

an adjustable stop to limit the movement of the diaphragm valve.

SASH HOLDER.—Lewis H. Bowman, Walla Walla, Wash. To hold a window sash, without rattling, at any height desired, and to prevent the ingress of air or dust when the sash is closed, are the main objects of this invention...

WAGON AXLE BEARING.—Henry M. Cromer, Anderson, S. C. This invention is designed to facilitate the utilization of old thimble skeins, making them fit closely upon the axle, as well as provide a new construction, which consists of a conical sleeve attached to each end of the spindle bearing and adjustable in either direction...

CLINICAL THERMOMETER SHIELD.—Jennie C. Harrington, Ossian, Ia. This shield is especially designed for use on fever thermometers, to prevent patients from breaking the instrument while it is being held in the mouth. It consists of a casing, preferably of a suitable metal, such as aluminum or silver, made in two longitudinal sections hinged directly together...

APPARATUS FOR COOLING LIQUIDS.—William L. Spoon, Jr., Burlington, N. C. For cooling hot water or other liquid used in ice machines, etc., this inventor has devised an apparatus which is designed to be very effective, while permitting the use of the liquid over and over again with a minimum percentage of loss by evaporation. It comprises a perforated casing into the upper end of which a current of air is to be forced, a nozzle connected with the liquid supply spraying liquid into the casing, while the latter has a perforated zigzag supporting leg containing perforated plates. The liquid is thus atomized and sprayed in finely divided state, and at the same time subjected to a current of air of ordinary or low temperature, causing accelerated evaporation and cooling.

STERILIZING APPARATUS.—Arthur J. Vause, Sydney, New South Wales. For sterilizing milk and other liquids, and the receptacles in which the milk is placed, as well as for automatically bottling and corking the milk, this inventor has devised an apparatus in which the milk is first passed in bottles through a series of inclined ways, kept at varying and adjusted temperature, passing from thence to be received in a steam jacketed container, from which it passes through a deodorizer and thence to a filling apparatus. The apparatus is provided at various points with thermometers, according to which the temperature may be regulated as desired.

WATER COCK.—Maurice Andriveau, Paris, France. This invention relates to cocks in which automatic closing takes place, and provides a cock which will have a double closing action, and which at each operation supplies only a predetermined quantity of water. The valve casing has two apertured seats, in both of which the cutoff valve, constructed in two longitudinally adjustable sections, may seat itself, the length of the valve being changeable, there being means for changing the pressure on one side to cause the valve to move from one seat to the other. The valve will operate in any position, with the outlet facing upward, downward or laterally.

WASHING MACHINE.—Alexander E. Hoiges, Tecumseh, Oklahoma Ter. In a suitably constructed frame, according to this invention, a semi-circular receptacle is mounted to rock, there being within it a rubbing cylinder journaled in a frame which is loosely connected an arm adapted to receive a swinging motion from the receptacle to move the rubbing cylinder in an opposite direction to the movement of the receptacle. By this means a proper rubbing and washing of the clothes is effected without danger of tearing them, the machine being easily operated and of simple and durable construction.

BOSOM PAD.—Dora Harrison, Lansing, Mich. This pad is an improvement on a formerly patented invention of the same inventor, providing an improved dress form readily applied to or removed from the pockets of corsets and other garments, and designed to insure a proper fitting of the dress. It is made in two pad sections, each having a back and front section with meeting edges having flanges lying snugly against each other, a welt surrounding and cemented to the flanges, while lace arms are secured by adjustable lacing to the welts of the pad sections.

ROLLING PIN.—Anson B. Fowler, Shelton, Wash. This device may be used as an ordinary rolling pin, in the preparation of dough for the oven, or with a flour delivery for sprinkling the dough to be rolled, to prevent it from sticking or adhering to the pin, and with this view is made with two shells, one within the other, and each having perforations, which may be brought in line with each other or not, as desired, the inner shell forming a flour receptacle. The parts are readily detachable to facilitate cleaning.

Designs.

SEPARATOR.—Frank H. Congdon, East Greenwich, R. I. This invention relates to separators used in spinning machinery, such as the Doyle separator, and embodies an improved form thereof. The blades are so curved as to present fewer chances of collecting lint and dirt, and are also lighter, giving the ring rail less weight to move.

GLASS PITCHER.—Joseph Wilson, New York City. This pitcher has panels decorated with "panties," and prismatic panels at each side of such panels, box panels crossing both the others.

BICYCLE LUGGAGE CARRIER.—A. J. Gilliland, Smethport, Pa., and W. H. White, Nyack, N. Y. This is a bracket device to be fitted on the steering head and having arms projecting from each side adapted to conveniently carry a variety of packages.

SPOON HANDLE.—Herman J. Klumpp, Portland, Oregon. On the obverse side this handle represents interlaced ribbons, with panels containing floral figures, while on the reverse side are scroll and shell figures and a beaded ribbon following the margin of the bead.

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(7369) J. W. B. writes: About what size wire, number of sections, etc., to wind on laminated core of following size. You will help me out of a quandary:

Table with 2 columns: Item, Value. Length of core... 5 1/2 inches. Diameter of core... 3/4. Number of laminations... 30. Sections... 10. Diameter between fields... 3 1/4.

I wish to obtain an E. M. F. of 52. A. If your field is of the proper strength, wind the armature with 24 sections of 12 turns each of No. 16 wire. You can change the number of sections if you keep the total number of turns the same. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 600, for further directions for winding. You can place sixteen No. 16 wires to the inch.

(7370) J. L. B. writes: Will you kindly answer for me the following? 1. Why does not the magnetic pole coincide with the geographic pole? A. This is as yet one of the hidden secrets in the physical constitution of the earth. 2. How is artificial stone made? A. Articles in SCIENTIFIC AMERICAN SUPPLEMENTS, Nos. 183, 355 and 868, give very full accounts of the various kinds of artificial stone. 3. What is meant by a "car mile" in speaking of building railroads? A. A "car mile" is a term used in estimating the cost of running cars. It is the cost of running one car one mile. 4. How are billiard balls turned? A. For method of turning billiard balls see Notes and Queries, No. 7353, SCIENTIFIC AMERICAN, February 19, 1898. 5. In what number of SCIENTIFIC AMERICAN or SUPPLEMENT may I find an account of how artificial ice is made, for or in skating rinks? A. Skating rinks with artificial ice are illustrated and described in SCIENTIFIC AMERICAN SUPPLEMENTS, Nos. 35, 738 and 892. 10 cents each, mailed.

(7371) C. N. S. asks for formula for preparation to stick wood veneer on tin or metal of any kind. Have used glue and nitric acid, also glue and garlic, but neither works satisfactorily. The veneer will peel after a time. I want something that will adhere permanently. A. M. Eiel gives the following formula for a mixture which can be used for metal, glass or wood: Gum tragacanth, 30 grammes; acacia gum, 120 grammes; water, 500 cubic centimeters. Dissolve, filter and add 2 1/2 grammes of thymol suspended in 120 cubic centimeters of glycerine; then add enough water to make up the bulk to 1 liter. This bath will keep a long time.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted FEBRUARY 22, 1898, AND EACH BEARING THAT DATE.

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

Table listing inventions with names and patent numbers. Includes items like Air brake, Amusement device, Animal trap, Ash remover, Axles, Band cutter, Band slide, Battery, Bearing ball, Bedstead, Bicycle crank, Bicycle guard, Bicycle handle, Bicycle holder, Bicycle lamp, Bicycle stand, Bicycle support, Bicycles, Billiard cushion, Binding implement, Bit, Bolt, Boiler, Boiler gage, Book rest, Boot or shoe nailing machine, Boring and turning machine, Bottle and stopper, Bottle attachment, Bottle packing case, Bottle stopper, Bowling alley, Box folding machine, Brake, Brake mechanism, Bread and pastry board, Buckle, Burner, Burning and heating appliance, Button or stud for shirt bosoms, Cabinet, Camera, Camera, photograph magazine, Can, See Oil can, Sealing wax can, Candle holder, Candy cutting machine, Car brake shoe slack adjuster, Car coupling, Car coupling, H. Lanke, Car coupling, S. Reynolds, Car door, Car draw bar, Car fender, Car fender, L. J. Neracher, Car spring leg, Car stopper, automatic, Cars, etc., safety guard and truck, Card box, Carpetsweeper, Cash register, Cash register and indicator, Cash pitching apparatus, Centrifugal machine, Chair, Chair, See Opera chair, Chair, Hanson & Wolf, Chuck, R. H. Hurlbut, Churn, Coppock & Miller, Churn, J. R. Hailey, Cleaner, Clothes wringer, Coffee grinder, Coffin lowering machine, Collar fastener, Color value curtain shutter, Cooker, steam, Cooler, Corn sheller, Allen & Bearden, Corn sheller conveyor, Corner plate, Corner strip, Corner strip anchor plate, Cotton cleaning mechanism, Couch, spring leg, Countersinking machine, Cuff links, Cultivator, Cup, Cutter, Cyclometer, Damper, grate, Keifel & Zipp, Demolisher, automatic, Dish, crushed fruit, Door checks and closers, lever connection for, Door hanger, Doors, double sliding, Draining machine, Drawing apparatus, Dress shield extender, Drier, A. S. Livengood, Drill, Dropper, Drum, heating, Dye, black trisazo, Dye, black alizarin, Dye derived from anthraquinone, green, Dye derived from quinizarin, green, Egg beater, Electric battery, Electric light support, incandescent, Electric meter driving gear, Electric resistance conductor, Electric resistance conductor, O'Neill & Gale, Fly screen, C. T. Siebert, Electrical primary battery, Elevator, Elevator hoist, T. Mason, Elevator safety appliance, Engine, See Gas engine, Rotary engine, Vapor engine, Engine, F. E. Bruguere, Engines, electric igniter for explosive, Engine, electric igniter for gas, Explosives, making, Explosives, making, J. E. Blomen, Fabric, See Knitted fabric, Feed trough, Fermenting squares and vats, construction of, Finishing roll, Fire alarm box, Firearm, box magazine, Firearm, magazine, Fire extinguisher, Fishing tackle holder, Flask, J. C. Korn, Fly trap, automatic, Foot covering, Forging and sharpening rock drills, etc., apparatus for, Forging hollow shafts, funnels, etc., mechanism for, Frame, See Photographic printing frame, Sewing machine quilting frame, Fruit cleaner, Fruit drier, G. A. & B. G. Stevens

Table listing inventions with names and patent numbers. Includes items like Furnace blast pipe, Game apparatus, Gas compressor, Gas engine, Gas engine, W. E. White, Gas engine attachment, Gas generator, acetylene, Gas generator, acetylene, P. McMurray, Gas machine, hydraulic blower and pressure apparatus, Gate, S. E. Auker, Gate, R. Hayden, Gear, driving, Generator, Glass cutter, window, Grease trap for sinks, Gun, pneumatic, Gun turrets, apparatus for operating, Hanger, Harness attachment, racing, Hat pin, Heater, Hides, skins or leather, machine for treating, Hoisting and lowering gear, Hoisting apparatus, Horseshoe, Hoses, rubber, Hydrocarbon burner, Injector, steam, Ink well, Insect exterminator, Insulator, Jar cover fastening, Joint, See Metallic frame joint, Steam joint, Knitted fabric, Knitting machine, straight bar, Knob attachment, Lacings, machine for securing metal points to, Lamp, C. M. Lundgren, Lamp, M. P. Stevens, Lamp burner shield, Lamp, electric arc, Skinner & Bacon, Lamp radiator attachment, arc, Lantern, bicycle, Lantern attachment, Lawn rake, scraper and cutter, combined, Lead from its ores, extraction of, Lemonade making device, Lifting jack, Liquids in form of a stream, implement for discharging, Liquids, means for controlling flow of, Loading dirt, gravel, etc., onto wagons, device for, Loom harness leveling device, Mail marking machine, Mail or parcel elevator, Manhole frame, Manhole frame, H. W. Sanborn, Match safe, Measurer, H. H. Woodward, Measuring variable angles between rotating bodies, machine for, Meat sawing machine, Medicine dropper, Metal drilling machine, Metallic, Meter, J. L. Dodge, Milk apparatus for testing amount of fat in, Milk cooler, Mine draining siphon, Mine shaft, Misting machine, Necktie retainer, Nut lock, Nut lock, W. E. Caylor, Nut lock, G. H. Dye, Nut lock, S. O. Haskins, Office indicator, Oil can, Opera chair, Ordnance, breech loading, Organ, reed, Ozone producing apparatus, Paper holder, roll, Paper shifter, Paper shifting gripper, Patten for brushes for waxing floors, Pavements, roadways, etc., composition of matter for, Pen, fountain, Pencils, etc., holder for, Permutation lock, Permutation lock, C. J. Kintner, Photographic films, apparatus for manufacturing, Photographic frame, Photographic shutter operating lever, Pianoforte action, Picture supporter, Pin, See Hat pin, Pin lock, Pipe, See Sheet metal pipe, Pipe hanger, C. MacTaggart, Pipe or nut wrench, Pipe or tube coupling, Pipe wrench, Packer fastener, Planing machine, Plow row gage, Pneumatic tube switch and back stop, Pocket garment, Power transmitter, Power transmitting mechanism, Preserving alimentary substances, apparatus for, Propeller, chain, Pumping machine, fabric, Puller, Pump, oil, Puzzle, W. Bowling, Radiator, Rail drill, Railway rail fastener, Railway signal, Railway signal, mechanical, Railway signal operating system, Railway system, electric, Railway system, electric, J. D. Gibbs, Railway tie, metal, Reckström device, Reversing device, Riveter, Riveting machine, Rolling balls, machine for cold, Rolling rods or wire, machine for, Rotary engine, Rotary engine, Wampler & Bloom, Rotary engine, reversible, Sampling mill, Sand distributing device, Sash balance, Sash fastener, Sash fastener, J. A. Wade, Saw, J. Guedel, Saw filing device, Scale, C. H. Mattice, Scale, air, Screen, See Window screen, Sealing wax can, Secondary battery, Separator, Reeves & Kailor, Sewing machine guide, Sewing machine needle holder, Sewing machine quilting frame, Shaft coupling and cycle hanger, Shears gage, Sheet metal pipe, Shell, See Corn sheller, Shirt, bathing, Shoe, bicycle, Shoe upper lacing device, Shovel handle, Signal, See Railway signal, Skirt guide, Sled brake, Slicer, vegetable, Soap cup or holder, Spinning machine, ring, Spinning or twisting machine, Spoke heading and bending mechanism, Spout, Sp. A. Ring, Sprocket wheel and chain, Stamp tapper, Steam boiler, E. Hook, Steam drier, rotary, Steam joint for rotary cylinders, Steel and cast metal, making composite articles of manganese, Stopper, See Bottle stopper, Stove, J. A. Hampton, Stove or furnace, heating

(Continued on page 157)