

a beveled index piece, k, about  $\frac{1}{2}$  inch wide. A line drawn down the face of the piece, k, serves as an index. In a similar way a ring, j', fitted to the boss, g, serves to carry an index for the circle, K'.

The circles here shown are electrotypes made from a galvanometer scale, soldered to brass plates and silvered, some black varnish being rubbed into the graduations to render them more distinct.

The equatorial mounting is secured to the head of the wooden stand by the rod, v, screwed into the block, A, and provided with a milled nut on its lower end.

In Fig. 1, the mounting is shown adjusted for the latitude of New York, 40° 41'. The screw, c, and nut, f, being loosened, and the polar axis being parallel with the earth's axis, the telescope is pointed to a star or other object, when the nut, f, is tightened, thus clamping the declination axis. The screw, c, is also tightened, when the instrument will be made to follow the object by turning the screw, H.

Although the slow movement is of great utility, it may be omitted and the instrument may be guided by the hand. The mounting may be further simplified by omitting the graduated circles, and still possess great advantages over the altazimuth mounting.

A stand formed of three-quarters service cocks is large enough for a three inch telescope. It has a smooth and steady motion and does not vibrate. There is, however, no objection to the use of larger stop-cocks.

The hints here given may serve as suggestions. The amateur may carry out the work in different ways. The reader is referred to Gibson's "Amateur Telescopist's Handbook" for simple instructions for using and adjusting the equatorially mounted telescope.

#### Four Year Old Ice.

It is stated by Portland ice dealers that this has been the best year for business on the Kennebec since the great season of 1890. One man says that some ice four years old has been sold. "This is very unusual," says the Portland Press. "Ice that is four years old costs more to get out of the houses than it costs to cut it in the first place. For it is the ice that is at the bottom of the house, and has been consolidated into a solid mass by the water flowing down from the melting cakes above and freezing these underlying cakes together. To run out a block from this is very difficult, for it is like quarrying stone from the solid ledge. It is a good thing that it can be sold, if only for the cost of handling it, because it must be got out of the building

somehow. Generally they bore holes in it with an auger, put in a stick of dynamite, and blow the ice into fragments, which are then shoveled out."

#### Report of an Engineering Insurance Company.

A prominent engineering insurance company in England has recently made public some very interesting figures concerning the causes of accident to engines and boilers. During the past year the company found that 33 per cent of the accidents to the boilers insured in their company were owing to weakness, faulty construction, and bad workmanship; 27 per cent were due to purely accidental causes; and only 12 per cent were the result of carelessness of owners or attendants. The great majority of the accidents were owing to the failure of spur gearing and to defects in valves and valve gear. A large number, however, were due to defective columns, bed plates, and pedestals, and to the failure of screws, bolts, cotters, and straps. The company made in all some 40,000 boiler inspections, and these led to the discovery of 575 cases of defective grooving, 146 fractures and blisters, 150 safety valves dangerously overloaded, and 175 water gauges out of order. The report finally states that out of nearly 1,000 boilers found to require immediate attention, a great many would have been run without repair until they had exploded.

#### Protection of Iron Columns.

Some experiments were recently made by the Building Inspection Department, Vienna, says Engineering, on the protection of iron from fire by incasing it with brick. A wrought iron column 12 feet long, and built up of two channels connected by lattice bars, was used. This was set up in a small chamber constructed of brick, and the column was loaded by levers. This done, it was surrounded by a  $\frac{1}{2}$  inch brick wall laid in fire clay mortar. The wall did not fit closely around the column, and advantage was taken of this to fix there samples of fusible metals, and which should serve as a gauge of the temperature attained.

Various samples of stone concrete and other materials were also placed in the chamber within the column. This chamber was then filled with split firewood, which was lighted and the doors immediately walled up with slabs of plaster of Paris. After the fire had burned out, the doors were broken in and a stream of water turned into the room from a 14 horse power fire engine. An examination of the room next showed that the walls of brick laid in Portland cement retained their strength, while most of the natural stone

left in the chamber had been destroyed. The ceiling had been lined partly with plaster of Paris and partly with terra cotta tiles. Both were damaged. The inclosure around the iron pillars was still standing firm, though corners of the brickwork were clipped one inch or so, and the fire clay mortar was largely washed out of the joints. On removing the casing, however, the pillar was found to be uninjured, even the paint being unscorched, and the fusible plugs only showed a temperature of 149 degrees Fah.

#### A Wire Fly Wheel.

Among the most recent and novel applications of wire, perhaps none has greater interest to the mechanical world than that presented by the new wire fly wheel lately erected at the Mannesmann Tube Company's Works, Germany. Heavy fly wheels driven at high velocities obviously present dangers of breaking asunder from the great centrifugal force developed. The wheel at the factory mentioned consists of a cast iron hub or boss to which two steel plate disks or checks, about 20 feet in diameter, are bolted. The peripheral space between the disks is filled in with some 70 tons of No. 5 steel wire, completely wound round the hub, and the tensile resistance thus obtained is far superior to any casting. This huge fly wheel is driven at a speed of 240 revolutions per minute or a peripheral velocity of about 2.8 miles per minute, which is nearly three times the average speed of any express train in the world. The length of wire upon such a constructed fly wheel would be about 250 miles.—American Manufacturer.

#### Business Aphorisms.

Carlyle wasn't a man of business, but he would have made a success of it, had he tried it. In his writings one finds these lines of solid business truth:

A laugh is worth a hundred groans in any market.  
Have a smile for all, a pleasant word for everybody.  
To succeed, work hard, earnestly and incessantly.  
All honest men will bear watching. It is the rascals who cannot stand it.

Better have the window empty than filled with unseasonable and unattractive goods.

When you hang a sign outside your place of business, let it be original in design and of good quality.

Wonderous is the strength of cheerfulness; altogether past calculation its power of endurance. Efforts to be permanently useful must be uniformly joyous, a spirit of sunshine, graceful from very gladness, beautiful because bright.

#### RECENTLY PATENTED INVENTIONS.

##### Engineering.

**FLUE CLEANER.**—Joseph O. Frazier, McCall, La. This is a readily applied apparatus for quickly removing all soot and other impurities in the flues by means of jets of steam. From a valve pipe connected with the steam supply a series of branch pipes are adapted to be extended centrally through the flues of the boiler, each of the branch pipes being provided with bearings on which they rest in the flue, and having also inclined nozzles, so that when the steam is turned on it strikes the inner wall of the flue at an angle, the jets thus removing and washing outward all impurities.

##### Railway Appliances.

**CAR COUPLING.**—Alonzo C. Packer, Pittsburg, Pa. This is an improvement in couplers of the Janney type, and is adapted for automatic coupling with another of the same kind, and for safe uncoupling from either side of the car. The recessed drawhead is vertically slotted and transversely apertured, there being a pivoted latch block, and a locking key being shouldered on the front edge and working in the vertical slot. The key locks the latch block when depressed, and a lifting bar passing through a lateral slot in the key has a cam slope on its top edge engaging the upper edge of the key slot to elevate the key when the bar is moved.

**CAR COUPLING.**—Blair B. Haydon, New Castle, Ky. This is a simple coupling which couples automatically when the cars come together, the uncoupling being effected from either the top or side of the car. The drawhead has a transverse coupling shoulder at the front end of the bottom of the mortise, in which is held a yielding member, and a coupling jaw in the top of the mortise is pivoted at its rear end and has its front end spring-pressed toward the bottom of the mortise. The front end of the coupling jaw has a transverse flange on its under face, and the link has its ends beveled and formed with transverse coupling shoulders. The link members can be readily coupled with the ordinary link and pin couplings.

**STATION INDICATOR.**—Dennis B. D'Orsey Blake, Denver, Col. Attached to a street car, this device automatically indicates to the passengers the name of the street or station passed or approached. It comprises an operating shaft geared to the car axle and formed in telescopic sections, there being a cam or spiral groove in one shaft section and in the other section a pin entering this groove, and gear wheels on the shaft sections, with shafting geared to the indicator, intermediate gears being alternately and automatically engaged when the rotation of the axle is reversed. A suitable dial in the car is marked with the points to be indicated in their relative positions, and a pointer actuated by the axle connections traverses the dial as the car moves over the route in either direction.

**BLOCK SIGNAL.**—James V. Richardson, Farmville, Va. According to the system devised by

this inventor the signaling apparatus is carried by the engines on the line, the arrangement being such that two engines cannot run upon adjacent blocks, either toward each other or in opposite directions, without operating the signals in both engines. Parallel line conductors are arranged in blocks, and the locomotives carry contact-blocks with a signal in circuit. A circuit breaker connects the blocks of line conductors, and has cross connections to connect the positive conductor of one block to the negative conductor of the next, and connections to connect the positive and negative conductors of one block to the similar conductors of the next.

**BRAKE SHOE.**—Henry A. Lewis, Norristown, Pa. This shoe and attachments are so made that the shoe may be readily reversed, or a new shoe be substituted for an old one, the holder being conveniently removed from the brake beam, and the shoe when in place being held with the necessary rigidity. The improvement is also adapted for use on any wheeled vehicles as well as on railway cars. On the back of the shoe is a dovetailed, notched rib, and the holder has a dovetailed groove and dovetailed socket, with a slot in which is pivoted a spring-pressed pawl whose lower end engages the notch of the rib while its upper end projects out through the slot.

**TIMBER TIE.**—Luman C. Ingersoll, Keokuk, Iowa. Excepting at the two places on its top where the rails are attached, the sides and ends of this tie are beveled outwardly, thus giving a larger flat surface on its bottom than on top. Square shoulders are formed where the bevels commence on each side of the rail bearings, whereby the tie is more firmly engaged by the ballast, affording a high degree of safety against lateral displacement of the track.

**ELEVATED RAILWAY.**—John N. Valley, Jersey City, N. J. The structure for an elevated road designed by this inventor comprises but few elements, and may be built at comparatively low cost without the aid of skilled workmen. Suitable posts support transverse girders to which are secured hangers of inverted U-shape, to the depending arms of which are secured angle irons carrying channel iron tracks. The tracks are adapted for reversal to bring the flanges either inside or outside the structure, and the rails are secured to the channel irons.

**ELEVATED ROAD CARRIAGE.**—The same inventor has devised wheeled hangers especially adapted to suspend a car, or logs or other loads, the carriage being of simple and inexpensive construction, with proper strengthening members, a novel propelling mechanism and suspension devices. The improvement affords safety against derailment, and the driving mechanism is capable of producing high speed, the car being cushioned in a simple and efficient manner.

**CONDUIT RAILWAY TROLLEY.**—Walter E. Delabarre, Francis M. Frazer, and Robert A. Carrick, New York City. The construction of this conduit is such that the main electrical conductor is protected from the action of the weather, and the opening through which

connection is made with the car is so located that it will serve as a channel for the flange of the wheels. The trolley is connected to a transmitting arm projecting through the slot, there being secured to the arm a covering of insulated material having at its ends bevels facing in the opposite direction from that of the trolley.

##### Mechanical.

**REAMER.**—Foist Hatmaker, Ithaca, N. Y. For the use more especially of plumbers, in the repair of faucets, bibs and similar articles, this inventor has designed a reamer having a hollow handle and adapted to carry a reversible shank formed at one end with a fixed cutter head, while supporting at its other end a reamer with adjustable cutters.

**SIDE DRESSING SAW TEETH.**—George Fritz, Rib Lake, Wis. This inventor provides a device for use on band or gang saws after they are swaged, to quickly dress both sides of the teeth. It comprises two arms having jaws engaging the sides of a tooth, one of the arms supporting a tooth guide to engage the front and back of a tooth; a guide bolt passes through the arms, and on it one of the arms moves toward and from the other, while a cam lever fulcrumed on the bolt engages the movable arm.

##### Agricultural.

**THRASHING MACHINE.**—Isaac W. Woodburn, Rock Rapids, Ia. In this thrasher the power and the machine are mounted on the same wheels, and the engine may also be utilized to move the machine from place to place. The construction is simple, strong, and inexpensive, and the machine is operated without end or side shake, the various rotating cylinders for cleaning purposes, together with the conveyers and air supply, effectually cleaning the grain after it is separated. The machine does not need leveling and setting, and the blower does double duty, drawing the chaff from the grain and expediting the exit of the straw from the machine.

**FODDER OR FEED LOADER AND SLED.**—Edwin F. Lewis, Vine Creek, Kansas. This is a low-wheeled sled for gathering and carrying hay, and is to be used in connection with a slatted gathering platform or loader upon a single axle, the loader being entered beneath the shock to gather a certain amount of hay and then being carried a portion of its length over the sled, to which the hay is thus readily transferred.

##### Miscellaneous.

**PNEUMATIC BICYCLE TIRE.**—Cevendra B. Shelton, Brooklyn, N. Y. This is a tubular tire whose inner portion may be stretched at one or more points more than its outer periphery, whereby the tire may be readily slipped on or off without collapsing and without the use of special tools. This tire is also armored in an improved manner, to render the tire proof against puncture or penetration, the armor possessing

such a degree of flexibility and resilience as not to interfere with these qualities in the tire as a whole.

##### MOTIVE POWER FOR BICYCLES, ETC.

—Julius Tullius, New York City. In the driving mechanism devised by this inventor a sliding pedal shaft projects through a bearing sleeve having cupped ends in which socket plates are fitted and secured to the shaft, there being balls in the bearings formed by the cupped ends and socket plates, and gear wheels of different sizes loosely mounted on the pedal shaft and loosely connected with the ends of the sleeve. By pressing with the foot on either the right or left crank arm with the foot the operator may carry the shaft to the right or left, to change the mechanism for speed or for power, according to the road being traveled.

**SEXTANT ATTACHMENT.**—Thomas T. H. Ferguson, Hankow, China. By means of this improvement the ordinary sextant may be converted into an instrument for measuring large angles, say from 120 to 240 degrees, as well as angles from zero to twenty degrees. The invention consists principally of a full silvered glass or mirror and a half silvered glass, the latter being substituted for a horizon glass in the plate of the instrument and the mirror being attached to a vernier indicating on a graduated arc.

**ELLIPSOGRAPH.**—John A. Caldwell, Vancouver, Canada. This is a device to facilitate the drawing of almost any kind of an ellipse. A sleeve is fitted to slide loosely on one of the legs of a compass, a rod adjustable in the sleeve standing at right angles to the leg carrying the sleeve. A holder is held on the rod and in it is adjustably held a second rod in which is pivoted a pen support, a pin being held adjustable on the pivoted support.

**MANIFOLDING DEVICE.**—Edwin B. Tilton, Brooklyn, N. Y. This improvement consists of a board, cut away for a hand space at opposite sides, and with right angled flanges on adjacent edges, together with projecting pins near one end, affording a cheap and simple contrivance for the use of typewriters, to facilitate the quick and accurate assembling of sheets of paper and carbon sheets.

**INK WELL.**—William B. Pratt, Rahway, N. J. This inventor has devised a cover attachment which may be applied to an ink well of any description, in such manner that it may be sealed air tight when not in use. The cover is held closed under tension, but the opening and closing may be effected with one hand.

**PNEUMATIC GRAIN CONVEYING.**—Frederic E. Duckham, Millwall Docks, London, England. This invention relates to former patented inventions of the same inventor, and particularly to the suction inlet nozzle of apparatus for loading, unloading and transferring grain and other granular matters in bulk by an exhaust current of air. The height above the inlet of the nozzle at which the air sleeve should terminate being dependent upon various circumstances, it is necessary to vary the relative positions of the nozzle and its air sleeve. The invention consists in making the air sleeve adjustable with regard to the nozzle, and

providing means of adjustment and means of regulating the air supply through the sleeve to the nozzle.

INLAYING METAL GOODS.—Henri F. L. Aumont, London, England. This inventor has devised a mode of inlaying with tortoiseshell or celluloid, watch cases, jewelry, ornaments, etc., of gold and silver and other metals without the use of cement, producing a transparent, enamel-like effect.

MANHOLE FOR SEWERS.—George Wright, Winnipeg, Canada. To ventilate the manholes of sewers and purify their obnoxious or deleterious gases, the manhole is, according to this invention, fitted internally with a cast iron cylinder provided with a ventilating cover, near which is held a mud pan, while a deodorizing basket is removably supported at the lower end of the cylinder.

UMBRELLA.—William R. Tebow, Tiskilwa, Ill. This inventor has devised a strong and durable runner and improved the construction of the crown-piece, connecting the ribs and braces with the crown-piece and runner by ball joints, to cause the parts to work easily.

POCKET KNIFE.—John P. Nordlow, Worcester, Mass. In the knife devised by this inventor the blade is so held in the handle that the blade may be quickly and easily opened and rigidly held in open position, no matter how long the blade may be.

POCKET KNIFE.—Carl C. Moritz and Stephen D. Greenwood, Salt Lake City, Utah. This knife costs but little more than an ordinary one, but it is so constructed that it may be easily separated into its parts, and the blades, partition plates, and springs readily removed and new parts substituted.

HAIR CURLER.—Thomas C. Moore, Great Falls, Montana. This implement has a tapered tubular body at whose larger end is a radial flange on which is loosely fitted a ring or collar to which is pivoted a clamp arm.

HOOK AND EYE.—Joseph F. Schoepl, Pittsburg, Pa. This invention provides a connecting device formed of a body portion with hook members extended from one side, wings projecting from the ends and an extension from the body between the wings.

HEAD REST FOR BEDSTEDS.—George G. J. Millar, Groveport, Ohio. This is an improvement upon a formerly patented invention of the same inventor, providing for invalids a head rest which is readily adjustable to any desired position without throwing the body out of a straight line, and without much exertion of the attendant.

BEER DRAWING AND SAVING APPARATUS.—William R. Dales, New York City. This apparatus comprises a vacuum tank and a beer discharge pipe connected by a two-way faucet to which a hood is applied, with means for controlling the discharge and inlet pipes.

HORSESHOE.—Erasmus Richardson, Esbon, Kansas. This is a compound or double shoe, one section being a light racing shoe permanently nailed on, over which fits a recessed heavier section, temporarily nailed in place, and to be used only when training.

CASKET HANDLE.—Lyman E. Woodard, Owosso, Mich. The wall of the casket, according to this invention, has a recessed and perforated ear, in which is a washer, the ear and washer being secured in place by a screw, and forming a base for attachable handles.

DESIGN FOR A ROPE CLAMP FRAME.—Per O. Olsson, Marshall, Minn. The edge contour of this frame presents a series of alternate convexities and concavities, the plate being essentially a plane surface, disposed on which is a ridge-like figure.

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.

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The Pope Manufacturing Company, manufacturers of the Columbia bicycles, are now sending out their desk pad calendars for 1895, affording space for memoranda for each day of the year.

The Overman Wheel Company, manufacturers of the Victor bicycles, have issued a neat desk calendar for 1895, consisting of a memorandum pad with blanks on which to jot down brief reminders of things to be remembered, etc., for every day in the year.

The Link Belt Manufacturing Company, of Chicago, send out a very ornamental calendar for 1895, in which a leaf of a small pad is given to each week, the pad being attached to the face of a card in colors.

SCIENTIFIC AMERICAN BUILDING EDITION.

DECEMBER, 1894.—(No. 110.)

TABLE OF CONTENTS.

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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.

(6331) S. M. B. asks: What is the proper size of steam ports and exhaust ports and bridges between ports of cylinder 2 1/2 inches by 3 inches stroke, 3/4 inch travel of valve, also the power of engine at 300 revolutions per minute with 70 pounds steam pressure?

(6332) B. F. E. asks: What are the metals and fluids used in the chloride of silver battery? A. The central negative electrode is silver; the depolarizer which surrounds it is silver chloride; the positive electrode is zinc; the excitant is a solution of ammonium chloride or sal ammoniac.

(6333) Denver House asks: Given a perfect wheel made to revolve free on a perfect axle, will it return from its forward motion upon stopping? A. On a horizontal axis the wheel will have a tendency to slightly turn back from the instant of stopping, to come to an equilibrium.

(6334) V. B. C. asks: 1. Is there any reason why steam or water could not be used internally in a gasoline engine to cool the cylinder? A. No reason beyond those based on practical points can be given.

TO INVENTORS.

An experience of nearly fifty 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.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

December 18, 1894,

AND EACH BEARING THAT DATE.

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

Table listing various inventions and their patent numbers, including: Addressing envelopes, machinery for, G. Clark; Advertising machine, sign, bridge & Patterson; Agricultural machinery, gearing and gear covering for, J. D. Scheffel; Air brake, J. D. P. Schenck; Air brake governor, T. H. Haberkorn; Air brakes, block system for automatically operating, J. H. Fox; Air brakes, mechanism for automatically actuating, J. H. Fox; Air brakes, track device to automatically operate, J. P. Clifton; Alarm, See Burglar alarm; Alarm, process of and apparatus for the production of caustic, C. T. Vautin; Apartment house, M. L. Ungrich; Apples, pears, etc., machine for pulping, C. J. Ollagnier; Ax rolls, machine for making, E. Rogers; Bait receptacle, W. B. Gilmore; Bait press, A. L. Cox; Baling press, C. E. Whitman; Ball, See Bowling ball; Bandage, suspensory, J. Teuscher, Jr.; Barrel making machine, Vale & Oehl; Bearing wheel, ball, H. F. Coates; Belt, electric, Fuller and Taylor; Bench stop, J. Daily; Bicycle brake, Hitchfield & Sanford; Bicycle lubricator, C. O. Furbush, Jr.; Bicycle safeguard and support, T. L. Bissell; Binder for music, magazines, etc., Beeing & Sterk; Bit, See Expansion bit; Bleaching powder, apparatus for making, C. Keller; Block signaling system, electric, A. J. Wilson; Board, See Sheet board; Bottle stopper and filler, combined, I. Pomeroy; Bottle stoppers, machine for feeding crown, N. Musier; Bowling ball, F. G. Deekenwael; Box, See Match box; Box, Z. B. Webb; Bracket, See Dental bracket; Brake, See Air brake, Bicycle brake, Car brake, Wagon brake; Bridge, See F. Lane; Bridle bit, F. Swales; Brooder, chicken, L. C. Billings; Broom, D. A. McDonel; Brooms, manufacturing, D. A. McDonel; Brush handle, Hue, E. P. Hunt; Buckle, suspensory, J. N. McGraw; Burglar alarm, detonating, J. W. Hord; Burglar alarm system, A. Stroumberg; Burglar alarm systems, circuit closer for, A. Stroumberg; Burner, See Hydrocarbon burner, Lamp burner; Burning granular fuel, apparatus for, C. W. Claybourne; Button setting machine, A. J. Shipley; Cabinet, stationery, L. C. Bearsley; Cables, tension device for towing, Humphrey & Hoffmann; Camera, See Camera; Candle grasp, H. Glaser; Candy, machine for cutting stick, J. M. Allardyce; Car brake, E. Allen; Car brake and power controller, electric, A. W. Mitchell; Car brake, automatic, H. E. Olson; Car coupling, A. Railway Co.; Car coupling, I. T. Buckus; Car coupling, J. Clark; Car door, R. T. Garland; Car fender, Kneel & Johnson; Car fender, automatic street, J. T. Van Gestel; Car fender, street, W. H. Brock; Car motor, street, J. Radomski; Car seat, reversible, S. Hoffman; Card, reinforced stencil, F. D. Belknap; Cartridge shell for practice shooting, W. M. Thomas; Case, See Gear case, Pencil case, Piano case; Cash register, multiple adding machine for, C. J. Ryberg; Cash registers, sealing device for, J. O. Byrns; Chain link, R. A. & C. Breal; Chair, See Rail chair, Railway chair; Charging apparatus, E. Solway; Chart, astronomical, F. E. Ormsby; Churn, J. A. Madox; Clay product machines, cutter for, J. H. Onwaka; Cleaner, See Wheel cleaner; Clipper attachment, hair, C. O. Bechtel; Clock, electric programme, J. L. McCaskey; Cloth line fastener, C. Bartsch; Clutch friction, A. S. Barnes; Coffee pot, C. C. Davis; Coin holding and delivering device, C. F. Kraump; Compound engine, J. Feebles; Confectionery machine, S. J. Hicks; Controller handle, H. Mittelsdorf; Corset, T. S. Gilbert; Cotton gin, F. Goodwin; Cotton opener, A. Kirschner; Cotton presses, combined belt shifter and brake for, T. M. Wallace; Couch, bed, and bathtub, combined, E. S. Mahen; Coupling, See Car coupling, Pipe coupling; Coupling, See A. S. Barnes; Crutch, bedsteads, support for canopy rods in metallic, W. T. Mersereau; Crusher, See Ore crusher; Cultivator, T. Belair; Cultivator, A. Lindgren; Cultivator, disk, H. E. Doolson; Cultivator, standard, device for adjustably attaching weed cutters, W. A. McCoy; Cyclometer, J. A. Mosher et al.; Cyclometer, C. E. Moss; Danger signal and lock for switches, G. E. Edwards; Dental bracket, A. Bond; Dental napkin holder, G. A. Bronson; Dental plates, forming, M. P. Boyd; Derrick, M. Beal; Display rack, combined folding and revolving, W. H. Conrad; Ditching machine, A. C. Carter; Door check, C. W. Hamshaw; Door flexible, A. S. Sandlering; Door operating device, W. C. Lucas; Doors, device for operating sliding, W. H. Brodie; Dovetailing machine for preparing edges of parts of electrolyte or stereotype plate blocks, E. C. Williams; Draughtsman's instrument, O. F. Hill; Drill, See Rock drill; Drilling machine, F. W. Williams; Dust pan, G. H. Gere; Dye, blue, Bierer & Dela Harpe; Dye, substantive red, J. J. Brack; Dynamometer, R. J. Reifson; Eaves to hold, A. C. Kamberg; Electric conduit, T. P. La Pointe et al.; Electric converter, F. C. Priestly; Electric meter, T. Brugger; Elevator controlling device, C. E. Foser; Elevator controlling device, See & Tyler.