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RECENTLY PATENTED INVENTIONS.

Engineering.

LOCOMOTIVE TRUCK SPRING HANGER.—Charles Linstrom, Vicksburg, Miss. This hanger has two forks for engagement with the pivots of equalizing bars, the inner members of the forks being rigidly connected with each other, and the forks being adapted to receive the equalizing bars. Each leaf spring extends between two equalizing bars on each side of the truck, and the seat in each hanger is at the center, so that the load is well distributed, and it is not possible to force the springs out of their proper position by heavy shocks or jars.

Railway Appliances.

CAR COUPLING.—Frederick D. Crandall, Sturgeon Bay, Wis. This invention relates to improvements in car couplings of the rotary head type having thin jaws, the coupling being adapted to couple automatically with another similar coupling whether the drawheads are aligned with each other or not, while the uncoupling may be readily effected from either side of the car. The improvement may also be used to couple with cars having the ordinary link and pin coupling.

Electrical.

TELEPHONE BELL.—Richard D. Harrigan, Leadville, Col. This invention provides a simple and quick-acting device whereby the bell will continue to be sounded after the main circuit shall have been opened or cut out, at the main office or elsewhere, and also to ring a bell at a distance from the telephone. An auxiliary circuit is provided, which may be omitted or employed alone, the main object being to set a bell in operation after the first ringing of the telephone bell.

ELECTRIC SWITCH.—Charles G. Bergquist, Chicago, Ill. This is a simple and compact device for attachment to electric fixtures, having the appearance of a gas key, and adapted to turn the electricity on or off as one turns a gas key. An insulated switch arm is carried by a revoluble tubular shaft, two contacts receiving the wires, a ratchet wheel being attached to the tubular shaft and a pawl attached to the support engaging the teeth of the ratchet wheel. A spherical casing is held around the switch by caps screwed into its body, a key passing into the casing screwing into the tubular shaft of the switch.

ELECTRICAL HAIR CUTTER AND SINGER.—Frank M. Bell, New York City. An electrically heated wire or bar, according to this improvement, is practically utilized for cutting and singeing the hair. In a comb provided with a handle are insulated electric conductors, and there are adjustable studs in the comb and comb handle between which is strained a wire or bar of platinum or other refractory material, there being also electrical connections and a button for closing and breaking the circuit. By pressing the button the circuit is completed through the wire, heating it sufficiently to burn the hair in contact with it.

Mechanical.

SHEET METAL GAGE.—Elbridge G. Paull, Fairhaven, Mass. This improvement comprises a rigid or main frame part with jaw, an upright and a lever handle, a compound lever consisting of a jaw with tappet arm and a handle connected together by a spring, and pivoted within the rigid or main frame part, while a pivoted index hand is acted upon by a tappet arm, there being a circular graduated scale, and a spring throwing the lever handles apart. Variations in the hand pressure on the levers make no appreciable difference in the bite or pinch of the jaws, and the gage enables measures to be taken with great exactness and uniformity.

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.

(6841) H. De W. asks: 1. What kind of steel should be used to make a permanent magnet? Please give commercial name of steel. A. Tool steel of good quality. 2. To what degree of hardness should the steel be tempered, so that it will retain the magnetism? Should the heating be done by coal, wood or other fire? A. Straw color in a clear fire. 3. What is the best means of magnetizing the steel, to give it the strongest magnetic effect? A. By a magnetizing coil moved from end to end. 4. Will plating with gold, silver, or nickel diminish the attracting or "sticking" of the magnets? A. Almost imperceptibly. 5. Would the application of "mannocitin" lessen the attracting power or adhesion of the magnets? A. Almost imperceptibly, if thin. 6. Will the strength of permanent magnets be impaired by constant contact with the human body? A. No. 7. Do the variations of temperature have any effect upon permanent magnets, and if so, what? A. Increase of temperature tends to lower intensity. There is a certain amount of "trade secrets" involved in the making of magnets. When a particular brand of steel is found best, it is often not disclosed. Information on making permanent magnets will be found in SCIENTIFIC AMERICAN SUPPLEMENT, No. 318, and information on the effect of temperature on same in SCIENTIFIC AMERICAN, No. 4, vol. 73. Very exhaustive articles on magnetism, the construction of magnets and electro-magnets, their physics, etc., will be found in SUPPLEMENT, Nos. 777, 778, 779, 780, 781, 784, 785, 786, 787, 788 and 789.

(6842) J. L. asks how to braze a band saw. A. Scarf the saw ends to match with a lap of ¼ inch, for small saws, up to ¾ inch, for large size. The scarf should not be brought to a sharp edge; it is liable to burn. Bind together with fine iron binding wire, with the laps wet with a paste of borax and water ground on a piece of slate or rough glass. Pin the blade, laid straight, on a large piece of charcoal, ground flat, with a recess excavated under the scarf so as to allow a blowpipe flame to pass under the saw blade. Place a piece of brass or, preferably, silver solder or coin on the upper edge of the lap, with enough ground borax to flow the brazing easily. Heat with a blowpipe under and above the blade until the solder flows, when it will draw entirely through the lap. When cold, file to an even thickness.

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