Report of Commissioner of Patents Duell.

The following report of the business of the United States Patent Office for the fiscal year ending June 30, 1900, has been made by Commissioner of Patents Duell:

APPLICATIONS AND CAVEATS RECEIVED

Applications for letters patent	39,815
Applications for design patents	2,263
Applications for reissue patents	90
Applications for registration of trade marks	2,103
Applications for registration of labels	872
Applications for registration of prints	127
Caveats	1,739
Total	47,009

APPLICATIONS AWAITING ACTION.

Number of applications awaiting action on the part of the office on July 1, 1900	3,564

APPLICATIONS FOR PATENTS, INCLUDING REISSUES, DESIGNS, TRADE MARKS, LABELS, AND PRINTS.

June 30, 1891	43,616
June 30, 1892	43,544
June 30, 1893	43,489
June 30, 1894	39,296
June 30, 1895	41,014
June 30, 1896	45,645
June 30, 1897	47,747
June 30, 1898	44,216
June 30, 1899	40,320
June 30, 1900	45,270

PATENTS GRANTED, AND TRADE MARKS, LABELS, AND PRINTS REGISTERED.

Letters patent granted (including reissues and designs)	26,540
Trade marks registered	1,660
Labels registered	682
Prints registered	93
Total	28,975

Summarizing these tables there were received during the year 39,815 applications for mechanical patents, 2,263 applications for designs, 90 applications for reissue, 1,739 caveats and 127 applications for prints. There were 26,540 patents granted, including reissues and designs; 1,660 trade marks, 682 labels and 93 prints were registered. The number of patents that expired was 19,988. The total receipts of the office were $1,358,228.35, the total expenditures were $1,247,827.58, and the surplus of receipts over expenditures, being the amount turned into the Treasury, was $110,400.77.

The examination work of the office is in about the same relative condition that it was at the close of the fiscal year ending June 30, 1899. At that time every examiner had his new work within one month from date of filing and his amended work within fifteen days of date. At the close of the present fiscal year thirty out of the thirty-six examiners had their new work within one month from the date of filing. Of the remaining six, three overran that time by but one day. The amended work in nearly all of the divisions was being acted upon within fifteen days after filing. The number of applications awaiting action on the part of the office on July 1, 1900, was between five and six hundred more than on the 1st of July, 1899, but the number of applications for patents, etc., received during the last fiscal year was 5,000 greater than during the preceding year, and the number of amendments acted upon was also correspondingly greater.

This is considered an excellent showing, Commissioner Duell says, and reflects credit upon the examining corps when it is borne in mind that a greater number of examiners were detailed for classification work than during the preceding fiscal year.

The work of the clerical divisions has been kept well up to date, and there is no reason why, he says, with the small increase of clerical force given by Congress at the last session, the work of the clerical divisions should not be promptly and carefully done.

During the last month of the fiscal year it was found possible to give to this division much needed room. This will enable a larger force to economically perform the valuable work now being done by the chief of the classification division and his carefully selected corps. The work of this division during the past fiscal year has continued, and, while the amount accomplished is not perhaps as great as was hoped for, yet it is but fair to say that with the additional room and force much of the incompleted work of the past year will be finished.

Commissioner Duell says:

"As yet this bureau has derived little or no advantage from the removal of the General Land Office. The additional room which has been assigned, under your direction, to this office is, I regret to say, inadequate for its needs. It demonstrates that the Patent Office building is too small to meet the needs of the Interior Department proper and this office. As the building was originally planned and designed for the Patent Office, and very largely paid for by money paid into the Treasury by the inventors of the country, it would seem as though the entire building should be applied to the uses of the Patent Office. This, however, does not seem to be feasible, and I therefore express the hope that at an early day a new building may be erected for the sole use of the Patent Office, and I bespeak your powerful influence with Congress to aid the passage of Senate Bill No. 1,159, which provides for the construction of a fireproof building for the use and accommodation of the Patent Office, including a hall of inventions.

"Legislation in this direction is favored by many societies and associations interested in the subject of invention, and by hundreds of progressive manufacturers and inventors who have addressed petitions to Congress in the matter. The surplus receipts of the United States Patent Office for the past ten fiscal years amount to more than $2,000,000, while the total excess of such receipts turned into the Treasury amounts to over $5,000,000. Aside from this, the United States owes a debt to inventors which it can never repay. A slight recognition of this debt, however, would be the erection of a building such as referred to, which might be considered in the nature of a monument. The necessity for some action on the part of Congress is pressing and should not be longer delayed.

THE SCIENTIFIC LIBRARY.

"This library," says the report, "consists of over 70,000 bound volumes, and a conservative estimate of its value is $200,000. It would, however, be impossible even with this amount, or with any sum, to replace the library should it be destroyed by fire. Many of the most valuable works are out of print. Our books are not now safely stored, and while in this building it is impossible to wholly protect them from fire, yet much might be done in this line by the use of steel stacks, which are now in common use in every modern library building.

LEGISLATION.

"In submitting my estimates for the present fiscal year my suggestions in the main were approved by you, with the result that many of them so approved were favorably acted upon by Congress. Your action in this matter was appreciated by the inventors and manufacturers of the country.

"Something more in the line of readjustment of salaries and a reclassification of the clerical force of this office is needed, and in submitting my estimates for the next fiscal year your attention will be called in detail to such matters."

The Current Supplement.

The current SUPPLEMENT, No. 1282, has many articles of unusual interest. "The Burial Grounds of the Ming Dynasty" illustrates the colossal statues of men and animals which grace this very curious cemetery. "Russian Central Asia, Countries and Peoples," by Archibald R. Colquhoun, is a particularly timely article, accompanied by an excellent map. "Some Twentieth Century Problems" is a vice-presidential address of the Section of Botany of the American Association for the Advancement of Science. The second of the remarkable series of papers on "American Competition" is given in this issue.

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RECENTLY PATENTED INVENTIONS.

Agricultural Implements.

COTTON-DISTRIBUTER.—JOSEPH A. PARKER, Dripping Springs, Tex. The invention provides a means for equalizing the distribution of cotton to a series of connected receptacles, and for retaining the cotton in the receptacles until it is desirable to deliver it to the hoppers or feed devices for cotton-gins. The current of air employed to deliver cotton to the receptacles, can be so regulated that it can be made either to draw or retard. A storage-receptacle is provided for each gin. The controlling devices for the receptacles are so constructed that either the right-hand one or the header can be cut out without interfering with any of the others.

Bicycle-Appliances.

REPAIR-JACK.—MARSHALL A. MASTERS, Montrose, Colo. In repairing and assembling bicycles, it is convenient to have some means for holding the bicycle, by which it may be adjusted to any desired position. Such an appliance the inventor has devised. His jack comprises a standard to which an arm is swiveled, projecting horizontally. A cross-bar is secured to the outer end of the arm by a fixed and by a swinging pivot at right angles to each other. Bicycle-holding clamps are provided upon the cross-bar. By means of this jack, the bicycle can be raised or lowered, turned or adjusted in every conceivable position.

Electrical Apparatus.

ELECTROLYTIC APPARATUS.—NATHANIEL L. TURNER, Salmon City, Idaho. This apparatus for the electrolytic separation of gold, silver, and the like in solution, prepared pulp, and slimes comprises a tank; a carrier provided with depending arms; an electrode supported by the arms; turn-buttons secured to the arms; and an electrode of opposite polarity to that first mentioned. The solution is placed in the tank and agitated while the current is turned on, so that dissolution and precipitation proceed simultaneously. The larger the number of anodes and cathodes, the quicker will be the precipitation. All gold, silver, or other metal is quickly deposited on the plates of the cathodes. When the proper amount of metal has been deposited, the carrier is raised with the cathodes and anodes.

Mechanical Devices.

HOOP-RACKING MACHINE.—CHARLES REED, Portland, Ind. In making hoops from lumber, it is customary to split the wood into bars which are of a thickness corresponding with the width of the hoop and of such width as to make a number of hoops. These are then checked at one end and split into separate hoops. Mr. Reed's machine takes bars which are thus prepared by being checked at the ends, and splits them up into hoops by passing them through the machine.

Railway-Contrivances.

RAIL-JOINT FASTENING.—ANNIE B. SCHIMMEL, Portland, Ore. The fastening comprises an angle-bar having two sets of teeth, and a locking-plate having means for engaging bolts and also having two sets of teeth. The teeth of the plate are so related to the teeth of the bar that, when adjacent sets of teeth of the plate and bar are in mesh, the other sets of teeth will be out of mesh. By reason of this construction, the use of a nut and nut-lock is rendered unnecessary; and the angle-bars at the points of the rail-sections are effectually and positively tied in place. The locking-plate cannot be loosened by any vibration in the rails and can be detached only by violently and repeatedly striking one of its ends.

Musical Instruments.

MUSICAL INSTRUMENT.—MANUEL MONTOYA, Bogota, Colombia. The instrument is of the mandolin type and has a hollow body comprising a top and bottom connected by a peripheral wall. This wall consists of an outer layer of celluloid and an inner layer of wood glued together. A tail-piece is also provided having at its front end a series of notches for the passage of strings and at the rear of the notches a series of apertures with notches and projections between them. The invention provides a very strong construction of the body without interfering with its resonancy, as well as a tail-piece or tuning the strings perfectly.

STRINGED MUSICAL INSTRUMENT.—ERNST EULERT and ADOLF WALLENSTEIN, Manhattan, New York city. The purpose of this invention is to provide a new cithern-like instrument arranged to enable the performer to play the desired accompaniment to the melody and to play the melody on either of the usual leading cithern strings, or on an open scale of strings. The accompaniment-strings extend over frets; and a number of independent, movable pitch-changing bars extend transversely over the accompaniment-strings and are arranged between adjacent frets. Individual buttons press and move each of the bars in engagement with the accompaniment-strings to press them upon the corresponding fret.

Vehicles and Accessories.

VEHICLE.—CLARK C. HYATT, HARRY W. WATSON, WILLIAM WILDANGER, and CYRUS B. SANDERSON, Flint, Mich. The invention provides a body for cutters and sleds, which body is arranged to permit one conveniently and quickly to change the vehicle from a single-seated one to a double-seated one, or vice versa. The rear portion of the body is protected from dust when only a single seat is used.

HAME-TUG.—JAMES T. DEDMAN, Sullivan, Ill. This coupling for a trace and hame-tug is so constructed that much less leather is required in the making of the tug. The sections can be rendered adjustable and can be securely locked in adjusted position by means of a very simple locking device. The coupling tends to strengthen the parts and dispenses with the necessity of loops.

SINGLETREE-COUPLING.—AMOS M. BARKER, Bloomington, Neb. Mr. Barker has devised an improved means for attaching singletrees to a doubletree, which means permit a more extended range of movement of the singletrees than is at present attainable. The pivotal connection between the singletrees and doubletrees is, moreover, rendered more durable, The singletrees can be raised and lowered relatively to the doubletrees, if desired.

Miscellaneous Inventions.

SPARK-ARRESTER.—MARTIN BROTHERS, Evergreen, Colo. The spark-arrester can be readily attached to the top of any smoke-stack, pipe, flue, or chimney. The arresting, collecting and escaping screen is constantly rotated by the natural or forced draft through the chimney, so that sparks, cinders, and escaping coal are caused to be conveyed to a receptacle in which the coal is collected and from which it is conducted back to the firebox. We have been assured that the device is very efficient in its operation.

LIFE-PRESERVER.—ZENUS C. ANGEVINE, Brooklyn, New York city. The inventor has devised a new life-preserver or jacket, having not only means for keeping a person afloat in the water, but also receptacles for holding food and drink, signaling devices, and instruments.

SHOE-LAST.—CHARLES C. TANNERT, Brooklyn, New York city. This shoe-last has hingedly-connected heel and toe sections. The toe is formed with a cavity in its rear face; and in the cavity a push-plate is mounted, engaged by a spring so that it tends to move rearward. A dog is mounted on a constant pivot in the cavity of the toe-section and has a pointed free end engaged by the push-plate, such point being situated above the pin, whereby to throw the free end of the dog downward into engagement with the heel. Thus a ready means is provided for removably holding the heel and toe-sections of a shoe-last extended.

HAT-FASTENER.—ELIZABETH S. SWANK, Wolcottville, Ind. The hat-holder comprises a frame designed to be attached to the inside of the crown of a lady's hat. The frame has guideways through which an elastic loosely extends. Looped hair-pins are secured at the ends of the elastic outside of the guideways. A hook on the frame is adapted to be engaged by the middle portion of the elastic. The device is always in proper condition for conveniently securing the hat in place, by simply taking hold of the loops of the hair-pins, drawing them outward, and finally passing the hair-pins into the hair to allow the elastic to draw the hair-pins firmly in position on the hair, releasing the hold on the loops.

KINETOSCOPE ATTACHMENT FOR STEREOSCOPES.—FRANK MONIOT and LOUIS GARCIN, Manhattan, New York city. The object of the invention is to provide a stereoscope so arranged that it may be used for viewing pictures in the usual manner and also for viewing "animated pictures"—that is, having an attachment by the operation of which the figures of a picture under view will have the appearance of moving. This attachment consists of a novel shutter which, when rapidly operated, causes the viewed figure apparently to move.

STEAM-JET TUBE OR FLUE-CLEANER.—WORTHINGTON H. INGERSOLL, Hamburg, N. J. At the larger end of a conical blower-head a steam-supply pipe is secured. On the exterior of the blower-head are spaced flanges. On the small end of the blower-head is a nozzle with a spiral rib formation extending along its inner side. The twists of the ribs give the steam-jet a spiral turn, so that the induced hot current of air will also assume a spiral twist and coact with the spiral steam-jet in order forcibly to loosen clogging soot.

DEVICE FOR MAKING LOOPS IN WIRE.—CHARLES R. HARTMANN, Manhattan, New York city. The purpose of the invention is to provide a device which can be carried in the pocket and which is especially adapted for forming eyes or loops at the ends of wire strings for musical instruments, but which can be employed with equally good results where an eye is required at the end of any piece or strand of wire. The device consists of a tubular body carrying a clamp and a forming-arm mounted to turn. This forming-arm is provided with a retaining section for forming a loop of wire, which loop is continued into the body for an engagement with the clamp.

INVALID-BED ATTACHMENT.—MRS. ANNA E. COUNTRYMAN, Marcus, Iowa. The invention provides a simple device by means of which a person can be lifted and removed from the bed when it is desired to rearrange the bedding. An arrangement is also furnished for supporting a person in a sitting position in the bed. At the head and foot of the bed horizontal tracks or rails are supported, on which standards are movable. A sling or hammock is placed under the invalid, and raised up by means of the standards, after which the hammock can be moved rapidly to one side on the rails, so that the bedding can be rearranged. The invalid can also be given a sponge bath without danger of soaking the bedding.

SIGN.—OTTO CAESAR, Manhattan, New York city. The invention relates to letters and designs which are attached to windows to form signs; and its object is to provide a sign that is adapted for attachment to

the inside of a pane of glass and is arranged to give a highly-ornamental effect. The letters can be readily fastened to the inside of the glass pane without destroying their concave appearance, at the same time permitting a cleaning of the window both inside and outside without danger of detaching the letters.

WRENCH.—JOHN J. BARCLAY, Elizabeth, N. J. The wrench comprises a shank with a fixed jaw, a movable jaw, and a retarding spring for the movable jaw. The shank and the opening in the movable jaw receiving the shank are so constructed that the movable jaw can be unobstructedly carried to or from the fixed jaw, and that the movable jaw will remain fixed on the shank as long as it is subjected to forcible engagement with a nut, pipe, or the like.

CABINET. — FREDERICK WADELL. Louisville, Ky. The purpose of the invention is to provide a cabinet for medicines and other articles. The cabinet is so constructed that it can be used as a writing or reading desk. Stationary receptacles are employed in conjunction with a revolving receptacle, which receptacles are so arranged that they may be compactly combined. The revolving receptacles contain an interior chamber not accessible to persons unfamiliar with the cabinet.

BOX.—JEAN H. KASSCHAU, Brooklyn, New York city. This box is a knockdown box so made that its several members can be rigidly and strongly connected without the use of nails, screws, hooks, or staples. The box can be quickly assembled and separated when it is desired to pack the several members closely together for reshipping or storage.

BOTTLE-CAP.—ALFRED L. BERNADIN, Evansville, Ind. Caps for whisky-flasks are ordinarily made of soft metal, with the result that the threads are often stripped when pressure is applied in turning the cap tightly upon the bottle-neck. The inventor has provided a novel form of cap having an inner shell of hard metal, which is threaded to fit the threads of the bottle-neck. An outer shell incloses the inner shell and forms a smooth cover for the cap. Thus a cheaper and more durable cap is provided than is otherwise possible.

BOOT-TREE.—MARY J. HALL, Aspen, Colo. The tree is composed of body sections provided in their inner faces with openings for bearing-pieces for a shaft and sleeve and for a pivot-shaft on an instep-block. This instep-block has its shaft held in the two sections; and the bearing-pieces for the shaft and sleeve have their trunnions held in their respective openings. A rocker is supported on the bearing-piece for the screw-shaft and has means for operating the instep-block. The body-sections are spread by a screw-shaft and retracted by a spring. A threaded sleeve is arranged to operate the rocker.

AERIAL WHEEL.—STEWART CAIRNCROSS, Grafton, N. D. This windwheel is designed to operate pumps, grain-separators, threshing-mills, dynamos, and other small machinery. The wheel comprises a hub, a peripheral frame, wires extending radially between these parts and across the frame diagonally; and a series of sails, composed of flexible material and attached to both the radial and diagonal portions of the wires, whereby they are held in the diagonal position. Each sail is held taut and flat in a plane which is transversely inclined at an angle of forty-five degrees.

Designs.

SCREW.—HERBERT E. KEELER, Manhattan, New York city. The head of the screw is formed with two notches at right angles to each other, instead of one. Thus a screw is provided which can be readily driven into place, since one notch is always in position for the screw-driver.

CLEANER FOR KITCHEN UTENSILS.—WALTER J. TURNBULL, New Orleans, La. The cleaner is a simple, convenient device for cleaning pots in which food has been cooked. Means are provided for holding a dish-rag and for scraping the interior of the utensil.

WATER-TANK CASING.—GEORGE BECKING, 12th Street and C. S. R. R., Chattanooga, Tenn. The front portion of the body of the tank has a central vertical depression or concave, and the projecting corners are convex. The top or cover has an ovolo molding provided with a row of beads on the under side.

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.

NEW BOOKS, ETC.

FLAME, ELECTRICITY, AND THE CAMERA. By George Iles. New York: Doubleday & McClure Company. 1900. 8vo. Pp. 398. Price $2.

This book is an attempt to briefly recite the chief uses of fire, electricity and photography, bringing the narrative of discovery and invention up to the close of 1899. As far as the book can, it traces man's progress from the cave man to the twentieth century scientists. It shows how progress has been accelerated by the electric current and the photographic ray. It is a most fascinating book and the story is told in the clearest possible language.

A HISTORY OF POLITICS. By Edward Jenks, M.A. New York: The Macmillan Company. 1900. 16mo. Pp. 174. Price 40 cents.

The book summarizes in a brief, popular form, the record of political action. Like other volumes of the Temple Primers, the subject is treated in a concise form and is admirably adapted for the use of the beginner.

TECHNOLOGISCHES LEXIKON. Handbuch fuer alle Industrien und Gewerbe. Redigert von Louis Edgar Andés. Large octavo. Part I. Vienna: A. Hartleben. 1900. Price per part, 70 cents.

A fitting companion to Hartleben's metallurgical and chemical dictionaries is this new technological lexicon. The first part, which we have just received, shows that the work will be as comprehensive and as thorough as its predecessors.

Business and Personal.

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.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

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.

(7223) J. V. McA. writes: There was a very heavy cloud and a downpour of rain accompanied by sharp lightning during which the Methodist Episcopal church was struck and somewhat damaged in its spire. The point of the spire is about 50 feet from the ground and covered with a case of sheet iron. There is no metallic connection with the ground. Directly under the spire, and running half way up is a gas pipe. Three men were working in the church and were unharmed, although two of them were very close to the pipe, one of them not more than 18 inches away. They saw an explosion at a brass fitting which was exposed, but felt no shock. The shingles with which the spire was sided were knocked off all along the one side and at the top where the shingles extended under the sheet iron cap, it looked as if the lightning had gone up instead of down. There was a terrific crash which, to some, seemed to be at a greater distance than the church, and to have been more severe than the one which struck the church. Could it have been that the cloud was charged positively and the earth negatively, and the restoration of the equilibrium, after the discharge, have caused the "fluid" to run up the spire and so have caused this damage? Some of us think so, as so many things seem to point that way. Does electricity ever do damage in rising from the ground? A. We do not know that the electric discharge takes place from + to —. It is conventional to regard it as doing so. Thompson says "No exact evidence exists as to the direction in which the current in a wire really flows." Many people see the lightning go up from the earth to the cloud rather than down. Since the flash lasts but a minute fraction of a second, the eye cannot determine the direction of the motion. We must consider that the impression of downward motion is subjective, and is due to the fact that a downward flow is more natural to us. In clear weather the atmosphere is usually plus to the earth. One observer found it minus but six times in fifteen years. But in stormy weather the sign changes very capriciously and frequently. In thunder storms the change is still more rapid, so that it is impossible to say whether the cloud at the moment of this flash was positive or negative to the earth, or whether the flash went up or down. It may have gone in either direction, or more probably it surged back and forth many times while the flash lasted. The description shows that the gas pipe was not in the path of the discharge. By induction it became charged with electricity, which made the flashes seen by the workmen at the same moment that the flash from the cloud passed by. All pointed objects under a thunder cloud become charged with electricity, and discharge it up toward the cloud, in streams which in the dark can be seen as brushes of light. This is similar to the brushes seen upon the points of an electric machine when it is working in the dark. One may see these brushes if near the top of a lightning rod when a shower is rising. This is what the men in the church saw on an intensified scale, because the grand discharge was going on so near the gas pipe. From what has been shown it is clear that a discharge of lightning will do equal damage in which ever direction it goes. It is the discharge which does the damage, and not any secondary restoration of equilibrium. The supposition of a secondary reaction is not necessary.

(7924) E R. asks: 1. What is the best method for preparing shellac for insulation on magnet wire? A. Dissolve gum shellac in alcohol, equal parts by weight of each. It will probably be easier and cheaper to buy the ordinary brown shellac from a painter. 2. Is the gage of iron and steel wire the same as copper? A. Yes. Ordinary wires of all metals are numbered by the same gage. Piano wire has its own set of numbers by a different gage. 3. What is the resistance of soft iron wire No. 20, per 100 feet? A. 6·1 ohms, very nearly. 4. How does iron compare with copper in resistance? A. Iron wire has 606 times as much resistance as a copper wire of the same size and length.

(7925) C. W. asks if you are required to get a license for a steam launch, if you do not use coal for fuel? A. Yes, on all navigable waters in which other vessels ply. The kind of fuel is not considered.

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JULY 17, 1900.

AND EACH BEARING THAT DATE.

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Car, convertible open and closed, F. Hoffer ... 653,958
Car coupling, C. Mehring ... 653,696
Car draft rigging, railway, H. H. Sessions ... 653,822
Car fender, G. B. Quarrier ... 653,694
Car lighting apparatus, casing for electric, W. F. Richards ... 653,885
Car loader, C. H. Gale ... 653,908
Car step, S. B. Fuller ... 653,769
Car window dust guard, D. E. Phillips ... 653,880
Carriage, motor, F. A. Perret ... 653,877
Cartridge primer, J. Gardner ... 653,953
Carving machine, H. Marles ... 653,813
Case. See Egg case.
Cattle, means for securing, C. F. Creamer ... 653,662
Chain wrench, G. W. Bufford ... 653,943
Checkrein attachment, G. E. Corey ... 654,110
Cheese cutter, W. G. Doty ... 653,988
Churn, A. G. Winslow ... 653,834
Clamp. See Sewing machine button clamp. Typewriter ribbon clamp.
Cleaner. See Cotton cleaner.
Clock, S. P. Thrasber ... 653,711, 653,712
Clock, electric, S. P. Thrasher ... 653,713
Coal bucket, H. B. Maddocks ... 654,117
Coal dumping apparatus, Phillips & Fleming ... 654,019
Coin controlled mechanism, coin exhibitor, J. M. Ricketts ... 653,947
Coin holder, C. L. Sledge ... 653,825
Collar supporter, apparel shirt, E. R. Gould ... 653,800
Column or pole, M. H. McInerney ... 653,752
Commutator segment, J. Burke ... 653,945
Compressing fibrous or other material, apparatus for, W. M. Holmes ... 653,735
Controller, W. M. Jewell ... 653,743
Conveyer switch, endless, M. M. Suppes ... 653,827
Cooker, steam, A. M. Artburs ... 654,046
Cooler. See Fluid cooler. Hot box cooler.
Cooling board, C. E. Windom ... 653,762
Cop, S. W. Wardwell, Jr ... 653,718
Corn shield, C. B. Hatfield ... 653,998
Cotton cleaner and feeder, seed, V. H. Talton ... 654,079
Counter skiving machine, W. C. Stewart ... 653,892
Counting board, C. J. E. Fleck ... 653,952
Coupling. See Air brake coupling. Car coupling. Pipe coupling. Thill coupling.
Coupling and ring, D. Heggie ... 653,912
Cranberry gatherer, B. Lumbert ... 654,013
Crate, collapsible shipping, Z. T. Stocks ... 653,972
Crate, egg, G. H. Sbort ... 653,705
Crate, folding, E. L. Gregory ... 654,061
Cream separator, Baird & Schellert ... 653,990
Crucible, combustion, P. W. Shimer ... 653,823
Crusher. See Stone or ore crusher.
Crushing ores, etc., machine for, S. W. Kimble ... 653,679
Cultivator attachment, H. T. Crosby ... 654,090
Cup and ball joint, E. D. Burkitt ... 653,728
Current motor, alternating, E. W. Brown ... 653,906
Curtain fixture, H. S. Hall ... 653,673
Cut off, automatic, Kittinger & Mottinger ... 654,009
Cutter. See Butter cutter. Cheese cutter.
Damper, heat or draft regulating, O. N. Anderson ... 654,045
Deborning knife, H. Harden ... 653,804
Dehydrating and mothproofing composition, G. R. Harrison ... 653,674
Dental articulator, H. Backstrom ... 654,109
Die press, triple, W. J. Gordon ... 653,955
Disinfecting block, F. Eden ... 653,989
Door bolt, W. T. Adams ... 654,106
Door, grain, J. E. Lisby ... 653,844
Door lock, Colletti & Colasanti ... 653,946
Drag, F. W. Chickering ... 653,658
Drill. See Grain drill.
Drill tool shaper, L. F. Nell ... 654,072
Drum, beating, Bates & Lutz ... 653,650
Drum, beating, J. W. Hilliker ... 653,676
Drying and cooling machine, G. S. Emerick ... 654,093
Dumb bell, E. Sandow ... 654,097
Dye and making same, olive cotton, E. Goebel ... 653,670
Dye, blue-green oxazin, Beyer & Schaar-Rosenberg ... 654,088
Dye, blue monoazo, P. Julius ... 654,064
Dye, blue-violet monoazo, P. Julius ... 654,065
Eccentric or gear, adjustable, I. E. Quist ... 654,020
Educating and training the eye and hand, device for, L. G. Beloud ... 653,838
Egg case, C. E. La Fleur ... 653,812
Electric cut out, H. P. Maxim ... 653,685
Electric machine, dynamo, W. M. Mordey ... 653,963
Electric meter, C. D. Haskins ... 653,806
Electric motor, D. C. Woodward ... 653,725
Electric switch, J. T. Robb ... 653,698
Electrical controller, E. H. Wise ... 653,857
Electrical distribution system, C. D. Anderson ... 653,784
Electrode, battery, G. Heidel ... 654,113
Electrode for electrolyzing apparatus, R. Moritz ... 653,933
Electrogalvanic battery, H. J. Brewer ... 653,763 to 653,765
Embroidering machine perforating device, M. Schoenfeld ... 653,782
Engine. See Gas engine. Gasoline engine. Oil engine. Rotary engine.
Engine igniters, magneto electric generator for gas, G. W. Henricks ... 653,957
Extractor. See Post extractor.
Eyeglass holder, C. F. Kabisch ... 654,005
Eyeglasses or spectacles, G. Lowres ... 653,831
Fabric. See Woven tubular fabric.
Fabric shaping machine, Parry & McClintock ... 653,846
Fare register, Ohmer & Tyler (reissue) ... 11,842
Faucet, self measuring, Allison & Bauer ... 653,835
Fence building apparatus, tension mechanism for, J. Sutliff, Sr ... 654,034
Fence joining tool, J. F. Wood ... 653,724
Fence machine, wire, G. P. A. Weisenborn ... 653,719
Fender. See Car fender.
Fibrous material, metal coated, J. H. Robertson ... 653,887
Fifth wheel, H. C. Swan ... 653,974
Filter, J. F. Ziegler ... 654,043
Filter, O. H. Jewell ... 653,737
Filter, granular bed, R. T. Weaver ... 653,759
Filter, metallurgical, F. H. Long ... 653,684
Filter, water, E. F. Stewart ... 654,033
Filtering material, N. Jacobsohn ... 653,809
Fireproof coverings for walls or ceilings, machine for making, P. Ryan ... 654,024
Fireproof shutter, Verdel & Saine ... 653,976
Flax cleaning and breaking machine, T. R. C. Crowell ... 653,663
Flue or chimney cap, F. Fickenschaw ... 653,732
Fluid cooler, Richard & Lennox ... 653,884
Fluid under pressure, means for transmitting, W. S. Halsey ... 653,802
Folding table, A. T. Smith ... 653,851
Foods from blood, making, J. W. C. Hamilton ... 653,956
Frogs, switches, etc., spring box for, W. Wbarton, Jr ... 654,039
Fumigating device, C. T. Kingzett ... 653,690
Furnace. See Gas furnace. Hot air furnace. Kiln furnace. Muffle furnace. Pair and sheet furnace, Retort furnace.
Fuse, electric, T. H. Brady ... 653,841
Fuse, projectile percussion, T. R. R. Ashton ... 654,108
Gage. See Water gage.
Galvanic battery, A. Heil ... 653,770
Game board back stop, H. L. Haskell ... 654,063
Garment supporter, J. D. Lewis ... 653,747
Gas engine, F. C. Olin ... 653,876
Gas furnace, regenerative, E. Derval ... 653,793
Gas generator, acetylene, E. S. Martindale ... 654,069
Gas generator, acetylene, Windbam & Fry ... 654,084
Gas machine, acetylene, W. J. Baulieu ... 653,651
Gasoline engine, F. J. Sproebnle ... 653,971
Gate. See Bridge gate. Railway gate.
Gate, T. Beard ... 653,981
Generator. See Gas generator.
Glass, conduit for molten, J. W. Sheppard ... 653,848
Glass, device for casting sheet, J. W. Sheppard ... 653,849
Glass, device for casting wire, J. W. Sheppard ... 653,850
Glycerin, purifying, E. A. Ruch ... 654,023
Governor, G. E. & C. W. Miller ... 653,815
Governor, steam engine, J. E. Kimble ... 654,007
Grain drill, C. L. Fowle ... 654,057
Grain drill disk attachment, Tolson & Schopp ... 654,037
Grain separator, E. E. McLin ... 653,777
Graphophone, A. C. Ferguson ... 653,667
Graphophone drive mechanism, O. E. Payne ... 654,018
Gun and cartridge holder, combination pocket, R. M. G. Phillips ... 653,779
Hammer, magazine, A. W. Savage ... 653,890
Hams, etc., machine for branding, R. D. Kinyon ... 653,915
Handles to vessels, attaching, W. A. Dunlap ... 653,863
Hanger. See Separable friction hanger. Shade hanger.
Harrow sulky attachment, L. D. Howard ... 654,000
Harvester safety lock, M. G. Morgan ... 653,817
Hat cabinet, L. M. Robinson ... 653,699
Hat fastener, H. De Tamble ... 653,950
Hat pinning machine, H. Robinson ... 654,022
Hay press, S. M. Bragg ... 653,789
Hay rake and stacker, A. H. Graves ... 654,059
Headlight, electric, J. W. G. Becker ... 653,982
Heating apparatus, Inderlied & Rumsey ... 653,867
Heating attachment, B. M. Pevey ... 653,878
Hog catcher, D. Svenson ... 653,973
Hoof clipper, H. Wolff ... 654,041
Hoop. See Barrel hoop.
Horse detacher, J. Rose ... 653,700
Horseshoe, W. Schultz ... 654,076
Hose patching or coupling clamp, A. G. Wilkins ... 654,040
Hot air furnace, A. W. Cram ... 653,927
Hot air furnace, J. P. Schaffer ... 653,820
Hot box cooler, Boggess & Hutchison ... 653,899
Huller. See Pea huller.
Hydroelectrotherapeutic apparatus, J. J. Sanger ... 653,708
Hygienic appliance for sound transmitter mouthpieces, T. R. Owen ... 654,096
Ice making plant, A. Ellis ... 653,666
Incandescent element, C. G. Richardson ... 653,696
Incandescent mantle support, A. Kitson ... 654,094
Indicator. See Mirror indicator.
Ink well, O. V. Farrell ... 653,990
Inking pad, H. H. Norrington ... 653,965
Inking pad, reversible, H. H. Norrington ... 653,964
Instruments of precision, attachment for, C. O. F. Schrottke ... 654,103
Ironing board, W. O. Bowman ... 653,839
Jar closure, G. H. Brabrook ... 653,840
Joint. See Cup and ball joint.
Journal box, Lewis & Godwin ... 654,116
Kiln furnace, F. R. Sellman ... 653,891
Knife. See Deborning knife.
Knob attachment, R. H. McHardy ... 654,102
Knob rose, door, W. E. Parker ... 653,693
Knockdown box, A. Duden ... 653,907
Lamp, electric arc, S. Bergmann ... 653,785
Lamp, electric arc, H. G. Carleton ... 653,984
Lamp socket, incandescent, Manchester & Brown ... 653,962
Lamps, manufacturing homogeneous mixtures for filaments of incandescent electric, K. Ochs ... 653,875
Lathe for turning irregular forms, M. G. Blue ... 653,786
Laundry rack, S. B. Waters ... 653,977
Lead into oil paste, converting white, G. Bischof ... 653,988
Leather, B. Trenckmann ... 653,829
Leather manufacture of, B. Trenckmann ... 653,830
Loader, baggage, Willis & Griffith ... 653,942
Lock. See Door lock. Seal lock.
Lock, Jentzen & Hoge ... 654,003
Locomotive, W. W. Gregg ... 654,060
Locomotive exhaust and means for regulating draft, W. H. Prendergast ... 654,074
Loom harness frame operating device, G. W. Stafford ... 654,077
Loom shuttle, J. C. Sergeson ... 653,969
Loom, upright, G. O. Draper ... 654,055
Low water alarm, electric, F. Leadbeater ... 654,067
Manhole cover, T. P. Greger ... 653,909
Measuring instrument, K. O. F. Schrottke ... 654,104
Meats, coating, J. Mitchell ... 654,118
Meat bands, wrought, T. J. Bray ... 653,904
Meat bands, forming wrought, T. J. Bray ... 653,903
Meat bending machine, T. J. Scott et al ... 653,704
Metal shearing machine, B. Wesselmann ... 654,082
Metallic parts together, fastening, J. A. Young ... 654,042
Meter. See Electric meter.
Milking machine, cow, M. J. Cushman ... 654,091
Mill motor mechanism, C. J. Weston ... 654,083
Mine cages or lifts, clutch mechanism for, R. Schulz ... 653,940
Mirror indicator for amplifying movements of bodies, A. Pollak ... 653,881
Motor. See Current motor. Electric motor.
Mucilage stand, E. S. Raff ... 653,695
Muffle furnace or oven, L. H. W. Regout ... 653,819
Music leaf turner, S. Cunningham ... 653,731
Nail machine, J. Atkins ... 654,047, 654,048
Nail or tack driver, G. W. Hobbs ... 653,772
Needle, L. A. Roberts ... 653,886
Nozzle, pipe, F. Ibert ... 653,677
Nut, C. H. Smith ... 653,852
Nut lock, O. A. Norlund ... 653,891
Oil burner, W. H. Wilder ... 653,963
Oil cake sacking machine, A. Fredrickson ... 654,058
Oil container attachment, Clayton & Persinger ... 653,985
Oil engine, V. V. Torbensen ... 653,894
Oil or other vessel and receptacle, L. E. Bultez ... 653,944
Ore separator, centrifugal, A. Dasconaguerre ... 653,792
Packing, W. Black ... 653,983
Packing for air compressor or other tandem cylinders, M. Bulkley ... 653,859
Packing semifluid substances, means for, C. Webjornsen ... 653,760
Pair and sheet furnace, J. E. Reeves ... 653,756
Paper, etc., manufacture of subsurface drying, S. Crump ... 653,791
Paper stock refining engine, M. P. Van Ryzin ... 653,876
Parcel carrier attachment, C. J. Miller ... 654,015
Pea huller and cleaner, E. D. Morris ... 653,874
Pegs, machine for making shoe, J. & G. E. M. Lewis ... 653,611
Pen, fountain, G. S. Parker ... 653,818
Pen holder and extractor, combined, T. M. Smith ... 654,098
Pencil holder and penknife, combined, A. Hofstetter ... 653,807
Pencil, lead, P. A. Hagy ... 653,733

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