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miles from the principal seaport by rail. Dead crabs, or crabstying on the way, would decompose, and while boiling would kill the bacteria, it would not destroy actual poisonous agents, the ptomaines, which are produced by the action of bacteria on animal tissue. Even crabstayed two or three days before reaching Merida, and then reheated before eating, might become reinfected in the interval, and in both cases the ptomaines might produce fatal symptoms resembling cholera. A noted case is one occurring in England, in 1887, when at a wedding breakfast a ham pie was served. Every one who ate of the pie was poisoned, and nearly all died, including the bride and groom. Examination showed that the ham was decomposed before boiling, but the resistant ptomaines were found in the boiled ham in sufficient quantities to cause fatal poisoning. Boiling in copper vessels would not cause such poisoning. As to bacterial examination of the dejecta, bacteria of all kinds are normally found, and the only bacterium known that would be of any aid to the cause of the outbreak would be the "comma bacillus" of cholera.

(4642) R. L. B. writes: 1. I have an electro-magnetic machine that has lost its electric force. Can the magnet be recharged? A. The magnet can be recharged by the usual methods, but it probably will not retain its charge longer than it did in the first instance. 2. What causes it to lose its electric power? A. The steel of which the magnet is composed may be too soft, or possibly the magnet has been subjected to jarring or concussion. 3. Where can I send it to have it recharged? A. Any one having a good sized electro-magnet can recharge your magnet by applying it to the poles of the dynamo.

(4643) H. M. W., Dakota, asks: Is hard coal in use upon any railroad for steaming locomotives drawing full sized trains? A. Anthracite or hard coal is now and has been used for many years on most of the railways in the Eastern States.

(4644) E. M. K.—The eyeglasses are cemented together with Canada balsam. As it requires some practice to do it neatly, better send it to an optician.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

January 10, 1893,

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 'Acid, recovering metastannic', 'Advertising device for glass vessels', 'Air brake coupling', 'Arch for ceiling or vaults', 'Automatic brake', 'Axle handle and protector', 'Axle box lid', 'Axle, sulky', 'Axle, vehicle', 'Band cutter and feeder', 'Banjo', 'Battery', 'Bed brace', 'Bed, folding', 'Bed, for hospital', 'Bed spring coil', 'Bee escape', 'Beehive', 'Beer cooler', 'Bicycle and other tubing', 'Binder, temporary', 'Bleaching or dyeing textile materials', 'Block', 'Blotter', 'Boiler', 'Boiler, steam', 'Boiler, J. R. Brown', 'Boiler, M. & G. Hise', 'Boiler and boiler furnace', 'Boilers, blow-off basin for steam', 'Bone cutting machine', 'Book, bank or check', 'Book rack, adjustable', 'Boot or shoe creaser', 'Border for walks', 'Bottle stopper', 'Boutonniers', 'Box', 'Box fastener', 'Box lid fastener', 'Brace', 'Brake', 'Brake adjuster, automatic', 'Brick building', 'Brick kiln', 'Bride check', 'Broom head', 'Brush, hat or clothes', 'Buckle', 'Buckle, G. W. Moore', 'Bullet mould', 'Butter', 'Butter, manufacture of', 'Butter mould', 'Button, blank', 'Calculating machine', 'Camera plate holder attachment', 'Can', 'Can lacquering machine', 'Cap, Lacto', 'Car brake', 'Car brake, street', 'Car coupling', 'Car coupling, T. P. Carroll', 'Car coupling, S. M. Carroll', 'Car coupling, J. C. Huggins', 'Car coupling, A. C. McCord', 'Car coupling, M. Dade', 'Car coupling, L. Parmyer'

Table listing inventions with names and patent numbers. Includes items like 'Car coupling, T. W. Ranson', 'Car coupling, R. A. Shipman', 'Car coupling, Walker & Hammerschmidt', 'Car fender', 'Car heating apparatus', 'Car post', 'Car seat', 'Car seat, J. S. Johnson', 'Car, vestibule railway', 'Car wheel', 'Cars, automatic life-guard for street', 'Car-meter', 'Carnel holder', 'Carpet stretcher', 'Case, See Display glove case', 'Cattle guard', 'Centrifugal machine', 'Chair, See Dental chair', 'Child sectional', 'Chimney or flue cowl', 'Chlorine and caustic soda apparatus', 'Chloroform, purifying', 'Chopper', 'Chuck, F. Blessing', 'Chuck, drill, S. C. Thompson', 'Churn, N. Monday', 'Churn, S. J. Saxon', 'Clear cutting and lighting device', 'Clamp, J. Babret', 'Clasp', 'Cleaner', 'Clip, See Vehicle clip', 'Clothes pounder', 'Coal elevating and conveying apparatus', 'Coal feeder', 'Coal sleeve protector', 'Coin-controlled apparatus', 'Coin-delivering device', 'Collar fastener', 'Collar, for coats', 'Cooker', 'Cooking apparatus', 'Cooler', 'Copy holder and rest', 'Corset', 'Corset shield', 'Cotton chopper', 'Cotton gin', 'Counterbalance and guide for reciprocating mechanisms', 'Coupling', 'Crane', 'Crane, charring', 'Cuff holder', 'Culinary chopper', 'Cultivator', 'Cultivator, E. A. Cox', 'Cultivator, L. B. Bann', 'Cultivator disk', 'Cutter', 'Dent chair', 'Desk', 'Detector', 'Detent mechanism', 'Detonating compound', 'Digger', 'Display glove case', 'Distilling and refrigerating apparatus', 'Drafting eyer', 'Drill holder', 'Drill mixer', 'Drying kiln', 'Dye, yellow red', 'Eaves trough hanger', 'Electric battery', 'Electric battery, C. S. Shepard', 'Electric light wires', 'Electric lighting system', 'Electric lighting system', 'Electric machines', 'Electric motor', 'Electric motors', 'Electric motor, means for controlling', 'Electrical diaphragm', 'Electrical switch', 'Electrically controlled ventilator', 'Elevator', 'End gate, wagon', 'Engine', 'Engine, See Reciprocating engine', 'Engine, steering apparatus', 'Engines, steady device for portable', 'Envelope dispensing machine', 'Evaporating pan', 'Excavator and carrier', 'Explosive powder', 'Extension table', 'Farm gate', 'Feed trough', 'Feeder', 'Feeder, time stock', 'File holder', 'File, newspaper', 'Filter', 'Fire escape', 'Fire escape, J. R. Coker', 'Fire escape, S. Kaye', 'Fire extinguisher', 'Fire screen', 'Flour mill', 'Funnel', 'Furnace, measuring', 'Furnace, See Smokeless furnace', 'Furnace, T. Moe', 'Furnace, J. H. Richardson', 'Gauge', 'Gauge, See Lumber gauge', 'Galvanic battery', 'Galvanic battery, G. L. Foote', 'Galvanic battery, W. R. Reud', 'Game apparatus', 'Game board', 'Garment supporter', 'Gas, apparatus for producing', 'Gas burner', 'Gas generating apparatus', 'Gas lighter', 'Gas lighting apparatus', 'Gas, manufacturing', 'Gate, See End gate', 'Gate, T. E. Foudray', 'Gate, W. A. Williams', 'Gear, expansion or cut-off', 'Gelatin circulating device', 'Ice cream freezer', 'Glass moulds', 'Glove fastener', 'Governor, steam brake', 'Grain cleaning machine', 'Grain meter', 'Grate', 'Guard', 'Gudkeon', 'Gun cleaner', 'Handle', 'Handle, See Trunk handle', 'Hanger', 'Harvester', 'Haap lock', 'Hat brim pressing machine', 'Hatchway attachment', 'Heater', 'Hitching device', 'Hitching strap', 'Hoisting and conveying machinery', 'Hof mill', 'Hook', 'Hook and eye', 'Horse or carriage block', 'Hose', 'Hot water boiler', 'Hour meter', 'Index device', 'Indicator', 'Injector', 'Insulator', 'Interlocking switch and signal', 'Jack', 'Jacket, chest protecting', 'Joint', 'Kiln', 'Knife blades', 'Knitting machine', 'Ladder, fire, Collaret'

Table listing inventions with names and patent numbers. Includes items like 'Lamp, B. J. M. Menge', 'Lamp chimney holder', 'Lamp holder, electric', 'Lamp, pocket', 'Lamp, regenerative', 'Lamp socket', 'Lamps, socket switch for incandescent electric', 'Land roller', 'Lantern, signal', 'Lathing, metal', 'Law rake', 'Leather working machine', 'Letter, sign', 'Lifter', 'Lifting device', 'Linotype making machine', 'Lock, M. O. Royce', 'Locomotive boiler', 'Loom for weaving double-faced pile fabrics', 'Loom heddle and heddle frame', 'Loop switch', 'Low water alarm', 'Lumber', 'Lunch box or case', 'Malting, dry kiln', 'Match stick bunching machine', 'Mattress filling apparatus', 'Meat or bread cutter', 'Moulds in machines for making leaf', 'Metal planing machine', 'Meter', 'Middlings purifier', 'Milk can', 'Milk can, A. F. Tripp', 'Milk separator', 'Mill, See Hominy mill', 'Milling machine', 'Mineral separating apparatus', 'Mining apparatus', 'Mixer', 'Mould', 'Motor', 'Musical instruments', 'Nickel, obtaining and separating sulphide of', 'Nickel, producing and separating sulphide of', 'L. Thomson', 'Numbering machine', 'Nut lock', 'Oil burner', 'Oil or gasoline can', 'Organ or piano pedal attachment', 'Organ stop action', 'Oven', 'Oven, bak', 'Packing vessel or jar', 'Pan', 'Paper holder', 'Paraphenol-carbamide', 'Pattern, garment fitting', 'Pencil attachment', 'Permutation lock', 'Phonographs, automatic feed and return mechanism', 'Photograph exhibitor', 'Piano', 'Piano forte action', 'Piano key touch adjuster', 'Piano, J. T. Smith', 'Pipe wrench', 'Plant cover or protector', 'Planter, corn', 'Planter, hand corn', 'Plow compensating lever', 'Pneumatic cushion', 'Pole or shaft support for vehicles', 'Pole or thill coupling', 'Potato digger', 'Press, See Book press', 'Pressure regulator', 'Printer's cabinet', 'Printer's galley', 'Prison cell and guard', 'Pulverizer and stalk cutter', 'Pump regulator', 'Punch card, register, tappet for duplex steam', 'Punch, G. H. Kavanaugh', 'Punching and riveting machine', 'Pyrometer', 'Rack', 'Radiator, stove, etc.', 'Rail brace', 'Railway, closer', 'Railway, electric', 'Railway grip, cable', 'Railway rails', 'Railway signal', 'Railway signal, W. F. Desant', 'Railway switch', 'Railway switch, automatic safety', 'Railway system, multiphase', 'Railway trolley', 'Railway, underground electric', 'Railways, conductor system for electric', 'Rake', 'Reciprocating engine', 'Refrigerator', 'Register or counting device', 'Register to count the operations of mechanism', 'Regulator', 'Removing obstructions, apparatus for', 'Riveting tool', 'Rods, machine for cutting, pointing, and shaping', 'Roller', 'Rougher, casting', 'Rush fastener', 'Rush fastener, R. E. Sweeney', 'Rush holder', 'Saw gauge', 'Saw, device for side swaging and setting', 'Screen', 'Seaming machine', 'Seat', 'Sewing machine needle', 'Sewing machine needle, drawer', 'Shavers, C. C. Naylor', 'Sheet metal creaser', 'Ships at sea, apparatus for coaling', 'Shoe nail', 'Shoe case', 'Signal', 'Sink and bath tub', 'Sink or basin trap', 'Smoke arrester', 'Smokeless furnace', 'Snap hook', 'Soldering machine', 'Sole leveling machine', 'Sole trimm', 'Steam generator', 'Steam generator, W. J. Rauton', 'Stop motion for rotary machine parts', 'Stopper', 'Store service apparatus', 'Stove, base heating', 'Stove, vapor', 'Stovepipe joint', 'Straightening machine', 'Strainer, tea', 'Strap', 'Striking bag drum', 'Sugar, obtaining', 'Supporter', 'Suspend end', 'Suspend end cast-off', 'Suspension device', 'Switch', 'Switch, See Electrical switch', 'Switch, Loop switch', 'Switch, Railway switch', 'Spring jack switch'

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 see 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 examination should be distinctly marked or labeled.

(4639) N. M. C. asks: Which of two bricks of equal dimensions and weight will require the greater force to move them—the one to be placed on its side, the other on edge, say for instance, the bricks are 4 inches wide by 8 inches long by 2 1/4 inches thick? A. Friction is independent of the extent of surface in contact, when the pressure remains the same, but is proportional to the pressure. There is no difference in the frictional force to move the bricks, whether they lie flat or edge-wise.

(4640) B. A. H. asks: Is there anything that can be used on soft coal that will prevent clogging with soot the stove, pipe, etc., and will aid in the combustion? A. There is nothing but perfect combustion that will burn the smoke and prevent soot in the pipe. Any oxidizing chemical will cost too much. There are stoves in the soft coal districts with under feed that burn the smoke, which is the cheapest and best way to prevent soot in the pipe.

(4641) J. M., writing from Merida, Yucatan, says: From the coast to this city so many crabs have lately been brought that they have been sold very cheap and have been eaten by almost every one. At the same time many persons have fallen sick and several died with symptoms very like those of cholera, causing great consternation. Death has been produced in a few hours, and patients have felt terrible pains and become very cold and blackish (cyanotic, physicians call) and with copious dejections, very bloody. The selling of crabs and fish has been forbidden. The flesh of crabs and patients' dejections have been found, under the microscope, to be full of living organisms (bacteria) that no one has classed yet, and which may be the source of the trouble. Some people believe the crabs were cooked in copper boilers. Others think the crabs were poisoned by eating poisoned fish or poisoned fruit at the shore. Others say the crabs probably were decayed before sale, and remained uncooked on account of abundance, total decomposition having been checked by daily heating. How do you explain the matter? Did you ever hear of such a case? A. Sometimes shell fish cause cholera and rash even when fresh. Merida is 20 miles from sea coast and about 60