the retraction of another socket to enable the writer to make use of separate pens for different inks, withou one pen interfering with the other. In the case of the penholder a right and left hand screw is mounted, the threads of which are engaged by pen-sockets. When one socket is moved in one direction, the other is caused to travel in an opposite direction.

FEED-RACK .- JAMES MORRIS, Westchester, Bronx, New York city. This rack is so constructed that it can be easily put up in a stall and taken down and folded for transportation, thus particularly adapting it for racing stables, in which it is desirable that each horse should have his own rack to avoid danger of contagious dis-

CHAIR-SEAT SUPPORT. - HEZEKIAH MORTON, Thomasville, N. C. The support comprises crosse straps extended under the chair-seat in order diagonally to connect a front leg with a rear leg of the chair. Each strap consists of two spaced pieces connected at the ends. Adjusting and supporting bolts extend from the legs through openings in the end connections; and nuts on the inner ends of the bolts abut against the end connections and are prevented from turning by engaging with the members of the straps. A very firm brace is thus formed which prevents the seat-frame from breaking and the parts of the back from spreading.

FRAME FOR BAGS, PURSES, SATCHELS, ETC., Louis B. Prahar, Brooklyn, New York city. A locking device has been provided by the inventor in which a catch-button has a rocking and guided movement on a member of the frame. The button can be released from a locking stud or studs on any number of members of the frame by a simple rocking movement from one side to another or by an upward movement.

BREAD OR CAKE-PAN .- MARIE VOSSRECK, Trinidad, Colo. The pan is made so that the parts can be quickly and conveniently detached, buttered, and assembled. When the loaves have been baked the body and bottom of the pan can be removed from engage ment with the partitions, which partitions serve to hold the baked loaves apart and yet permit them rapidly to

CIGAR-WRAPPER. - FRANCISCO E. FONSECA, 22 Fulton Street, Manhattan, New York city. Mr. Fonse has received a patent for a novel paper cigar wrapper, the ends of which extend beyond the cigar and are twisted to form cords which are wound back upon the cover and secured. No matter how roughly the cigar may be handled, the wrapper will always maintain its position to protect the cigar. The twisted ends serve as cushions, which prevent the cigar from being damaged. One object of the invention is to enable the manufacturer to print descriptive matter on the wrapper. The invention has been practically applied and seems to fulfill its inventor's expectations. For presentation this cigar is specially adapted. Each cigar may bear the name of both the donor and recipient.

FIRE - EXTINGUISHER. - JOHN BRAUNWALDER Davenport, Iowa. This fire-extinguisher is of a type in which a container for an extinguishing liquid is designed to be broken so that the liquid can escape. The invention seeks to furnish a means for breaking the container, which means are actuated by fire. These means consist of a powder-chamber and a fuse. When the fuse is ignited, the powder will eventually be exploded and the liquid-container shattered.

VIOLIN .-- Louis H. Hall, Hartford, Conn. The body of the violin consists of a rim or ribs, to which a top and a bottom are secured. The edge-portions of the top and bottom at certain points are under a strain and tend to separate from the ribs. This tension is beneficial in more than one respect. It improves the tone; it opposes the pressure produced by the bridge and strings and, therefore, strengthens the body of the instrument; and it enables the inventor to vary the quality of the tone simply by giving more or less curve to the bottom

AMIDOSULFONIC ACID.-JOSEPH TURNER, Huddersfield, York, England. Amidosulfonic acids, according to this invention, are produced from nitro bodies of the phenolic and carboxylic series by the action of sodium bisulfite. The products obtained combine with phenols, are slightly soluble in alcohol, insoluble in benzin, form crystallized diozo compounds with nitrons acid and all the sodium salts, and are very soluble in water.

BABY-EXERCISER.—CHARLES E. LATSHAW, Lincoln, Neb. The exerciser is a "baby-jumper," consisting of a spring-suspended frame of novel construction, in which the baby is supported. The elastic support enables the child to use its legs freely in springing or jumping, thus combining the benefits of exercise and amusement without requiring close watching.

NON-REFILLABLE BOTTLE.-José M. Urgeliés, 816 Ricla Street, Havana, Cuba. Two balls are held in a EIN LENKBARER FLUGAPPARAT. Von valve-seat arranged to be locked in the neck beneath the cork. The larger ball acts as a valve to permit the outflow of liquid, and the smaller acts as a back bearing to fellow up and hold the larger ball to its seat.

TRUNK-HANDLE, - BERTNIE M. WILHITE and . Ноут, Gordon, Neb. In the the pinching of the fingers between the handle and the The present monograph contains a very thorough, and it trunk body is frequently experienced. To prevent this, the handle above noted is so connected by its ends that ties of mechanical flight. Dr. Danilewsky writes with when gripped it slides outward in diagonal slots in the the confidence of one thoroughly versed in his science. securing devices and so as to stand out from the trunk

TRAP. - THOMAS H. TAYLOR. Luzerne, N. Y. This trap is designed to kill small animals instantly, and to this end the inventor provides a pivoted bait plate with one end turned up to form a jaw, and a spring frame which, when the trap closes, will spring downward striking the animal and causing it to be caught between the frame and the jaw of the bait-plate.

# Designs.

PLATE. - ARTHUR S. HIGGINS, Manhattan, New York city. The horder of the plate is a ribbon of tuling with their leaves. A second and inner border of fancy foliate figures is also employed.

Note.-Copies of any of these patents can be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

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Minerals sent for examination should be distinctly INDEX OF INVENTIONS marked or labeled.

(7940) C. R. asks: If it were possible to build a tower 100 miles high and from the top of such a tower a ball be dropped, would the ball strike the earth exactly toward the center of gravity? Would the mo tion of the earth imparted to the ball throw the ball out of a direct line toward the center, not considering the attraction the tower has for the ball. A. A ball dropped from a height strikes the earth to the east of the vertical line in which it started. All parts of the earth move with the same angular velocity, but not with the same linear velocity. The smaller the circle of rotation the slower the velocity of motion. As the ball drops it maintains the velocity of motion toward the east, which the point had from which it was dropped. As it approaches the center of the earth, it comes to points which have a slower velocity than it has. It will, therefore, be moving to the east faster than the place to which it has come. This has been proved by dropping balls into deep mines

(7941) W. G. asks: 1. Could  $\frac{1}{32}$  inch brass be used instead of 12 inch for the spool of the ammeter described in Supplement, No. 1215. A. Any thickness of brass can be used which will hold the wire without bending. 2. How many pounds of No. 31 copper wire does it take for the high tension transformer described in Supplement, No. 1087? A. About 48 pounds by calculation. You will probably not get so much in as you cannot wind it perfectly true. 3. How many layers is there on the secondary of high frequency transformer. A. One.

(7942) B. U. S. writes: I desire to know wbat size and amount of wire to use to convert eight light dynamo in Supplement, No. 600, pages 9586 to 9590 inclusive of July 2, 1887. I wish to change to 500 volt motor. Have you a SUPPLEMENT with this information? A. It is not feasible to change the eight light dynamo into a motor to run upon a 500 volt circuit. The commutator could not stand it. You would need to wind each of the armature coils with about 40 turns of No. 28 wire and use a resistance of about 400 ohms with the present field. This is not figured out accurately becau it is not desirable to make the change. It would be far better to build a new machine,

# NEW BOOKS, ETC.

Dr. Constantin Danilewsky. Char kow, Russia: Author's Edition. 1900. Octavo, 82 pages. Illustrated. Price, paper 75 cents.

Danilewsky's experiments in aerial navigation have dready been described in the Scientific American must be confessed, convincing account of the possibili-He claims much for his experiments, but not too much. His monograph is valuable because it contains the only exhaustive account of what he has really accomplished.

SYMBOLISM OF THE HUICHOL INDIANS. By Carl Lumholtz. Memoirs of the American Museum of Natural History. Volume III. Anthropology II., May, 1900. Quarto. Pp. 228, plates and illustrations.

During the years 1890 to 1898 the author made three expeditions to Mexico under the auspices of the Museum. The author spent ten months among the Huichols in 1895 and obtained valuable information on the state of their culture. The author has produced a most solid and satisfactory contribution to ethnological research and the Museum is specially to be commended for the substantial and sumptuous manner in which the book has been clothed. 'The illustrations are good and the plates are specially fine.

TECHNOLOGISCHES LEXIKON. buch für alle Industrien und Gewerbe. Redigirt von Louis Edgar Andes. Illustrated. Parts 2-5. Vienna: A. Hartleben. Large Octavo. Price, per part, 70 cents.

The parts of this new lexicon which lie before us extend from "Arsenhüttenbetrieb" to "Eichenholzfärbungen." Long articles are to be found under the headings "Ausdehnungskoëffizienten verschiedener Körper," "Baumwollgewebe," "Bleigewinnung," "Desinfektion," etc. The illustrations which accompany the text are, for the most part, excellent woodcuts. The parts which, up to the present, have come to our notice deserve unstinted praise for the evident care which the author has taken in their preparation.

DIE SOCIALEN AUFGABEN DES INGEN-IEURBERUFES UND DIE BERECHTIG-UNGSFRAGE DER HÖHEREN SCHU-LEN. Eröffnungsrede zur 40. Jahresversammlung des Deutschen Vereins von Gas-und Wasserfachmännern. Von Generaldirektor W. v. Oechel-München: haeuser, Dessau. Oldenbourg. 1900.

DIE ELEKTRISCHE VOLLBAHN BURG-DORF-THUN. Separat-Abdruck aus der "Schweizerischen Bauzeitung." Zürich: Ed. Rascher, Meyer und Zeller's Nachfolger. 1900.

### TO INVENTORS.

An experience of over fifty years, and the preparation of more than one hundred thousand applications for patents at bome and abroad, enable us to understand the laws and practice on both continents, and to possess 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 bome 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.

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AUGUST 14, 1900.

AND EACH BEARING THAT DATE.

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

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| Advertising device, P. E. white  | 656,131  | F  |
| Advertising device, P. E. White. Air compressor, bydraulic, J. W. Van Brock Air pipe coupling, automatic, J. W. Spurlock Alarm. See Burglar alarm. Annunciator, W. M. Davis. Arm rest or support, I. C. Neal. Automobile, F. G. Frankenberg. Automobile, vehicles, nower mechanism   | lin 656,147  | F  |
| Air pipe coupling, automatic, J. W. Spuriock   | 655,997  | F  |
| Annunciator W M Davis  | 655 7 63   | F  |
| Arm rest or support. L. C. Nesl.   | 655,885  | F  |
| Automobile, F. G. Frankenberg  | 655,885  | Τ.   |
| Automobile vehicles, power mechanism Allyne & Pomeroy.  Awning, I. Miller.   | for,   | F  |
| Allyne & Pomeroy   | 655,749  | Ē  |
| Awning, I. Miller  | 656,033  | G  |
| Allyne & Pomeroy. Awning, I. Miller. Axie swaging apparatus, J. Lanz. Back pedal brake or coaster, J. N. Parks. Back pedaling brake, E. E. Ziegler. Baking pan, J. F. Meredith. Balle tie, L. K. Lantz. Baling press, G. Taylor. Barrel cap holder, Richardson & Colcord. Batt cabinet, L. L. Cahoon.  | 655,718<br>656,041   | G  |
| Back pedal brake or coaster, J. N. Parks   | 655,945  | G  |
| Reking pan J. F. Meredith  | 656,032  | Ģ  |
| Rale tie L. R. Lantz   | 656,028  | G  |
| Baling press. G. Taylor.   | 655,998  | ä  |
| Barrel cap holder, Richardson & Colcord  | 655,940  | Ğ  |
| Bath cabinet, L. L. Cahoon   | 655,956  | G  |
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| Barrel cap holder, Richardson & Colcord Batt cabinet, L. L. Cahoon. Battery, See Storage battery. Battery plate, secondary, J. B. Conrad. Battery receptacle, secondary, J. Middleby, Bearing, shaft tbrust, E. G. Hoffmann. Bed or crib, folding, J. P. Balser. Bed, spring, W. F. Ade, Jr. Bicycle, A. Prager. Bicycle, W. C. Dunn. Bicycle pump, O. Keen. Bicycle pump, W. M. Reason. Bicycle support, O. Weston. Billiard cue tip, J. Prince. Bit. See Bridle bit.   | 656,095  | G  |
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| Red or crib folding J P Balser   | 655 950  | G  |
| Bed. spring, W. F. Ade. Jr.  | 655.893  | Ğ  |
| Bicycle, A. Prager   | 655.830  | Ğ  |
| Bicycle, W. C. Dunn  | 655,697  | G  |
| Bicycle pump, O. Keen  | 656,122  | G  |
| Bicycle pump, W. M. Keason   | 655,797  | Ğ  |
| Rilliard one tin 1 Prince  | 655 990 ±  | Ğ  |
| Bit. See Bridle bit.   |  | Ğ  |
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| Board. See Kneading board.   |  | G  |
| Boat, life, P. U. & A. M. J. Riess   | 655,993  | G  |
| Boiler. See ripe boiler. Water tube boiler.  | g## 000  | Ğ  |
| Roller furnace steam I Thurst  | 030,550  | Ģ  |
| Rolater, collapsible, J. E. Long   | 000,000  | H  |
| Book, account, E. Maver  | 656.031  | H  |
| Bitt. See Building block. Sheet leader ble Board. See Kneading board. Boat, life, P. U. & A. M. J. Riess   | 1,846, 11,847  | H  |
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| Boring tool brace head, A. Weisenhorn  | 656.069  | Н  |
| Boring tool orace nead, A. Weisennorn Bottle, J. T. Johnson. Bottle carrier. bolder, or banger claw, C. A. Bottle, non-reflling, J. Walber Bottle or similar receptacle, J. O'Connor Bottle washing machine, F. Lugviel. Box. See File box. Folding box. Letter b Box machine, honey, C. Mondeng. Bracket. See Elegartaff bracket. Steel t.  | Town #65.872   |  |
| Bottle non-refilling. J. Walher  | 656.148  | H  |
| Bottle or similar receptacle, J. O'Connor  | 655.887  | Ĥ  |
| Bottle washing machine, F. Lugviel   | 655,792  | H  |
| Box. See File box. Folding box. Letter b   | OX.  | Н  |
| Box machine, honey, C. Mondeng   | 655,938  | 1  |
| bracket.   | OWEI   | H  |
| Brake. See Back pedaling brake. Railway by   | rake.  | Н  |
| Vebicle brake. Wagon brake.<br>Brake application valve for train pipes, J. J.  |  | Η  |
| Brake application valve for train pipes, J. J.   | Sul-   | H  |
| livan<br>Brake mechanism, differential, Brill & Adam   | 656,058  |  |
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| Brick mold sanding machine H Schoonmak   | 18 655,754  <br>ser 655,740  | Н  |
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| Brick mold sanding machine, H. Schoonmak Brick press. C. M. Steele.  Bridle bit. M. H. Sims. Brush. L. Roth. Brush bolder, Erben & Potter Buggy top attacbment. H. C. Stockton Buggy top attachment. H. C. Stockton Buggy top raiser. J. C. Ford Buggy top raiser. J. C. Ford Buggy top raiser. J. C. Ford Buggiar alarm. J. W. Rough Burner. See Hydrocarbon burner. Smoke gas burner.  Cales. manufacture of chain. J. Verity. Calcium. etc., producing carbid of, W. S. Ho Can. See Oil can. Can opener. C. Kempf. Canopy frame J. T. Johnson. Canopy frame or support, J. T. Johnson. Canopy support, J. T. Johnson. Canopy frame J. T. Johnson. Canopy frame, J. T. Johnson. Canopy frame, J. T. Johnson. Canopy support, J. T. Johnson. Canopy frame, D. T. Johnson. Canopy frame, D. T. Johnson. Canopy support, J. T. Johnson. Canopy frame, D. T. Johnson. Canopy frame, D. T. Johnson. Caraten, W. Lanz. Car coupling, J. F. Buckholtz. Car, parior compartment, J. B. Strauss. Car, parlor compartment, J. B. Strauss. Car parlacer, J. D. Hoover. Car seat, F. Bennett. Car seat, M. N. Forney. Car setp, J. B. Thacker. Carband, M. Forney. Car steep, J. B. Thacker. Carband, M. Forney. Car seep, J. B. Thacker. Carband and M. Forney. Carrier, See Bottle carrier. Package carrier Cartrice see Buttle carrier.  | er. 655.749   656.056   655.913   655.894   655.814   655.814   655.814   655.814   655.814   655.814   655.814   655.815   655.816   655.816   655.817   655.817   655.818    655.818   655.818   655.818    655.818   655.818    655.818   655.818    655.818   655.818    655.81 | HH HHHHHILI DIGHTUL LILLI LILL |
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| Brick mold sanding machine, H. Schoonmak Brick press. C. M. Steele.  Bridle bit. M. H. Sims. Brush. L. Roth. Brush bolder, Erben & Potter Buggy top attacbment. H. C. Stockton Buggy top attachment. H. C. Stockton Buggy top attachment. H. C. Stockton Buggy top raiser. J. C. Ford Buggy top raiser. J. C. Ford Bugglar alarm. J. W. Rough. Burner. See Hydrocarbon burner. Smoke gas burner. Cables, manufacture of chain, J. Verity. Calcium, etc., producing carbid of, W. S. Ho Can. See Oil can. Can opener. C. Kempf. Canopy frame or support, J. T. Johnson. Canopy frame or support, J. T. Johnson. Canopy frame or support, J. T. Johnson. Canopy support, J. T. Johnson. Canopy frame, J. T. Johnson. Canopy frame, J. T. Johnson. Canopy frame, J. T. Johnson. Canopy support, J. T. Johnson. Canopy frame, J. T. Johnson. Canopy frame, D. T. Johnson. Canopy support, J. T. Johnson. Canopy support, J. T. Johnson. Canopy frame, D. T. Johnson. Care coupling, J. F. Buckholtz. Car coupling, J. F. Buckholtz. Car, grain, G. Douglas. Car, parlor compartment, J. B. Strauss. Car, parlor compartment, J. B. Strauss. Car replacer, J. D. Hoover. Car set, F. Bennett. Car seat, F. Bennett. Car seat, M. N. Forney. Car step, J. B. Thacber. Carband, M. Rother, Car benderical support all parts of the carrier of extractin Bergersen. Centrifugal machine. Centrifugal machine. Centrifugal machine. Centrifugal machine.  | er. 655.740 656.056 655.913 655.824 655.826 655.834 655.834 655.834 655.834 655.834 655.834 655.834 655.835 655.834 655.836 655.837 655.837 655.837 655.838  | HE HEHHHIOL INDIVIDUAL TO THE STATE OF THE S |
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| Brick mold sanding machine, H. Schoonmak Brick press. C. M. Steele.  Bridle bit. M. H. Sims. Brush. L. Roth. Brush bolder. Erben & Potter Brugy top attachment. H. C. Stockton Buggy top raiser. J. C. Ford. Burner. See Hydrocarbon burner. Smoke gas burner. Cables, manufacture of chain, J. Verity. Calcium, etc., producing carbid of, W. S. Ho Can. See Oil can. Can opener. C. Kempf. Canopy frame of support, J. T. Johnson. Canopy frame, J. T. Johnson. Canopy frame, J. T. Johnson. Canopy frame, J. T. Johnson. Care coupling, J. F. Buckholtz. Car coupling, J. F. Buckholtz. Car coupling, J. F. Buckholtz. Car, frain, G. Douglas. Car, parlor compartment, J. B. Strauss. Car, parlor compartment, J. B. Strauss. Car relacer, J. D. Hoover. Car fool, D. C. Ross. Car as eat, F. Bernett. Car seat, M. N. Forney. Car seat, M. N. Forney. Car sprime, W. Robinson. Car Seat, M. N. Forney. Car sprime, W. Robinson. Carbage de Melle See Bottle aurieer. Package carrier Cartrace bell levaleraer. To exterict  | er. 655.740 656.056 655.913 655.824 655.826 655.834 655.834 655.834 655.834 655.834 655.834 655.834 655.835 655.834 655.836 655.837 655.837 655.837 655.838  | HH HHHHHIII IIIIIIIIIIIIIIIIIIIIIIIIII   |
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|   | Cigar holder, J. W. New<br>Cigar, self-ligbting, B. Heiman<br>Circuit breaker, F. W. Garrett<br>Clasp. See Garment clasp.  | 656,036<br>655,864<br>656,105                       |
|---|--|---|
|   | Clasp. See Garment clasp. Clipping machine, J. K. Priest. Clock striking apparatus, R. J. Rudd. Clothes line prop. W. T. Shaffer. Clutch, Hakewessell & Henn. Clutch, J. A. Moore. Clutch be mechanism, pin, Hakewessell & Henn. Clomb. See Hair drying comb. Comb, H. P. De Vogel. Confection molding machine, J. C. Walier. Convertible tub, Levy & Holt.  | 655,796<br>655,801<br>656 053                       |
|   | Clutch, Hakewessell & Henn   | 655,972<br>655,906<br>655,973                       |
|   | Comb. H. P. De Vogel   | 655.816<br>655.918<br>655,980                       |
| ! | Convertible tub, Levy & Holt. Cord fastener, C. J. W. Hayes. Cork extractor, L. C. Mumford. Corn sheller, H. A. Adams. Cotton cleaning mechanism, seed, H. W. Graber.  | 656,114<br>655,725<br>655,946<br>656,107            |
|   | Thill coupling.  Covers of culinary vessels in closed position, ap-  |   |
|   | pliance for securing, J. Weidner   | 656,003<br>655,975                                  |
|   | Cushion spring, upholstered, F. Buob   | 655,957<br>655,756<br>655,745                       |
|   | Currycomb, M. Campbell   | 655,933<br>556,124<br>656,079                       |
|   | Designs, means for reproducing multicolor, A. von Beust  | 655,739<br>655,981                                  |
|   | von Beust Display device, necktie, H. Runtz. Display rack, C. Lietz. Door hanger, J. M. Hopkins. Door banger, W. J. Lane. Door or window fastener, A. F. Hoffman.  | 655,978<br>656,116                                  |
|   | Door unlatching device, E. Denne  Dye and making same, yellow azo, P. Julius  Dye, sulfonated anthraquinone, O. Bally  | 656,062<br>655,764<br>656,120<br>656,081            |
|   | Dyeing kbaki, Comber & Chorley<br>Electric current registering device. V. G. Fuller  | 656,015<br>655,854<br>655,703<br>655,780            |
|   | materials for, G. Alefeld  | 656,077<br>656,127                                  |
|   | Electric machines, regulating dynamo, J. D.  | 656, 128<br>655,852                                 |
|   | Spence. Electric motor, P. J. Collins. Electrical party lines, system for individual service on, W. Torst, Jr. Electricity meter, P. Eibig. Electromedical vacuum apparatus, G. W. Winck-  | 655,916<br>656,100                                  |
|   | field.  Elevator safety appliance, A. A. E. Sterzing Engine. See Explosive engine. Gas engine. Steam engine. Traction engine.  | 655,747<br>655,836                                  |
| ١ | Engine cylinder, compound steam, F. G. Burley<br>Engine indicator, steam. Doran & Taggart<br>Engines, apparatus for charging and feeding fuel  | 655,857   |
|   | to steam, E. Eiran.<br>Engines, incandescent igniter for gas, A. G. New<br>Engraving machine, pantograph, M. Barr.   | 655,700<br>666,143<br>655,750<br>655,955            |
|   | Excavator, A. E. Cheney et al. Excavator, G. W. King. Exbauster and blower, C. H. Keeney Explosive and making same, Ross & Cairney   | 655,758<br>655,784<br>656,023                       |
|   | Extractor. See Cork extractor.   | 656,048<br>656,101<br>656,153                       |
|   | Eyeglasses, F. M. Daniels<br>Eye shade, H. E. Newton.<br>Fabric. See Carpet fabric.<br>Fan, revolving band, Behrendt & Mayer   | 656,153<br>656,038<br>655,919                       |
|   | Fan. revolving cand, Bettrendt & Mayer. Fastener, W. B. H. Dowse Feed mill, A. T. Foster Feed water strainer, locomotive, R. B. Paxton Fence machine, wire. T. M. & T. M. Conner Fifth wheel, N. C. Smith File box J. E. Reynolds  | 655,696<br>655,795<br>655,760                       |
|   | Fifth wheel, N. C. Smith.  File box, L. E. Reynolds.  Filer, W. Paterton.  | 655,795<br>655,760<br>655,836<br>655,799<br>656,043 |
|   | File box, L. E. Reynolds. File box, L. E. Reynolds. Filter, W. Paterton. Filter, H. B. Watson et al. Fire escape, C. O. Dutton. Fire escape, C. O. Dutton. Fire pydrant, R. Hughes. Fire bydrant, R. Hughes. Fire shutter, P. Ebner. Flagstaff bracket, E. D. Bates. Flask. See Molder's flask.  | 655,841<br>655,923<br>655,776<br>655,781            |
|   | Fire shutter, P. Ebner.<br>Flagstaff bracket, E. D. Bates<br>Flask. See Molder's flask.  | 655,781<br>655,965<br>655,951                       |
|   | Flower stand, W. F. Kessler  | 655,715<br>65,5,939<br>655,719<br>655,720           |
|   | Furnace. See Boiler furnace. Electric furnace.<br>Liquid fuel furnace.   | 696,061   |
|   | Furnace, F. Clayton<br>Furnaces, control of electric, W. S. Horry<br>Game apparatus, Eynon & Duckett<br>Game, educational, J. R. Hughes  | 655,759<br>655,779<br>655,768<br>656,117            |
|   | Game scoring apparatus, A. M. Goulding   | 655,862<br>655,882<br>655,982                       |
|   | Gas generator, acetylene, T. E. E. Bartlett  | 656,020<br>656,008<br>655,732                       |
|   | Furnaces, control of electric, W. S. Horry Game apparatus, Eynon & Duckett. Game, educational, J. R. Hughes. Game scoring apparatus, A. M. Goulding. Garment clasp, H. A. Maxwell. Garment fastener, F. B. Mathewson. Garment hook. I. P. Doolittle. Gas engine, C. Hautier. Gas generator, acetylene, T. E. E. Bartlett. Gas generator, acetylene, Post & O'Brien. Gas lighter, automatic, Jones & Barrett. Gas meter, coin freed, B. Paterson. Gas producer charging hopper, G. R. Hislop. Gas regulating tip for burners, J. W. Hentz. Gate. B. G. Davis. | 656,118<br>656,042<br>655,931<br>656,136            |
|   | ' Gate operating mechanism. w. R. Pitt   | 040.091   |
|   | Generator. See Gas generator. Glue pot, F. Kahrs   | 655.826<br>656.099<br>655.922<br>655.800            |
|   | Generator. See Gas generator. Glue pot, F. Kahrs. Golf club, W. Dunn. Governor, speed, C. E. Duryea. Grain dump and elevator, J. Rocke. Grain spearator, O. O. Fjeld. Grain shocking machine, Wooley & Fox. Grate. W. C. Higgins.  | 655.800<br>656,102<br>655,748                       |
|   | Grain shocking machine, wooley & Fox. Grate, W. C. Higgins Grinding machine. H. W. Bolens Grinding mill, L. C. Shellabarger Grip, T. B. Jeffery. Hair drying comb, Cooper & Thompson. Hammer, pneumatic, C. H. Johnson. Hammering press, H. H. Hamlett. Hanger. See Door hanger. Scaffold hanger. Harrow, vineyard, J. F. Fay Harvesting seed from corn, etc., machine for, R. C. Wilson.  | 655,930<br>655,753<br>655,805<br>656,136            |
|   | Hair drying comb, Cooper & Thompson  | 655.895<br>655.902<br>656,135                       |
|   | Hanger. See Door hanger. Scaffold hanger.<br>Harrow, vineyard, J. F. Fay   | 655,859<br>656,073                                  |
|   | Head and shoulder rest, G. M. Sellinger<br>Heater. See Lunch heater.<br>Hinge spring Stump & Brucker   | 655,912<br>-655,812                                 |
|   | Hitching device, S. F. Ettinger  | 655.983<br>656.067                                  |
|   | book. Hook andeye, J. A. Brunner Hook andeye, V. O. Mills Hopper or storage bin gate and cut-off, R. P. Felton   | 655.847<br>655,884                                  |
|   | Horsesboe nail finishing machine, H. A. Will-  | <b>655</b> ,967<br>65 <b>5</b> ,829                 |
|   | iams.  Horseshoe pad, J. Kronenberg.  Horseshoe, soft tread. H. D. Palmer.  Horseshoe soft tread attachment, T. J. Lovett  | 655,818<br>656,026<br>656,144<br>655,828            |
|   | i Hose up, G. W. Lisk  | 099.679   |
|   | Hub, C. C. Mifflin.  Hydraulic motor regulating means, J. D. Fricot.  Hydrocarbon burner, B. F. Weber.  Ice cbipping tool, Dana & Snook.  Ice cream molding and cutting machine, G. M.  Pinkerton  | 655,692<br>656,692                                  |
|   | Pinkerton.<br>Indicator. See Engine Indicator.<br>Ink ribbon mechanism, S. A. Neidich.<br>Insect screen, G. Sattler.   | 655,985<br>656.050                                  |
|   | Insect screen, G. Sattler. Insulated hanger for arc lamps. G. Cutter. Insulating electric conductors, N. Tesla. Iron. See Sad iron. Jack. See Lifting jack.  | 655,762<br>655,838                                  |
|   | Joint. See Railway rail joint. Journal bearing, G. Fulton. Kneading board, A. A. Cushman. Knife. See Pocket knife.   | 656.017<br>655.855                                  |
|   | Knoter, H indley & Harding   | 656,155<br>655,952<br>655,852                       |
|   | Knife. See Pocket knife. Knitting machine, circular, A. J. Gulich. Knockdow ncase. H. E. Reerling Knotter, Hindley & Harding. Label and label holder, L. Weigel. Jacing hook setting wachine, W. O'Brien. Lamp, C. F. Allen.   | 655,843<br>655,987<br>656,605                       |
|   | Lamp, acetylene gas generating. A. Winch   | 655.944   |
|   | Lamp, electric arc. B. A. Stowe. Lamp holder, G. Grimm Lamp, incandescent, C. Hoelscher Lamp shade supporter and protector, L. Y. Cowl.  |   |
|   | Lamp shades, constructing, O. A. Mygatt<br>Lamp, vapor, W. T. Wood<br>Lantern, D. F. Van Riper   | 655,728<br>656, 150<br>655,917<br>656,153           |
|   | Lard refining apparatus, C. Kempf. Latch for adjustment levers, tbumb, B. A. Kennedy.  Latbe, R. M. Nuttall.  Launch, electric, J. C. Chamberlain.  Laystory lock, coin controlled, F. J. Beaumont.  |   |
|   | Launch, electric, J. C. Chamberlain. Lavatory lock, coin controlled, F. J. Beaumont Lawn sweeper, J. I. Caruthers  | 656,012<br>656,082<br>656,093                       |

(Continued on page 126.)