

rise and fall of water in inches and fractions of an inch, and provides for an annunciator for indicating at a distant point the variations in water level beyond the prescribed limits, and also to indicate in which one of several boilers the water is too high or too low.

A hair crimper has been patented by Dina and Rudolph Jordan, of New York city. It consists of two shanks pivoted at one end and connected by a spring clasp at the opposite end, the face of one shank having a groove and the face of the other fitting in the groove, making a device by which the air may be conveniently held in the crimper as long as desirable to form a perfect curl.

A bolt has been patented by Mr. Henry A. Brown, of Toledo, O. It is a round bolt threaded at one end to receive a nut, and having an oblong countersink head, to be received in a countersink or recess of similar form in the tire or other metal work where the bolt is to be used, thus preventing the bolt from revolving while the nut is turned on or off, and avoiding the weakening of the metal by making a round countersink.

A headstall for stock has been patented by Mr. Francis M. Medling, of Rutherford Depot, Tenn. It is so made as to carry a spring with points that rest upon the nose of the animal in a way that will not interfere with its ability to graze or drink, but, on attempting to push off the top rail of a fence, or to suck, the points will prick the nose and deter the animal from accomplishing its object.

A stethoscope has been patented by Mr. Louis D. Radzinsky, of McKeesport, Pa. Its cup is made of soft rubber, in order to be practically a non-conductor of external sounds, and it has a peculiarly constructed tambourine, or drum, whereby the sounds from different regions of the chest or other parts of the body are intensified, the earmuffs being also of soft rubber, with an ear canicula of hard rubber or similar material.

An incubator has been patented by Mr. Frank Rosebrook, of Elmira, N. Y. Combined with the boiler is a hot water tank divided by partitions into channels that conduct the water first to the outside of the tank, then back to the center, a system of pipes connecting the hot water tank and the boiler, and water pans resting upon the pipes, making an improved arrangement for the uniform distribution of heat necessary for hatching.

A gas heating attachment for reversible sad irons has been patented by Mr. Henry C. Fox, of Evansville, Ind. This invention provides a burner calculated to give a flame of great intensity without any increased consumption of gas, and for a more perfect general distribution of the flame over the interior surface of the several sides to be heated, the device being also applicable to cylinders or other hollow bodies requiring to be heated on their interior.

A ditching machine has been patented by Mr. John C. Sage, of Gainesville, Ga. It is mounted on a car, with a vertically adjustable crosspiece carrying plows, with movable carriages and conveyer frames hinged therein, with means for adjusting their lower ends vertically, and flanged conveyer belts and means for rotating them, the machine being calculated for digging ditches, excavating the foundations of houses, and similar work.

A harness hook has been patented by Mr. John H. O'Donnell, of Winnipeg, Manitoba, Canada. It is intended especially for use as a check rein hook, the base, by which the hook is secured to the saddle, having at its forward end a lateral notch to receive the free end of a latch hook or open link pivoted to turn in a plane at right angles to that of the hook proper, so the rein cannot be released until the link is adjusted to open position.

A straw-board lining machine has been patented by Mr. Arnold W. Schlichte, of New York city. The mechanism is such that the operator is able to sever the web which constitutes the lining material between each sheet of board after the material has been pasted and pressed to place upon the board, the parts being so arranged that sheets of board of varying size may be used without changing the adjustment of the machine.

A burglar-proof safe has been patented by Messrs. John W. Norris, of Chicago, Ill., and Thomas M. Brintnall, of Maryville, Mo. The invention consists essentially in interlocking the bolt ribs with the safe door by dovetail joints, providing a construction to connect the bolt-carrying devices without the introduction of screws or threaded bolts, and making a firmer and stronger connection between the doors and the bolt-carrying devices.

A watch has been patented by Mr. Domingo T. Garcia, of Guadalajara, Mexico. It has two crown wheels mounted on an arbor in the case, one of the wheels having more teeth than the other, a pinion engaging the teeth of both crown wheels, with a crown scape wheel on its shaft, with other novel features, making a watch with very few parts and designed to be very accurate.

A clock has likewise been patented by the same inventor, whose construction is based upon the principle of differential gearing. It has but few parts, two toothed wheels being mounted on the same shaft, one fixed and the other loose, an escapement anchor pallet engaging with both wheels, the loose escapement wheel having part of its face cut out and a circular scale formed around the opening, with other novel features, the use of the usual multiplying train being dispensed with.

A parasol for children's carriages has been patented by Mr. John McAlister, of Jersey City, N. J. A notched runner is held on a clamp attachable to the stationary rod fastened to the carriage, a stick with a notched collar supporting the braces, a cord from the upper end of the stick passing through the runner, and a spring on the stick engaging with a slot in the runner, so the parasol can be supported in an angular position, and opened and closed from the top or outside.

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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 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 exam nation should be distinctly marked or labeled.

(1) W. T. T. says: Please oblige an old subscriber with the receipt to prevent awnings and cotton goods from mildewing. Also a receipt to make tents waterproof. A. 1. Use 4 oz. powdered alum and 4 1/2 oz. sugar of lead, dissolved in 3 gals. water. When perfect subsidence has taken place, pour off the clear liquid only, and add to it 2 dr. isinglass, previously dissolved in warm water, taking care to mix thoroughly. Steep the goods well, and dry without wringing. 2. In 80 parts of water heated to about 80° C. melt 3 parts of gelatine and 6 of castor oil soap; then add 3 parts gum lac, stirring the liquid until entirely dissolved. Withdraw from the fire, and add to the mixture, little by little, 6 parts of powdered alum stirring all the while. The liquid thickens in forming an insoluble alum soap, which is intimately incorporated with the gelatine and the gum lac. Spread it over the stuff with a bristle brush.

(2) F. P. M. asks how many "crow-foot" gravity cells 5 inches by 6 inches it will require to run a 16 candle power incandescent lamp, and how they are to be connected. A. Assuming the cells to give one volt each, and to be of 200 ohms resistance, 512 such cells arranged in eight parallel series of 64 each would supply a 16 candle power lamp.

(3) E. C. E. asks: 1. Can you give me a good recipe for liquid stove polish, such as stove builders use? A. Take of pulverized black lead 1 pound, turpentine 1 gill, water 1 gill, sugar 1 ounce. 2. A recipe for a glossy and quick drying furniture polish not having much color. A. Dissolve 4 ounces best shellac in 2 pints of 95 per cent alcohol; add to this 2 pints of linseed oil and 1 pint of spirits of turpentine; when mixed, add 4 ounces of sulphuric ether and 4 ounces ammonia water; mix thoroughly, shake when used, and apply with a sponge lightly. 3. A safe and quick liquid for cleaning silverware? A. The best thing to use is two teaspoonfuls of ammonia, dissolved in a quart of hot soap suds. 4. A solvent for cellulose. A. Cellulose dissolves completely in an ammoniacal solution of oxide of copper.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

October 5, 1886,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing inventions and their patent numbers, including Aerostat, dirigible, Agricultural machines, Alarm, Animal trap, Animals, ear mark, Annunciator, Axle box, Axle boxes, back collar, Bag turning machine, Band for packages, Barrel cover, Barrel swing, Basket cover, Batteries, Bed, Bed bottom, Bed spring, Bell, Bell cord, Belting, Bicycle stand, Bird cages, Bit, Bleaching compound, Blower, Boiler, Boiler attachment, Boiler furnace, Bolt.

Table listing inventions and their patent numbers, including Boneblack revivifier, Book cutting machine, Bottle case, Bottle stopper, Box, Box covers, Bracket, Brake, Breeching hook, Brick drying kiln, Bridle bit, Brush, Brush, tooth, Buckle, Buildings automatically, Burglar alarm, Burner, Bustle, Button, Buttonholes, Button machine, Camera, Can, Can, L. 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