Mass. One of the shear-members has its end pointed and its edges sharpened to form a knife. The end of the other member is formed as a plate bent about the end of the cutting member to form a shield therefor. This second member is also provided with a slot and a saw-tooth notch, serving to prevent the clogging of the shears by the cut threads. In ripping a seam, the two members are operated to cause the edge of the cutting member to reciprocate across the notch and slot in order to cut the stitches. The shield prevents the blade's engaging the cloth.

BOLT OR PIPE-EXTRACTOR.—ALBERT ST. ALVIN UTT, Chicago, Ill. The extractor comprises a lever having two jaws at one end, a bolt projecting inwardly from each jaw, and wedge blocks pivoted on the inner sides of the jaws and mounted to slide on the bolt. The jaws are placed over the bolt or pipe to be drawn, with the wedge-blocks engaging the sides of the bolt or pipe. By depressing the outer end of the lever, the jaw-end will be raised. This will serve first to clamp the blocks tightly upon the bolt and then to raise the bolt. As the outer end of the lever is raised for a new purchase, the blocks will be freed from the bolt and will drop down for a new bite.

PACKING-BOX.—CHARLES A. ROBBINS, Manhattan, New York city. This invention provides an improvement in packing-boxes in which each of the parts consists of a frame and a lining therefor, the frame being ordinarily of wood and the lining of pulp. On account of its lightness and strength, the inventor uses jute-pulp. Heretofore boxes of this character have not been strong enough to meet all requirements. The inventor overcomes the difficulty by using open frames provided with double lining. A portion of the lining has its edges bent around members of the frames so as to be clamped between two frames. A box thus constructed possesses the three desirable features of lightness, strength, and impermeability to water.

GAS-FURNACE. — CHARLES W. RICE, Columbus, Ohio. The combustion-chamber of this furnace tapers toward its upper end, and is surrounded by the main body which communicates therewith at the top only. A drum is located on top of the main body in contact therewith so as to receive heat by transmission. Pipes connect the drum with the lower part of the main body. A smoke-pipe is connected with the drum. By the use of a deflector-plate the top or crown sheet of the furnace is protected.

LEMON-SQUEEZER. — JOHN W. NEAL, Kealia, Hawaii. This lemen-squeezer belongs to that class in which two sections are hinged together and provided with a bowl and knife, so that the lemon is forced into the bowl by the movement of the sections toward each other, the knife serving to cut the lemon simultaneously with the squeezing. The novelty of the present invention resides in the use of a spring-ejector to dislodge the lemon-rind.

SECTION-LINER.—EDWARD E. SHELDON and JOSEPH T. FREEMAN, Rochester, N. Y. This drawing-tool is designed to be attached to a T-square or rule, and is provided with a rod, spring-pressed in one direction. The rod can be reciprocated by means of a hand-operated device. A clutch coacts with the rod and serves to engage and disengage the rod, whereby the clutch may be advanced step by step by the movement of the rod, hence imparting a similar movement to the ruling edge connected with the clutch. By means of this device, section-lining, laying off distances and ordinates, spacing, obtaining angles, and the like, can be readily accomplished.

WAGON-STARTER. — BENJAMIN J. SYKES, Troutville, Pa. The starter is intended for use in holding a wagon on a hillside, and for storing up energy to aid in starting the wagon, so that the horses can be stopped while ascending a hill and the wagon be held by the device. The starter includes a pointed rod sliding in a casing and actuated by a spring. The rod is connected with the rear axle and is arranged so that its point will be embedded in the ground. As the weight of the wagon moves back on the rod, the spring will be compressed, thus storing energy, which will be used in assisting the starting of the vehicle. The device is simple in construction, easy of application, and, when not in use, can be readily removed and packed away.

Designs.

NECKTIE-FRAME.—WILLIAM J. SMITH, Brooklyn, New York city. The frame consists of a front portion having a hole formed therein, and two arms rising at the sides of the front. The arms embrace the collar, and the cravat is passed through the hole in the front portion before being tied. The device prevents the movement of the bow after having once been tried.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for 10 cents each. Please send the name of the patentee, title of the invention, and date of this paper.

NEW BOOKS, ETC.

GEOLOGICAL SURVEY OF CANADA. Annual Report. New Series. Vol. IX. 1896.

The portly volume before us is full of valuable information relating to the geological and mineralogical resources of Canada. There is no question that Canada has a great future before her as regard valuable deposits of minerals, etc., and the survey should be complimented on the valuable report, which shows that not only the practical but the scientific side of the subject is not neglected.

OUTLINES OF INDUSTRIAL CHEMISTRY. A Text Book for Students. By Frank Paul Thorp, Ph.D. New York: The Macmillan Company. 1898. Pp. 541. 8vo. Illustrated. Price $3.50.

We have long waited for a modern book on this subject which would be strictly scientific, but which would also give in plain, intelligible language the modern processes for making the various chemicals, and information relating to the carrying on of various chemical industries. The need of a thoroughly modern book in English on the subject has been very pronounced, and we are happy to say that at last we have a book which, while possibly not ideal, fills nearly all the conditions of a book of this kind. The author has taken an extremely heterogeneous collection of material and has assorted and combined it with rare judgment. The result is immensely satisfactory. We shall place the book among our standard books of reference.

TRANSACTIONS OF THE WAGNER FREE INSTITUTE OF SCIENCE OF PHILADELPHIA. Vol. III. Part IV. April, 1898. Philadelphia. Pp. 571-946.

CURRENT OBSERVATIONS OF ESSENTIAL OILS. By W. J. Bush & Company, Limited, Distillers of Essential Oils. First Edition. London. 1898. Pp. 44.

DAS KLEINE BUCH VON DER MARINE. Ein Handbuch alles Wissenswerten über die deutsche Flotte nebst vergleichender Darstellung der Seestreitkräfte des Auslandes. Von Georg Neudeck und Dr. Heinrich Schröder. With one map and 646 illustrations. Kiel and Leipsic: Lipsius & Tischer. 1899. Pp. viii, 351. 12mo. Price cloth, 60 cents.

Germany's navy, although not the largest in the world is of no little importance, because it must protect a commerce which, in size, is exceeded only by that of England. The work which lies before us describes this navy most minutely, tells of its past achievements and future possibilities. The book is divided into four parts, in which are respectively discussed the history of the German navy, its organization and personnel, the various vessels, the naval stations and the Kaiser Wilhelm Canal. An appendix contains a comparison of the navies of the world. The clearness which characterizes the descriptive matter, and the thoroughness with which everything that bears even remotely upon the German navy has been discussed, certainly confirm the statement found on the title page, that the work is "a handbook of all that is worth knowing of the German navy."

Notes & Queries

HINTS TO CORRESPONDENTS.

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

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

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

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

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

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

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7605) E. W. B. asks: 1. How can I make a photographing camera to take 4×5 pictures, on plates or films? It must have time or instantaneous shutter, must be provided with finder, and be adapted to taking scenery, groups or single objects. Also what will be the probable expense of making? A. Several cameras are described with illustrations in Hopkins' "Experimental Science," price $4. As to expense, it will probably cost you more to make a camera than to buy one, though the materials, except the lens, cost very little. You should buy the best lens you can afford, a rapid rectilinear lens, if it is to do all the sorts of work you mention. 2. What is used to sensitize plates, and how used? A. Plates are coated with an emulsion of gelatine and nitrate of silver. The process is described and illustrated in SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 541, 467, 647, 649, 1042, price 10 cents each. 3. Can you give directions for making the electric house lamp pictured in the issue of December 17? A. We must refer you to the manufacturers of the lamp, whose address is given in the number mentioned. 4. Why does mercury adhere so closely to tin, and not to any other metal? A. Mercury adheres to most common metals when they are clean. The only ones to which it does not adhere are iron and platinum. 5. Can you give complete instructions for making a ¼ horse power dynamo? A. A quarter horse power dynamo is described in a little book by Watson, price 50 cents.

(7606) C. F. N. asks: 1. If a solid rod of iron 10 feet long and ½ inch in diameter be suspended 7 feet from long end and 3 feet from short end, how much weight must you hang from short end to make it balance? A. A weight equal to ⅜ of the weight of the iron bar 10 feet long, placed at one end of the bar, will cause it to balance when suspended at a point three feet from the same end. 2. An ohm measures resistance, but I cannot understand why the more resistance you give a telegraph instrument, the better it works. A. The sounder does not work better because of its greater resistance, but because it has a larger number of turns in its coils. Its resistance is simply a convenient mode of specifying the amount of wire in it. When the current becomes very weak, as in long telegraph lines, a large number of turns on the sounder is necessary to produce magnetism enough to work the armature. For that reason relays and sounders on long lines have high resistance.

(7607) A. B. P. asks: 1. How can I make a preparation to keep moth from clothing, something that has no strong odor? A. Lupulin, 1 drachm; snuff, 2 ounces; camphor, 1 ounce; cedar sawdust, 4 ounces. Mix. This is to be used for sprinkling where the moths frequent. 2. Also please tell me how to make a cheap "flashlight" powder for making photographs. A. Magnesium, 40 per cent; permanganate of potassium, 40 per cent; peroxide of barium, 20 per cent. Or purchase 1 ounce of magnesium powder and 1 ounce of negative guncotton from dealers in photographic materials. Place on a dust pan enough cotton, when pulled out and flattened, to measure about 3½ inches in diameter. Sprinkle