

NEW INVENTIONS.

An improved millstone, which facilitates the adjustment of the grinding surfaces, has been patented by Mr. Emil Hermann Streitz, of Rauschmühle, near Freienwalde, Pomerania, Germany. It is well known that the outer part of the grinding surface of millstones wears out first, whereas the central part of the grinding surface remains quite intact; but in order to have a level grinding surface the entire surface of the millstones in use heretofore had to be dressed, which involved a considerable amount of time and labor and was very expensive, as the central part of the stone, which never became worn off, had to be cut away. This is an item of considerable importance, and the difficulty is avoided by this improvement.

Mr. Adrian C. Selby, of Covington, Ky., has patented a new soap, composed of tallow, olive oil, sal-soda, unslaked lime, rosin, borax, alum, white wax, spermaceti, and benzine, which ingredients are prepared in the manner and combined in certain proportions given in the specification.

Mr. Charles H. Vibbard, of Aurora, N. Y., has patented a cigar lighter constructed with a case provided with a hinged cover and a spring catch for holding the cover closed, a tube provided with a spiral spring and a tubular cap for holding a candle, a slotted and curved partition, having a correspondingly curved spring attached to it for holding a fuse, a four-armed wheel pivoted to the case for raising the fuse, a curved arm attached to the cover for operating the four-armed wheel, a curved arm attached to the cover for igniting the fuse, and a curved spring for raising the cover quickly, so that a fuse will be ignited and a candle lighted by opening the cover, and the fuse raised, ready to be again lit, by closing the cover.

An improved pivoted counter seat, which is raised up against the counter or wall automatically as soon as the occupant leaves it, has been patented by Mr. Reuben J. Spalding, of Rosita, Col. The invention consists in a seat pivoted to the side of a counter or wall, and having a single or forked leg pivoted to its under side, the end of this leg sliding in a grooved vertical guide of the counter and being attached to a spring, the upper end of which is attached to the counter above the seat, so that this seat will be raised against the side of the counter or wall as soon as the occupant leaves the seat.

An improved gasoline stove adapted for cooking and heating has been patented by Mr. George A. A. Siffait, of Portland, Oregon. The invention consists in a stove with a central tubular flue and an annular flue surrounding the central flue, so as to insure a thorough circulation of the heat created by a double gasoline burner arranged below the central flue and fed from a tank or reservoir combined with the stove.

Mr. James A. Dubbs of Lansing, Kan. has patented an improved carriage body support for painters' use, whereby carriage bodies may be firmly and securely supported and turned side for side and end for end, or held in any position desired, and the surface leveled with very little trouble.

An improved barrel swing has been patented by Mr. Sylvester W. Sheldon, of New York city. The object of this invention is to improve the construction of the barrel swing for which Letters Patent No. 227,848 were issued to the same inventor May 18, 1880, in such a manner as to make it more convenient and satisfactory in use.

Mr. Peter Forshay, of Amite City, La., has patented an improved cotton condenser for use with gins, for receiving and compacting the cotton. The object of this invention is to prevent the drums from choking and escape of cotton with the refuse.

Mr. George A. A. Siffait, of Portland, Oregon, has patented an improved coffee pot provided with cup-shaped sieve, through the bottom of which a central tube passes, surmounted by a perforated cap, and the lower end of this tube is threaded, so that it can be screwed into the upper end of a tube of a filling piece, fitting in and closing an opening in a false bottom or horizontal partition a short distance above the bottom of the pot. This filling piece is of greater or less size, accordingly as a greater or less quantity of coffee or tea is to be made.

Messrs. Thomas Lawrence, Absolom C. Stratton, and James M. Wolf, of Mountain Home, Ark., have patented a cheap, safe, and reliable fire-lighting device to be used in the place of ordinary matches, it being intended more especially for outdoor use. The invention consists, principally, of a cord saturated or coated with some easily ignitable substances or mixture and a lamp, both contained in a suitable small case or box, the cord being adapted to be drawn out, as it is used for lighting the lamp, through a small aperture, which aperture is protected with a hinged or sliding cover.

Mr. Albert Ayers, of Rahway, N. J., has patented an improvement in that class of devices designed to hold window sashes at any desired elevation, and to prevent their rattling, and is especially designed for car and carriage windows. The invention consists of a rubber tube closed at one end, provided with a head having a polygonal face or edge and a projecting central boss, and containing a loosely-fitting rigid pin, which tube and pin constitute the stop, several of which are designed to be set in suitable sockets in the edges of the sash, so that opposite faces will bear against the sides of the sash grooves in the window frame and the bosses against the bottoms of the grooves.

A convenient portable showering device, to be applied to any washing or bathing tub, has been patented by Mr. Edward Williams, of Griffin, Ga. The invention consists of a pump provided with a clamp for securing it to the edge of

the tub, and of a perforated pan or sprinkler and an upright pipe connecting the same with the pump, so that a person standing in the tub can operate the pump to force water up into the sprinkler, whence it will fall upon the operator.

An improved apparatus for the manufacture of alkali balls has been patented by Mr. Minard M. Smith, of New York city. The object of this invention is to produce alkali balls without wires, thereby saving the cost of the wires and the trouble caused by their presence in the balls. The invention consists in forming the balls on screws or screw-threaded pins, and in the combined pin bars and pins used in the manufacture.

An improvement in album clasps has been patented by Mr. Thomas Kelly, of New York city. The object of this invention is to furnish albums with extensible clasps, so that when the books become stretched by being filled the clasps can be lengthened to correspond, instead of becoming useless, as is usually the case.

An improvement in reclining chairs has been patented by Mr. Theodore Hofstatter, Jr., of New York city. This invention relates to chairs having backs adjustable for varying their inclination to the seat; and the object of the invention is to furnish a chair of that general character which can be readily manipulated by the occupant.

An improved wash boiler has been patented by Mr. John Murray, of Woodman, Wis. This invention relates to that class of wash boilers which have their bottoms sunken or formed into a pit, and it consists of a removable plate adapted to fit over the mouth of the depression or fit in the bottom of the boiler, and provided with a pipe seat and pipe at one end, holes for the passage of water at its opposite end, and a partition or frame having openings and valves, and resting on the bottom of the pit, which frame serves the threefold purpose of a valve seat, a brace to support the plate, and a means for preventing lateral movement of the plate.

An improved washing machine has been patented by Mr. William T. Hollis, of Corsicana, Texas. The object of this invention is to regulate the pressure of the rubber upon the clothes, and thus facilitate the operation of washing clothes.

Mr. Charles W. Gelett, of Oakland, Cal., has patented a portable and inexpensive apparatus that can be operated by hand for freezing cream and cooling water when ice cannot readily be obtained for such purposes. The improvements relate to the class of machines in which volatile liquids are used as the freezing agents.

Messrs. Isidore Gerard and Peter Tremblay, of Newton, Kan., have patented an improved washing machine which is simple, convenient, and effective. The top of the reservoir is covered with the removable cover, which prevents the water in the reservoir being splashed out, and it is provided with the hinged door near the rear end. The washer may be operated by foot-power or by steam or horse power.

Positive Pictures on Gelatino-Chloride.

A form of the hydro-kinone developer which Dr. Eder and Captain Pizzighelli recommend is prepared as follows: Water, 100 volumes; alcoholic hydro-kinone solution, 1 and 20, 4 volumes; sodium chloride solution, 1 and 30, 12 volumes; ammonium carbonate solution, 1 and 30, 20 volumes. This is considerably slower in its action than the iron developer previously described, and an exposure of three or four times the usual length is advisable. Another point to be remembered is the circumstance that pictures developed with hydro-kinone are very much more reduced during the operation of fixing than is the case with pictures developed by means of iron; and it is consequently necessary to carry on the action until the picture appears much denser than it should ultimately remain.

The hydro-kinone developer yields, in the case of the non-ammoniacal emulsion, very fine yellowish-red or bright-red tones, well adapted for lantern transparencies or for transparencies intended to be used in making enlarged negatives, while the ammoniacal emulsion gives grayish-red and unartistic tints. An ordinary gold toning bath slowly changes the color of the reddish images to highly pleasing violet tints. Should it be wished to obtain more intense images than are yielded by the developer as described, it is merely necessary to give a longer exposure, and to dilute the developer with about an equal bulk of water. A diminution in the proportion of hydro-kinone, and a corresponding increase in the ammonium carbonate, tends toward flatness and fog; a similar result also following any considerable diminution in the amount of sodium chloride present. Any considerable increase in the proportion of sodium chloride or of hydro-kinone is undesirable, the former leading to extreme hardness and deep ruby shadows, while the latter causes a greenish fog to form over the transparent parts of the picture. A simple addition of more carbonate of ammonium is useful in case of under-exposure, but the results are not nearly so satisfactory as when the correct exposure has been given and the normal developer used.

As a rule, the gelatino-chloride pictures tone with some difficulty, an ordinary neutral gold bath acting with extreme slowness; but the following answers very well in all ordinary cases:

No. 1.—Water, 500 parts; ammonium sulphocyanate, 20 parts; sodium hyposulphite, 15 parts.

No. 2.—Water, 500 parts; chloride of gold solution, 1 and 50, 40 parts.

For use, equal parts of the two solutions are mixed, and the fixed prints are immersed, but care must be taken not to allow the pictures to remain too long in this bath, or the

more delicate half tones will acquire an unpleasant bright blue tint; by careful watching, however, it is possible to obtain a very considerable variety of tones.

The chloride emulsion process appears to possess very notable advantages over the bromide method for the production of positives on paper, and the paper may be coated with emulsion just in the same way as carbon tissue is prepared, the plain paper being drawn over the surface of the melted emulsion. Another method adapted for the production of small quantities is to rub a glass plate with French chalk, and coat with emulsion. After this has set a sheet of damp paper is squeezed down upon it, and when all is dry, the gelatino-chloride paper may be stripped from the glass, the French chalk serving to prevent adhesion.—*Photographic News.*

Terra Cotta Lumber.

One of the most important of recent practical inventions is that of the manufacture of lumber from fire clay, patented by Mr. C. C. Gilman, of Eldora, Iowa.

The process is fully described in his letters patent, from which we extract the following: The composition consists of kaolin clay, free from grit, one part; resinous sawdust, from one to three parts, as porosity may be required; water sufficient to thoroughly incorporate the above, by the aid of machinery, into a plastic mass.

Removed from the grinding tubs, where it has been ground, the spongy product is forced by plungers driven by steam through iron or steel cylinders to express the superfluous moisture therefrom, and issues forth in the shape of long blocks or logs, of length, form, and size best fitted for handling, usually eight to twelve inches in thickness and four to six feet in length. When sufficiently dry to render handling safe these logs are moved into kilns or clamps calculated for the purpose. After the steam and vapors are driven out by a slow, steadily increasing fire, the temperature is rapidly raised to nearly a white heat, which not only consumes the sawdust, but brings the clay itself into the first stages of vitrification. On cooling, the logs are removed to the mill and sawed into planks, boards, and dimension-stuff, as lumber from wood is manufactured, and subsequently fashioned in the workshop into such forms and articles as demanded by purchasers. This material, being free from grit and tough in texture, can be cut, sawed, bored, planed, and carved with edged tools, and before or after such treatment can, after slipping and glazing, be submitted to a second firing, with fine results in ornamentation obtained.

Kaolin is the upper stratum of fire or feldspathic clay beds, and owing to the absence of sand or free silica is unsuited to common pottery uses, as its warpage in drying and firing unfits it for moulding purposes.

Mr. Gilman's invention overcomes this trouble, inasmuch as the material is reduced to form with edged tools subsequent to firing.

New York's greatest present want is a fire-proofing, cheap, and undoubted in its capacity for every emergency. Heretofore ten-storied buildings can in a conflagration receive but little aid from the fire department, especially when Croton is as scarce as it is now.

Terra cotta lumber is indestructible by fire, gases, or acids; is a poor conductor of heat, sound, and electricity; and possesses molecular attraction to an extent which allows of plastering without first lathing.

Its weight is one-half less than common building brick, and is erected with nails instead of cement or mortar, virtually rendering fire-proofing a work of carpentry instead of masonry as heretofore. Mr. C. C. Gilman's present address is room 71, No. 71 Broadway, New York.

A Notable Chinese Scroll.

The Chinese merchants in San Francisco have lately received from the Emperor of China a handsome scroll in recognition of the contributions sent by them to the victims of the Chinese famine three years ago. The scroll is four feet high and twelve feet long. The surface is entirely cross-grained and indented with miniature squares formed by lines running from opposite corners. These squares, uniformly covered with old gold, stand out in bold relief by means of a darker shade of gilt with which the lines are traced. Four large Chinese letters in ebony are carved at regular intervals across the face of the scroll, around which is a rich border of flowers and fruits. The scroll itself is inclosed by a deep, wide frame, upon which is carved a large number of allegorical figures, so wrought and blended together as to appear to have been made of one solid piece of wood. At the lower corners are placed two figures of Chinese gentlemen, each holding a sword, the upper corners being devoted to two maidens, each having a tambourine in hand, and depending from which is a long veil, completely encircling their body. The space intervening between the figures is blocked with dark glass, so that under an artificial light the effect is very beautiful. The imperial present has caused a commotion among the Chinese, and great curiosity is manifested.

MODIFICATION OF RUHMKORFF'S COIL.—With an induced coil, arranged in two blocks placed on the poles of the magnetic nucleus and communicating with each other, so that their points of junction may be at equal distances from the nucleus, effects are obtained of much greater power than with the ordinary arrangement.—*M. M. Scarpa and Baldo, in Les Mondes.*