RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

BAND-CUTTER AND FEEDER FOR THRESHING-MACHINES.—JOHN LUNZ, Sandcreek, Oklahoma Ty. In this machine the speed of the threshing-cylinder is regulated by the amount of grain deposited on the endless grain conveyer or carrier leading to the cylinder. A second conveyer is employed, arranged to swing backward in a vertical plane when a large amount of grain passes between it and the main conveyer. A clutch mechanism automatically regulates the speed of the swinging conveyer. A new arrangement of circular band-cutters has been devised, whereby the grain is spread as it is loosened from the sheaves.

PLOW.—WILLIAM C. POPE, Acme, Fla. The invention provides a plow for use in working cotton for the first time. The plow or cultivator embodies two disks which run on opposite sides of the row, together with devices whereby the angle of the disks to the row can be varied to make the disk run deep or shallow, as may be required.

DEVICE FOR OPERATING MARKERS OF CORN-PLANTERS. — JOSEPH CUNNINGHAM, Mattoon, Ill. Mr. Cunningham has provided a device adaptable to any corn planter, whereby the marker can be quickly raised by the foot of the driver and freed from any trash which may have been gathered. Thus, a plain mark is made during the planting, and the work of straight planting facilitated. The device is also serviceable in raising the marker to clear a rock or stump.

REPLANTER ATTACHMENT FOR CULTIVATORS.—JURGEN W. GRONEWOLD, Golden, Ill. By means of this simple replanting attachment, which can be readily applied to any cultivator and operated from the handle, a "set" of corn can be instantly and accurately dropped in a lost hill and added to one thinly planted during the cultivation of the field. At one movement of the operator's hand, a few seeds or grains are dropped on the ground, the furrow having been previously opened for the seed. The dropped seed is covered and rolled.

Engineering Improvements.

ROTARY ENGINE. — THOMAS CROSTON, Hoquiam, Wash. The rotary engine can instantly and automatically adjust itself to the requirements of the load and to the variation of steam pressure. Racing is prevented. The engine is not liable to slow down until the limit of its working power is reached. The cut-off can be varied from zero to full revolution. Efficient reversing means are provided. The engineer can ascertain the horse power under which the engine is running at all times.

ROTARY ENGINE.—JOHN D. R. LAMSON, Toledo, Ohio. Mr. Lamson's engine is simple in its construction and effective in its operation. The novel features of construction are to be found in a revoluble ring-shaped cylinder in which piston-heads swing. A fixed, hollow abutment is arranged in the cylinder and discharges the steam against the piston-head. The cylinder revolves around a fixed steam-chest connected with the abutment through an opening in the inner wall of the cylinder, to furnish steam to the abutment.

Electrical Apparatus.

CABLE.—JOHN D. GOULD, Brooklyn, New York city. The cable is to be used for conducting electric-light currents. The cable comprises not only a conductor for the working current, but also a fusible conductor designed for connection with a fire-alarm system. Thus the cable is converted practically into a thermostat throughout its entire length, or throughout the length of cable that may be placed in a building for electric-lighting purposes.

Miscellaneous.

TOOL-HANDLE. — JOHN A. HALL, Box 719, Aspen, Col. This tool-handle can be used with a hammer, an ax, a pick, and with other forms of heads. The handle is simple in construction and very cheaply manufactured.

PUMP-ROD GRIP.—JAMES E. FOSTER and CHARLES F. RICHEY, Franklin, Pa. The gripping device consists of a frame between the side pieces of which clamping-jaws are pivoted, thrown into gripping position by a pull-chain. The device is intended mainly to make connections between tackle-boxes and oil-well rod lines.

Designs.

HYDROCARBON LAMP. — JOHN W. McCREA, Manhattan, New York city. The essential features of the design are to be found in bending the vaporizing tubes upward in a circle and in supporting upon them a globe to prevent the smoking of the ceiling. The support is ornamental in character. The design removes much of the hideousness of the ordinary hydrocarbon lamp.

FABRIC FOR DRESS BELTS. — JOSEPH RIEGELMAN, Manhattan, New York city. Ornamental figures are transversely coiled at the central portion of the strip of fabric, and V-shaped ornamental figures are marginally arranged. Both series of figures are embossed.

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.

Inquiry No. 715.—For a burner for coal oil or crude petroleum that will heat a water plant in house; plant carries 183 gallons.

Inquiry No. 716.—For manufacturers of wooden spigots with a key to operate.

Inquiry No. 717.—For manufacturers of cask making and stave dressing machinery.

Inquiry No. 718.—For manufacturers of acetylene gas cook stoves.

Inquiry No. 719.—For manufacturers of patent fuel machinery.

Inquiry No. 720.—For manufacturers of match making machinery.

Inquiry No. 721.—For manufacturers of hand power mixing and sifting machines.

Inquiry No. 722.—For manufacturers of washing machines.

Inquiry No. 723.—For implements for a fruit cannery.

Inquiry No. 724.—For manufacturers of ditching machines.

Inquiry No. 725.—For manufacturers and dealers in aluminium goods for cooking purposes.

Inquiry No. 726.—For the addresses of the largest stone quarry companies in the United States.

Inquiry No. 727.—For manufacturers of crucible steel castings.

Inquiry No. 728.—For a weighing or tallying machine to automatically weigh or count each coal tub in hoisting same.

Inquiry No. 729.—For machinery for making round soapstone and crayon pencils.

I want to secure the latest and best machinery for excavating and making peat fuel. J. Melvin, Box 773, N. Y.

Inquiry No. 730.—For manufacturers of cheap short distance telephone outfits in quantities.

Inquiry No. 731.—For manufacturers or dealers in long distance telephones.

Inquiry No. 732.—For machine for coiling No. 16 wire into ⅜ diameter coils of ⅛ to 5-16 mesh; machine to operate the same as weaving machine for wire mattresses.

Inquiry No. 733.—For a machine for sharpening horse and barber's clippers.

Wanted.—The best "Horseless Carriage" there is in the market. Please quote lowest price for spot cash, and mail descriptive circular or catalogue, P. O. Box 764, Brooklyn, N. Y.

Inquiry No. 734.—For manufacturers of small castings in quantities.

Wanted.—A manufacturer to introduce the Fowler Pen on royalty (Pat. U. S., Can., Eng.), described in SCIENTIFIC AMERICAN, April 20. Fowler & Briggs, 118 Center Market, Washington, D. C.

Inquiry No. 735.—For parties to manufacture a special instrument.

Wanted.—General Superintendent for large manufacturing concern near New York. Must be an executive and organizer of ability and force. Give age, references, experience etc.—E. B. B., 16 and 18 Park Place, N. Y. City.

Inquiry No. 736.—For a lathe to turn ordinary bobbins for cotton mills.

Inquiry No. 737.—For a machine for turning and mortising shuttles.

Inquiry No. 738.—For dealers in machines of ¼ to ½ horse power operated by electric battery or gasoline (gasoline preferred).

Inquiry No. 739.—For manufacturers of the Blake stone crushing machine.

Inquiry No. 740.—For manufacturers of miniature railways.

Inquiry No. 741.—For manufacturers of machinery for evaporated fruits.

Inquiry No. 742.—For manufacturers of well drilling machinery.

Inquiry No. 743.—For blue-flame kerosene cooking stoves and ranges.

Inquiry No. 744.—For domestic cooking and kitchen labor-saving appliances.

Inquiry No. 745.—For manufacturers of oil filters.

Inquiry No. 746.—For manufacturers of steam hoisting engines for building work.

Inquiry No. 747.—For manufacturers of portable steam saws for cutting off timbers, etc.

Inquiry No. 748.—For a motor, wound by horse power, or otherwise, furnishing power to run light machinery on a farm.

Inquiry No. 749.—For the manufacturer of the "Clawson's Rotary" ice shaving machines.

Inquiry No. 750.—For manufacturers of radiators for automobiles.

Inquiry No. 751.—For manufacturers of marble cutting machinery.

Inquiry No. 752.—For manufacturers of gold mining machinery for gold placer work.

Inquiry No. 753.—For the manufacturer of aluminum sheets suitable for strainers.

Inquiry No. 754.—For manufacturers of aluminum rivets.

Inquiry No. 755.—For manufacturers of rapid photographic instruments that will photograph, develop and finish entirely in the shortest possible time, or half a minute, if possible, for making abstracts of legal records in a county seat.

Inquiry No. 756.—For manufacturers of autographic supplies.

Inquiry No. 757.—For manufacturers of a complete plant for cleaning carpets, or machinery therefor.

Inquiry No. 758.—For manufacturers or dealers in large colored photographs of scenery of Switzerland, the Alps and the Rocky Mountains.

Inquiry No. 759.—For manufacturers of thermometers for measuring temperatures from 300° to 1000° Centigrade.

Inquiry No. 760.—For manufacturers of machinery, tools and material for manufacturing traveling bags, dress suit cases, etc.

Inquiry No. 761.—For manufacturers of small porcelain-lined water tanks for refrigerators.

Inquiry No. 762.—For manufacturers of ice harvesting machinery.

Inquiry No. 763.—For manufacturers of machines for blanching and grinding, or otherwise preparing peanuts.

Inquiry No. 764.—For manufacturers of feather duster machinery.

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.

(8194) A. C. writes: 1. I read the following extract from Ganot: "He who makes choice of Coulomb's law to connect the electrical measurements with the 'absolute units' will constitute the system of absolute electrical units known as 'electrostatic system.' If the law of electrodynamic actions, expressed by the Ampere formula, be chosen, the electrodynamic system will be formed. At last, he who prefers the law of the electromagnetic actions expressed by the Laplace formula will form the electromagnetic system of the absolute electrical units." Please be so kind as to give me a notion of: 1. Coulomb's law. A. The formulas for which you inquire are mostly given in Ganot, from whom you quote. Coulomb's law is that the force between two charges is directly as the product of the quantities and inversely as the square of the distances between them. 2. Of the law of the electrodynamic actions expressed by the Ampere formula. A. Ampere's formulas refer to the motion produced by currents in relation to the direction of their flow, by their attractions and repulsions upon each other. They may be found in any advanced text book of physics. 3. The law of the electromagnetic actions. A. The electromagnetic actions of currents upon each other are given at length in Ganot, 15th American edition, sec. 909. As they cover more than half a page of fine type, we cannot spare space to reprint them. 4. The formula of Laplace. A. We are at a loss to say what formula of Laplace is referred to. 5. You have a solid body animated by the rotary movement around an axis. There are the centripetal and the centrifugal forces; the molecular attraction is in equilibrium with the centrifugal force, and we have the equality of action and reaction. But suddenly, the body breaks to pieces; the centrifugal force has become too great; the molecular attraction has been overcome. How can it be maintained in that case, that the action is always equal to the reaction, and vice versa, according to the principles of mechanics? A. You are in error in your conception of Newton's third law. It states the mutual action of two bodies upon each other, and not the action of a single body in motion. While the body is held together, the action and reaction of its parts are as you state them; but when the body breaks to pieces there is no longer any reaction against its motion. If there were but one body in the universe, there could be no reaction. A reaction is always between two bodies, and the law is better stated: "The mutual actions of any two bodies are always equal and oppositely directed." (Barker).

(8195) C. W. S. writes: A substance called "Sencone" is stated in Thorp's "Dictionary of Applied Chemistry," to be made by heating crystalline silicon to redness in chlorine and passing the compound formed into water. It claims that this substance when heated glows with a bright light and deposits silica. Can you kindly inform me if this means that this glow, when heated, is permanent? A. The heating of the compound of silicon which you describe produces its decomposition with light. When the action is over the light will, of course, cease. There is no way to produce permanent light.

(8196) J. L. P. writes: I would be glad if you would give me a rule for finding the trial figure in the divisor in extracting square root. A. To extract the square root of any number separate the number into periods of two figures each, counting each way from the decimal point. Fill the lowest period of the decimal part with a cipher, if it contains but one figure. Find the largest square in the highest, or left-hand period. Place the root of this square as the first figure of the root, and subtract the square from the highest period of the number. To the remainder annex the second period of the number as a dividend. Multiply the root already found by two, and place the product as the *trial* figure in the divisor. Divide all of the dividend except its lowest figure by the trial divisor for the next figure of the root. Write this both in the root and as the lowest figure in the divisor. This is called the *complete divisor*. Multiply the complete divisor by the last figure of the root, subtract the product from the dividend, bring down the next period of the number, and proceed as before till the entire root is found. This rule is simply the statement of a formula of algebra in words:

$$a^2 + 2ab + b^2 = (a + b)(a + b).$$

a represents the first figure of the root, and b the second figure. An example of the mode of using the rule is given:

```
                        6,34, .20 (25.18
                        4
Trial figure  4       ——
                      45)234
                         225
Trial figures 50       ———
                        501)920
                            501
Trial figures 502       -———
                       5028)41900
                            40224
```

This may be carried out to any desired number of figures.

(8197) A. F. D. asks: 1. What effect, if any, has the adding of bichromate of potash solution? Does it give solution more strength or lessen it? Example: If rule gives 3 ounces sulphuric acid and 3 ounces bichromate potash and water, and you add 5 ounces instead of 3 ounces potash, what does it do? A. Adding more bichromate to a solution makes it stronger in bichromate, relatively weaker in the other ingredients. If the formula is properly made up, no change should be made in its proportions. The chemist who made the formula knew what quantities to use so as to have the various ingredients do their proper work. 2. I have small electric motor, about one-half man power; would like directions for making battery to run same, and number of cells. I am going to use motor to run small foot drill and emery wheel. A. A battery is described in SUPPLEMENT No. 792 which is just the thing for your purpose.

(8198) R. K. F. asks: 1. Will you kindly inform me of a firm selling aquarium cement? A. See our advertising columns, or Manufacturer's Index, which is sent upon application. 2. Have you a recipe? A. Mix equal parts of gutta percha and yellow pitch. Heat carefully, stir well, and apply to the heated glass while hot. 3. What is the lowest voltage (direct current) at which the electric arc may be operated? A. The drop in the arc is 45 volts. Any excess over this in an open arc must be taken up by a resistance. 4. Can a 10-inch spark (induction coil) be produced with a pressure of 48 volts? A. Yes. 5. Can chalk be made incandescent? A. Yes, by the oxy-hydrogen jet, just as the lime is in a calcium light. 6. At what temperature does incandescence occur? A. The latest conclusion is that an electric light carbon emits visible radiations at 734° F. Iron sends out light at 713° F., and gold at 783° F. The first light seen is gray, and the spectrum extends from the point of greatest luminosity to both ends of the spectrum. 7. At what temperatures do platinum and German silver melt? A. The latest figures for the melting point of platinum are 5,846° F. Previously the figure given was 3,427° F. German silver is a substance of no fixed composition. Its melting point thus varies, and no fixed point can be given.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

May 21, 1901,

AND EACH BEARING THAT DATE.

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

(Continued on page 348)