RECENTLY PATENTED INVENTIONS.

Electrical Devices.

TROLLEY-POLE CATCHER.—J. H. WALKER, Lexington, Ky. When the trolley-wheel jumps the wire in the novel construction provided by this inventor the pole will be prevented from rising to a perpendicular position. The manipulation of the trolley-pole is easy, as the pole can be caught at any angle desired and prevented from pulling too hard against the conductor or other operator manipulating the same when turning the pole from end to end of the car. Time is saved in starting cars out of barns and in leaving cars in the barn or on the track, as the pole can be easily pulled down by the cord a short distance below the conductor-wire and quickly dogged.

Of Interest to Farmers.

SPRAYER FOR THE WOUNDS OF ANIMALS.—MARY F. HAVENS, New York, N. Y. The purpose of this invention is to provide a device for spraying heavy oils, ointments, and emulsions upon the wounds of cattle, horses, and all animals without causing the wounds to bleed or to be unduly irritated and without frightening the animals under treatment. The device may be operated by the mouth of the operator without danger of any of the liquid returning to where the lips are applied.

VARIABLE COUNTERPOISE FOR GATES.—J. HAWKESWORTH, New York, N. Y., and R. A. MCCULLOCH, Orange, N. J. According to Mr. Hawkesworth's present invention his purpose is the provision of a variable counterpoise for any form of gate intended to open by pivotal movement in a vertical plane or a counterpoise for any equivalent object intended for similar movement.

DEVICE FOR THE BREAKING IN OF HORSES.—H. SCHLUETER, Scribner, Neb. One purpose of this improvement is to provide a readily-controllable vehicle especially adapted for breaking in colts or wild horses to harness, the arrangement of the vehicle being such as to accommodate one or two unbroken animals only or one or two unbroken animals together with one or two animals previously broken to harness. Steering the vehicle and manipulating the brakes simultaneously with reference to the front and rear trucks is conveniently done.

OPERATING MECHANISM FOR GATES.—J. E. STIRTON, Monroe, Wash. In this mechanism the lever-ring may be made at a very slight expense and shipped cheaply, adapting it to be sold at a low price and applied by the purchaser to gates which are already in place. It furnishes what amounts to a continuous wheel having all the strength necessary to transmit the moving force and yet applicable to an erected structure.

GATE.—C. W. VAN DE WALKER and R. T. JENNEY, Two Rivers, Wis. By this effective mechanism the gate may be operated in either direction from either side by a person in a vehicle and at either of its extreme positions it will not only be locked by the catch provided, but will be held by the tension of the spring which assists in opening or closing it. The gate and its operating mechanism are extremely simple and durable.

HARROW AND CULTIVATOR.—J. A. BEARD, SR., Liberty, Miss. In the present case the object of the invention is to simplify the construction and reduce the cost of the combination harrow and cultivator for which Mr. Beard, Sr., obtained a former Letters Patent. The principal feature of this invention is the special means employed for locking the shanks of the shovels or other cultivating devices so that they are prevented from turning to the side or laterally in the direction in which the leverage due to draft is mainly applied.

Of General Interest.

TANK-CLEANER.—J. W. BIVINS, Topeka, Kan. The inventor has devised and applied a simple apparatus by which tanks may be cleaned quickly and with little labor and loss of but a small quantity of water. The invention includes improved means for effecting the mechanical loosening of the sediment and for washing out the same or discharging it from the tank, likewise an attachment for the top of a tank which serves as a support for the shaft of the rotary plow or scraper by which the sediment is loosened and also for the workman who operates such scrapers.

FOUNTAIN-BRUSH.—P. H. CLINGAN, Florence, Col. The intention in this instance is to provide a can of very simple form which is so constructed as to prevent the possibility of spilling the contents thereof. The can includes a wick of absorbent material which is constantly supplied with oil or other fluid within the can. The invention relates to fountain-brushes and oil-cans or similar receptacles for lubricating or polishing fluids.

HYDRAULIC COUPLING.—J. J. DELEHANT, Chicago, Ill. In this patent the invention has reference to hydraulic couplings, and more particularly to a type of coupling suitable for fastening hose to hydrants, for coupling hose-sections together, and for general service where a pipe or tube of any kind is to be quickly coupled with a member through which water is to flow.

INVALID BEDSTEAD.—W. C. FEELY, New York, N. Y. One of the purposes of this improvement is to provide an adjustable bedstead and a commode practically constituting a portion of the bed and means whereby the commode may be adjusted up and down or in direction of either side of the bed, all of the said adjustments being capable of accomplishment by the manipulation of a single lever or operating member.

RESPIRATOR.—W. G. GATES, Fort Benton, Mont. This invention pertains to respirators. The present device is readily adjusted to the face, and does not in any way interfere with the vision of the wearer, nor does it prevent the use of spectacles or goggles at the same time. A marked advantage is in the use of cotton-batting instead of sponge. It is more sanitary, comfortable and convenient to the wearer of the respirator, it does not freeze in cold weather, and is more potent to catch fine dust.

CAP.—H. SEIDE, New York, N. Y. This cap is an improvement, particularly on the general type worn by automobilists, bicycle-riders, and the like, the object of the inventor being to provide a cap so constructed that it may be readily changed to present different colors or textures, thus practically providing a plurality of caps in a single structure.

THREAD CUTTER AND TIER.—J. B. UNDERWOOD, Fayetteville, N. C. The inventor has made an improvement in hand-manipulated implements which relates to cutting and tying the ends of strands or threads, and is particularly adapted for tying spool ends, an object being to provide a device of this character by means of which two ends of a broken thread may be quickly tied and evenly cut without materially interfering with the operation of the spool.

FLUE OR TUBE CUTTER.—R. T. MILLER, Defiance, Ohio. The inventor employs a hollow body in which works an adjustable stem, having at one end a specially-constructed head. A set of laterally-movable blocks is co-operatively organized with body and head, each provided with a cutter, with a set of devices mounted upon the body for rotating the structure. A solid longitudinal extension is employed at one end of body, having a pilot for supporting the structure within a tube or flue to be cut. The invention relates to rotary flue or tube cutters.

FOLDING TABLE.—J. A. CRANDALL, New York, N. Y. To the standard of the table legs are hinged to fold inward in close relation and to the fixed center of the table top radial leaves are hinged. Connections are provided between the upper ends of the legs, and a sliding sleeve on the standard, the leaves being connected also to the sleeve at the upper end of the latter by means of braces, their construction being such that when the legs are folded inward the table leaves are automatically folded into lowered position, whereby the table is brought into compact form.

FOUNTAIN-PEN.—R. A. HAMILTON, Seymour, Conn. In this instance the invention refers to fountain-pens and more especially to self-filling pens having a compressible reservoir. The object of the inventor is to provide improved means for compressing the reservoir which shall be compact and effective to empty the reservoir without requiring undue manipulation or distortion of the reservoir.

BOX.—J. J. POLSKI, Duluth, Minn. The improvement refers to a box which is capable of general use, but is especially applicable for holding beer-bottles. The object of the invention is to provide a box which will be strong and durable without materially increasing the cost of manufacture and which will be especially adapted for the purpose of holding beer-bottles and the like.

Machines and Mechanical Devices.

MACHINE FOR INSERTING DIAGONAL STRANDS IN WOVEN CANE FABRICS.—F. H. JANSON, New York, N. Y. Means are provided for depressing the warp-strands and raising the weft-strands in woven cane fabric for the passage of a needle carrying a diagonal strand, by this inventor. He accomplishes his object by an up-and-down movement of bars carrying guide-pins, which pins have projections for depressing the strands, and serve in action to hold the fabric in position and to separate the weft from the warp while the diagonal strands are inserted and at the same time rectify inaccuracies in the weave.

MINERAL-VANNER.—H. C. KRAUSE, Point Mills, Mich. The improvement pertains to concentrators and separators for ores and other minerals; and its object is to provide a vanner, very simple, durable, effective, and readily adjustable for treating different minerals, and arranged to insure a quick concentration and separation of the valuable minerals from the tailings.

Pertaining to Vehicles.

SHORT HARNESS-TRACE.—D. K. BELLIS, Manton, Mich. Of the several objects in view of this inventor one is the provision of a simple, strong, and durable short metallic trace in which the metallic parts are protected on one side to prevent chafing the animal and to overcome wrinkling or displacement of the protective layer with relation to such metallic parts.

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 the 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. 6788.—For manufacturers of milk bottles made of paper.

Inquiry No. 6789.—Wanted, a twelve string guitar in which the guitar is of the six string model, but having two strings together like a mandolin.

Inquiry No. 6790.—For manufacturers of machines for making lead pencils.

Inquiry No. 6791.—For manufacturers of a small rubber ball generally sold at retail for two cents and known as rebounding rubber ball.

Inquiry No. 6792.—For manufacturers of small rubber tubing in 24-inch lengths.

Inquiry No. 6793.—For manufacturers of silver, German silver and brass plate, in sheets of about the thickness of medium to heavy tin; also silver and German silver wire.

Inquiry No. 6794.—Wanted, information regarding air pumps, such as are used for pumping air from a tin barrel tank.

Inquiry No. 6795.—For manufacturers of material for making scrotum supporters, buckles, cloth straps, etc.

Inquiry No. 6796.—For manufacturers of refrigerating machines in which chemicals are used in place of ice to lower the temperature sufficiently for keeping food sweet.

Inquiry No. 6797.—For manufacturers of spring motors having at least ½ h. p.

Inquiry No. 6798.—For manufacturers of hardened spring steel balls, 1⅝ inches in diameter, weighing 1½ ounces.

Inquiry No. 6799.—For manufacturers of tools used in making pipe coils.

Inquiry No. 6800.—For manufacturers of churn power which can be applied to the dash and run of its own accord

Inquiry No. 6801.—Wanted, hollow leather throats for filling out corners in castings.

Inquiry No. 6802.—For manufacturers of lead pipe making machinery.

Inquiry No. 6803.—Wanted, address of parties weaving cotton tubing in 24-inch lengths or longer.

Inquiry No. 6804.—Wanted, address of parties making or selling spring motors.

Inquiry No. 6805.—For manufacturers of small chains, like bicycle chains, small enough to take place of tape which operates typewriter carriages.

Inquiry No. 6806.—For parties having good rubber reclaiming process.

Inquiry No. 6807.—Wanted, address of violin maker's tools.

Inquiry No. 6808.—For firms in United States manufacturing apparatus for the dry distillation of wood, for producing alcohol, charcoal and other products.

Inquiry No. 6809.—For manufacturers of machines making shipping tags.

Inquiry No. 6810.—Wanted, address of manufacturer or dealer in water glass.

Inquiry No. 6811.—Wanted, address of firms manufacturing or selling devices for printing quotations, etc., on postal cards with metal or rubber type.

Inquiry No. 6812.—Wanted, address of manufacturer of railway ticket machines.

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.

(9626) W. B. C. says: Will you kindly state in your notes and queries column a process for treating wood for open fireplaces so that it will burn with colored flame? Also the substances used to make a slow-burning colored fire? A. In a pail of water put 4 ounces copper chloride, and soak the wood in this solution. When dry it will burn with a green flame. Zinc chloride and strontium chloride may be added, giving bluish and red flames mixed with the green. A slow-burning green fire may be made by mixing potassium chlorate 36 parts, barium nitrate 40 parts, and sulphur 24 parts. For a red flame use potassium chlorate 40 parts, strontium nitrate 39 parts, sulphur 18 parts, lampblack 3 parts. These formulas are from the "Scientific American Cyclopedia of Receipts," which contains many others, besides thousands of valuable receipts. We send it for $5.

(9627) C. A. G. asks: A D and C B are parallel horizontal planes, X is a 40-65 Winchester rifle. The distance A C is one foot and is vertical. Now a bullet is shot from the gun X, and the instant the bullet passes point A, another bullet (same size, etc.) is dropped from this same point, i. e., A. Will both bullets strike the ground within one-tenth of a second of each other? Besides answering this question, I wish you would give me the data from which you derive your answer. A. Both bullets in the case proposed will strike the level plane below at the same instant, not within a tenth second of each other. The reason is that the bullet which is shot from the gun falls by gravity as readily and as much as one which is dropped from the same point at the same time. The law of motion which covers this case is stated as follows: "A given force produces the same effect whether it acts upon a body at rest or in motion, whether it acts alone or at the same time as other forces." One force acts in the line AC, gravity; two forces act upon the ball which is shot from the gun, the force of the powder and gravity, to cause it to pursue the path AB in the same time as the other ball passes through AC.

(9628) G. W. S. says: Assume an air-pipe of considerable length, say 100 feet, open at its ends. Apply an air-pump of 10 pounds force at one end. Air will pass through the pipe because of a pressure at the inlet of 25 pounds against 15 pounds pressure at the outlet. Transfer the pump to the other end of the pipe, and use it as a suction pump. Again air will pass, in the same direction, due to a pressure at the inlet of 15 pounds and an outlet pressure of 10 pounds. The latter arrangement is alleged to be the more efficient. Why so, since in each case apparently the actual moving force is the superior pressure at the inlet end, and there is the same difference of pressure at the ends? If there is no difference in efficiency, wherein lies the acknowledged great economy in an exhaust steam heating system, wherein a suction pump is placed at the tail of the system, as against a force pump of the same power placed at the head of the system and supplementing the power of the exhaust piston? Apparently here also the actual moving force in each case is a "push." A steam heating book uses the simile of pushing and pulling a rope—apparently an inaccurate one. A. There is no difference in efficiency between pumping air through a pipe and drawing it through by suction. The work required to move the same quantity of air at the same velocity will be the same in either case. The idea that you have regarding the greater efficiency of a vacuum steam-heating