

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.

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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.

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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.

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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. Marcon probably still finds trouble with syntonizing. At the late naval maneuvers in England one fleet stole the other's message.

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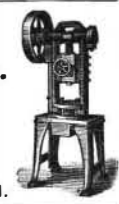
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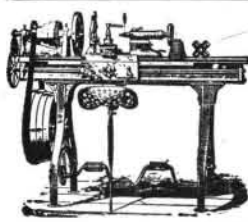
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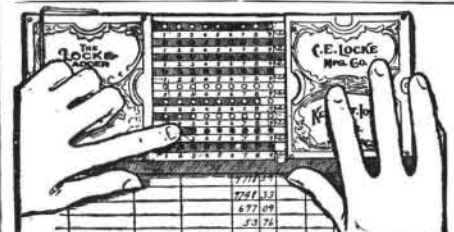


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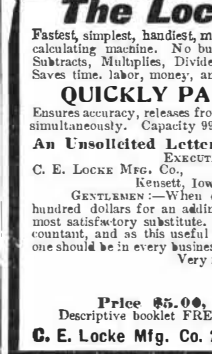
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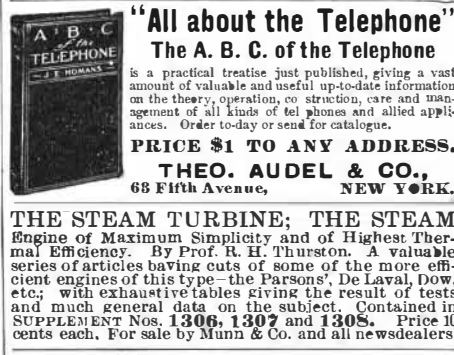
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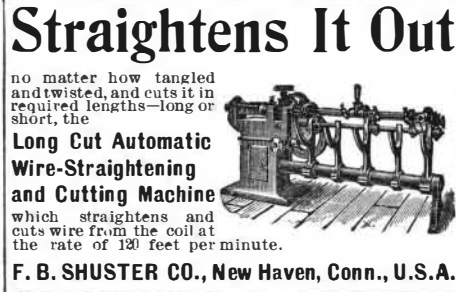
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