# Special.

## AN OPINION CHEERFULLY GIVEN.

From their relation to society, the clergyman of a growing denomination, the minister of a congregation the pastor of a flock, naturally feel great sympathy for the afflicted. Hence, when the truly pious priest finds a certain remedy is no humbug, but does afford genuine reliable relief, he does not hesitate to give to the world an honest opinion of it.

The following is from one of the most faithful missionaries ever sent to Siam:

"DRS. STARKEY & PALEN: I cheerfully give you my name as a reference for inquirers as to the merits of the Compound Oxygen Treatment. After having been so greatly benefited by the use of this Treatment, I should deem it an act of the deepest ingratitude to withhold my name from a remedy which is so effectual in healing and removing the pains, diseases, and infirmities which our fellow creatures are suffering, or are liable to. With the deepest gratitude for all your kindness, I remain your

true Oxygen friend, J. H. CHANDL "CAMDEN, N. J., 573 Lime Street, 29th Oct., 1885."

A Treatise on Compound Oxygen, containing a history of the discovery and mode of action of this remarkable curative agent, and a large record of surprising cures in consumption, catarrh, neuralgia, bronchitis, asthma, etc., and a wide range of diseases will be sent free. Address DRS. STARKEY & PALEN, 1529 Arch Street, Phila-

## Business and Personal.

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

Graphite Lubricating Co., Jersey City, N. J. Graphite bushings and bearing, requiring no grease or oil. Hartford drill chucks. 3 sizes. Hold to ¼ in., ½ in. and % in. Cushman Chuck Co., Hartford, Conn.

Accurate Counting Machines for all kinds of machine ery. 10.000 and 100.000 sizes. Send for circulars. G. R. D. Hubbard, New Haven, Conn.

Had ten years' experience handling agents, and wish exclusive control of articles of merit for U.S. Address Mr. Hull, 381 Canal St., N. Y.

Second-hand engine and boiler for sale cheap. One non-condensing walking beam engine, cylinders 20 x 36 inches, in good condition; also a drop flue boiler, 8 ft. x 28 ft., 16 riveted flues (14-12 inch and 2-20 inch). For further particulars address P. M. Wise, Superintendent Willard Asylum for the Insane, Willard, N. Y.

Press for Sale-Quick acting. Hole in bed 8x5 punches to center of 13 in. sheet: 2% in. shaft; also four spindle Drill. A few second-hand engines in first-class condition. B. W. Payne & Sons, Elmira, N. Y.

For the latest improved diamond prospecting drills address the M. C. Bullock Mfg. Co., 138 Jackson St.

Graphite Bushings .- Put them on all loose pulleys.

The Railroad Gazette, handsomely illustrated, published weekly, at 73 Broadway, New York. Specimen copies free. Send for catalogue of railroad books.

The Knowles Steam Pump Works, 113 Federal St., Boston, and 93 Liberty St., New York, have just issued a new catalogue, in which are many new and improved forms of Pumping Machinery of the single and duplex, steam and power type. This catalogue will be mailed free of charge on application.

Link Belting and Wheels. Link Belt M. Co., Chicago Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Woodworking Machinery of all kinds. The Bentel & Margedant Co., 116 Fourth St., Hamilton, O.

Nickel Plating.—Sole manufacturers cast nickel an odes, pure nickel salts, polishing compositions, etc. \$100 "Little Wonder." A perfect Electro Plating Machine. Sole manufacturers of the new Dip Lacquer Kristaline Complete outfit for plating, etc. Hanson, Van Winkle & Co., Newark, N. J., and 92 and 94 Liberty St., New York.

Iron Planer, Lathe, Drill, and other machine tools of modern design. New Haven Mfg. Co., New Haven, Conn.

Supplement Catalogue.—Persons in pursuit of information of any special engineering, mechanical, or scientific subject, can have catalogue of contents of the Sci-ENTIFIC AMERICAN SUPPLEMENT sent to them free. The Supplement contains lengthy articles emoracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Timber Gaining Machine. All kinds Wood Working Machinery. C. B. Rogers & Co., Norwich, Conn.

Curtis Pressure Regulator and Steam Trap. See p. 253 Power, 113 Liberty St., N.Y. \$1 per yr. Samples free. Billings' Drop Forged Machinists' Clamp and Stee Clamp. Billings & Spencer Co., Hartford, Conn.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York. Friction Clutch Pulleys. D. Frisbie & Co., N.Y. city.

Machines, with latest imp Fdry. Mach. Co., Ansonia. Conn. Send for circular.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N.Y. See illus. adv., p.28. Band saws, with tipping table. All kinds woodworking machinery. Rollstone Machine Co., Fitchburg, Mass. Iron and Steel Wire, Wire Rope, Wire Rope Tramways. Trenton Iron Company, Trenton, N. J.

Send for new and complete catalogue of Scientific Books for sale by Munn & Co., 361 Broadway, N. Y. Free on application.

# NEW BOOKS AND PUBLICATIONS.

THE AMERICAN GLOSSARY OF ARCHITECTURAL TERMS.

The Clark & Longley Co., of Chicago, have issued a useful dictionary for architects, builders, and others. Mr. George O. Garnsey is the author and compiler, and the work contains the definition of over 3,000 terms used in the building trade, some of which are accompanied with well executed engravings. This work is furnished in a substantial and ornamental leather binding, and will no doubt meet with a large sale among architects.

PLORATIONS ON THE WEST COAST OF FLORIDA AND IN THE OREECHOBEE
WILDERNESS. By Angelo Heilprin.
Philadelphia, 1887. Wagner Free Institute of Science. Pp. vi., 134.

The late William Wagner, a citizen of Philadelphia, is the founder of the institute that bears his name. Since 1855 it has been incorporated. During Mr. Wagner's life his interest in it was personal and unceasing, and dying, he left it well endowed as a permanency, to carry on the work of giving free lectures and carrying on original researches in science. Professor Heilprin, who, by his contributions to recent goological history, notably in the International Science Series, has won considerable reputation, was intrusted with the charge of an expedition to the Florida peninsula. In the present report the account of his work is given, together with illustrations and identifications of the fossil shells. The plates of the shells are produced by autotype, and are beautiful examples of such work. The entirereport, on heavy paper with wide margins, has the aspect of an edition de luxe. The general conclusions as to the history of the Florida peninsula are of much interest and novelty. Professor Heilprin pronounces it to belong exclusively to the tertiary and post-tertiary periods, and hence to be the youngest portion of the United States. Its growth he declares to be almost entirely due to sedimentary causes and upheaval. The hypothesis of a coral formation of the entire peninsula is unhesitatingly rejected. The northern half of the State represents a deep-sea formation, while deposition from shallower waters is indicated for the southern territories. Upheaval seems to have been very gradual and even, as little disturbance of the strata can be discerned. A plea for evolution is drawn from the fossils discovered, and relics of ancient man are noted as having been found on Sarasota Bay. In addition to the plates of shells, a few landscape plates of the regions explored give variety to the book. It is altogether, both in matter and form, a credit to Professor Heilprin and to the Wagner Institute.

\* \* Any of the above books may be purchased through this office. Send for new catalogue just published. Address Munn & Co., 361 Broadway, N. Y.



#### 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.

In quiffles not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all, either by letter or in this department, each must take his turn.

Special Written Information on matters of

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.

Booksreferred to promptly supplied on receipt of

Minerals sent for examination should be distinctly marked or labeled.

(1) F. E. O. -Enameled writing pads are made by using bleached shellac and borax dissolved in water. Kremnitz white is then rubbed up with a little water glass, and the whole worked into a thin paste, which is spread upon the paper with a stiff brush. The paper is then steamed in a chamber at a temperature of 248°, or a pressure of 15 lb., which fuses the shellac and makes the surface waterproof. To make the surface smooth, it should be passed through a steam

(2) W. N. G. asks: What is the thick ness of the metal around the powder chamber of a 15 inch gun? And what pressure per square inch would throw a 100 lb. projectile one mile? Also, what amount of powder would produce the above result? A. The thickness of metal of guns depends largely upon the material used and the power required. In steel guns the thickness is about equal to the diameter of bore The elevation of the gun and strength of powder, whether quick or slow burning, and the length of the gun are all elements in computing pressure and amount of powder required. We refer you for further information to a valuable table of the weight and power of modern guns, in Scientific American Supplement, No. 583, and on steel guns, gunpowder, etc., in Scien-TIFIC AMERICAN SUPPLEMENT, No. 589; also on the new 110 tonguns, in Scientific American, April 16, 1887. You will find in Chambers' "Practical Mathematics," under the head of projectiles, simple and easy computations for all conditions of gun practice.

(3) G. O.—There is no satisfactory method of camera or polyopticon projection with objects in same position with image. The double glasses interfere with the field and the brightness of the image. For illustrations of camera lucida, see Scientific AMERICAN SUPPLEMENT, Nos. 393, 380, 420.

(4) R. W. S.-A test of 300 lb. pressure on linen hose, determined by plugging a 50 ft. length at one end and applying a gauge, is not high for the best qualities of such hose. You might easily have eached such a pressure in your hose with 120 lb. of steam in the engine, the pump cylinder having a corresponding smaller area than the steam cylinder. We cannot say how far small leaks might have indicated that less pressure was exerted in the bose than that shown by the gauge, without more exact details; but if the leaks were trifling, you probably had substantially the pressure indicated by the gauge.

(5) R. J. K. desires: 1. A receipt for making a varnish to be used on a paper check. Something that will dry quickly, and will protect the signature. A. The only satisfactory varnish for your purpose is naturally a shellac varnish; but, judging from the specimen sent, a poor quality has been used. You

TRANSACTIONS OF THE WAGNER FREE INSTITUTE OF SCIENCE. VOL. I. EXgood white shellac. 2. How to remove mildew and dirt spots from a rattan carriage body. A. Try Labarraque's solution or bleaching fluid for this purpose. 3. What kind of varnish can I use on it protect it? A. Use a good wearing body varnish, and give it plenty of time to dry.

> (6) O. M. H. writes: 1. In drilling a hole in the earth for oil or natural gas, the drill and all irons attached thereto become strong magnets, so that a common pocket knife will adhere and hang suspended. What is the cause? A. It has long been known that striking a steel rod endwise will magnetize it. If itis hard, it will retainits magnetism. Theold fashioned fire irons, when constantly hardled and thrown into the corner of the fireplace, have been known to become magnetic. The drill point of your boring tool is of steel, hardened. The rod becomes magnetic by the end shock, and the steel end tends to retain it. 2. Can steel cast into tools like the blades of house shears be tempered after they are finished and ready to be put together? If so, how is it done? A. Steel cast into articles of cutlery, if of the proper carbon temper, may be hardened in the usual way. You cannot tell the hardening properties of an otherwise unknown quality of steel without a trial. If the steel is too low in carbon, it can be casehardened.

## TO INVENTORS.

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

## INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

July 12, 1887,

#### AND EACH BEARING THAT DATE.

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

Ammunition, apparatus for handling, S. Seabury. 366,34

Alarm. See Burglar alarm. Electrical alarm.

Ammunition, apparatus for handling, S. Seabury. 366,348	Lubin
Ash can, H. Mortenson	Electric circuits, circuit controller for, Byllesby
Axle bearing, car, Hawkins & Wilkins	& Lange
Axle boxs, mould for, C. E. Candee	Electric circuits, safety strip for, O. B. Shallen- berger
Axle, car, S. L. Denney	Electric conductor, G. Westinghouse, Jr 366,361
Axle car, C. E. Candee	Electric converter, H. M. Byllesby 366,376
Axle clip for vehicles, E. Partridge 366,425	Electric distribution, automatic regulator for, W.
Axle, vehicle, J. M. Brosius	Stanley, Jr
Bake pan, W. Hagerty 366,478	Electric generators, regulator for self-exciting
Bale tie, wire, D. H. Mathias 366,635	alternate current, O. B. Shallenberger 366,349
Baling press, A. Wickey	Electric lights, key socket for incandescent, F. L.
Baling presses, power mechanism for, G. Johnson 366,397	Pope et al
Barrel skid, A. U. Grummann 366,626	Electric lights, mast arm for, F. H. Parker 366,603
Bath. See Copying bath.	Electric meter, W. Stanley, Jr 366,266
Bed, folding, B. F. Farrar	Electric motors, automatic regulator for, W. Stanley, Jr
Bicycle, Yost & McCune	Electric switch, P. Lange
Bicycle treadle, R. T. Torkelson	Electric switch, Macrae & Tavener 366,634
Bicycles, clutch mechanism for, Yost & McCune 366,288	
Binders, sheaf carrier for, S. D. Lee 366,327	Electrical conduits, laying continuous, A. C.
Blackboard and writing desk, combined, O. M.	Chenoweth 366,457
Mitchell	
Blank feeding device, automatic, Marsh &	Electrical converter, G. Westinghouse, Jr. 366,362, 366,544
Church	Electrical distribution, system or circuit for,
Blast furnace, E. Walsh, Jr	
Blocker and tablet, A. K. Owen	Electricity, apparatus for measuring, J. Caude-
Board. See Ironing board.  Boiler. See Sectional boiler. Tubular boiler.	ray
Bolt, A. J. Hardenbergh	Elevator gate, A. U. Grummann 366,625
Book, conductor's trip, A. R. Gustafson 366,579	Elevator wells, door guard for, O. L. Davis 366,460
Box. See Axle box. Music box.	Engine. See Compound engine. Dental engine.
Boxes, machine for constructing, Wakeman &	Steam engine. Traction engine. Wind en-
Crocker	gine.
Brake. See Car brake. Wagon brake.	Engines, igniting apparatus for gas and petro-
Brick, composition of, W. Rennyson 366,609	leum, Schiltz & Quack 366,346
Brick kiln, Kehoe & Zilker	Engravers' tool or scraper, A. Bonniol 366,297
Bridles, crown piece loop and clasp for, E. C.	Envelopes or other articles, apparatus for apply-
Richards	ing postage stamps, adhesive labels, and the
Bridles, short stop blinder for, A. P. R. Hanks 366,313	like to, Ede & De Bondini
Bucket, sap, W. Forshee	Escape, carriage, C. H. Averberg
Buggy boot, T. E. Stevens	Explosive compound, C. W. Volney 366,281
Buggy boot, T. E. Stevens.       366,270         Bung, O. Sowers.       366,434	Explosive compound, C. W. Volney
Buggy boot, T. E. Stevens.       368,270         Bung, O. Sowers.       366,434         Burglar alarm, Wade & Burrus.       366,537	Explosive compound, C. W. Volney       366,281         Eyeglass holder, M. Riggs       366,347         Eyeglasses or spectacles, L Fox       366,471
Buggy boot, T. E. Stevens.       366,270         Bung, O. Sowers.       366,434	Explosive compound, C. W. Volney
Buggy boot, T. E. Stevens.       368,270         Bung, O. Sowers.       366,434         Burglar alarm, Wade & Burrus.       366,537         Burner. See Gas burner. Lamp burner.       Vapor burner.         Bustle, C. C. Carpenter.       366,378	Explosive compound, C. W. Volney       366,281         Eyeglass holder, M. Riggs       366,341         Eyeglasses or spectacles, L Fox       366,437         Fan or blower, S. J. Voden       366,531         Farrier's tool, L G. Pollard       366,602         Faucet and automatic gas valve, C. C. Morris       366,337
Burgy boot, T. E. Stevens.       386,237         Bung, O. Sowers.       366,434         Burglar alarm, Wade & Burrus.       366,537         Burner. See Gas burner. Lamp burner.       Vapor burner.         Bustle, C. C. Carpenter.       366,378         Bustle, J. Hosford.       396,217	Explosive compound, C. W. Volney       366,348         Eyeglass holder, M. Riggs       366,344         Eyeglasses or spectacles, L. Fox       366,471         Fan or blower, S. J. Voden       366,535         Farrier's tool, L. G. Pollard       366,627         Faucet and automatic gas valve, C. C. Morris       366,237         Faucet can, J. Marshall       366,232
Burgy boot, T. E. Stevens.   388,270	Explosive compound, C. W. Volney       366,281         Eyeglass holder, M. Riggs       366,342         Eyeglasses or spectacles, I. Fox       366,471         Fan or blower, S. J. Voden       366,582         Farrier's tool, I. G. Pollard       366,602         Faucet and automatic gas valve, C. C. Morris       366,232         Faucet can, J. Marshall       366,232         Feed rack, J. R. Logan       366,412
Buggy boot, T. E. Stevens.       368,270         Bung, O. Sowers.       366,424         Burglar alarm, Wade & Burrus.       366,537         Burner. See Gas burner. Lamp burner.       Vapor burner.         Bustle, C. C. Carpenter.       366,378         Bustle, J. Hosford.       366,217         Bustle, T. P. Taylor.       305,276         Butter or lard cutter, C. D. Cannon.       366,567	Explosive compound, C. W. Volney       366,281         Eyeglass holder, M. Riggs       366,342         Eyeglasses or spectacles, L Fox       366,347         Fan or blower, S. J. Voden       366,532         Farrier's tool, L G. Pollard       366,602         Faucet and automatic gas valve, C. C. Morris       366,232         Feed rack, J. R. Logan       366,412         Fence guard, T. Dockum       366,208
Burgy boot, T. E. Stevens.       386,270         Bung, O. Sowers.       366,434         Burglar alarm, Wade & Burrus.       366,537         Burner. See Gas burner. Lamp burner.       Vapor burner.         Bustle, C. C. Carpenter.       366,378         Bustle, J. Hosford.       366,217         Bustle, T. P. Taylor.       305,276         Butter or lard cutter, C. D. Cannon.       366,567         Button, F. J. Edwards.       386,467	Explosive compound, C. W. Volney       366,348         Eyeglass holder, M. Riggs       366,344         Eyeglasses or spectacles, L. Fox       366,471         Fan or blower, S. J. Voden       366,535         Farrier's tool, L. G. Pollard       366,535         Faucet and automatic gas valve, C. C. Morris       386,235         Faucet can, J. Marshall       366,236         Feed rack, J. R. Logan       366,436         Fence guard, T. Dockum       366,236         Fence post, W. Gepford       366,578
Burgy boot, T. E. Stevens.       388,270         Bung, O. Sowers.       366,437         Burglar alarm, Wade & Burrus.       366,537         Burner. See Gas burner. Lamp burner.       Vapor         burner.       366,378         Bustle, C. C. Carpenter.       366,378         Bustle, J. Hosford.       396,217         Bustle, T. P. Taylor.       366,276         Butter or lard cutter, C. D. Cannon.       366,487         Button, F. J. Edwards.       366,447         Button, H. McDougall       366,419	Explosive compound, C. W. Volney       366,381         Eyeglass holder, M. Riggs       366,341         Eyeglasses or spectacles, I. Fox       366,471         Fan or blower, S. J. Voden       366,535         Farrier's tool, I. G. Pollard       366,607         Faucet and automatic gas valve, C. C. Morris       366,237         Faucet can, J. Marshall       366,236         Feed rack, J. R. Logan       366,412         Fence guard, T. Dockum       366,266         Fence post, W. Gepford       366,576         Fiber digester, J. H. Brown       366,556
Buggy boot, T. E. Stevens.   388,270	Explosive compound, C. W. Volney       366,281         Eyeglass holder, M. Riggs       366,347         Eyeglasses or spectacles, I. Fox       366,471         Fan or blower, S. J. Voden       366,532         Farrier's tool, I. G. Pollard       366,602         Faucet and automatic gas valve, C. C. Morris       366,236         Faucet can, J. Marshall       366,236         Feed rack, J. R. Logan       366,412         Fence guard, T. Dockum       366,412         Fence post, W. Gepford       366,576         Fiber digester, J. H. Brown       366,576         Fiber, treating vulcanized, H. W. Morrow       366,341
Burgy boot, T. E. Stevens.   \$36,427	Explosive compound, C. W. Volney       366,284         Eyeglass holder, M. Riggs       366,344         Eyeglasses or spectacles, I. Fox       366,471         Fan or blower, S. J. Voden       366,535         Farrier's tool, I. G. Pollard       366,535         Faucet and automatic gas valve, C. C. Morris       366,236         Faucet can, J. Marshall       366,236         Fence track, J. R. Logan       366,426         Fence guard, T. Dockum       366,206         Fence post, W. Gepford       366,576         Fiber digester, J. H. Brown       366,576         Fiber, treating vulcanized, H. W. Morrow       366,341         Fibrous material, disintegrating, J. H. Brown       366,557
Buggy boot, T. E. Stevens.   388,270	Explosive compound, C. W. Volney       366,281         Eyeglass holder, M. Riggs       366,347         Eyeglasses or spectacles, I. Fox       366,471         Fan or blower, S. J. Voden       366,532         Farrier's tool, I. G. Pollard       366,602         Faucet and automatic gas valve, C. C. Morris       366,236         Faucet can, J. Marshall       366,236         Feed rack, J. R. Logan       366,412         Fence guard, T. Dockum       366,412         Fence post, W. Gepford       366,576         Fiber digester, J. H. Brown       366,576         Fiber, treating vulcanized, H. W. Morrow       366,341
Burgy boot, T. E. Stevens.       384,270         Bung, O. Sowers.       366,437         Burglar alarm, Wade & Burrus.       366,537         Burner. See Gas burner. Lamp burner.       Vapor         burner.       366,378         Bustle, C. C. Carpenter.       366,278         Bustle, J. Hosford.       396,217         Buttle, T. P. Taylor.       366,567         Butter or lard cutter, C. D. Cannon.       366,567         Button, F. J. Edwards.       366,447         Button, H. McDougall.       368,419         Can. See Ash can.       Candlestick, miner's D. B. Janes.       366,320         Car brake, M. A. McCarron.       396,418	Explosive compound, C. W. Volney       366,348         Eyeglass holder, M. Riggs       366,344         Eyeglasses or spectacles, I. Fox       366,535         Farn or blower, S. J. Voden       366,535         Farrier's tool, I. G. Pollard       366,627         Faucet and automatic gas valve, C. C. Morris       366,237         Feucet can, J. Marshall       366,237         Feed rack, J. R. Logan       366,412         Fence guard, T. Dockum       366,527         Fence post, W. Gepford       366,576         Fiber digester, J. H. Brown       366,556         Fiber, treating vulcanized, H. W. Morrow       366,556         Fibrous material, disintegrating, J. H. Brown       366,657         Fifth wheel, H. C. Shriner       366,657
Burgy boot, T. E. Stevens.   368,270	Explosive compound, C. W. Volney       366,348         Eyeglass holder, M. Riggs       366,344         Eyeglasses or spectacles, I. Fox       366,471         Fan or blower, S. J. Voden       366,535         Farrier's tool, I. G. Pollard       366,627         Faucet and automatic gas valve, C. C. Morris       366,237         Feucet can, J. Marshall       366,238         Fence guard, T. Dockum       366,428         Fence guard, T. Dockum       366,578         Fiber digester, J. H. Brown       366,578         Fiber digester, J. H. Brown       366,537         Fibrous material, disintegrating, J. H. Brown       366,537         Fifth wheel, H. C. Shriner       366,637         Fitering air, apparatus for, J. C. Christopher       366,538         Fire kindling apparatus, J. F. Hager       366,538         Fire kindling apparatus, J. F. Hager       366,338
Burgy boot, T. E. Stevens.   388,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   368,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   386,270	Explosive compound, C. W. Volney       366,348         Eyeglass holder, M. Riggs       366,344         Eyeglasses or spectacles, I. Fox       366,535         Farrier's tool, I. G. Pollard       366,535         Faucet and automatic gas valve, C. C. Morris       366,235         Faucet and, J. Marshall       366,232         Feed rack, J. R. Logan       366,402         Fence guard, T. Dockum       366,502         Fence post, W. Gepford       366,575         Fiber digester, J. H. Brown       366,567         Fibrous material, disintegrating, J. H. Brown       366,567         Fifth wheel, H. C. Shriner       366,557         Firearm, magazine, A. Burgess       366,558         Fire kindling apparatus, J. F. Hager       366,558         Fishway, W. H. Rogers       366,552         Floor cramp, A. S. Bayer       366,446
Burgy boot, T. E. Stevens.   384,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   368,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   386,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   386,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   388,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   386,270	Explosive compound, C. W. Volney 366,286 Eyeglass holder, M. Riggs 366,347 Eyeglasses or spectacles, I. Fox 366,477 Fan or blower, S. J. Voden 366,537 Farrier's tool, I. G. Pollard 366,537 Faucet and automatic gas valve, C. C. Morris 366,237 Faucet can, J. Marshall 366,237 Feed rack, J. R. Logan 366,238 Fence guard, T. Dockum 366,238 Fence post. W. Gepford 366,578 Fiber digester, J. H. Brown 366,578 Fiber digester, J. H. Brown 366,557 Fiber treating vulcanized, H. W. Morrow 366,547 Filtering air, apparatus for, J. C. Christopher 366,557 Filtering air, apparatus for, J. C. Christopher 366,557 Fire kindling apparatus, J. F. Hager 366,558 to 366,558 Fire kindling apparatus, J. F. Hager 366,558 Fire place, W. J. Hutchinson 366,557 Fishway, W. H. Rogers 366,257 Floor cramp, A. S. Bayer 366,446 Floors of theaters and halls, device for raising and lowering, G. G. Adams 366,257 Foot rest, J. W. Tilley 366,457 Fork, rake, etc., J. T. Bridges 366,771 Frame. See Bed frame.
Burgy boot, T. E. Stevens.   388,270	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   386,429	Explosive compound, C. W. Volney
Buggy boot, T. E. Stevens. 386,270 Bung, O. Sowers. 366,437 Bungla alarm, Wade & Burrus. 366,537 Burner. See Gas burner. Lamp burner. Vapor burner. Bustle, C. C. Carpenter. 366,378 Bustle, J. Hosford. 396,217 Bustle, T. P. Taylor. 306,276 Butter or lard cutter, C. D. Cannon. 366,567 Button, F. J. Edwards. 366,467 Button, H. McDougall. 366,419 Can. See Ash can. 366,419 Car brake, M. A. McCarron. 366,418 Car brake, M. A. McCarron. 366,418 Car brake, automatic, E. Beales. 366,448 Car, dumping, B. F. Bean. 366,295 Car heater, C. M. Smith. 366,513 Car, platform, C. M. Smith. 366,513 Car, railway, J. W. Post. 366,250 Car, platform, C. M. Smith. 366,513 Car, railway, J. W. Post. 366,281 Car, sleeping, E. W. Cutler. 366,381, 366,382 Car wheel, G. Palmer. 366,381 Car wheel, G. Palmer. 366,381 Cars, apparatus for heating railway, J. H. Ballard, Jr. 366,445 Cars, grooved girder rails for street, C. A. Richards. 366,507	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   384,270	Explosive compound, C. W. Volney
Buggy boot, T. E. Stevens. 386,279 Bung, O. Sowers. 366,434 Burglar alarm, Wade & Burrus. 366,537 Burner. See Gas burner. Lamp burner. Vapor burner. Bustle, C. C. Carpenter. 366,378 Bustle, J. Hosford. 366,217 Bustle, T. P. Taylor. 386,527 Butter or lard cutter, C. D. Cannon. 366,567 Button, F. J. Edwards. 366,487 Button, H. McDougall. 366,419 Can. See Ash can. Candlestick, miner's D. B. Janes. 366,320 Car brake, M. A. McCarron. 386,419 Car brake, M. A. McCarron. 386,419 Car brake, automatic, E. Beales. 386,430 Car brake, automatic, E. Beales. 386,430 Car heater, C. M. Smith. 366,517 Car lighting apparatus, C. R. Arnold. 386,220 Car, passenger, J. W. Post. 366,250 Car, patform, C. M. Smith. 366,510 Car, railway, J. W. Post. 366,250 Car, railway, J. W. Post. 366,250 Car, sleeping, E. W. Cutler. 366,381, 366,582 Car wheel, G. Palmer. 366,602 Car wheel, G. Palmer. 366,602 Car wheel C. Palmer. 366,602 Cars, grooved girder rails for street, C. A. Richards. 366,520 Cars, ining for railway, C. A. & C. M. Smith. 366,520 Cars, ventilating railway, C. A. & C. M. Smith. 366,520 Cars, ventilating railway, C. A. & C. M. Smith. 366,520 Cars, ventilating railway, C. A. & C. M. Smith. 366,520	Explosive compound, C. W. Volney
Buggy boot, T. E. Stevens. 384,270 Bung, O. Sowers. 364,434 Burglar alarm, Wade & Burrus. 364,537 Burner. See Gas burner. Lamp burner. Vapor burner. Bustle, C. C. Carpenter. 366,378 Bustle, J. Hosford. 366,217 Bustle, T. P. Taylor. 365,567 Butter or lard cutter, C. D. Cannon. 366,567 Button, F. J. Edwards. 386,449 Can. See Ash can. Candlestick, miner's D. B. Janes. 366,320 Car brake, M. A. McCarron. 366,448 Car brake and starter, T. Sanders. 366,448 Car brake, automatic, E. Beales. 366,448 Car, dumping, B. F. Bean. 366,295 Car heater, C. M. Smith. 366,517 Car lighting apparatus, C. R. Arnold. 366,292 Car, passenger, J. W. Post. 366,292 Car, passenger, J. W. Post. 366,293 Car, railway, C. M. Smith. 366,518 Car, railway, C. M. Smith. 366,519 Car, sepping, E. W. Cutler. 366,381, 366,382 Car wheel, G. Palmer. 366,692 Cars, apparatus for heating railway, J. H. Ballard, Jr. 366,445 Cars, grooved girder rails for street, C. A. Richards. 366,520 Cars, washstand for boudoir and other, W. D.	Explosive compound, C. W. Volney
Buggy boot, T. E. Stevens. 386,420 Bung, O. Sowers. 366,437 Bung, O. Sowers. 366,537 Burner. See Gas burner. Lamp burner. Vapor burner. Bustle, C. C. Carpenter. 366,378 Bustle, T. P. Taylor. 366,217 Bustle, T. P. Taylor. 366,567 Butter or lard cutter, C. D. Cannon. 366,567 Button, F. J. Edwards. 366,447 Button, H. McDougall. 366,419 Can. See Ash can. 366,419 Can brake, M. A. McCarron. 366,418 Car brake, M. A. McCarron. 366,418 Car brake, automatic, E. Beales. 366,448 Car, dumping, B. F. Bean. 366,220 Car heater, C. M. Smith. 366,518 Car, rallway, J. W. Post. 366,220 Car, passenger, J. W. Post. 366,250 Car, patform, C. M. Smith. 366,518 Car, rallway, C. M. Smith. 366,518 Car, rallway, C. M. Smith. 366,518 Car, rallway, C. M. Smith. 366,518 Car, sleeping, E. W. Cutler. 366,381, 366,382 Car wheel, G. Palmer. 366,381 Cars, spooved girder rails for street, C. A. Richards. 366,445 Cars, enventilating railway, C. A. & C. M. Smith. 366,520 Cars, ventilating railway, C. A. & C. M. Smith. 366,520 Cars, washstand for boudoir and other, W. D. Maun. 366,413	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   384,270	Explosive compound, C. W. Volney
Buggy boot, T. E. Stevens. 384,270 Bung, O. Sowers. 366,434 Burglar alarm, Wade & Burrus. 366,537 Burner. See Gas burner. Lamp burner. Vapor burner. Bustle, C. C. Carpenter. 366,378 Bustle, J. Hosford. 366,217 Bustle, T. P. Taylor. 336,217 Buttler or lard cutter, C. D. Cannon. 366,567 Button, F. J. Edwards. 386,449 Can. See Ash can. Candlestick, miner's D. B. Janes. 366,320 Car brake, M. A. McCarron. 366,418 Car brake and starter, T. Sanders. 366,448 Car brake, automatic, E. Beales. 366,448 Car, dumping, B. F. Bean. 366,295 Car heater, C. M. Smith. 386,517 Car lighting apparatus, C. R. Arnold. 366,292 Car, passenger, J. W. Post. 366,292 Car, passenger, J. W. Post. 366,293 Car, railway, C. M. Smith. 366,518 Car, railway, C. M. Smith. 366,510 Car, sepping, E. W. Cutler. 366,381, 366,382 Car wheel, G. Palmer. 366,602 Car wheel replacer, J. E. Cameron. 366,303 Cars, apparatus for heating railway, J. H. Ballard, Jr. 366,445 Cars, grooved girder rails for street, C. A. Richards. 366,507 Cars, washstand for boudoir and other, W. D. Mann. 366,520 Cars, washstand for boudoir and other, W. D. Mann. 366,431 Cargo discharging apparatus, S. Murray. 386,451 Cars darge bow, J. A. Sampseil. 386,501	Explosive compound, C. W. Volney
Burgy boot, T. E. Stevens.   384,270	Explosive compound, C. W. Volney

Cart, dumping, N. F. Reilly	366,428 366,938
Cash received, apparatus for checking and recording, S. Firth	
Casting car wheels, method of, W. Wilmington (r) Casting metal, device for, R. A. Register	10,850
Catamenial sack, A. V. Robinson	366,256
Chain wrench, W. H. Brock	366, <b>4</b> 51
ing chair. Chair attachment, E. H. Taliaferro	266 595
Chair iron, tilting, E. J. Schumacher	366,262
Chuck, G. L. Jones	
Clip. See Axle clip. Clock winding mechanism, A. Robinson	26.6 A9u
Closer. See Door closer. Cloth stretching machine, clip for, P. Scheider	
Coloring matter formed by the action of parani- trosodiphenylamines on phenols or oxycar-	900,491
bonic acids, blue, E. Ullrich	366,356
diphenylamine on phenols or oxycarbonic acids, blue, E. Ullrich	966 257
Combination press, L. H. Taylor	364,526
Concrete mixer, J. Lundie	366,591
Copying bath, W. Mendenhall	
the same, P. Lange	
Corn and cane cutter, J. Albertson	366,533
Corset, S. M. Warren	
Coupling. See Hose coupling. Rope or cable coupling. Thill coupling.	
Creamer, centrifugal, Howell & Pooler	
Cutter. See Butter or lard cutter. Corn and cane cutter. Stubble cutter.	
Cyclometer, O. B. Beach	
ess	
Diethylmethylthionin blue, production of, E. Ullrich	366,640
Digger. See Potato digger.  Dimethyldiethylthionin blue, production of, E.	
Ullrich	<b>36</b> 6,639
for, J. M. Krieser  Door closer, E. H. Brown	
Door fastening, E. A. P. Campbell	366,377
Doubling and winding machines, stop motion for, Dronsfield & Gilbody	366,465
Draught regulator, duplex automatic, N. M. Mann	<b>366,4</b> 93
Dredging apparatus, Edwards & Kelly	366,468
Drilling machine, J. Bailey	366,355
Lubin	
& Lange Electric circuits, safety strip for, O. B. Shallen-	
berger.  Electric conductor, G. Westinghouse, Jr	
Electric converter, H. M. Byllesby Electric distribution, automatic regulator for, W.	
Stanley, Jr.  Electric generators, regulator for self-exciting	366 <b>,52</b> 3
alternate current, O. B. Shallenberger Electric lights, key socket for incandescent, F. L.	366,349
Pope et al	366,606 366,603
Electric meter, W. Stanley, Jr	3 <b>6</b> 6,2 <b>6</b> 8
Stanley, Jr	366,267 366,4 <b>0</b> 7
Electric switch, Macrae & Tavener	366,634 366,212
Electrical conduits, laying continuous, A. C. Chenoweth	
Electrical converter, A. Schmid	366,347
Electrical converter, G. Westinghouse, Jr. 366,362, Electrical distribution, system or circuit for,	
Byllesby & Shallenberger Electricity, apparatus for measuring, J. Caude-	
ray Elevator. See Wagon elevator.	
Elevator gate, A. U. Grummann	
Engine. See Compound engine. Dental engine. Steam engine. Traction engine. Wind en-	
gine. Engines, igniting apparatus for gas and petro-	900 940
leum, Schiltz & Quack	
ing postage stamps, adhesive labels, and the	000 574
like to, Ede & De Bondini	366,365
Explosive compound, C. W. Volney Eyeglass holder, M. Riggs	366,345
Eyeglasses or spectacles, L Fox	366,535
Farrier's tool, L G. Pollard	366,237
Faucet can, J. Marshall	5 <b>6</b> 6,412
Fence guard, T. Dockum	366,578
Fiber digester, J. H. Brown	366,341
Fibrous material, disintegrating, J. H. Brown Fifth wheel, H. C. Shriner	366,637
Filtering air, apparatus for, J. C. Christopher Firearm, magazine, A. Burgess	366,563
Fire kindling apparatus, J. F. Hager	366,393 366,630
Fishway, W. H. Rogers	366,257
Floors of theaters and halls, device for raising and lowering, G. G. Adams	366,290
Foot rest, J. W. Tilley	366,437
Fork, rake, etc., J. T. Bridges	
Furnace grate, E. Boutcher	
Gauge. See Locomotive tire gauge. Galvanometer, H. B. Cox	•
Galvanometer, electric, P. Lange	366,409
Game, J. M. Hughes	366,318
Gas burner, hydrocarbon, F. Jarecki	