

RECENTLY PATENTED INVENTIONS. Electrical Devices.

ELECTRIC-LIGHT-CIRCUIT PROTECTOR.—S. KALBACH, Wildwood, N. J. The invention relates to means for preventing interruption in the current fed to electric lamps caused by the disorder of one of the lamps. It frequently happens where electric lamps, and more particularly arc-lamps, are operated together in series that if the circuit of one lamp be left open, it will have the effect of stopping action of other lamps. It has been found that most of the annoyance caused by street electric lamps is due to electric-light leads. Much trouble of this kind is obviated by this device.

Of Interest to Farmers.

WINDROWER.—H. M., L. A. and J. A. MUELLER, White Lake, S. D. In this case the object is to provide a windrower or bunching attachment for mowing-machines, arranged to gather hay, millet, short wheat, and the like as fast as mowed by the machine, and to enable the operator to easily and quickly dump the gathered material in windrows without scattering or losing any of the material between adjacent windrows.

PENCIL-POST.—C. H. LEWIS and C. BOOK, Harpster, Ohio. The construction of this post comprises a main upright with a brace extending downward therefrom. An arched bar is connected to the upright and brace, and the lower ends of the bar members are sunk in anchoring-disks. The upright and brace each has an outwardly opening slot at its lower end, the arched bar having its upper portion secured in the slots. It will be impossible to draw the post out or to move it out of its vertical line.

GRAIN-DRILL.—R. D. BROWNING, Orange, Va. The object in this instance is to provide means for regulating the depth that the disks of disk-drills shall run in the ground, and is specially adapted to hilly or rolling land. The disks are divided into sets, preferably a set on each side of the center of the drill and have means for regulating each set independently of the other and for locking the sets in any adjustment with reference to each other.

Of General Interest.

SPRING BED-BOTTOM.—S. H. ANDERSON, Vandergrift, Pa. In this case the invention relates to spring bed-bottoms, the more particular object of the inventor being to produce a seat form of such a device made so as to fold. The bottom is made in two halves for convenience in folding. When the bed-bottom is to be folded, certain means enable the bottom to be doubled upon itself, and leaving the base ends of the springs extending outward. The wires that engage the springs are woven together into a fabric having large square meshes, the length of each mesh extending from center to center of each spring.

SAFETY-LOCK FOR GAS FIXTURES.—E. H. SHUTE, Chicago, Ill. The object of the invention is to provide a locking device for the valve or cock of a gas-fixture which will automatically lock the plug or key of the cock in closed condition when the key has been turned to shut off the flow of gas from the gas-burner that is a part of the fixture.

REFRIGERATOR.—J. M. DOPPEL, New York, N. Y. This refrigerator is so constructed that while it is packed with a non-heat-conducting material a perfect circulation of air will be obtained around both sides of the packed section, to which end air-ventilating spaces or chambers are located between the packed section and the inner box or receiving section and the said packed section and the outer box or casing section, which air spaces have connection with the outside atmosphere. The invention relates to the construction of refrigerators in which receptacles containing ice-cream are to be stored or from which the cream is served.

FOLDING BOX.—M. HIRSCH, New York, N. Y. In this patent, the invention refers to improvements in foldable boxes; and one of the objects in view is the provision of a one-piece blank adapted to be cut or stamped from suitable paper-stock without waste of materials, the blank being bendable into the shape of a complete box without pasting or gluing any of its parts.

CUSHION FOR DOUCHE-PANS.—HARRIET E. FELTHOUSEN, Jersey City, N. J. One object in view in this case is to provide a padded cushion which promotes the comfort of a sick person during the service of the pan by affording a soft pad whereon the body may rest without coming in contact with the hard material or sharp edges of the pan, thus dispensing with towels and other padding. The pan parts may be cleaned and dried rapidly.

SUSPENSORY BANDAGE.—E. R. DRAKE, De Land, Fla. Mr. Drake's invention is an improvement in that class of bandages in which an elastic leg-band is employed, the leg-band being connected with the scrotal bag and also with the body band. Means are provided by which the band may be turned if worn and frayed by friction with the ring on the edge of the scrotal-bag, and to render the leg band elastic when the strain is greatest and change of strain almost constant.

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American inventions negotiated in Europe. Wenzel & Hamburger, Equitable Building, Berlin, Germany.

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Inquiry No. 5392.—For manufacturers of rubber suction hooks used to hang cards, jewelry, etc. on show cases, panes of glass, etc.

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

Inquiry No. 5393.—For manufacturers of a machine that will clean cotton of sticks and straws.

In buying or selling patents money may be saved and time gained by writing Chas. A. Scott, 300 Cutler Building, Rochester, New York.

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Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 5395.—For manufacturers of pails, tubs and kegs which will hold a penetrating grease.

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Inquiry No. 5398.—For a machine to pick sponges in small pieces without cutting them.

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Inquiry No. 5401.—For a heavy spring motor with governor to run a light machine.

Inquiry No. 5402.—For makers of machinery to make stove pipe.

Inquiry No. 5403.—For machines for preparing cotton for surgical dressing.

Inquiry No. 5404.—For machines for making pens and pen holders.

Inquiry No. 5405.—For information regarding cost, etc., of small ice-making machinery, capacity of plant 500 pounds in 5 hours' run.

Inquiry No. 5406.—For parties engaged in the manufacture and installation of electric light plants.

Inquiry No. 5407.—For quotations on water motors.

Inquiry No. 5408.—For makers of steel tanks to hold 25 cubic feet to stand 600 pounds' test and high pressure pumps to pump 300 pounds.

Inquiry No. 5409.—For manufacturers of elevators.

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Inquiry No. 5411.—For machinery for separating the outer hulls from the bean of the castor oil plant.

Inquiry No. 5412.—For manufacturers of smoke consumers.

Inquiry No. 5413.—For manufacturers of buckram wire used in manufacturing hat frames.

Inquiry No. 5414.—For makers of gasoline or hot air engines of about 1/2 h. p.

Inquiry No. 5415.—For makers of small steam engine cylinders of the slide valve type of about 1 1/2 inches stroke and 3/4-inch bore, either metal or brass.

Inquiry No. 5416.—For a machine for printing on lead pencils.

Inquiry No. 5417.—For a Taylor calculating machine.



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.

(9364) C. M. M. asks: 1. Will an explosion of gasoline in a cylinder 2 1/2 inches long by 3 inches bore, standing vertically, lift or throw a piston weighted to 250 pounds 6 feet high? A. The total explosive force in a cylinder as stated depends upon the volume of explosive mixture contained in the cylinder beneath the piston and its compression, as well also upon the proportion of the gasoline vapor and air mixture. The instantaneous explosive effect of a good non-compressed gasoline gas is about 100 pounds per square inch, while the weight of the piston stated is but 35 pounds per square inch, leaving about 65 pounds per square inch, or a total accelerating force of 455 pounds, which, with a volume of 3 or 4 inches in depth in the cylinder, should project the piston vertically from 6 to 10 feet, according to frictional resistance. 2. What size or dimension of cylinder would be necessary to do this? A. The energy effect will be in proportion to the size of the cylinder and the weight of the piston. 3. How many such lifts could be obtained with a quart of gasoline? A. A quart of gasoline should give several hundred impulses as given above. 4. Could the power of a gasoline explosion be thus utilized in a long cylinder, say proportioned as the barrel of a gun? A. We advise that successive impulses in a long cylinder, as in a gun, will not be practicable.

(9365) F. S. writes: It seems to be the common impression in this vicinity, and among people that ought to be informed in the matter, that the older an incandescent electric light becomes, or rather the longer it is used, the more current will it consume, the voltage remaining the same. I do not believe that this is the case, because the few experiments I have made to determine this increase, though crude, gave contrary result. I understand, of course, that the energy consumed per candle power given out increases, due no doubt, to blackening of the globe. This very blackening suggests to me a possible decrease in the sectional area of the filament and consequently increase in resistance and decrease in current passed. A few words of explanation in respect to the above will be much appreciated. A. An incandescent lamp runs down with age, that is, its candle power decreases for same current and current increases for same candle power. The causes are: (1) The wearing away of the filament either by evaporation or by the projection of particles upon the glass, thus blackening the bulb; (2) the blackening of the bulb reduces its transparency, thus preventing some of the light actually produced from being utilized; (3) the capacity of the filament to radiate heat is increased so that more current is required to maintain its temperature and luminosity. It is true that such a lamp will consume more current for full candle power if it can get it, but it is also true that it cannot get more, but will take less current, and gives less light as it grows old, since its filament rises in resistance with diminution of size, and more resistance means less and not more current flowing. If higher voltage is put on the line, the lamp can then take more current. Decrease in light-giving power means also an increase in energy consumed per candle actually realized. Candle power, efficiency and life of lamps are fully discussed in Crocker's "Electric Lighting," Vol. II., which we can furnish for \$3.

(9366) C. W. Stuart & Co. ask: Will you please tell us what two metals would best be used in combination to make a thermostat? That is, we want the metal that expands the most with heat and one that contracts (if there is such a one). A. Of the metals adapted for use in a thermostat, zinc has the largest expansion and platinum has the smallest. If platinum is prohibited by its high price, steel, soft annealed, is the next best. There is no metal which contracts with heating, so far as we know.

(9367) R. S. asks: Is there any air in an electric light globe, and how much, if any? Why do they not make it a perfect vacuum? Is black a color? A. There is always some air or other gas in an incandescent lamp globe. It is not a constant quantity, of course, and is so little that it has no oxidizing action on the filament. A perfect vacuum is not made because a perfect vacuum is not a possibility. There has never been one made by a pump. We cannot decide the puzzle whether black is a color or not. Artists do not recognize black and white as colors. Scientists to a certain extent call black a color, in the sense that black produces a different sensation from absence of anything to look at. You will find the question argued in books on physiological optics, and on psychology.

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(9368) H. F. G. says: A gas company sells natural gas for purposes of heat at 30 cents per thousand cubic feet at a pressure of 4 ounces. If for various causes the same is furnished at a pressure of 1 ounce instead of 4 ounces, what is the gain or loss in heat units to the consumer? How much is the low-pressure gas worth per thousand cubic feet comparing it with the high-pressure gas at the price named? A. At the pressure of 4 ounces per square inch the volume is as 98.4 to 100 free gas and at one ounce is 99.6 to 100 free gas. The difference is 1.2 cubic feet per 100 or 12 cubic feet per 1,000. If the gas is equal to 800 heat units per cubic foot, your loss will be 9,600 heat units per 1,000 cubic feet consumed. Its value at the low pressure, comparatively, should be 29.64 cents per thousand cubic feet.

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for the Week Ending April 5, 1904.

AND EACH BEARING THAT DATE

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