The British Association.

Professor Lodge advocated the creation of a national physical laboratory. His idea was that the amateur would, as at present, start lines of research and carry them on till they became unwieldy, but that at that stage, instead of dropping them or leaving them for the Continent to continue, our own national laboratory should take them up.

GEOLOGY OF PALESTINE.

Professor E. Hull gave a description of the "Physical Geology of Sinai and Palestine." The expedition, the results of which he communicated, started from Egypt, passed through the desert to Moses' Wells, thence through the Sinaitic Peninsula, along the Gulf of Akaba, and through the Araba and Jordan Valley to the foot of Mount Hermon. The most remarkable fact noticed by the expedition was the existence of terraces, showing that at one time the Dead Sea had risen to the level of the Mediterranean, the Jordan in the glacial period forming a lake 200 miles long.

THE COLOR OF ANIMALS.

The influence of food and surroundings on color was illustrated in a paper by Mr. E. B. Poulton on the colors of lepidopterous larvæ. Several members of a large brood of caterpillars of the pepper moth were exhibited which had been reared under different conditions. Those which had been confined among green leaves and twigs became green, those which had had black and brown twigs mingled with their food were brown or black, while others which had been reared among spills of white paper had made a pathetic attempt to imitate their surroundings. Experiments with artificial colors showed that both blue and red tended to produce a dark coloration, especially the former, while, strangely enough, painted twigs did not produce the same effect as those whose tints were natural. Mr. Poulton was able to show that the sensory stimulus producing the change did not act through the eye, as in the case of the chameleon, frog, and sole, but through the skin. It consists, moreover, in the formation of definite pigment, and hence is not so rapid as in those animals. It is possible to modify the color of a caterpillar only once or twice in its lifetime.

THE HABITS AND POWERS OF SPIDERS.

The Rev. Dr. M'Cook read a paper on "The Social Habits of Spiders," in which he criticised the observations of Dr. Simon, from which that observer had concluded that certain spiders were social in their habits. Dr. M'Cook said that all spiders were solitary in their habits, and that the discovery of a social species, if confirmed, would be most important. The appearances which led Dr. Simon to the hypothesis of a social habit might, in default of further observations, be interpreted by the phenomena commonly observed to occur in the history of many common forms. Lest the audience should think too hardly of spiders, he might mention that there really were cases in which the male and female lived in amicable relations for a considerable period.

He discussed the capability of spiders as weather prophets. He mentioned that this belief was as old as the time of Pliny, who stated that when a river was about to rise, the spiders in the neighborhood built their webs at a greater elevation, and that it seemed to have been almost universally believed. He concluded, from his own observations, that there was no ground for the theory.

ARABIA.

In description of a recent journey in Yemen, Mr. Walter Harris said that, although by most people Arabia was considered to be a desert, he had found that Yemen, at least, was a country of magnificent fertility. The great plateau lying at an elevation of from 7,000 to 9,000 feet above the sea level was in a state of excellent cultivation. Water was by no means scarce, in fact, in many places there were rivers of no inconsiderable size. Although the journey had been made once or twice before, he was probably the first European who had reached Sanaa from Aden.

Artificial Ivory.

Natural ivory under analysis shows albumen, gelatine, alumina, magnesia, calcium carbonate, and tribasic phosphate of lime. By this process quicklime is first treated with sufficient water to convert it into the hydrate, but before it has become completely "slaked" an aqueous solution of phosphoric acid is poured upon it, and while stirring the mixture the calcium carbonate, magnesia, and alumina are incorporated in small quantities at a time; and lastly, the gelatine and albumen, dissolved in water, are added. The point to aim at is to obtain a compost sufficiently plastic and, as intimately mixed as possible. It is then set aside to allow the phosphoric acid to complete its action upon the chalk. The following day the mixture, while still plastic, is pressed into the desired form in moulds, and dried in a current of air at a temperature of about 150° C. To complete the preparation of the artificial product by this process, it is kept for three or four weeks, during which time it becomes perfectly hard. The following are the proportions for the mixture, which can be colored by the addition of suitable substances: Quicklime, 100 parts; water, 300 parts; phosphoric acid solution (1·05 specific gravity), 75 parts; calcium carbonate, 16 parts; magnesia, 1 to 2 parts; alumina precipitated, 5 parts; gelatine, 15 parts.

RECENTLY PATENTED INVENTIONS.

Electrical.

REMOVING ARMATURES.—Stephen H. Sharpsteen, Honesdale, Pa. To quickly and conveniently remove the armature from between the field magnets for inspection or repair, carrying the armature and its support independent of the usual bearings, with safety to the operator, is the object of this invention. A track extends through the dynamo between the magnets and above the armature, being supported at opposite sides of the dynamo, and traveling hangers on the track have vertically adjustable hooks to hook under the ends of the armature shaft, whereby the armature may be lifted and carried away.

FIRE ALARM TELEGRAPH.—Andrew J. Coffee, Portland, Ore. This improvement relates more especially to fire alarms in which auxiliary boxes are used in connection with main district signal boxes, and provides means whereby the exact auxiliary that has been turned in may be located, the boxes not interfering to cause confusion. The invention comprises a controller having operative electrical connections with a signal box, auxiliary boxes in series electrically connected with the controller, manually operated means for setting the controller mechanism, with automatic locks therefor. The mechanism is easily operated, and a return signal is provided at the auxiliary box, so that any one bringing in an alarm may know that everything is in good working order.

TROLLEY CARRIAGE FOR CONDUITS.—Stephen L. Platt, Elgin, Ill. This is a wheeled carriage adapted to be engaged by the car hanger, a contact wheel being journaled in spring-pressed bearings in the carriage. The slotted conduit or duct supports the conducting wire and rails arranged within it, on which travels the carriage having a wheel in contact with the wire, and the whole construction is simple and durable, and not likely to get out of order.

Mechanical.

SAW TOOTH.—John W. Todd, Portland, Ore. This is an improved removable tooth for circular saws, having a shank and point seated in the saw blade, and its outer edges formed partly on a segment of a different circle than the seat in the saw blade, the end of the shank adjacent to the point having a spring part pressing on the point to hold the latter on its seat. The tooth may be conveniently inserted or removed from the blade, as desired, for sharpening or other purposes.

TOOL.—Charles E. Harris, Saxton's River, Vt. An attachment for hammers and hatchets is provided by this invention, consisting of a piece having a threaded shank, a pointed prong, and a knife, the shank fitting in a screw-threaded socket in the end of the handle, where it projects through the hammer or hatchet, in combination with which the tool is designed to be used in shingling, clapboarding, and similar work.

KNIFE BLADE MACHINE.—Thomas R. Moore, Walden, N. Y. This machine has parallel oscillating rolls geared together between their ends and provided with opposed dies, in combination with a spring-actuated lever, a gear wheel on the lever-actuated roll, and a locking and tripping mechanism for locking and unlocking the gear and roll. The machine is strong and durable, and designed to rapidly work strips of metal to the right shape for finishing, all the pieces of metal being shaped alike.

GLOBE VALVE.—Frank M. Moore, Spreckelsville, Hawaii. This invention provides a novel improvement in the securing nuts and in the valve itself, to facilitate the grinding and reseating of the valve. The construction is such that the packing gland and packing will not be unduly affected either by the ordinary operation of the stem or in regrinding, and the valve may, by removing the nut, be restored to perfect condition at a trifling cost.

ROLLER MILL SCRAPER.—John Harvey, Brooklyn, N. Y. This patent covers an improvement upon a former patented invention of the same inventor, by which the vertical adjustment of the scraper strip under the roller is facilitated, and the operator may bring the exact degree of pressure upon the roller needed to cause the strip to remove compacted crushed grain from its surface, and whereby also the scraper strips may be used until they are almost entirely worn away, besides affording improved means for securing the strips in place below the rollers.

CONVEYER.—Pinkney C. Wilson, Patterson, La. This invention relates to cane mill conveyers, for carrying the crushed cane from one mill to another, or for the conveyance of bagasse, the conveyer adjusting itself automatically, according to the quantity of material to be conveyed. The improvement consists of a sprocket chain carrying knives and passing over sprocket wheels, of which one is mounted in fixed journals and the other in journals carried by pivoted arms.

Agricultural.

CHURN.—Geo. S. Agee, Willow Springs, Mo. This churn is made with an angular rocking frame, pivoted at its angle to a support, there being a foot treadle at the lower end of the vertical member of the rocking frame and a dasher shaft clamp on the outer end of the horizontal member, whereby a swinging treadle is formed to operate or actuate the dasher by the foot. The invention also includes a specially constructed dasher and other novel constructions and combinations of parts.

CELERY DIGGER.—Maurice M. Ranney, Comstock, Mich. This is a simple and inexpensive machine, the shovel of which may be given any desired draught and lowered to any depth for cutting the roots, while the sides or mould boards may be adjusted upon the bottom to take any thickness of dirt required from the sides of the celery being dug. The implement may be used for hilling purposes as well as for digging.

Miscellaneous.

TYPE WRITER.—Analdo M. English, New York City. This is a simple, very inexpensive, and conveniently operated mechanism, taking up but little more space upon a desk than an inkstand, and with which anyone not an expert can readily make a type written letter or other copy. The letters and characters are on the top of a small revoluble disk, and a small knob opposite each is moved to a depression centrally in foont of the operator to make the impression, the carriage then being moved along the space of the letter by a finger piece. The letter or character may be seen as soon as printed, and the register is perfect, the carriage being moved back the length of a line, when another lever is pressed upon. The paper is shifted by hand for line spacing by a simple paper-holding clip, which enables one to write upon ruled paper, when desired, with great facility.

WASHING MACHINE.—Silas P. Lowell, Eugene, Oregon. The suds box of this machine is circular, and in its bottom is mounted a revoluble disk, on which are upright perforated tubes and a central perforated cylinder, through which water may be passed to the clothing to be washed. The cleansing is effected, as the disk is revolved, by a middle or central rubbing against the tubes, and also by a further rubbing between the tubes and upright side ribs on the inner side of the suds box.

PORTABLE PASTRY RACK.—Charles F. Jesser, Staunton, Va. This device consists of a suitable supporting frame, to which is pivoted a series of laterally movable receptacles, adapted to be swung within the frame, the receptacles having vertically movable covers. The improvement may be used as a display rack, although especially designed to facilitate the carriage of large quantities of pastry, the rack being very durable and permitting of the ready arrangement of the articles within it, while the articles may be securely locked against displacement, and sufficiently covered to protect them during transit.

PUZZLE DICE BOX.—Hippolyte Goujon, Paris, France. This box is of barrel shape, and has a tapering, open end, with a shoulder in which fits a removable head with a removable plug and bung. The construction is such that it is a puzzle to find out how to open the box, the accessories tending to confuse one not understanding its intricacies.

METALLIC CEILING.—William W. and Robert H. Old, Leadville, Col. Panels formed with flanges are, by this invention, adapted to engage grooves formed in furring strips secured to the supporting beams or joists, the covering strips for the furring strips being formed with flanges interlocking with the flanges of the panels. By this means the panels are held in place so as to allow of expansion without bending or bulging, giving a neat and finished appearance to a wall or ceiling, and no screws, nails, or similar devices are needed to fasten the panels and covering strips in place.

TIMEPIECE CALENDAR.—Paul J. Johnson and Joseph H. Hamill, Globe, Arizona Ter. An attachment for watches and clocks is shown by this patent, which may be easily put on timepieces already in use, to indicate the day of the month. It consists of a metallic disk with a pointer extending inward from its edge, and with a central boss and graduated disk marked for the days of the month, this disk also having a notched periphery. A finger with curved spring arms is mounted on the boss of the hour hand and engages the notched periphery, so that on two revolutions of the hour hand a day's advance is marked on the graduated disk. The disk requires setting once a month.

WATCH CASE.—Victor Nivois, Brooklyn, N. Y. In a watch case shell filled with baser metal attached thereto by solder, and having on its inner face a recess, is a lift spring adjustably secured to the backing or filling, the larger part of the lift spring occupying a recess in the filling, while a catch or releasing spring forms a dust band, constituting essentially a circle within the center, and of such width that it conceals the filling, its recess, and the lift spring.

REVOLVING PAPER FILE.—Ralph E. Ferguson, Akron, O. This is a device for use in stores, etc., for filing checks, bills, sales slips, and memoranda, securely holding them and permitting of their convenient examination. It consists of a revolving frame carrying rings or disks one above the other, spring-pressed impaling pins being hinged on the rings or disks, and adapted to engage with their free ends recesses in the next following ring.

AXLE BEARING.—Thomas J. McGee, Hattiesburg, Miss. This is a bearing adapted for all sorts of vehicle wheels and axles, and which may be inexpensively made. The tapering axle box has a closed outer end provided with a threaded aperture and an annular recess in the inner end of the box to receive the axle collar, and to the outer end of the box a plate is secured overlapping the outer end of the hub and preventing the displacement of the box. When the parts are in place no dirt can get within the box and no oil can ooze out to injure the hub or collect upon any part of the vehicle.

ANIMAL SHEARS.—Charles and Harry Burgon, Malin Bridge, England. This invention relates to instruments for shearing or clipping sheep and other animals, and covers an improvement on a formerly patented invention of the same inventor, devising a better mode of mounting the forked crosshead upon the vibrating or oscillating lever, by which the top cutters are driven, and of applying a spring to press the cutters on the comb plate with the necessary pressure. An improved construction is also provided of the pivotal axis upon which the vibrating lever oscillates, whereby the working loose of the axis is avoided.

UNICYCLE.—Abraham and Fernando Yost, New York City. The main wheel of this machine has an inner toothed band, within which is mounted a stationary band, having overlapping side flanges, and supporting a suitable framework, in which is journaled a gear wheel extending through a slot to engage the teeth of the toothed wheel, while a seat-carrying frame supported on anti-friction rollers is held to contact with the toothed band, handle bars being supported in front of the seat. The wheel is adapted to be driven by a rider sitting within it, the driving mechanism being very simple and efficient.

CLOTHES LINE SUPPORT.—Robert McNab, Paterson, N. J. This invention relates especially to an adjustable safety arm for pulley clothes lines, such as are usually arranged with one end supported adjacent to a window of a building and with the other end upon an outside pulley. The arm is attached to the window frame, and supports the line-carrying pulley, which may be conveniently brought into any desired position and there fastened, while, when not in use, the arm may be dropped and held in a vertical position outside of the window.

MESSENGER'S PICKET.—James C. Hays, Rusk, Tex. This invention provides an improved form of bullet-proof cage or miniature fort in which an expressman or messenger may lock himself in case of danger, and fire upon an assailant with safety. It is practically a large box of sheet steel, mounted on rollers, and having a side door and portholes with closing shutters, with means for attaching it to the flat top portion of the tender.

WINDOW SEAT.—Wm. Engler, Brooklyn, N. Y. This device is designed also to be used as a blackboard, music rack, or writing desk, and consists of a board having cleats at its opposite ends, a piece hinged to one edge, and a hinged bar folding into the rabbet of the edge of the hinged board, there being a sliding adjustable bar for leveling up the board when used as a window seat or writing desk, and a brace to hold it in inclined position when used as a blackboard or music rack.

TO START RACE HORSES.—James J. Sullivan, New York City. This invention provides a screen device so arranged as to insure a fair and prompt start for the horses, ranging the horses against the screen. The screen consists of side pieces, between which is secured a network, a wire connecting the upper ends of the pieces, to the lower ends of which is secured a wire carrying cushions, the improvement also covering other novel features. The device is designed to entirely avoid injuring or frightening the horses, and may be quickly and conveniently carried out of their path when a start is to be made.

MECHANICAL FLY TRAP.—Emil Rathgeb, New York City. A hollow waterwheel is, according to this invention, held to turn on a base board, and has face buckets with inwardly extending arms, a reservoir of sweetened water above the wheel delivering upon the buckets by slow dripping, so that the flies light upon the slowly turning wheel to drink the sweetened water, and are carried down to a tank beneath.

TOY MORTAR.—Grant B. Nichols, Wapakoneta, O. A stick or toy gun barrel has a toy mortar secured on its end, and provided with a ball seat, in the rear of which is an explosion chamber, to which leads a firecracker opening. The device is cheap and

simple, and with it a child can safely shoot a toy ball by the explosion of a firecracker, the ball being readily directed as desired.

GAME APPARATUS. — Anton Scholz, Brooklyn, N. Y. This is an apparatus to be employed in conjunction with an ordinary spinning top, and consists of a plate having a handle, and with a central aperture forming a seat for the spinning top, as it may be caught up from the ground or floor while spinning, the top being marked with numerals around its body, while a pointer on the handle indicates the number at which the top comes to rest. The pointer may, if desired, be on the top, and the numerals on the plate around the aperture, the numbers in either case marking points made in a game.

DESIGN FOR A SPOON. — Joseph A. Hughes, Corpus Christi, Texas. This is a souvenir spoon representative of the State of Texas. Its leading feature is a head and bust of Davy Crockett on the end of the handle, while at the middle of the shank is a lone star, and on the bowl a representation of the old building known as the "Alamo."

DESIGN FOR A BARBER'S SIGN.—Ferdinand Svoboda and Charles Hofmann, Chicago, Ill. At the top of this sign is the figure of a man's head and face, with towel gathered about the neck, below which is a shield having stars on its upper portion, there being also stripes or panels on the face of the sign.

DESIGN FOR ORNAMENTING FABRICS. —Henry Sturm, Arlington, N. J. This design is more particularly applicable for night shirts, and comprises a conventional figure of Columbia grasping a sword with one hand and with the other a gonfalon.

DESIGN FOR A LEGGIN.—Samuel Borchardt, New York City. This leggin body has an extension top, ornamentation separating the extension top from the body portion, while the body and top of the leggin are made of contrasting colors to heighten the effect of the design, and cause the top to show to advantage through open panels.

DESIGN FOR A CARPET.—Pierre C. Chambellan, West Hoboken, N. J. The body of this design is formed of a large group of flower and leaf forms, partly surrounded by curving branches, while the border is composed of groups of flower and leaf forms and spiral branching arms and ornamental inner and outer margins.

DESIGN FOR A SHEPHERD'S CROOK.— Albert L. Babcock, Billings, Montana. This crook has a somewhat pear-shaped loop, from which the outer end of the crook sweeps gradually outward to some distance from the handle.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

Business and Personal.

The charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue

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 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 examination should be distinctly marked or labeled.

(4530) J. W. L. asks: Suppose I have two dynamos, 110 volts each, one 200 and the other 400 amperes, connected in shunt on the main line, and have a load of 400 amperes, and the load being equal on both machines; now, there is a demand on the line for 600 amperes; now, does the load continue to be equal on both machines or does the 400 ampere machine take the load? A. The following is furnished by Mr. Edison: Two dynamos, one having double the capacity of the other, would not share the load equally, unless the e. m. f. of the smaller were made a little in excess of that in the armature of the larger machine. This being done, however, and the load equally divided, a still further increase will be shared unequally, the larger machine taking the greater share of the increase. In practice, of course, the e. m. f. of each machine is so controlled that its proper load is taken.

(4531) E. G. P. writes: I would like to know in what way salt effects the freezing of ice cream. A. By causing the ice to melt, on account of its own slight affinity for water. The ice in melting rapidly absorbs heat or renders heat latent, and hence reduces the temperature below that of ice, which simply melts by heat acquired from surrounding objects by conduction or convection of air.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

September 6, 1892.

AND EACH BEARING THAT DATE.

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

Advertising device, W. E. Irish 482,178
Air brake, T. J. Hogan 482,058
Air brakes, slack take-up for, L. Gu llemet 482,040
Alcoholic liquors and other liquids, apparatus for purifying and refining, S. Mason, Jr. 482,018
Ammonia absorber, F. Kaiser 481,955
Annealing oven, D. W. Murphy 482,048
Annunciator, electric, E. D. Mo ore 482,263
Armature for dynamo-electric machines, J. Nebel 482,265
Atomizer, F. F. Ingram 481,951
Autographic register, W. L. Egry 481,937
Baling press, H. Deitz 482,303
Battery. See Storage battery.
Battery connector, E. R. Knowles 482,012
Battery cut-off, automatic, W. S. Richards 482,136
Bearing, P. H. Holmes 482,309
Bed, folding, W. S. Nevins 482,266
Bed for infants, swinging, B. B. Roach 482,275
Bed, sofa, J. P. Miller 482,262
Bed, wardrobe, A. M. Brainard 482,158
Bed, wardrobe, C. Teufel 482,028
Bedstead, wardrobe, A. M. Brainard 482,159
Bedstead, wardrobe, F. Geldowsky 482,122
Bicycle, F. Sweetland 482,067
Blast furnace, M. W. Iles 481,950
Blower, steam, A. Fletcher 482,236
Boat. See Paddlewheel boat.
Boiler. See Furnace boiler. Steam boiler.
Boiler and furnace setting, C. O. Arey 482,147
Boiler feed indicator, Guasco & Chusin 482,171
Boiler setting, steam, S. Runser (r) 11,268
Boilers, water circulator and purifier for steam J. MacDonald 482,183
Book, shipping receipt, J. D. D. Mortimer 482,047
Booth, collapsible, E. C. Cook 482,078
Boring machine, J. W. Day 482,231
Bottle, F. F. Ingram 481,953
Bottle and stopper, H. Crimmel 482,230
Bottle cleaning apparatus or machine, G. E. Wallace 482,110
Bottle designed to prevent refilling, E. L. Tevis 482,329
Box. See Letter box. Money box.
Box cover, V. A. Lebuchet *et al* 482,258
Bracelet, L. Cremonesi 482,229
Bracket. See Roof scaffold bracket. Swinging bracket.
Bracket, W. D. Gridley 482,086
Brake. See Air brake. Sled brake. Vehicle brake.
Brake shoe, C. T. Schoen 481,973
Brick machine, H. Harlan 482,248
Brick machine, G. T. Jacobs 482,252
Bridge guard, draw, F. Boucher 482,291
Bridge, iron, H. A. Loomis 482,017
Brushes, etc., handle holder for, Barnett & Chalk 482,221
Buckle, Williamson & De Negri 482,030
Buckle, J. Zeigler 482,289
Burner, E. T. Wigg 482,145
Buttons from plastic material, machine for making, M. Stirn 482,144
Cable elevator, sprocket, M. Garland 482,239
Cables into conduits, means for drawing, O'Connor & Marsh 482,270
Caddy, grocer's, C. Toohey 482,285
Can. See Sealed can.
Can opener, J. H. Golding 482,057
Cane and stool, combined, Wallis & Mader 482,214
Cane mill, J. Fisher 482,084
Caoutchouc balls, process of and apparatus for the manufacture of hollow, G. L. Hille 482,088
Car and air brake coupling, combined, J. B. Thomas 481,984
Car coupling, C. H. Dale 481,930
Car coupling, W. E. Gallaher 482,121
Car coupling, G. C. Harlin 482,125
Car coupling, R. S. Kirkpatrick 482,010
Car coupling, C. A. Tower 482,105
Car coupling, S. R. Williams 482,288
Car coupling, J. J. Wisda 481,991
Car dumping apparatus, T. J. Phillips 481,968
Car, freight and grain, J. F. Butz 481,928
Car journal box, C. T. Schoen 482,200
Car, vestibule, A. Fordham 482,006
Cars, pipe coupling and coupling attachment for railway, F. Du Montier 482,304
Carriage, A. N. Parry 482,189
Carriage top, S. E. Kierolf 482,254
Cash indicator and recorder, W. T. McGraw 482,132
Cash indicator, register, and recorder, P. J. Landin 482,014
Cash register, indicator, and recorder, H. Cook 482,165
Cash registers, complete stroke mechanism for, T. Carney 482,161
Caster, furniture, A. A. Minor 481,963
Chair, F. A. Dennett 482,167
Charm or locket, Tetaz & Hadorn 482,208
Chase locking bar, J. S. Brown 482,160
Chute, coal, R. M. Hosea 482,009
Clock, electric alarm, McMillan & Taylor 482,133
Cloth cutting machines, take-up device for, W. H. Kerr 482,128
Cloth piling machine, F. H. Dobeck 481,933
Clothes drier, G. W. North 482,269
Clover huller feeding device, C. Pippenger 482,135
Clutch, friction, W. A. Wilkinson 482,326
Coal cutter or drill, C. W. & L. B. Atkinson 482,033
Coffee pot, W. H. Comstock 482,299
Coin-actuated mechanism, J. Evans 482,119
Coloring matter, azo, Ulrich & Bammann 482,106
Combination lock, G. L. Barney 482,222
Composition of matter, P. H. Holmes 482,176
Computing machine, P. J. Landin 482,312
Coring machine, fruit, J. Adams 482,327
Cotton, feeding mechanism for machinery for opening and preparing, J. C. Potter 482,194
Cotton, feeding mechanism for machinery for opening, cleaning, and preparing, J. C. Potter 482,193
Cotton opening and preparing machine, J. C. Potter 482,273
Coupling. See Car coupling. Car and air brake coupling. Thill coupling.
Crane, overhead traveling, J. R. Morgan 481,964
Cuffholder, H. W. Jones 482,311
Cultivator for listed corn, L. P. Schrader 482,321
Cultivator, orchard, Daily & Neil 482,081
Cultivator tooth, Cheney & Berch 482,226
Cultivators, spring tooth attachment for, D. E. Herrington 481,946
Curtain fixture, S. H. Snavely 481,978
Cutter. See Coal cutter. Meat cutter.
Dipper, fruit, E. E. Thomas 482,283
Dish washing machine, H. F. Low 482,313
Disinfectant, B. R. Seifert 482,102
Disinfectants, making, B. R. Seifert 482,101
Displaying goods, rack for, E. A. Foster 481,942
Door check, W. J. Conner 482,227
Doors, mechanism for opening and closing jail, P. J., Sr., & P. J. Pauly, Jr. 482,316
Drainer plate, H. Strater 481,981
Drawing apparatus, A. H. Johnson 482,127
Drier. See Clothes drier.
Drum, beating, J. Seither 482,276
Dye and making the same, red, C. Duisberg 481,934
Dyes, manufacture of yellow, M. Hoffmann (r) 11,267
Electric cable, J. A. Barrett 482,328
Electric circuit and cable, J. A. Barrett 482,152
Electric conductor, J. A. Barrett 482,150, 482,151
Electric currents, meter for alternating, O. B. Shallenberger 481,975
Electric furnace generator, E. Berliner 481,999
Electric meter, F. Teague 482,324
Electrical circuit and cable, J. A. Barrett 482,149
Electrical conductor, P. H. Holmes 482,177
Electrical heater, J. V. Capek 482,074
Electrostatic switch and phase indicator, A. U. Alcock 482,032
Elevator. See Cable elevator. Hand elevator.
Elevator, S. H. Hale 482,247
Elevator and carrier, P. H. Brodesser 481,926
Elevator controlling mechanism, A. J. McAdam 482,131
Elevator gate, E. D. Toops 482,286
Engine. See Gas or oil motor engine. Oil motor engine. Pulp engine. Rotary steam engine. Steam engine.
Envelopes, means for detecting the opening of sealed, L. P. Callmeyer 482,073
Excavator, trench, A. J. Mason 482,260
Extractor. See Stump extractor.
Eyeglass holder, E. C. Perkins 482,191
Fare collecting, registering, and recording device, W. T. Wood 481,993
Faucet or valve, F. Pomper 482,049
Feed water heater, J. J. Wilson 482,069
Fence, R. H. Fristoe 482,037
Fence, E. G. & S. M. Storm 481,980
Fiber preparing machine, I. Villamor 482,205
Fibrous material transmitter, G. Beekman 482,155
Filter, B. M. Santurio 482,140
Fire and burglar alarm connection, electric, H. T. Wilson 481,989
Fire escape, A. A. Badger 481,923
Fire escape, J. Pride 482,274
Fire escape ladder and means for raising the same, P. A. Palmer 481,967
Fishing line reel holder, J. Falvey 481,941
Flask. See Moulding flask.
Fog signal, W. R. Close 482,077
Fountain, G. C. Grisler 482,244
Fruit pitting and spreading machine, J. D. & E. E. Thomas 482,284
Fruit pitting machine, F. C. Philips 482,272
Fruit sizer, A. C. Burke 482,294
Furnace. See Blast furnace. Gas furnace.
Furnace boiler, E. B. Parkhurst 482,188
Game counter, P. H. Hillard 481,947
Gas furnace, regenerative, F. Danner 482,117
Gas lighter, electrical, J. E. Hamilton 482,172
Gas or oil motor engine, H. Schumm 482,202
Gas producers, automatic steam regulator for, E. Ruud 482,320
Gas purifier and condenser, G. Scharfe 482,141
Gate. See Elevator gate. Swinging gate.
Gate, W. S. Coulter 482,301
Gate, Dreesman & Wagler 482,005
Generator. See Electric furnace generator.
Glue cutting and spreading apparatus, C. Keller 482,042
Grain binder, G. Schubert 481,974
Grinding fixture, W. W. Tucker 482,212
Guard. See Bridge guard.
Gun, G. F. Fogerty 482,305
Hair clipper, J. W. Smith 481,977
Hand elevator, H. G. Zoschnick 482,054
Handle. See Tool handle.
Hanger. See Shafting hanger.
Harvester, corn, H. Morrison 482,186
Harvester, corn, H. C. & A. E. Peoples 482,065
Harvester, cotton, G. Beekman 482,156
Hat and coat hanger and cigar cutter, combined, W. R. Cole 481,929
Heater. See Electrical heater. Feed water heater.
Holder. See Cuff holder. Eyeglass holder. Paper holder. Paper bag holder.
Hook. See Snap hook.
Hoop flaring machine, T. A. Cook 482,300
Horse boot, H. R. Hurd 482,041
Horseshoe, Devine & La Chapelle 481,932
Horseshoe nails, manufacturing, W. W. Miner 481,962
Hose connector, electric, C. F. Kellom 482,181
Hub, lubricating, F. W. Randolph 482,195
Ice elevators, planer for, W. H. M. Smith 482,206
Indicator. See Boiler feed indicator. Cash indicator.
Indicator lock, C. Lindstrom 481,960
Induction coil for electric meters, E. Thomson 482,209
Inhaler and medicament holder, combined, T. M. Dunham 482,083
Inkstand stopper, C. L. Wheeler, Jr. 482,051
Insulator, electric, W. H. Clark 482,297
Jar. See Preserving jar.
Journal bearings, composition of matter for, P. H. Holmes 481,949
Journal bearings, manufacturing composition, P. H. Holmes 482,310
Keg hooping and heading machine, T. A. Cook 482,079
Kettle, steaming, J. F. Taylor 481,982
Knit undergarment, J. H. Pike 482,097
Knitting machine, H. E. Harbaugh 482,173
Lamp, I. E. Blake *et al* 482,290
Lamp, electric arc, J. T. Birch 482,157
Lamp, electric arc, J. E. Gaston 482,240
Lamp, electric arc, J. F. Kester 482,253
Lamp support, electric, A. Wright 482,112
Lamps, ceiling block for incandescent, L. Stierlinger 482,104
Lantern and foot warmer, combined stirrup, T. F. Baird 482,219
Lasting, H. H. V. Lilley 482,016
Lathes, reversing attachment for screw cutting, J. J. Messing 482,261
Lawn trimmer, H. P. Hansen 482,307
Leather, finishing, J. Sanzenbacher 482,199
Letter box, house, P. C. Brown 482,292
Lettering, etc., in relief on sheets of ductile metal, apparatus for producing, J. M. Newton 482,267
Level, plumb, J. T. Rider 482,026
Lifter. See Plate or pan lifter. Transom lifter.
Lock. See Combination lock. Indicator lock. Seal lock.
Locomotive ash pan, J. W. Eads 482,235
Log carriers, etc., hanger or support for, G. W. Cole 482,163
Logging machine, cable, J. Buckley 481,927
Lubricant, D. Harmon 482,249
Main, water or gas, H. F. Dunham 481,935
Malting apparatus, G. A. Krause 481,958
Ma ual motor, M. Johnson 482,180
Marker, land, H. C. McBroom 482,062
Mat. See Wire mat.
Measure, ammunition, H. O. French 482,120
Meat cutter, O. D. Woodruff 482,146
Metal shears, H. Aiken 482,113
Metals, process of and apparatus for purifying, refining, and carburizing, B. Brazelle 482,001
Meter. See Electric meter.
Meter diaphragm, W. N. Milsted 482,185
Minerals, apparatus for cutting, L. B. Atkinson *et al* 481,921
Milk receiver, S. J. Morgan 482,264
Mill. See Cane mill.
Mining machine, B. A. Legg 482,045, 482,046
Miter tool, A. Van Bibber 482,107
Mould, F. F. Ingram 481,952
Moulding flask, J. G. Newbury 482,063
Money box, registering, J. C. F. Dick 482,004
Mortising machine, Belmont & Cload 482,224
Mortising machine, E. J. Gisvold 482,242
Motor. See Manual motor.
Musical instruments, bow for stringed, E. A. Kretschmer 482,255
Nail machine, Baackes & Richards 481,997
Name plate for monuments, signs, etc., R. H. Follenius 482,237
Net, pound, Williams & Cleveland 481,990
Oil motor engine, H. Schumm 482,201
Ore concentrator, C. E. Seymour 482,322
Ore concentrators, magnetic separator for, C. E. Seymour 482,323
Ores, reducing unsmelted, J. T. Wainwright 482,213
Organs, swinging treadle for, W. E. Sleight 481,976
Paddlewheel boat, J. S. Baker 482,115
Padlock, V. P. Brown 482,070
Paint pot, Deming & Fuller 482,082
Paper bag holder, Elton & Cadwell 482,056
Paper bag machine, A. C. Getten 482,170
Paper cutting machine, R. D. Crawford 482,228
Paper feeding machine, W. Womersley 481,992
Paper holder and cutter, roll, E. R. Granger 482,039
Pen, writing, F. C. Colburn 482,298
Photographic background holder, A. C. Caswell 482,002
Piano action pilot, J. Herrburger 482,008
Piano expression regulator, J. Y. Druckenmiller 482,168
Pin, spiral hair or other, J. T. Larkin 482,257
Pipe threading machine, A. W. Cash 482,296
Pipe wrench, W. J. Walker 482,109
Piperazin, making, P. Volkmann 482,108
Planter, cotton, P. P. Simpson 482,277
Planter marking attachment, C. W. Chafee 482,075
Plate or pan lifter, C. L. Waldron 481,986
Pliers and calipers, balance wheel, J. E. Eckert 481,936
Pot. See Coffee pot. Paint pot.
Power transmitting device, E. D. Weyburn 481,988
Preserving jar, J. E. Faber 481,939
Press. See Baling press. Printing press.
Printing press, W. Scott 482,204
Propeller, W. R. Bonham 482,225
Pulp engine, G. Miller 482,184
Pump for condensers, air, B. V. Nordberg 482,315
Pump, steam vacuum, D. P. Burdon 482,072
Pumping mechanism, oil well, O. A. Knox 482,011
Rail chairs, method of and die for making, P. J. Lavel e 482,092
Railway collisions, device for preventing, J. Stierle 482,143
Railway signal device, automatic, B. & J. Shoecraft 482,203
Railway signal, electric, C. K. Hall 482,306
Railway trolley, electric, Adams & Thorp 482,031
Railway trolley, electric, Tyner & Irving 482,325
Railways, automatic gypsy for cable, A. J. Smith 482,279
Railways, conduit system for electric, R. Lawrence 481,969
Railways, crossing for underground cable, W. H. Page 481,966
Ranges, oven and closet door for, F. W. Born 481,924
Recorder. See Time recorder.
Reel. See Fishing ine reel.
Refrigerating apparatus, Nason & Leinert 482,268
Register. See Autographic register. Cash register.
Relay, electrically adjusting, W. S. Richards 482,137
Rheostat, H. W. Lawrence 482,093
Rice scourer, S. A. Pickett 482,192
Roof scaffold bracket, H. McCornack 482,096
Roofing tile, metallic, E. B. Repp 482,025
Rotary steam engine, W. B. Coulter 482,166
Sacks for filling same, device for holding open grain and other, A. L. Klank 481,957
Saddle, riding, V. D. Hart 481,945
Sand and slimes, separating, G. Gates 482,241
Sand screen, C. Monjeau 482,020
Sandpapering roll, Everett & Finn, Jr. 481,938
Sash fastener, automatic, G. Solari 482,280
Sashes, etc., bar and fastening for, W. Henderson 482,087
Sawbuck, J. Chattaway 482,162
Saw set and gauge, C. F. Heath 482,250
Sawing machine, A. Rodgers, Sr. 482,319
Sawing machine, portable band, A. C. Speer 482,103
Scale attachment, L. F. Robare 482,138
Scourer. See Rice scourer.
Screen. See Sand screen.
Sea walls, construction of, B. C. Kenway 482,059
Seal lock, J. Dowling 482,118
Sealed can, G. W. Carnrick 482,055
Sealing device, L. Wurzburg 482,216
Seat. See Vehicle seat.
Seesaw, C. A. Woodbury 481,994
Sewage purifying apparatus, J. Wilson 482,052, 482,053
Sewing machine thread controlling device, S. W. Wardwell, Jr. 482,215
Shafting hanger, A. H. Wagner 482,287
Shears. See Metal shears.
Ships' magazines, device for flooding, W. Tait 482,282
Shoe, H. Newcomb 482,134
Shovel, P. Poulson 481,972
Shutter fastener, E. W. Hagee 482,246
Shutter fastener, C. L. Walters 482,111
Signal. See Fog signal. Railway signal. Torpedo signal.
Signal wires, compensator for, S. W. Babcock 481,922
Signaling apparatus, train, Henry & Wilson 482,126
Sled brake, J. Wennberg 482,039