

RECENTLY PATENTED INVENTIONS.

Pertaining to Apparel.

TROUSERS PRESSER AND CREASER.—R. M. TATE, Somerset, Ky. By means of a curved board and a flexible apron the inventor secures uniform pressure on the trousers, and this pressure may be assisted in forming the crease by pressing with the hand or some other substance, an iron, if necessary, upon the apron. When the lever is drawn to strain the apron over the bed, it will be stopped by engagement with the folding leg. The apron is made so as to conform to all inequalities of garment thickness, thus giving pressure in every portion.

EAR-GUARD.—I. D. JAMES, Roselle, N. J. The guard has means for retaining itself in the desired angular relation to the side of the face. The device is so constructed that while thoroughly protecting the ear of the wearer from the wind and rain and preventing entrance of dust or dirt it also serves to convey ordinary or nearby sounds to the auditory canal so that there is no difficulty in carrying on conversation with occupants of automobiles or other vehicles.

Electrical Devices.

ELECTRIC MOTOR.—D. MENDELSON, New York, N. Y. The inventor utilizes the attraction value of the remote ends of both electromagnets as well as their proximate ends—that is, in addition to the attraction value between the adjacent ends of the movable magnet and the stationary electromagnet he utilizes also the attraction value of the two ends of these magnets which are remote from their adjacent poles. The next feature consists in means for reversing the current through the movable and the stationary electromagnet at short intervals to clear out or prevent accumulation of residual magnetism.

Of Interest to Farmers.

COTTON PICKING AND HARVESTING MACHINE.—W. H. LE VIN, New Orleans, La. The invention relates to the class of pickers and harvesters in which pneumatic force and suction-hose are used. The objects are to provide a means for the easy application of suction-hose to the ripe cotton-boll at all stages of development of the maturing plants and by means of an automatic picker detach the matured cotton.

INCUBATOR.—G. H. LEE, Omaha, Neb. This improvement pertains to incubators and the object of the inventor is to improve the circulation of the warm air and ventilation of the eggs during incubation. Further objects of the invention are to render the heating of the eggs more uniform and to provide improved means for supporting the eggs in the egg-tray.

CHURN.—G. LAKE, Memphis, Tenn. Mr. Lake's invention is an improvement in churns which are provided with vertical rotary dashers that are operated by a horizontal shaft arranged above the churn body and suitably geared with the dasher. It is also applicable for mixing various materials, such as paint, cream, paste, powders, and drugs.

GATE.—O. E. CONAT, North Yakima, Wash. One purpose of this invention is to provide a lever-operated gate or a farm-gate that will be perfectly safe, not liable to stop on a dead-center and return to a shut position while a person or vehicle is in transit through the gate, and also to so construct the gate that it will be light, simple, strong, and economic and so evenly balanced that it can be operated with ease by a child.

COMBINED COOP AND BROODER FOR YOUNG CHICKENS.—J. A. CLARK, Bolckow, Mo. A combined coop and brooder is employed, embodying special means for preventing overcrowding of the young chicks in the compartment in the structure, due to which hitherto poultrymen or culturists have incurred considerable losses by smothering of chicks in large numbers, it being their peculiarity to crowd together in small space in the coop or brooder however ample the housing provisions. Special means are provided for airing, fumigating, and ventilating.

Of General Interest.

LEAF-TURNER.—K. H. DILLON, Philadelphia, Pa. The apparatus of this inventor is primarily intended for turning sheet music. The individual arms provided for each sheet are operated in succession by means of a treadle, the arms being mounted in connection with a rock-shaft which connects with the treadle by a cord. A torsion spring is provided for returning the shaft after each movement of the treadle. The mechanisms include means for readily permitting the assemblage and rearrangement of the turning arms as desired.

HOIST.—S. T. WALLACE, Los Angeles, Cal. The object is to primarily adapt the invention to handling mortar, lime, cement, brick, and other material required to be carried in a hopper or bucket. A carriage is provided adapted to move along a vertical track and mount pivotally a bucket. Coacting with the bucket is a peculiar latch and trip, by means of which the bucket is held during the ascent and automatically released when the top of the track is reached, the bucket being pivoted off center, so that as the bucket is released it automatically tips and dumps its load.

SOAP.—L. H. REUTER, New York, N. Y. This liquid soap or soap solution is for toilet and medicinal purposes and for use in the arts. The method of making soap consists in saponifying oils or fats with an alkali, dissolving the alkaline soap in water and alcohol, allowing the liquid to settle, filtering, adding gradually a predetermined quantity of a salt of perboric acid, stirring the liquid during process of dissolution, keeping temperature low, and adding finely powdered boric acid in small portions.

Hardware.

WRENCH.—J. CHRISTIAN, Hydraulic, and C. E. WETZEL, Naturita, Col. This implement may be readily adjusted and securely locked in position. The side of a recess remote from the pivot engages a projection upon the wedge when the handle is swung outwardly and tends to move the wedge slightly downward upon the bar, whereby to loosen the wedge from between the frame and the bar. In this construction the long arm of the handle is provided with means for tightening the wedge, while the short arm is provided with means for loosening the wedge.

Machines and Mechanical Devices.

REDUCING AND SEPARATING SYSTEM.—M. S. WEBER, Ephrata, Pa. A coffee-berry has, between and within its sections, an integument, which is a continuation of a hull and which is not removed in preparing coffee for the market. This contains tannic acid, which impairs the flavor and renders it unhealthy. To remove this substance and to furnish means for reducing or grinding the berry for use are the objects of the invention.

PULP OR PAPER STOCK SCREEN.—W. W. WELLS, Sandy Hill, N. Y. The object of the present invention is to provide a new and improved screen arranged to permit of screening an exceedingly large amount of pulp or paper stock in a short time. It relates to pulp or paper stock screens such as shown and described in Letters Patent formerly granted to O. H. Moore, in 1902 and 1903.

DEVICE FOR MAKING AND FINISHING BOTTLE-NECKS.—W. S. BREEDEN and H. H. BREEDEN, Bradford, Pa. The invention relates to a machine for making and finishing the necks of glass-blown jars, bottles, and homeopathic vials; and the purpose is to provide a machine in which a revoluble shaping and polishing tube is employed for that portion of the tube to be formed into the neck, and means for adjusting the bottle to the said tool, and also means for bringing the tool quickly into and out of action with relation to the neck.

TOOTH-BAR.—T. O. BERG, Little Falls, Minn. The improvement is in tooth-bars used in sawmills for shifting and turning logs, one of the objects being to provide a tooth-bar formed in a single casting, thus giving it greater strength and rigidity than is found in bars made in several pieces riveted together, as such a bar is weakened on account of the great number of rivet holes.

Prime Movers and Their Accessories.

ROTARY MOTOR.—A. PRIMAT, 103 Rue Lafayette, Paris, France. Four rigidly-connected pistons rock around a central point, moving in cylinders arranged circularly in the casing of the motor, cast in a single piece, this rocking movement being converted into continuous circular movement by means of a connecting-rod and crank, while the explosive mixture is conducted alternately into each of the four cylinders so that an explosion takes place for each reciprocatory movement, while the suction, compression, and the exhaust of the burnt gases take place alternately in each of the other cylinders, owing to the provision of a set of valves.

Railways and Their Accessories.

SWITCH-TONGUE GUARD.—M. MALLA, Scranton, Pa. The invention refers to improvements in guards for the free ends of railway-switch tongues, the object being to provide a simple device to prevent chains, couplings, stretchers, or other devices that might be dragging from a car from catching over the end of an open switch-tongue, thus preventing damage or possible accidents.

Pertaining to Recreation.

MARINE ILLUSION APPARATUS.—F. M. WHITE, Fort Worth, Texas. Two boats are apparently floating in a waterway, and a fixed structure spans the latter intermediate the boats. The first boat is tied to a dock by which passengers are transported along the waterway until the fixed structure is met, and through this they pass onto the second, which is stationary, but capable of being rocked to simulate motion of a boat and also provided with paddle-wheels revolved to produce further illusion of propulsion. Passengers suppose that they pass through the bow to stern of boat instead of making the transfer, as stated. The second boat is moored within a building ornamented with marine views and moving pictures are thrown on a screen, giving a steamboat tour with realistic effect.

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. 8350.—Wanted, the name and address of the manufacturer of the Imperial Smoothing Iron, which is heated by gasoline or oil.

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

Inquiry No. 8351.—Wanted, the name and address of the patentee and present manufacturer of the toy top called the New 20th Century Gyroscope.

Handle & Spoke Mch'y. Ober Mfg. Co., 10 Bell St., Charrin Falls, O.

Inquiry No. 8352.—Wanted, manufacturers of decorated glass, such as used in clock doors and quaint dials.

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

Inquiry No. 8353.—Wanted, manufacturers of bricks made of sawdust compressed with coal oil.

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

Inquiry No. 8354.—Wanted, the name and address of the manufacturer of the Mars Gas Engine Lubricator.

The celebrated "Hornsby-Akroyd" safety oil engine. Koerting gas engine and producer. Ice machines. Built by De La Vergne Mch. Co., Ft. E. 138th St., N. Y. C.

Inquiry No. 8355.—Wanted, the name and address of the manufacturer of the following: Alarm watch, automatic time stamps and registers, and Baldwin's calculating machine.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machine work and special size washers. Quadriga Manufacturing Company, 18 South Canal St., Chicago.

Inquiry No. 8356.—For manufacturers of adding and listing machines.

Inquiry No. 8357.—For manufacturers of large magnets.

Inquiry No. 8358.—Wanted, makers of models, in the steam line, or just boilers and engines.

Inquiry No. 8359.—Wanted, machinery for the manufacture of alcohol from apples, molasses and sugar.

Inquiry No. 8360.—Wanted, machines for grinding the straw of alfalfa into meal.

Inquiry No. 8361.—Wanted, plans and specifications for a one-story, frame Knoch Deau building, size and appearance suitable for a small machine shop.

Inquiry No. 8362.—For parties engaged in making small buildings, Knoch Deau, suitable for small machine shop.

Inquiry No. 8363.—Wanted, machinery to make wooden bungs, stoppels, etc.

Inquiry No. 8364.—Wanted, a machine for extracting fibers from plants.

Inquiry No. 8365.—Wanted, makers of buckram for carriage work, also manufacturers of malleable corner irons used in buggy work.

Inquiry No. 8366.—Wanted, makers of reliable melodeon cloth, and a general line of buggy oil cloth.

Inquiry No. 8367.—Wanted, a mill for grinding lumps in cup grease.

Inquiry No. 8368.—Wanted, apparatus for the distillation of wood for charcoal, wood spirit and acetic acid.

Inquiry No. 8369.—Wanted, manufacturers of pulley rims, for motor cycle outfits.

Inquiry No. 8370.—Wanted, makers of glasses with miniature pictures, such as are in knife handles, etc.



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.

(10158) E. B. asks: 1. I want to magnetize an ordinary twist drill, making a magnet of it. Will I have to draw the temper of the drill first, or can I make a magnet of it as it is? A. The cutting end is already hard enough for your purpose. Heat the other end to redness and plunge into water, then magnetize. 2. How many amperes of current will it take to magnetize it by means of a coil of 6 or 8 layers of No. 18 silk-covered wire, the current being 110 volts? A. You must be governed by the heating of your coil. Use only so much current as will not heat the coil so that the insulation burns. That would destroy the coil. 3. In making a permanent magnet of tool steel, shall I first soften the steel before magnetizing it, or should it be hardened at the ends? A. Harden the bar at the ends glass hard.

(10159) E. S. D., Jr., writes: 1. I would like to know if you could give me the formula for a solution for bichromate cells, with a good ampere output, in the right proportions, and how to mix it, etc? A. A good solution may be made after the method described in SUPPLEMENT No. 792, price ten

cents. 2. Which is the best form of bichromate to use for making electroplating fluid—the sodium or the potassium? A. The sodium salt is easier of use. 3. What is the best way of amalgamating a zinc? A. The usual method is to clean the plate with dilute sulphuric acid, and then rub mercury over the plate, dipping it into the dilute acid if necessary to make the mercury take to the surface. 4. I would like to know if I could have a battery rheostat made for these batteries, steady current, etc.? A. Yes; though there is little need of one. The amount of current can be regulated by immersing the zincs to a greater or less depth in the liquid.

(10160) W. G. S. asks: 1. What is the output in amperes of the common telephone battery called sal-ammoniac battery? A. The Leclanche cell gives probably 3 amperes as a maximum discharge rate. 2. Also of the dry battery called the 1900, and does the size of the battery govern the number of amperes? A. A dry battery has a small discharge rate. The amperes of discharge of any cell are greater with a large than with a small plate. 3. Also give output in amperes of the common Crowfoot gravity battery, 6 x 8 size. A. You will not be far wrong to take the discharge of the gravity cell at two amperes. 4. Where can I get a table giving the above information? A. Most cells are rated in Carhart's "Primary Batteries," price \$1.50 by mail.

(10161) D. C. E. asks: 1. Which is the correct way to place a fuse block—outside or inside the cut-out switch? I have seen fuse blocks put outside the switch, but doubt its being right. A. Switches are placed so that the handles turn down when opened. They cannot then drop by gravity and close themselves. This is much more important than the position of the fuse. 2. Tell me the best oil to use on commutators. A. Use some one of the commutator compounds prepared for this especial purpose.

(10162) H. B. asks: What in your opinion is the best material or substance to cut off or take away the power of the magnet? For instance, a magnet will draw steel toward itself; what can be placed between the piece of steel and the magnet to take away the power of the magnet to draw the steel? A. Iron of considerable thickness is the only screen against the lines of magnetic force.

(10163) P. S. S. asks: What solution is used in plating, for instance silver, or nickel, when batteries are used for circuit? A. For nickel the double sulphate of nickel and ammonium is commonly employed, and for silver the cyanide of silver is almost universally used. Full instructions are to be found in Langbein's "Electro-Deposition of Metals," price \$4 by mail.

(10164) A. B. McK. asks: Will you kindly give me what information you can on the following subject? Take a piece of steel and cut in two pieces. Make one as soft as possible and the other as hard as possible; now, what will be the difference in resistance in ohms, if any? A. Barus and Strouhal give the specific resistance of glass-hard steel as 45.7 and of soft steel at the same temperature as 15.9. This is the resistance in thousandths ohms of a bar one square centimeter in cross section.

(10165) M. and S. J. write: If iron or steel is properly cleaned before plating with nickel, it can be burnished like silver without peeling or stripping, therefore, the burnish is a good test for poorly nicked goods, as the loose nickel will come off.

(10166) C. W. asks: Please inform me as to the difference between an aneroid and a holosteric barometer. A. The word *aneroid* is from two Greek words meaning without liquid, and the word *holosteric* is from two Greek words meaning wholly solid. They are two names for the same thing. There is no difference between them.

(10167) G. M. D. asks: What should be the dimensions, size and amount of wire for a 12-inch coil, 15-inch coil and 18-inch coil? Is there any definite relation existing whereby the above information may be determined from a known coil? A. The dimensions of induction coils are the result of experience rather than of calculation. The properties of the magnetic circuit and the effects of induction are well known, and can be applied to an induction for giving sparks; but almost every builder works from designs which have been wrought out by experiment and are known to give good results. The sizes and windings of certain large coils are given in Hare's "Large Induction Coils," price \$2.50 by mail.

(10168) H. O. writes: Can you give us a formula for a preparation for the tempering of mill picks? A. The treatment of mill picks before hardening is of far greater importance than any hardening preparation other than salt water, which is the only menstruum that we can recommend. No hardening solution can recover the lost properties of steel that has been overheated, burnt corners of mill picks, or hammering at above or below a full red heat. Cyanide of potassium dissolved in the hardening water or powdered and sprinkled on the red-hot point before dipping, or even common soap rubbed on the pick before heating, are used by experienced men in the business.

(10169) F. H. P. asks: Is it possible to wind a spark coil of the simple pattern and