

ENGINEERING INVENTIONS.

A mechanical movement has been patented by Mr. George M. Reed, of Leadville, Col. It is for an apparatus producing a motion simulating that given by hand to the trays used in developing dry plates and other photographic work, to be applied to the pans of gold concentrators, and similar work, and consists in a balanced table or platform combined with mechanism to rock the table on its pivots.

A cable railroad and trainway has been patented by Mr. Francis de Vooght, of Antwerp, Belgium. This invention covers means for retaining the cars on the rails on curves, and to hold them down to prevent tipping on steep gradients; means for conducting a cable through a shield or tube above or below the ground, and for avoiding friction; hooks of peculiar form for attaching and detaching cars; means for closing and unclosing the shield or tube to permit the car attachment to communicate with and be carried by the cable; means for passing other similar cables at crossings, and for adapting the same car to run either way on the same track, with provision for automatically disconnecting the hook from the cable and notifying the car driver thereof at crossings, and other novel features, to facilitate the propelling of cars by endless ropes driven by stationary motors.

AGRICULTURAL INVENTIONS.

A cultivator has been patented by Mr. John Feast, Sr., of Baltimore, Md. The invention consists in a wheeled "scuffer" combined with a rotary rake, and adapted to be drawn instead of pushed, so that it will rake the weeds to the surface, where they will be exposed to the sun, and at the same time by the rotary movement clear itself of them.

A corn planter has been patented by Mr. George H. Meyer, of Santa Rosa, Cal. At convenient intervals on a broad wheel, about sixteen feet in circumference, are seed openings, with automatic means of piercing the ground, and connecting with a hopper, whereby the seed is dropped into the pocket thus made, and the planter may be conveniently rolled by hand before the operator.

A corn and potato cultivator and hillier combined has been patented by Mr. William G. Parmelee, of Le Roy, N. Y. This machine is especially adapted for row or drill crops, such as corn, beans, and potatoes; it is for use with a span of horses, and straddles the row, the draught being so arranged as to draw straight, without side or zigzag motion, and requiring no labor for holding, the invention covering several novel features of construction and arrangement.

MISCELLANEOUS INVENTIONS.

A tricycle has been patented by Mr. Theophilus H. Paessler, of Malvern, Ohio. This invention covers a special construction and combination of parts for the propelling mechanism, to apply a man's power to greater advantage, and to utilize his weight in addition to the power of both his legs and arms.

A pencil holder and slate cleaner has been patented by Mr. Charles O. Patterson, of Augusta, Kan. It has a tube to be filled with water, with a cap from which a brush projects, and over which is placed a cap when the pencil is carried in the pocket; one end of the tube is also adapted to receive and hold a pencil.

A skate has been patented by Mr. Chas. E. Wardwell, of Holyoke, Mass. The invention covers a special combination of parts in a skate to be easily adjusted as a runner skate or roller skate, there being combined with the foot plate bar detachably held knees, with socket pieces and spindles held therein, and rollers or runners held on the spindles.

Special.

FRANK SIDDALL'S OPINION.

Frank Siddall's name has become a household word, wherever purity in soap is prized, and washing day is robbed of its old-fashioned terrors. By the introduction of the soap which bears his name, he has won a place in the grateful hearts of the women of America. The opinions of a man as shrewd and observant as Mr. Siddall is known to be, are well worthy of consideration in forming judgment on a matter into which he has examined.

Whether in a throng of invited guests, as at his "Silver Wedding," or in the quiet comfort of his cozy home, it is pleasant to spend an evening with Mr. Siddall. Desiring to learn his views concerning an important question of health, one of our editors passed an hour with him and his family. To look at Mr. and Mrs. Siddall and their son, nobody would suppose that they had ever been invalids. Yet they have, and all three of them owe their present health to—

Well, let them tell the story. "No," said Mr. Siddall, "you would hardly think my wife an invalid. Certainly she has not an emaciated or feeble appearance. But some time ago there appeared on her side something which seemed to be a tumor. Two of her relatives had died of cancer, and she feared she was to be a victim of that terrible malady. The tumor, or whatever it was, increased in size and painfulness. The chafing of the dress against it was a continual reminder of its presence, as well as a constant irritation. We feared the necessity of the surgeon's knife as a last resort.

"But we tried another method. I had long known of Compound Oxygen. It had never made any impression on my mind until, after a good deal of disbelief, I had tried it for my sick headaches. With close application to a largely increasing business which took my whole time and thought, I had become a martyr to this distressing complaint. It seemed strange that such an invisible agent as the gas which is inhaled through a tube could make its impression on that condition of the system which produces sick headache. But it did. After taking the office treatment, I found complete rest from brain weariness and entire exemption from the nausea and the harrowing pains which make up that very unpleasant combination known as sick headache. I became an entirely renovated man in my ability to attend to daily business. I had also, for a long series of years, suffered severely from constipation. The Compound Oxygen treatment completely removed this trouble.

"So we concluded to try Compound Oxygen for Mrs. Siddall. Dr. Starkey, after a careful examination, pronounced the abnormal growth to be something entirely different from cancer. This was a great relief, even if the growth could not be entirely removed, and it gave

great confidence in Dr. Starkey, for some practitioners would have tried to make it out as aggravated and alarming a case as possible, in order to magnify their skill in case a cure were made. In even the short space of a few days the effect was perceptible. Compound Oxygen was doing its work on the blood. The poison in the circulation, or whatever it was that had caused the growth of the lump, was driven out of the system. Most of the hard growth was absorbed into the circulation, and thus carried away. The hardness departed. Something like the core of a boil came out, painlessly. Within four weeks from the time she began to take the Compound Oxygen the lump was gone, and the flesh had healed and become as natural and healthy as that on any other part of the body.

"Mrs. Siddall is now as able as ever to attend to her regular duties, which she heartily enjoys. She is a wonderful help to me in my extensive business, being at my office every day, transacting, with great efficiency, the affairs of her department, which consists in the supervision of the 20 lady clerks."

And how as to your son, Mr. Siddall?

"Well, he is now as hearty as need be; thanks to Compound Oxygen. His blood was impure. For years he was my cashier, with constant duty and heavy responsibility. It wore on him. His appetite was irregular and capricious. There were pimples and blotches on his face, indicative of the condition of his blood. There were dark spots under his eyes, and his general state was such that although he was not laid up in bed as a chronic invalid, there was danger that he would be. We tried him with the treatment. Compound Oxygen soon did for him what it had done for his mother and myself. It renewed his blood and gave him a heartier vitality. The pimples, blue spots, and other indications disappeared. His skin became soft and natural. His appetite became regular, and his digestion, which of course had been impaired, was restored to its proper condition."

Then, Mr. Siddall, you have no objection to be quoted as a believer, firm, thorough, and constant, in Compound Oxygen?

"Believer! Why, I consider that in the discovery of Compound Oxygen there has been given to the world something as valuable and as notable as Jenner gave it in the discovery of vaccination! Believer! Why, see our family experience with it. Believer! Yes, so much so that I never lose an opportunity to send those of my friends who need medical treatment to Drs. Starkey & Palen, and all that I have heard from are enthusiastic in their approval of it. Not a word of disappointment from any of them. Believer! Well, I have induced four of my clerks to take the treatment. There is Mr. Johnson, for instance. Come round to the office in the morning and see him. He had catarrh so badly that at night he had to take a handkerchief to bed with him, and to have a basin by the side of the bed, in which to expectorate during the hours when most people are asleep, and, now, after but a few weeks' treatment, he is almost entirely rid of his trouble. His ears were clogged with catarrh discharge. They are now entirely free from it.

"And so I might tell you till morning of such cases, and others of similar importance and value. You cannot speak too highly of Compound Oxygen. You may give my opinion of it as strongly as you please."

The writer called to see Mr. Johnson, and found him at his post, not only free from catarrhal annoyance, but grateful for it, and enthusiastic in his praises of Compound Oxygen.

And now, if any one wishes to know all about this wonderful Compound Oxygen, let him write to Drs. Starkey & Palen, 1109 Girard St., Philadelphia, and they will send him an interesting little book in which its discovery, nature, and action are fully described. It also contains a large record of remarkable cures which have been made during the last twelve or thirteen years in all forms of chronic ailment.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

The leading Non-conducting Covering for Boilers, Pipes, etc., is Wm. Berkefeld's Fossil Meal Composition; 1/2 inch thickness radiates less heat than any other covering does with two inches. Sold in dry state by the pound. Fossil Meal Co., 48 Cedar St., N. Y.

\$7 for 2 x 4 Model Engine Castings. Send for circular. W. D. Rich, 120 N. 5th St., Philadelphia, Pa.

Bradbury's Chart of Electric Forces, for the school, home, and library. By Benj. Franklin Bradbury, Fairbury, Ill.

All Scientific Books cheap. School of Electricity, N. Y. See page 76 for our special offer of Single Breech-loader. J. A. Ross & Co., Boston, Mass.

Machinists.—Spring Calipers and Dividers, with patent washers, made by J. Stevens & Co., Box 23, Chicopee Falls, Mass.

The best Steam Pumps for Boiler Feeding. Valley Machine Works, Easthampton, Mass.

Try our Corundum and Emery Wheels for rapid cutting. Vitrified Wheel Co., 38 Elm St., Westfield, Mass.

Stockings.—All sizes and lengths made on one machine. Lamb Knitting Machine Co., Chicopee Falls, Mass.

The Providence Steam Engine Co., of Providence, R. I., are the sole builders of "The Improved Greene Engine."

Every variety of Rubber Belting, Hose, Packing, Gas-kets, Springs, Tubing, Rubber Covered Rollers, Deckle Straps, Printers' Blankets, manufactured by Boston Belting Co., 226 Devonshire St., Boston, and 70 Reade St., New York.

Stephens' Pat. Bench Vises and Planer Chucks. See adv., p. 76.

For sale.—Large Air Compressor, 24" x 24" air cylinder; steam cylinder, 18" x 24"; coupled to one shaft, with cranks at right angles; also has 10' band, wheel 16' face. Good as new. Will be sold very low. Address Henry I. Snell, 135 N. 3d St., Philadelphia, Pa.

Steam Engine, Corliss system, 10 inch cylinder, 24 stroke, used only a short time, for sale. Keuffel & Esser, New York.

Experimental Machinery Perfected, Machinery Patents, Light Forgings, etc. Tolhurst Machine Works, Troy, N. Y.

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Wanted.—A first-class man to superintend a Sash, Blind, and Door Factory; outfitted with all late and improved machinery; working about one hundred hands. Must be sober, a good manager, and estimator on job work. To the right man a good salary and permanent employment will be given. Or I will sell a half interest in the above well established business. Address, with full

particulars as to age, habits, qualifications, and recommendation, R. F. Learned, Natchez, Miss.

Snyder Engine Company, 12 Cortlandt St., N. Y. "Little Giant" Engines, 1 to 6 H. P. Also Boat Engines, Propeller Wheels, etc. Send stamp for 23 page list.

Whistles, Injectors, Damper Regulators; guaranteed. Special C. O. D. prices. A. G. Brooks, 261 N. 3d St., Phila.

Brush Electric Arc Lights and Storage Batteries. Twenty thousand Arc Lights already sold. Our largest machine gives 65 Arc Lights with 45 horse power. Our Storage Battery is the only practical one in the market. Brush Electric Co., Cleveland, O.

The Cyclone Steam Flue Cleaner on 30 days' trial to reliable parties. Crescent Mfg. Co., Cleveland, O.

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Wanted.—Patented articles or machinery to manufacture and introduce. Lexington Mfg. Co., Lexington, Ky.

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Send for Monthly Machinery List to the George Place Machinery Company, 121 Chambers and 103 Reade Streets, New York.

If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN patent agency, 361 Broadway, New York.

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Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

Catalogue of Books, 128 pages, for Engineers and Electricians, sent free. E. & F. N. Spon, 35 Murray Street, N. Y.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 62.

Agency wanted by M. E. to represent at Exposition, or on cotton, sugar, or rice plantations. Wm. N. Simmons, No. 817 Magazine St., N. O.

Wrought Iron Bridges, Roofs, Girders, and Structural Iron Work. Hudson Bridge Works, Box 411, Hudson, N. Y.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 78.

Anti-Friction Bearings for Shafting, Cars, Wagons, etc. Price list free. John G. Avery, Spencer, Mass.

Brass & Copper in sheets, wire & blanks. See adv. p. 92.

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 20,000 Crank Shafts and 5,000 Gear Wheels now in use, the superiority of their Castings over all others. Circular and price list free.

Curtis Pressure Regulator and Steam Trap. See p. 14.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

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Lane's Patent Anti-friction Steel Door Hanger and Track. Lane Bros., Box 276, Poughkeepsie, N. Y.

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Knurling Tool, self-centering, for lathe use. Pratt & Whitney Co., Hartford, Conn.

Woodworkg Mach'y, Rollstone Mach. Co. Adv., p. 14.

Patent Elevators with Automatic Hatch Covers. Circulars free. Tubbs & Humphreys, Drawer 1637, Cohoes, N. Y.

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.

Special Information requests on matters of personal rather than general interest, and requests for Prompt Answers by Letter, should be accompanied with remittance of \$1 to \$5, according to the subject, as we cannot be expected to perform such service without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Minerals sent for examination should be distinctly marked or labeled.

(1) W. M. P. writes: Would you be kind enough to inform me if I can get a machine for making pop corn into balls, and can you inform me of the process and ingredients used to make the corn adhere, and

the process for coloring? A. There is such a patented machine in the market. The exact nature of materials used differs with different makers, and by some is claimed to be secret, but there is little doubt that the adhesive mixture is gelatine with a little molasses, and the coloring matter carmine.

(2) W. S. C. asks (1) why a screw-driver with a handle a yard in length will turn a screw into wood easier than one 9 inches or a foot long. A. The long handle not only gives a better grip, but is usually of larger diameter, thus giving increased leverage. 2. Please explain the manner or instrument by which it is ascertained how many inches of rain have fallen after a storm, shower, or blizzard? A. A rain gauge may be made of any cylindrical vessel with top and bottom of equal area, so that the rain catch may be measured with a thin rule. There are a variety of forms of varying proportions, requiring special scales, too intricate to describe here.

(3) P. J. H.—To find the pressure that will open a one inch safety valve: Multiply the weight of the ball in pounds by the length of the lever, and divide the sum by the length of the fulcrum (all in inches), add to this the weight of the valve and lever, divide this sum by the area of the valve in square inches. The quotient will be the pressure per square inch required to lift the valve. As in your case

$$\frac{2\frac{1}{2} \text{ lb.} \times 12 \text{ in.}}{0.787} + 2 \text{ lb.} = 41 + 2 \text{ lb. pr. sq. inch.}$$

(4) A. G. asks (1) directions for varnishing violins. A. Use coarsely powdered copal and glass, each, 4 ounces; alcohol, 1 pint; camphor, 1/2 ounce; heat the mixture with frequent stirring in a water bath, so that the bubbles may be counted as they rise, until solution is complete, and when cold decant the clear portion. Add a little dragon's blood to produce the reddish color. 2. Does dipping fence pickets in strong lime water do much toward preventing decay? The pickets are in the water but a few minutes. A. Only slightly. It is not as good a preservative as some of the coal tar substances.

(5) J. D.—For the manufacture of potassium ferrocyanide, three things are necessary: first a nitrogenous animal matter, for your cyanogen; an alkali containing potassium, usually the carbonate, for the potassium; and iron, to form the ferro-(cyanide). One generally uses the cheapest materials available, and it is of no consequence which one is used, provided the proper quantities are obtained. The carbonate of potash is probably the best potassium to use. Hoofs, horn, feathers, and dried blood contain 14 to 17 per cent of nitrogen, while leather parings contain only 8 per cent, so that more than twice the quantity of the latter would be required to offset the first mentioned.—Saleratus is a mixture of sodium carbonate and salt, and therefore is a sodium mixture.—Copper is generally used for carbon connections; the ends, however, should be kept clean and bright.

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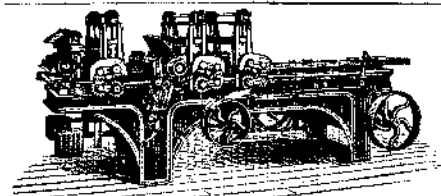
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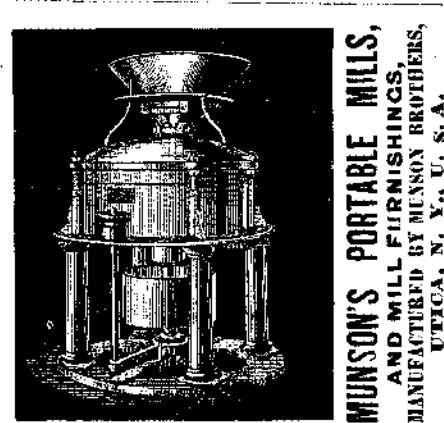


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