RECENTLY PATENTED INVENTIONS.

Mechanical Appliances.

KNITTING MACHINE. — Julius Freiloehr, New York City, and Louis Tisch, Hoboken, N. J. This invention relates to machines for forming knitted fancy trimmings, providing for such work a machine of simple construction which requires no Jacquard mechanism to control the pattern of the fabric. The invention consists of a series of pins acting on the thread guide bars to reciprocate them. The devices for shifting the sliding thread guide bars are located at the ends of the latter, each device being provided with sets of movable pins, and means are provided for simultaneously imparting a sliding motion to the corresponding sets of pins of the devices.

STONE CUTTING MACHINE. — David Rettiger, Strong City, Kansas. This invention covers an improvement in machines with revolving cylinders having steel cutters in combination with a moving carriage, to efficiently reduce stone from a rough to a finished planed or moulded surface. The chisels are adjustable, and so arranged as to be readily reset when worn, while in one operation the surface of a rapidly moving stone may be first scabbled off, making spawls large enough to be merchantable, and then planed, smoothed or moulded. An automatic adjustment of the speed of the stone is provided for, which will cause a temporary slowing with extraordinary resistance, while a steady, uniform method of feeding is effected. The machine is strongly yet compactly built.

PRINTING PRESS. — Hynek Breuer, New Prague, Minn. The bed of this press has two separate and independent vertically adjustable rails, set screws at the side of the bed supporting the rails, upon which an impression roll travels, the latter having a body section equal to the width of the bed and end disk sections of a hard elastic substance adapted to engage with the rails, hand wheels being connected with the ends of the rolls. The impression is readily regulated by means of the set screws under the rails, while the press is of simple and strong construction and can be made at a low cost.

PRINTING PRESS ATTACHMENT. — Howard F. Bowers, South Framingham, Mass. This is a jogging device for evening the sheets delivered from the fly of a press. Combined with the table and fly is a jogging board hinged to the table opposite the free end of the fly, the board having depending fingers extending through holes in the table, while one end of a rod is hooked to the fly crank and its opposite end extends loosely through the jogging board, there being an adjustable stop on the rod to engage the board. The device is especially adapted for miscellaneous or job work, and may be quickly and accurately adjusted to suit sheets of different sizes.

Miscellaneous.

TWINE CUTTER.—Walter L. Gibson, Turnbull, Fla. This invention relates to finger rings with knife attachments for use by salesmen in cutting twine, starting to rip cloth, cutting button holes, etc. A miniature knife case is arranged to project at right angles in front of the ring, and the blade is pivoted at the rear end of the case, being held closed by a spring except when it is raised and held open by the pressure of the thumb on a crank-like extension of a pin fast to the blade. When the knife is closed the blade shuts down within the recessed case after the manner of an ordinary pocket knife.

VEGETABLE MASHER.—Kate F. Taylor, Smethport, Pa. In a cylindrical body having a sieve at the bottom and a cross bar at the top is journaled a handled rod carrying on its lower end a blade to press upon the sieve, and rods at right angles to the blade, also adapted to press on the sieve. The potatoes or other vegetables placed in the body are finely mashed and forced through the sieve by rotating the rod. If desired the vegetables are placed in the masher when raw, the masher being then placed in the kettle of boiling water until the vegetables are sufficiently boiled, the draining and mashing being quickly effected on removal.

TEMPERATURE REGULATOR. — Adam Kelly, Smithfield, R. I. This is an apparatus applicable to rooms heated by steam, hot water or hot air, passed through pipes, the supply being controlled by a valve. A pivotally mounted thermometer tube is employed, with a ratchet wheel controlling the valve-operating lever, the connections being such that when the temperature rises above or falls below a fixed point the ratchet wheel will be moved in a proper direction to close or open the valve.

LOCK MECHANISM FOR REVOLVERS.—Adamantius C. Houston, Pickaway, West Va. In this fire arm a spring-pressed lever is pivotally connected with the firing pin, while the trigger is mounted to turn and has a series of arms adapted to alternately engage the lever, which is returned to its normal position, by a spring connected with the firing pin. By this improvement the cylinder is rotated and the firing pin is moved by revolving the trigger.

BOTTLE FILLING MACHINE. — Nelson Smith and Alvin B. Marcy, Wallkill, N. Y. This invention relates especially to devices for filling receptacles with milk, the body of the device consisting of a tank car with open top, a series of piped apertures leading from a metal bar transversely embedded in the floor of the tank near end. The construction is such that the receptacles will be partially filled from one end of the car and wantage from previous presence of foam will be supplied from the opposite end, while the flow of milk from the car will be as regular when it is nearly empty as when it is nearly full. The valves at each end of the car are held closed by gravity, and means are provided whereby both sets of valves may be worked concertedly or independently. All portions of the device brought in contact with the liquid may be conveniently and expeditiously cleaned.

STOVE. — George E. Leonard, Menominee, Mich., and Silas A. Stowe, Neenah, Wis. This is a drum tubular sectional stove, with an enlarged upper part which communicates through a series of pipes with a smoke chamber below the ash pit. These pipes surround and incase the firepot, thus increasing the radiating surface, also improving the air circulation at the surface of the fire pot. The drum, above the main portion of the stove, consists of a central pipe with hollow heads at both ends, the heads being connected by a series of pipes surrounding the central pipe. The invention provides a stove having a very large radiating surface, and the arrangement of the dampers is such that the amount of such surface may be greatly varied.

MAKING CHROME YELLOW.—Frederick W. Ihne, Kansas City, Mo. This invention is for a process for making from galena chemically pure chrome yellow having great covering power. The process consists in first dissolving pulverized galena with nitric acid to produce liquid nitrate of lead and then precipitating chromate of lead by subjecting the nitrate of lead to the action of the bichromate of potassa, neutral chromate of potassa, or chromate of potassa soda, in proportions and after a manner described. The process is very simple, and the crude lead ore is transformed into chrome yellow in from three to four days.

SCOOP. — Levi L. Hall, Parkersburg, West Va. This is a device having an adjustable or extensible digger section, adapting it for breaking up hard lumpy sugar, soda, dried fruits, etc., so they can be readily dipped up by the scoop, avoiding the necessity of using a separate device for breaking up the article. The digger section is held to slide on the body of the scoop, and has teeth at its free end, the connection of the sections being such that the digger section may be held in either its extended or retracted position.

CUSPIDOR ATTACHMENT. — Stephen Horseman, Estacado, Texas. This invention relates to a swing device, consisting of two brackets, a washer and a pivot pin, adapted for attachment to a cuspidor, whereby the latter may be pivotally connected with a seat or other support, and held in a horizontal position, while it may be swung out from or beneath the seat, and readily removed when necessary.

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Notes & Queries

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(3253) C. V. S. writes: I am employed in a head-light works, and we have a sulphuric acid bath that we pickle the copper in. I cleaned the tank out some time ago, and found a large deposit of sulphate of copper in the tank. Is there any way to turn it back to the pure metal? A. Dissolve in water and add iron scrap. Dissolve excess of iron with acid. This will give metallic copper. Or add the iron in larger pieces, so that it can be picked out by hand, after precipitating the copper.

(3254) T. L. R. asks: 1. Is all pure gold the same color? A. Yes; if of the same surface and polish, and thick enough to be opaque. 2. Also, what is meant by 1,000 fine? A. Absolutely pure.

(3255) T. W. McN. writes: I have some white wool underwear that was returned from laundry spotted brown and yellow, evidently from having been washed in chloride lime bleach water, used on cotton goods. Is there any simple treatment that will restore them to white? A. Try moistening the articles and treating with sulphurous oxide. The latter may be made by burning sulphur. The articles may be suspended in a barrel over the burning sulphur. It is better and safer to use a solution of sulphurous acid. It may be made by dissolving one or two parts sodium sulphite in 100 parts of water and adding 1 or 2 parts muriatic acid.

(3256) R. S. J.—For replies relating to patents, send your address.

(3257) P. S. asks: 1. How many volts and amperes are required to operate one gallon of nickel and silver solution? A. The number of amperes used for nickel plating depends upon the surface. Probably 1 ampere to each square foot is about right. The E. M. F. should be about 7 volts. 2. What good work would you recommend on constructing dynamo-electric machines, also on lacquers? A. We think "Experimental Science" would meet your wants.

(3258) P. J. S. writes: 1. I am building an armature with washers. I have some No. 20 iron; will that work, or must it be thinner? A. No. 20 will answer. 2. What size wire will be required in accordance with the iron I mentioned? If thinner washers will be required, give size of wire. A. There is no special relation between the thickness of the washers and the size of the wire. 3. What size wire would be required in fields? I wish to build a motor and use as little battery as possibly will run it. A. Without knowing the size of the motor, we cannot give information of any value on this point. For electrical calculations in general we refer you to "The Arithmetic of Electricity," $1 by mail.

(3259) H. M. asks: What is isinglass? Is it soluble? A. The word is applied to two entirely dissimilar substances. One is mica, a natural mineral, used for lights in stove doors and in electrical apparatus. The other is a fine form of animal or fish gelatine. The latter is soluble in water. Mica is insoluble.

(3260) B. F. B. asks: In receipts which read, "Take 2 parts of this, and 7 parts of that, and 3 parts of something else," etc., what is one part equal to? Is "a part" to be by weight or measure? In the above, am I to believe the whole is 12 parts or 12 lb., and that the 3 parts equal 3 lb.? etc. A. Parts by weight are always to be understood except where otherwise stated. The total number of parts stated give the basis for the proportion of one part to the whole.

(3261) E. H. asks for a recipe for making adhesive fly paper. A. (1) Resin 9 parts and linseed oil 4 parts, or (2) resin 8 parts, linseed oil and turpentine 4 parts each, honey ⅓ part, or (3) resin 4 parts, molasses and linseed oil 1 part each, boiled together.

(3262) E. M., Jr., writes: I want to make a simple electric motor after the pattern described in SCIENTIFIC AMERICAN SUPPLEMENT of April 14, 1888, No. 641, on pages 10240 and 10241, but not so large, only large enough to have the power to run one ordinary sewing machine. What size shall I make it, and what size wire shall I use on the field magnets and armature, also how much wire will it take for each, provided a chromic acid battery is used to run it, the armature and field magnet being connected in series? A. Make it about two-thirds the size of the motor referred to, and wind both armature and field magnet with No. 20 wire. It will require about 2½ pounds of wire. 2. How many 5×7 chromic acid cells, would it take to run it normally? A. Four. 3. Does a chromic acid battery give off unhealthy fumes? A. Not as long as the zincs are well amalgamated. 4. How near together should the tin foil sectors of a 20 inch plate Wimshurst machine be to each other, if there are sixteen of them? A. About twice their own width. 5. What chemical is used to stain glass? A. Different substances are used for producing different colors. Consult works on glass manufacture. 6. Can an induction coil charge a Leyden jar? A. Yes.

(3263) A. G. asks for a receipt for making suitable size for applying gold leaf to silks or satins. A. A good size for attaching gold leaf to silk and satin is made by beating the whites of eggs thoroughyl, allowing the resultant mass to subside, forming liquid albumen, reducing the albumen by the addition of an equal quantity of water. The size is applied and allowed to dry. The gold leaf is laid on and the type or dye is warmed and pressed upon the gold leaf. Wherever the albumen size is heated by the die, it is coagulated and rendered insoluble. The leaf remaining on other portions of the fabric may be brushed off or wiped off with a damp cloth.

(3264) P. A. M. asks: 1. Why is it undesirable to put two or more different kinds of open circuit batteries in one circuit? A. This idea we presume arises from the supposition that any one using batteries will select one kind best adapted to his wants. We see no objection necessarily attendant on mixing different kinds of batteries. 2. What is the objection to using larger diaphragms than are commonly used in telephone receivers and transmitters? Would they not be more sensitive? A. The best articulation is secured by the use of small diaphragms. With large diaphragms articulation is defective. 3. What carbon batteries may be sealed, or which do not require a vent for escaping gas? A. Any battery using chromic acid or bichromate of potash or bichromate of soda may be practically sealed. Gas will be liberated only when the zincs are poorly amalgamated; a small vent should be provided for this contingency. 4. Which form of battery is considered the cheapest for operating small motors or incandescent lamps? A. Either the plunging or Bunsen. 5. Which is the cheapest process for making zinc plates for printing, in which the lines will all be in relief—the reverse of intaglio? A. Consult SUPPLEMENT, No. 656.

(3265) T. C. W. asks: 1. What water pressure is supplied to the residences of Cleveland and some other large cities of the United States? A. You can probably obtain the water pressure of your city by addressing the superintendent. We have no data other than New York 10 to 40 pounds, Brooklyn 20 to 60 pounds, according to flow and elevation of ground, Philadelphia 5 to 25 pounds. A few towns 50 to 80 pounds per square inch. 2. What is the horse power of some of the various types of locomotives in use? A. Our largest locomotives will develop as high as 800 horse power. 3. How can the horse power of locomotives be calculated? A. The horse power of locomotives may be computed the same as any duplex steam engine from boiler pressure, cut-off, area of pistons, and piston speed. 4. Please explain why arc lamps cannot be burned in parallel, also why incandescent lamps cannot be burned in series to advantage. A. Arc lamps vary perpetually in resistance and require the current to be as nearly as possible constant. If arranged in parallel, some would take more than others, and the resulting light would be even more unsteady than it is now. Incandescent lamps can be burned either in series or in parallel. The latter method gives a lower initial difference of potential, and makes it possible to shut off one lamp at a time without special apparatus to pass the current around it.

(3266) C. L. C. asks: 1. What is a good treatment for chronic rheumatism? A. We refer you to SUPPLEMENT, No. 299, page 4772. 2. Can it be cured by electricity? A. A judicious application of electricity often proves beneficial. 3. If so, what kind of a simple and inexpensive instrument can be constructed for that purpose? A. You can procure a medical battery from any of the dealers in electrical supplies.

(3267) A. P. E. wants to reproduce a medal in silver galvanoplastically. Is the cyanide solution of the nitrate of silver as good as of the cyanide or chloride of silver? What solution of silver is best for above purpose? Are 2 gravity cells or 4 Leclanche cells sufficient to reproduce a dense and thick deposit of silver, analogous to an electrotype deposit of copper? A. The usual method of copying medals is to take an impression in wax or gutta percha, coat the model with fine plumbago and take a copper shell by the galvano-