

RECENTLY PATENTED INVENTIONS.

Mechanical Devices.

ORE - FILTER.—CHRISTOPHER VOELKER, Helena, Mon. The cyanid leaching processes have the fault that more or less metal remains in the tailings, thus giving rise to losses. The ore is introduced, as a general rule, and the solution added, and where it happens that the ore lies in different grades of value within the tank, the solution cannot dissolve the particles of metal uniformly. The pulp is affected more thoroughly at first, and as it goes down to the bottom will take the slimes forming with it, and will deposit them around the discharge aperture. The present apparatus permits the solvents of the metals to pass through the pulp during a time governed by the operator. The filtrate can be examined so that the metal-lurgist can determine the valuable salts of mercury, copper, silver, gold and the like which may form through the chemical or electrical action in the amalgamators. The machine is of particular service where the extravagant use of copper sulphate, mercury and salt are in most cases the cause of the solubility of gold.

ADDING-MACHINE.—AMOS K. ERSLAND, Fruithurst, Ala. The adding-machine contains but few parts and is not liable to get out of order. The elements are so arranged that they will accurately perform their functions. The numeral wheels employed are operated from the exterior of the machine by a lead pencil, penstock, pointer, or the like.

RECARBURIZING-MACHINE.—JOHN W. DAVIS, Converse, Ind. The machine recarburizes metal. Powdered carbon, carborundum or any other finely ground material, is infused into a bath of molten steel or iron while in a furnace or bath. The machine comprises a feeder for the powder and a tube for receiving the material from the feeder. The tube is mounted to rock relatively to the feeder. A blast connection with the tube is provided. The feeder, tube and bias are mounted on a truck.

Vehicles and Their Accessories.

BICYCLE-WHEEL-TIRE.—CHARLES H. PASCHKE, Buffalo, N. Y. The essential features of the tire comprise a number of elastic tread sections, means for holding the tread sections in ring form, and resilient arms which serve elastically to retain the composite thread ring concentrically with two spring tension rings clamped upon each side of the wheel-rim.

AXLE-JOURNAL.—CHRISTIAN FOX, Gap, Pa. Mr. Fox has devised a means for mounting wheels upon axle journals so that the movement of the wheels will be attended by the least possible friction and also so that the wheels will still be held in place even though the nut should become disengaged.

Miscellaneous Inventions.

STANCHION.—ROBERT T. REID, Tacoma, Wash. As ordinarily constructed and arranged, the stanchions between which the heads of horned cattle are secured do not permit freedom of position and movement to the animals when lying down or getting up. The inventor has devised an improved stanchion which overcomes this objection and which consists essentially of a single metal rod peculiarly bent.

SORTING-DESK.—SAMUEL A. HARRISON, Brooklyn, New York city. In post offices of large cities the mail-carriers usually sort their mail by means of pigeon-hole desks. Mr. Harrison has devised an improvement upon the desk usually employed, in which improvement a series of shelves or compartments are provided, the sizes of which can be readily varied. The shelves are capable of being released simultaneously by a peculiar novel construction.

ATTACHMENT FOR CUFFS AND CUFF-BUTTONS.—JAMES W. RUNNER, Shelby, Mich. This device is very simple and durable in construction, can be readily applied and does not interfere in any way with the working or appearance of the cuff button. All rattling of the cuff buttons is prevented, especially when used in connection with celluloid or rubber cuffs.

EXHIBITING DEVICE.—CHARLES A. HAMILTON, Pana, Ill. The invention is an improvement for exhibiting goods in stores—notably such goods as lace curtains, draperies, carpets and the like; and the object is to provide a device for this purpose that should be simple in construction and inexpensive, and by means of which the goods when not on display are stored or packed in a small space.

Designs.

WINDROWER FOR MOWING-MACHINES.—THOMAS B. FAGAN, Van Wert, Ohio. The windrower is of a peculiar design, the essential features of which consist of a series of parallel slats of gradually increasing length, each slat being flat, or of much greater width than thickness, and each turned up at the rear with a gradually curved or hook-shaped end, the terminal portion of which is twisted, so that its plane stands at an oblique angle to the body part. The windrower is to be attached to the rear of the cutter-bar of a mower, and causes the lateral delivery of the hay with a rolling action.

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.

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Inquiry No. 1525.—For manufacturers of compression springs of special measurements.

For mining engines. J. S. Mundy, Newark, N. J.

Inquiry No. 1526.—For manufacturers or dealers in divers' supplies.

TURBINES.—Lefell & Co. Springfield, Ohio, U. S. A.

Inquiry No. 1527.—For dealers in milk can spouts, also covers for cans with knives in lids.

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

Inquiry No. 1528.—For dealers in casein.

WATER WHEELS. Alcott & Co., Mt. Holly, N. J.

Inquiry No. 1529.—For leading bolt and nut manufacturers in the United States, England and Germany.

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Inquiry No. 1530.—For dealers in articles for the queensware business.

Gasoline Lamps and Systems. Turner Brass Works, Chicago.

Inquiry No. 1531.—For a machine for automatically weighing and wrapping parcels.

"Perfect aluminum solder. Amer. Hdw. Mfg. Co., Ottawa, Ill."

Inquiry No. 1532.—For manufacturers of water gas appliances.

Machine chain of all kinds. A. H. Bliss & Co. North Attleboro, Mass.

Inquiry No. 1533.—For manufacturers of wireless telegraphy apparatus.

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

Inquiry No. 1534.—For manufacturers of electrical and other toys.

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

Inquiry No. 1535.—For dealers in novelties and notions.

For Sheet Brass Stamping and small Castings, write Badger Brass Mfg. Co., Kenosha, Wis.

Inquiry No. 1536.—For a machine or generator for generating gas from kerosene or coal oil.

Rigs that Run. Hydrocarbon system. Write St. Louis Motor Carriage Co., St. Louis, Mo.

Inquiry No. 1537.—For a small plant for electric lighting purposes.

Ten days' trial given on Daus' Tip Top Duplicator. Felix Daus Duplicator Co., 5 Hanover St., N. Y. city.

Inquiry No. 1538.—For the manufacturer of a special nickel-plated street car ticket holder for the pocket.

Gear Cutting of every description accurately done. The Garvin Machine Co., 149 Varick cor. Spring Sts., N. Y.

Inquiry No. 1539.—For parties to make a steel spring about 4-1000 of an inch thick, 1-2 inch wide and 7 inches long.

FOR SALE.—Patent office reports, from 1853 to 1871, inclusive, bound in cloth. Address Patent, P. O. Box 773, New York City.

Inquiry No. 1540.—For manufacturers of launches operated by alcohol vapor.

Designers and builders of automatic and special machines of all kinds. Inventions perfected. The W. A. Wilson Machine Company, Rochester, N. Y.

Inquiry No. 1541.—For manufacturers of gasoline engines for motor wagons.

The celebrated "Hornsey-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

Inquiry No. 1542.—For dealers in ready-made wheels, bodies and running gears for automobiles.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y.

Inquiry No. 1543.—For dealers in the electrical water heater invented by H. M. Hill.

TO MANUFACTURERS AND INVENTORS.—Send particulars and illustrations of your manufactures and inventions to Calder & Goldwater, Solicitors, Auckland, New Zealand.

Inquiry No. 1544.—For manufacturers of counting machines.

DESENISS & JACOBI, A. G., Hamburg, deep-well and pumping machinery manufacturers, are desirous to deal in modern pneumatic pumping systems, either for representation or acquiring inventor's rights. Heinrich Eisler, Hamburg, sub. B 6545.

Inquiry No. 1545.—For manufacturers of wind-mills to generate electricity for lighting purposes on a farm.

MECHANICAL SUPERINTENDENT WANTED.—Familiar with the manufacture of firearms on a large scale, possessing executive and mechanical ability. Address, stating age, experience and references, A. Box 2123 General Post Office, New York.

Inquiry No. 1546.—For a small drill to drill plus holes in solid granite by power, compressed air or electricity.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Inquiry No. 1547.—For a small generator for running an electric drill.

Inquiry No. 1548.—For one 25 h. p. upright engine of best make.

Inquiry No. 1549.—For dealers in second-hand commutators of 50 or 110 volts for a 1½ h. p. dynamo.

Inquiry No. 1550.—For manufacturers of cadets' suits and outfits.

Inquiry No. 1551.—For the manufacturer of "pigs in clover" puzzles and other toys.

Inquiry No. 1552.—For manufacturers of steel plates, bars and pipes for iron shipbuilding.

Inquiry No. 1553.—For manufacturers of heating plants furnishing hot water for heating purposes in towns and small cities.

Inquiry No. 1554.—For manufacturers of phosphorus.

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.

(8415) R. S. D. asks: I have a four-magnet telephone generator which rings through 50,000 ohms, which has been through a fire. Is there any way by which I can charge the magnets over again, and how much wire will I need to wind the armature? A. The Carty bridging bell, which is used for long-distance telephoning, is said to be wound to 1,000 ohms with No. 38 B. & S. wire. This would require nearly three-fourths of a pound of wire. If your magnets are not burned so as to injure the steel, they may be retempered and remagnetized. They will then be as good as they were before.

(8416) D. A. H. asks: Have scientists generally accepted the theory that the electric current does not flow through a wire, but follows the space around it? A. An electric current flowing with unvarying intensity flows through the material of the wire, flows in the wire, and also sets up a magnetic field around the wire. In this field a magnet is attracted by the lines of magnetic force. When an electric current flows with a varying intensity, either increasing or diminishing in intensity, as, for instance, starting with a sudden rush and as suddenly dying out, then electric waves are thrown off into the space around the wire, it may be with great force, so that they are sent many miles. It is these waves which are used in wireless telegraphy. They are not in the wire. The wire is but a core or center around which the waves whirl with tremendous energy. We are but beginning to learn their power and value, and have not yet harnessed them and broken them into our use and service. The clipping you inclose is a good example of loose scientific writing. It is only a half truth. 2. Referring to article entitled "Humidity and Heating Systems" in your SCIENTIFIC AMERICAN of August 17, why is it that the humidity of the air in the house heated by artificial means is so much less than that outside? Does the air lose any of its moisture by being drawn into the house and heated? A. The humidity spoken of is not the amount of moisture in the air, but the percentage of moisture as compared with the total amount of moisture which the air could hold at that temperature. Air saturated with moisture is said to have 100 per cent of humidity. The whole name is relative humidity, which expresses the meaning better. It is the moisture relatively to complete saturation. Now, the capacity of the air to hold moisture varies greatly with the temperature. In a summer morning fog may lie thick over the earth, because the air was saturated with moisture, and the excess of water appeared as fog. The sun rises, warms the air and the fog disappears. Why? Not because there is any less moisture in the air than earlier, for the dew and fog will come again at nightfall and last till morning probably; but because at the higher temperature of midday the air can carry more water in the condition of invisible vapor than it could at the lower temperature of the early morning. Now apply this principle to the heated room. The air inside the room is warmer than the air out of doors; and though it may contain the same number of grains of water vapor to the cubic foot, that amount of water vapor will not bring the relative humidity of the room as high as it will the out-of-door air, because it will take more water to produce the same per cent of humidity in warm than in cold air. The warm air has a greater capacity for water vapor than cold air has. It is for this reason that we should have a water pan in the hot-air box of the furnace and add water vapor to the heated air before it enters the room.

(8417) E. K. E. asks: Would you be kind enough to tell me the exact length of German silver wire of a suitable size for a resistance box which would be required to give a resistance of one ohm, the wire being such as is commonly sold by electric supply houses? A. The length of wire for one ohm depends upon its size. Supply houses keep all or nearly all sizes of German silver wire to correspond to those of copper wire. To find the number of feet in an ohm, divide the number of feet of copper wire in an ohm by 13. The quotient will be the number of feet of German silver wire in an ohm.

(8418) F. W. L. asks: In order to generate a current in a closed coil of wire, is it necessary to alter the number of lines of force passing through the coil, or can a current be

generated by simply cutting equal numbers of lines with one part of the coil, with constant speed? A. To generate a current of electricity in a coil of wire it is necessary to vary the number of lines of force passing through the coil. If the same number of lines are cut each second, there will be no current produced in the wire.

(8419) J. C. P. asks: 1. In wireless telegraphy will trolley cars, two routes, crossing paths of wires, interfere with our signals? Arc light wires also? A. Any direct current would scarcely interfere with wireless telegraph operations. Nor would an alternating current, unless it were sending out waves comparable with those of the wireless apparatus. 2. How big a coil, minimum spark length, is needed? A. We have no data upon minimum spark length for one mile. It is better to have a larger coil and bring the balls together to the proper working distance than to cut down the power by using a small coil. 3. How high a mast at each station from top to ground? A. We think 20 to 30 feet will answer. 4. Shall we find trouble in syntonizing? A. We do not understand that syntonizing is a practical matter yet. Mr. Marconi probably still finds trouble with syntonizing. At the late naval maneuvers in England one fleet stole the other's message.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending October 22, 1901, AND EACH BEARING THAT DATE.

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

Acid, manufacture of carbonic, O. P. Ostergren	684,084
Air compressor, H. Strater	684,954
Alkalies and aluminates, making, F. Prohahn	684,864
Alkaline cyanide, purifying, G. Craig	684,914
Amalgamator, H. M. Smith	685,184
Anchor, F. Joyner	685,047
Animal tray, W. G. H. Ripper	684,867
Automobile pumping device, W. F. Singer	684,953
Automobile running gear, F. L. Balcomb	685,087
Axle lubricator, car, S. A. Flower	684,808
Back band hook, L. Stowe	684,879
Baling press self feeder, J. S. Tuttle	685,190
Ball bearing wheel, W. M. Conway	685,332
Bandage or plaster, M. Bauer	685,090
Basket, fruit, H. C. Finley	685,124
Bath tub leg, Day & Ward	684,797
Bath tub leg, A. G. Ward	684,888
Battery, See Electric Battery	
Battery plates, preparing secondary, A. Lehmann	684,831
Bed, folding, J. F. Wilmot	685,079
Bedstead brace, J. W. Durban	685,037
Beer cooling apparatus, E. H. Niemi	685,168
Belt, electric, A. Chrystal	684,977
Belt stretcher, C. T. Cummings	685,201
Bicycle, L. T. Hood	684,821
Bicycle, J. Taylor	684,862
Bicycle mud guard, S. Miller	684,163
Bicycle rest, C. L. Vonderahe	684,961
Bicycle support, Robb & Lund	685,062
Binding device, temporary, G. C. Shepherd	685,181
Binding book, C. Simmons	685,068
Boats, visual indicator for submergible, C. A. Morris	685,164
Boiler furnace, steam, O. D. Orvis	684,852
Boiler or steam generator, C. A. Sawin	685,178
Boilers or evaporators, reflector for, J. W. Haworth	684,818
Bolting apparatus, L. Gray	685,132
Book cutting or trimming machine, J. B. Mercer	684,942
Book holder, Umstead & Dickie	685,017
Book, manufacturing sales, L. M. Landing	685,151
Boring and turning mill, G. W. Moreton	684,944
Bottle, non-refillable, M. Rosenstock	684,870
Bottle, non-refillable, S. L. Cole	685,030
Bottle, non-refillable, Davis & Brown	685,114
Bottle, non-refillable, A. P. Rimoldi	685,175
Bottle transporting case, J. H. Lyons	684,995
Bottle washing machine, J. G. Hehr	685,138
Brake beam, J. N. Barr	685,025
Brake shoe, B. Wolhaupter	685,023
Brick, hollow, W. Schleuninger	685,223
Brooches, etc., fastening for, A. F. E. Lutby	685,214
Broom moistener, M. M. Catlin	685,100
Buggy attachment, H. Krebs	684,940
Butter plate and wrapper, combined, M. O'Meara	684,851
Button hook, spring, J. A. Crandall	684,914
Button, metal, trough, J. and A. Holt	685,208
Cable grip, P. R. Stuart	684,956
Cable hanger, W. H. Johnston	685,046
Can, See Collapsible Can	
Can cleaning machine, W. Munn	685,000
Can opener, S. A. Johnson	684,825
Can testing machine, G. F. Leiger	684,832
Cane bundling device, A. Horner	684,988
Car bolster, railway, A. Stuckli	685,187
Car coupling, E. Lethem	684,834
Car coupling, W. E. Hoyt	685,144
Car fender, G. W. Webb	684,964
Car fender, J. P. Cornelius	685,109
Car, railway, L. A. Hoerr	684,936
Car roof, Thompson & Herbert	684,885
Car starter and mover, Erwin & Moehn	685,120
Car switching cane, F. Weimar	684,965
Carburetor, G. Machlet, Jr.	684,836
Carburetor, Gromer & Wright	685,235
Carriage and cradle, combined baby, D. L. Simonson	684,875
Carriage, child's, O. W. Siebert	685,225
Carriage packing apparatus, G. M. Peters	684,862
Cartridges in boxes, apparatus for packing, G. M. Peters	684,861
Cash register, D. Bernhart	685,093
Cask rinsers, J. G. Hehr	685,137
Castor socket, E. J. Wasbrood	685,073
Catalogue, card, W. O. Waterfield	685,071
Cattle guard, T. P. Theriault	685,013
Christmas tree support, J. F. Kerr	685,049
Chuck, tool, I. Barker	684,903
Cigar bunch wrapping machine, F. L. Herington	685,140
Cigar moistening box, J. Besser	684,782
Cigarettes, device for forming tobacco for, J. N. Seropyan	685,009
Clamp for gluing columns or pillars, C. E. Littell	684,835
Clamp for roofing bracket, etc., C. M. Hart	684,815
Clamp for securing and holding a sheet or sheets of soft material, A. Ringdahl	684,866
Clock chime, C. A. Jacques	685,045
Clothes drier, W. M. Barnes	684,776
Clothes drying machine, W. M. Barnes	684,778
Clothes pounder, F. H. Perry	684,860
Coal handling device, S. B. Peck	684,859
Cocoa preparations, making, A. Denaeayer	684,920
Coffin lowering apparatus, D. J. B. Sarazin	684,872
Collapsible can or tube, C. M. Higgins	684,986
Collar brace, J. F. Tell	685,011
Composing stick, O. F. Holmgren	685,142
Compressing peat, pulp, etc., into blocks, apparatus for, J. Westaway	684,967
Concaves, means for supporting and adjusting, H. C. Clay	685,107

(Continued on page 285)