RECENTLY PATENTED INVENTIONS. Apparatus for Special Purposes.

PROCESS OF TREATING FLOUR.-J. M WILLIAMS, Guthrie, Oklahoma Ter. In this patent the invention is in the nature of a process for whitening, aging, disinfecting, increas ing the absorption of, and otherwise improving flour. It consists in subjecting the flour while in a state of agitation to the gases formed by the electrolysis of water or other liquids or compounds capable of generating oxygen.

Electrical Devices.

COMPRESSED-AIR SUPPLY FOR ELEC TRIC VEHICLES .- R. LEB. OWEN and R. O. LE BARON, Pontiac, Mich. The invention relates to fluid-pressure brakes used on electric street cars and other vehicles; and its object is to provide a device for automatically supplying the compressed air required for working the fluid-pressure brakes, the device being acluated during the time the electric power is shut off in stopping the vehicle, thus utilizing the power ordinarily wasted.

Of Interest to Farmers.

INCUBATOR-BROODER.-C. H. SPERLE, Boundbrook, N. J. In this case the objects are to secure as nearly as possible the actual conditions obtaining in the operation of hatching eggs naturally. Mr. Sperle has discovered that the hatching-bird in addition to heating, rolling, and cooling the eggs also clutches them, while the air circulates around them without drafts, an operation not performed by any incubator heretofore known. A further object is to protect the young birds the first sixty days of their lives.

HAND-PLOW PROPELLER.-L. W. AVANT. Atascosa, Texas. One of the chief objects of this inventor is to enable the point at which the propelling force is exerted to be shifted vertically in order that the plow attachment may be adjusted to accommodate operators or plowmen of different heights; secondly, the attachment is so constructed that the force applied by the operator may be varied in its relation to the plow as conditions require; thirdly, the invention includes means for applying the attachment to the plow-handles, which are separated more or less from each other.

Of General Interest.

ARTIFICIAL TOOTH .- F. L. PRIEST. Dallas. Texas. In this patent the purpose of the invention is the provision of a solid or practically solid surface upon the back face of teeth in order to hold the faces firmly to a gold bridge or to a plate at all points, especially at the tips of the teeth.

REST DEVICE .- R. W. SCHROEDER, Bloomington, Ill. The aim in this instance is to provide a rest device more especially designed for use on the backs of chairs, school-desks, couches and like pieces of furniture and arranged to properly support the back and sides of the person occupying the chair, to avoid undue fatigue and allow natural respiration, and to prevent deformities of the chest and shoulders.

CONDENSER FOR VACUUM-PANS .- J. F UTRILLA, Jersey City, N. J. This invention has reference particularly to improvements in condensers used in connection with sugar-machines, an object being to provide a simple means for drawing gases from the condenser and dispensing with the vacuum-pump usually employed.

FLY-CATCHER .- J. SCHNELL, Macon, Ga. In this instance the invention is an improvement in that class of fly-catchers in which a continuous cord or strip of fibrous material is drawn through a body of tacky liquid and is subsequently cut off in suitable lengths for use in various localities.

CORNER-IRON FOR SIDING-JOINTS.-J SIMPSON, Veedersburg, Ind. The purpose of the improvement is to provide corner irons or plates for the siding-joints of frame buildings, which corner-irons will render the joints impervious to water at the corners of the house, particularly such houses as are sided with shingles or clapboards.

Machines and Mechanical Devices.

оск, Americus, Ga. Mr. Warnock's invention Metal Novelty Works, 43 Canal Street, Chicago. relates to improvements in motor-actuated fans. especially fans operated by a spring-actuated motor. The purpose is to provide a device wherein the fan-blades or fly-brushes will operate with vibratory motion, enabling the device to be placed upon a table or support quite close to a person, without inconveniencing him. Means hold the fan or brush carrying arms in operating connection with a rocking support, together with means for imparting a cushioned vibratory motion to the racking supnort from a shaft, and also provide ready lateral and vertical adjustment for the fan-carrying arms. The claim is that the inventor's working model has proved entirely successful in operation.

Railways and Their Accessories.

VALVE .- W. T. HARRISON, Savannah, Ga. In this case the invention refers to improve ments in valves for controlling the outflow of water from railroad-tanks, an object being

to provide a valve so constructed that it may be readily removed for repairs without first running the water out of the tank, and, further, to provide a simple means for preventing the rattling or jumping of the valve.

CABLE-TRACTION SYSTEM.-G. W. SAN-DERS, Gadsden, Ala. In this patent the invention has reference to cable-traction systems, and has for its principal object the provision of an effective means for operating cars in either direction along a track. Mr. Sanders' system is very simple in construction and operation and subjects the cable to but slight wear.

RAILWAY-SWITCH .- M. BARNES, Syracuse, N. Y. In this case the invention relates to improvements in switches, particularly for use on street-railways, an object being to provide a simple switch that can be moved by a motor $man\ without\ stopping\ the\ car\ to\ \mbox{\bf direct}$ the carin any one of three directions.

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

Business and Personal Wants.

READ THIS COLUMN CAREFULLY,—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry. MUNN & CO.

Marine Iron Works. Chicago. Catalogue free-Inquiry No. 6002.—For information concerning he manufacture of fish hooks.

AUTOS .- Duryea Power Co., Reading, Pa.

Inquiry No. 6003. -For makers of electrically driven hammers for riveting steel posts and plates.

"C. S." Metal Polish. Indianapolis. Samples free. Inquiry No. 6004.-For makers of small air-cooled marine and stationary gasoline motors.

Perforated Metals, Harrington & King Perforating Co., Chicago.

Inquiry No. 6005.—For machinery required in the manufacture of furniture.

Handle & Spoke Mchy. Ober Mfg. Co., 10 Bell St., tion: How is nickel-plating to be made?

of soda, or so-called liquid glass.

Sawmill machinery and outfits manufactured by the

Lane Mfg. Co., Box 13, Montpelier, Vt. Inquiry No. 6009.--For parties engaged in malleable casting work, brass work, etc.

American inventions negotiated in Europe. Wenzel & Hamburger, Equitable Building, Berlin, Germany. Inquiry No. 6010.—For manufacturers of carpenters' tools.

Agents wanted to sell the Ryede puzzle. Sample by mail for 10c. Ryede Specialty Works, Rochester, N. Y.

Inquiry No. 6011.-For makers of prism glass. The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company Foot of East 138th Street, New York.

Inquiry No. 6012.—For manufacturers of cork-cutting machinery.

Patented inventions of brass, bronze, composition or construction placed on market. American Brass Foundry Co., Hyde Park, Mass.

Inquiry No. 6013.—For makers of cheap, small, water-cooled gasoline engine castings with working drawings included.

For Sale or on Royalty.-Three United States and Canadian patents on heating stoves and furnaces; or would like to incorporate. F. G. Pioch, Provo, Utah.

Inquiry No. 6014. - For manufacturers of machinery for sawing and quarrying sand stone.

NEW INVENTION.—Receipt for shoe polish, the best ever invented. For sale by chemist. Address Chemist, Box 773, New York.

Inquiry No. 6015.—For the manufacturers of the Mitchell gasoline automobile.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broad way New York. Free on application

Inquiry No. 6016. -For manufacturers of adressing machines.

In buying or selling patents money may be saved Life Building, Buffalo, New York.

Inquiry No. 6017.—For manufacturers of life preservers for use on steamers.

We manufacture anything in metal. Patented arti-MOTOR-CONTROLLED FAN.—C. S. WAR- cles, metal stamping, dies, screw mach. work, etc.,

Inquiry No. 6018.-For makers of stills.

WANTED.—Back numbers: Automobile, October, 1980; Motor Vehicle Review, 1902; Motor Age, 1900; Motor Age. 1901. Mrs. C. F. MacDermot, Hotel Touraine, Bos-

Inquiry No. 6019 .- For manufacture of aerated

South Canal Street, Chicago.

Bagwell, 4340 Papin Street, St. Louis, Mo.

inted sofa pillow covers.

Inquiry No. 6023.—For importers of tea and secondary from the negative to the positive softee.



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. his turn

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 sympled on receipt of

Books referred to promptly supplied on receipt of

(9461) G. W. T. says: Seeing that your publication answers almost anything in the scientific line, I would be pleased to know if you can tell me of some substance that a magnet will not draw through. A. Magnetic attraction takes place through all excepting magnetic substance. Practically, iron is the

only available magnetic screen. If a magnetic needle is inclosed in iron, exterior magnetism will affect it but little. The iron should be rather thick—at least a quarter of an inch. The reason for the screening action of iron is that magnetic lines of force pass through iron more easily than through other materials. When iron lies in their path they take to it, and do not pass through the adjacent air. A

needle inclosed in iron is thus screened from magnetism. (9462) K. A. E. asks: Will you kindly answer me in the Notes and Queries of the

SCIENTIFIC AMERICAN the following ques-For plating with nickel, the double sulphate Inquiry No. 6006.—For makers of carts, trucks, of nickel and ammonia is almost universally etc. for heavy service. used. The salt is dissolved by boiling, taking INDEX OF INVENTIONS If it is a paper tube we can supply it. Textile Tube 12 to 14 ounces to 1 gallon of water. The Company, Fall River, Mass. density of the electrolyte should be 6.5 deg. Inquiry No. 6007.-For manufacturers of silicate to 7 deg. Baumé. Cast anodes are preferred. These should be large enough to reach to the Wanted.—Addresses of importers and consumers of bamboo. D. F. Mitchell, Jacksonville, Fla.

bamboo. D. F. Mitchell, Jacksonville, Fla.

battom of the work, and have a surface larger than the work to be plated. The voltage may Inquiry No. 6008.—For manufacturers of slot be from 3.5 to 6 volts, while the current should be from 1 to 2 amperes for every 37.5 square inches to be plated. For full instructions we would refer you to Watts' "Electro-Plating," which we can furnish for \$4.50, or to Langbein's "Electro-Deposition of Metals," price, Van Horne's "Modern Electroplating," price \$1, is a good, though small, book, which

may be a sufficient guide.

(9463) A. E. F. says: 1. How can I determine when the condenser of an induction coil is of proper size? What is the effect of one too large? A. An induction coil gives its greatest length and intensity of spark only when the condenser is of the proper size. The spark is diminished if the condenser is either too large or too small. 2. I have a small spark coil of the following dimensions: Length inside of end pieces, 3 inches; diameter of core, 9-16 inch; primary winding, two layers No. 18; secondary winding, 3 ounces No. 36 cotton-covered wire; diameter to outside of secondary winding, 1 11-16 inches. I have been able to obtain a ½-inch spark with this coil, and would like to know how to proceed to construct one of say twice the spark length of this one. My reason for asking this is that I seem to have acquired, with a small amount of secondary wire, the results which are obtained with 34 of a pound of No. 36 silk-covered wire according to the usual directions for making such coils, but I do not know how to proportion the dimensions for a larger coil on the same lines in order to obtain the best results. A. The proportioning of coils is the result of experience. Of course, there are formulas and time gained by writing Chas. A. Scott, 719 Mutual for expressing the data of construction, but we do not think the ordinary mechanic employs them. To make a coil to give a spark twice as long as another coil, you will not be required to make the dimensions twice as great, but something less than this. All di-mensions should be increased. A set of coils All difrom the same shop will usually present a symmetrical increase of power. 3. Should I increase the length, the diameter of the core, use a larger size wire for the primary and increase the diameter of the secondary winding, and in what proportions? Also, if this ad-Manufacturers of patent articles, dies, metal stamp- mits of a direct answer, what is a practical ing, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 18 pared to its length? A. Different manufacturers differ in designing coils, and it would Inquiry No. 6020.—For a machine for printing on be difficult, if not impossible, to reduce the otherwish handles. FOR SALE - Patent on rotary engine, explosive, ratio of length to diameter. 4. If the out-Patent No. 759.953. The only rotary explosive engine side end of the secondary wire is prevented that confines the gasoline in the explosion chamber till from coming near any part of the primary cirit has great force before it strikes the piston. D. V. cuit, is there any tendency to break down the Insulation between the primary and secondary Inquiry No. 6021.—For manufacturers of bottle, windings? If so, why? A. There is a tencorks. insulation between the primary and secondary D. A. Beaton, Practical Lead Burner, P. O. Box 334 dency to break down the insulation of the sec-Woburn, Mass. Fifteenyears' experience.

Inquiry No. 6022.—For dealers in stamped and most widely separated. The reason for this tinted sofa pillow covers.

end proportionately to the number of turns

NEW BOOKS, ETC.

ELECTRICITY AND MATTER. By J. J. Thomson, D.Sc., LL.D., Ph.D., F.R.S. New York: Charles Scribner's Sons, 1904. 8vo.; pp. 162. Price, \$1.25.

This book contains six lectures given by Prof. Thomson in May of last year, at Yale University. In them he discussed the bearing of the recent advances made in electrical science on our views of the constitution of matter and the nature of electricity. The relation between matter and electricity, which has been a characteristic feature of electrical researches, such as the study and discovery of Roentgen rays and radium, is here very thoroughly discussed. The book contains chapters on the "Representation of the Electric Field by Lines of Force"; "Electrical and Bound Mass"; "Effects Due to the Acceleration price.

Minerals sent for examination should be distinctly marked or labeled.

price year of Faraday Tubes"; the "Atomic Structure of Electricity"; the "Constitution of the Atom"; and "Radio-activity and Radio-active Sub-

> ATLANTE DI MACCHINE E CALDAIE CON TESTO E NOTE DI TECNOLOGIA. Per Salvatore Dinaro. Milan: Ulrico Hoepli, 1903. 16mo.; pp. 80.

This is a useful handbook on steam boilers, steam engines, gages, and various kinds of steam machinery. It is abundantly illustrated with 112 full-page diagrams.

RICETTARIO INDUSTRIALE. By Ing. I. Ghersi. Milan: Ulrico Hoepli, 1904. 16mo.; pp. 703.

This is a book of valuable receipts for all trades, arts, and industries. It is arranged in alphabetical order, and, besides the receipts, there are a number of physical and chemical tables of value.

DIE WETTERKRÄFTE DER STRAHLENDEN PLANETENATMOSPHÄREN. Von C. Marti, Sekundar-Lehrer in Nidau, Schweis. Nidau: Buchdruckerei E. Weber, 1904. Pp. 40.

For which Letters Patent of the United States were Issued for the Week Ending

September 13, 1904 AND EACH BEARING THAT DATE

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

	Adding machine, S. H. Drysdale	700 000
	'Advertising display means I W May	769,892 769,868
	Air brake coupling, automatic, F. M. Caron Air brake mechanism for cars, automatic,	770,160
	*** Daurage	(69.838
	W. Sauvage Air brake mechanism for railway cars, auto-	=00.000
	Amusement apparatus C V Johnson	769,839
	Artillery, naval or military, G. C. J. Topp	770 200
	Atomizer, I. Q. Gurnee	770,071 770,200 769,741
	Air brake mechanism for railway cars, automatic, W. H. Sauvage Amusement apparatus, C. V. Johnson Artillery, naval or military, G. C. J. Topp. Atomizer, I. Q. Gurnee Automatic regulator, W. S. Moody Axle box lubricating packing holder, car, J. S. Patten Bagging machine, D. L. Whittle	770,017
	Axle box lubricating packing holder, car, J. S. Patten S. Patten Bagging machine, D. L. Whittle Baling press, F. G. Davies Baling press, J. Kemp Battery plate mold, Wood & McMullan Bed bottom, N. R. Murphy Bedclothes clamp, A. Grandjean	770 010
	Bagging machine, D. L. Whittle	770,242 769,783
	Baling press, F. G. Davies	769,692
	Baling press, J. Kemp	769.826
	Battery plate mold, Wood & McMullan	
	Bed bottom, N. R. Murphy	770,600
	Bell. P. C. Arnold	770,003 770,211 769,850
	Belt guide, automatic, G. S. Thompson	769.850
	Belt or chain, link, C. M. Lewis	770,081 770,063
	Belting, T. Gingras	770,063
	Bicycle coaster brake and nub, S. N. Rapp.	769,918 769,940
	Bill head or statement sheet and envelop	109,940
	W. H. Bassinger	769,933
	Binder and lock therefor, H. E. Dade	769,857 770,021
	Binder, loose leaf, C. R. Nelson770,020,	770,021
	Block See Tramway block	769,686
	Block signal system F R Corev	769,983
	Bluing stick, L. N. Iuppenlatz	769,800
	Bed bottom, N. R. Murphy Bedelothes clamp, A. Grandjean Bell, P. C. Arnold Belt guide, automatic, G. S. Thompson Belt or chain, link, C. M. Lewis Betting, T. Gingras Bicycle coaster brake and hub, S. N. Rapp. Bicycle pedal toe clip, C. F. Cooper. Bill head or statement sheet and envelop, W. H. Bassinger Binder and lock therefor, H. E. Dade. Binder, loose leaf, C. R. Nelson. 770,020, Binder, temporary, J. B. Barlow Block. See Tramway block. Block signal system, F. B. Corey Bluing stick, L. N. luppenlatz Boiler furnace, steam, D. L. Shaffer Bolt anchor, H. B. Newhall Book, lodge account, and receipt, J. C. Scog- gins	769,800 770,122 770,022
	Bolt anchor, H. B. Newhall	770,022
	gins	770 190
	Bookcase, sectional, J. Mauro	769.705
	Boring machine, C. W. H. Blood	770,156
	Bottle, J. Fitzpatrick	769,894
	Bottle, non-refillable, W. V. K. Ayres	770,120 769,705 770,156 769,894 769,979
	Rottle or jar closure G T Road	770,095
	Bottle stopper, non-refillable, J. B. Ross	770.117
	Bolt anchor, H. B. Newhall Book, lodge account, and receipt, J. C. Scoggins Bookcase, sectional, J. Mauro Boring machine, C. W. H. Blood Bottle, J. Fitzpatrick Bottle, non-refillable, W. V. K. Ayres Bottle, non-refillable, P. McGrath Bottle or jar closure, G. T. Reed Bottle stopper, non-refillable, J. B. Ross Bottle washing apparatus, M. Feuerstein Branding iron, F. France Breathing apparatus, C. W. Madsen. Brick drying plant, G. Pagel Brick mold, E. W. Seamans Bridge signal, L. Allen Broiler, F. F. Hendrickson Brooding and nursing apparatus, stock, G. Elsold Bucket, bair, R. H. Paar Breath brances M. F. Zeller	769,960 770,117 769,733 769,735 769,755 770,186
	Branding iron, F. France	769,735
	Breathing apparatus, C. W. Madsen	769,755
	Brick mold E W Soomang	770,186 769,771
	Bridge signal. L. Allen	770.036
i	Broiler, F. F. Hendrickson	770,036 769,745
	Brooding and nursing apparatus, stock, G.	
1	Eisold	769,942
	Ruckle harness M E Zeller	769,874 770,035
	Building block molding press. G. H. Denton.	769,819
	Bunsen burner. T. Smith	769,806
	Eisold Bucket, bair, R. H. Paar Buckle, harness, M. E. Zeller Building block molding press, G. H. Denton. Bunsen burner. T. Smith Burning apparatus, pulverulent fuel, W. F. Wolfe	5 00 0 5 1
	Putton blanks from shalls, machine for man	769,974
	ufacturing. C. Schroenfer	769,922
	Button, cuff, F. E. Farnham	769,732
•	Wolfe Button blanks from shells, machine for manufacturing, C. Schroepfer Button, cuff, F. E. Farnham Cabinet, McCrory & Vogel Cake or doughnut cutter, G. W. Baier. Calculating machine, C. M. Furman, Jr., Calipers, C. E. Lamb. Camera, L. Nesemann Camera, Lens carriage clamp for photo-	770,093
ł	Cake or doughnut cutter, G. W. Baier	760,932
!	Caliners, C. E. Lamb	770,061 769.9 68
١	Camera, L. Nesemann	769,9 68 770,100
١	Cameras. lens carriage clamp for photo- graphic, F. B. Case	
١	graphic, F. B. Case	770,220 769,927
١	Can cleans F Ginet	769,927 769,899
١	Can closure, F. Ginet	
١	dise. J. C. Kimsey	770,075
	Candy forming machine. B. B. Bowers	769,887
١	Canned substances, processing, H. C. Gard-	760 797
	Can or receptacle for articles of merchan- dise. J. C. Kimsey Candy forming machine. B. B. Bowers. Canned substances, processing, H. C. Gardner Car chair, G. W. Chambers Car construction, H. F. Vogel Car coupling, O. H. Grupe Car door opening and closing mechanism, J. R. Carmer	769,737 770,161
	Car construction, H. F. Vogel	770,161 770,132
1	Car coupling, O. H. Grupe	770,004
•	Car door opening and closing mechanism, J.	500 000
•		769,687
	Smith	770,125
	Car stake cap. A. A. McIntosh	770,125 770,096
•	Smith Car stake cap. A. A. McIntosh Car stopper, R. R. Williams Car, streets C. B. Price	769,926 770,1 07
İ	Uar, street, U. B. Price	710,107

September 24, 1904.	
Car, tank, G. I. King 749,900 Car, tank, A. Stucki 761,522 Car unloading device, Sheehan & Johnson 645,522 Carpet stretcher, J. P. Gallagher 678,753 Carpet stretcher, F. Fererro 762,753 Carrier. See Work carrier. Cartons or folding boxes, nuachine for making, L. S. Burbank 769,953 Carving machine, G. A. Baghurst 769,953 Casting apparatus, bar or rod, J. O. E. Trotz 770,153 Cement kiln, F. M. Haldeman 769,742 Chain, drive, C. E. Whitney 769,973 Cheese cutter, G. W. Martin 769,823 Cheese cutter, G. W. Martin 769,823 Cheese cutting machine, M. Foran 769,993 Cheese manufacture of Roquefort, J. A. 760,003	
Carrier. See Work carrier. Cartons or folding boxes, machine for making, L. S. Burbank	
Cement Kiln, F. M. Haldeman 769,742. Chain, drive, C. E. Whitney 769,971 Cheese cutter, G. W. Martin 769,822. Cheese cutting machine, M. Foran 769,993. Cheese gage, W. H. Frank 770,054. Cheese, manufacture of Roquefort, J. A.	
Trillat (10),55 (Chuck, drill, C. R. Pascucillo	8
Circuit breaker, time limit, E. M. Hewlett. 770,00° Circuit protecting device, E. W. Rice, Jr. 769,96° Clothes drier, T. M. Anderson 770,03° Club or baton, E. J. Trout 769,88°	
Clutch for variable speed counter shafts, I. M. Foster	
position, H. F. T. Erben	-
Color binding mediams, production of, C. H. Voigt Voigt Composite structure, H. A. Crane 769,857 Composite structure, H. A. Crane 769,857 Composition of matter, E. C. Many 779,887 Condenser, O. S. Still 770,727 Conveyor, H. H. Bighouse 770,727 Conveyor rollers, F. N. Merrill 770,727 Copy press, M. J. Foyer 769,730 Copy press, M. J. Foyer 769,730 Corn fork, hot, F. Peters 770,167 Compling, J. Gapp 770,167 Crustein, W. A. Phillips R. C. Griman 770,122 Cuttivator, rolling disk, H. B. Furr 770,122 Cuttivator tooth, O. E. Johnston 769,733 Current machinery, alternating, A. S. McAllister 770,002 Current machinery, alternating, A. S. McAllister 770,003	
Copying press, M. J. Foyer. 763,820 Corn fork, hot, F. Peters 770,40 Coupling, J. Gapp 763,830 Crushing or pulverizing mill, E. C. Grinar, 65,742 Crutch, W. A. Phillips 770,022 Cultivator, rolling disk, H. B. Furr. 765,821	
Cultivator tooth, O. E. Johnston	
Curtain fixture, C. A. Roth 768,743. Curtain txture, W. H. Forsyth 762,833. Curtain pole, A. E. Hunter 762,633. Curtain rod support, J. F. Fanning 762,833. Curtain stop, R. E. Wageley 783,632. Pamper regulator, G. R. Smith 763,844.	FD SH =
Dental appliance, F. C. Rood. 77 (414) Dental instrument, J. Mills 7(2),758 Dental tool, R. M. Chase 770,102 Dentistry, D. T. Hill 770,003 Display rack, C. L. Taylor 769,848 Display stand, Doize & Ducomos 60,472	
Dobby and Jacquard device, combined, 11. Reufer	
Neireiter 770,019 Dredges, lower tumbler and ladder end for clevator, Knex & Ferris 770,011 Drier. See Clothes drier. 769,752 D Laping mechanism, T. Lawson 769,752 D Laping receptacle, W. McMahon 770,097	T
Looman 769,808 Dye and making same, azo, P. Julius et al. 770,177 Dynamo, M. C. Burt 769,815	ano eral Doe useo
Dynamo regulator, G. S. Neeley 770,098 Dynamo voltage regulator, G. S. Neeley 770,099 Ear, E. L. Williams 770,208 Edge tool, J. E. Eaton 769,858 Electric apparatus, vapor, M. von Reckling-	of puface Pin
hausen 770,109 Electric circuit cut out or fusc, O. Fenerlein, 769,995 Electric lighting device, O. Gergaesevies 769,739 Electric machines, brush and brush holder for magneto, E. B. Jacobson 770,175 Ehectric meter, T. Duncan 769,986 to 769,988 Electric motor brake, L. A. Tirrill 770,028 Electric motor control system, multiple, W. 769,849	\$15.0 cati 291.7
Electric motor control system, multiple, W. Baxter, Jr. 769,812 Electric motors, controlling, Kennedy & Pocock 770,073 Electric switch, Keller & Kadow 769,698 Electrical connector, P. 11. Fielding 770,054 Electrical distribution system, W. L. R. 700,000	•
Electrical distribution system, W. L. R. Emmet 769,991 Electrical indicator, W. J. Forrest, Jr. 770,230 Electrical switch, H. W. Cox 770,166 Electrode, battery, Wood & McMullan 770,140 Electrode, wasta in case or vapor electric do.	
Electrical indicator, W. J. Forrest, Jr. 769,993 Electrical switch, H. W. Cox. 770,166 Electrode, battery, Wood & McMulian. 770,146 Electrode waste in gas or vapor electric devices, replenishing, P. H. Thomas 770,198 Electrody tie meter, H. I. Wood 770,033 Electromedical appliance, S. H. Linn 770,014 Electropating machine, J. Bailey 770,148 Energy, means for protection against reversal of L. Wilson 769,973	d _c
Engine gas and air mixer, gas, M. F. Bates, 770/212 Fraser, H. O. Keferstein	Sen new
Fan motor, rotary, J. W. Miller 770,086 Fastener, J. D. Stirckler 769,777, 769,780, 769,887 Feed water purifier and filter. W. Doughetty 769,792 Fence post device, I. M. Wanner 769,967	
Fish trap, O. Melbye	Rur
Fine cutter, J. W. Faessler 770,032 Fine stopper and cap, combined, H. J. Saecker 769,837 Fly paper, receptacle for shipping and expenser T. D. Vestrond	
Flying machine, G. W. Thompson 769,721 Folding box or crate, S. G. Williams 770,138 Foot rest, detachable, A. O. Warren 770,205 Friction device, L. A. Shepard 769,841 Full picker, J. H. Widdrombe 769,722 Funnace, T. G. Selleck 770,025 Furnace charging apparatus, blast, W. R.	
Furnace thes, apparatus for making deeply corrugated, W. Rainforth	Th
Furnace for the combustion or destruction of refuse, shaft, H. Ochwat	
Garment supporter clasp, G. E. Prentice 769,875 Gas or vapor electric apparatus, P. C. Hewitt	At al Sulp
Gate, W. I. Cox	2120
Governor attachment, I. Arrasmith 770,146 Grader, road, W. Alcorn 770,145 Grain conveyer, E. M. Kramer 769,947 Grain separator, E. M. Kramer 769,948 Grape berry stripping and crushing machine, E. Bach 770,038	





ATHES SEBASTIAN LATHE C. CHESTAND

ot and Power and Purret Lathes, Plan EPARD LATTIE CO., 23 W. 30 St., Cincinnat., O.



HE EUREKA CLIP

The most useful article ever invented r'the purpose. Indispensable to Lawrs, Editors, Students, Bankers, Insurace Companies and business men gonally. Book marker and paper clip, see not mutilate the paper. Can be ed repeatedly. In boxes of 100 for 25c. be had of all book-sellers, stationers ad nonon dealers, or by mail on receipt price. Samplecard, by mail, free, Manactured by Lunstidated Safety in Co., Box Ld., Bloomfield, N. J.



KE THE NICKEL PLATE ROAD FOR THE ST. LOUIS FAIR.

owest Rates and many unusual privileges. Special .00 rate on certain dates. Full information on appli-tion to local Agents, or R. E. Payne, General Agent, Main St., Buffalo. N. Y., or A. W. Ecclestone, D.P.A., Broadway, New York.



PSU USE GRINDSTONES? If so we can supply you. Ah sizes mounted and unmounted, always kept in stock. Romemoer, we make a

The CLEVELAND STONE CO. 2d Floor, Wilshire, Cleveland, O.

MARINE ENGINES 1½ to 40 H. P.

unches to 50 feet d for



GRAND RAPIDS GAS ENGINE & YACHT CO. Grand Rapids, Mich.



For PIPE-THREADING or CUTTING

FORBES PATENT DIE STOCK

CURIIS & CURIIS CO. # Garden St., Bridgeport, Conn.



tour Cycle Motor

Single and double cylinders. Simple and reliable. Best ma-terials and workmanship. Not how cheap but how good. Catalogue Free Vrite us. Grant-Ferris Co., To., N.Y.

he Standard Household Disinfectant



10c. and 25c, pkgs. by mail. Look for above trade mark Ipho Napt kul Co., 15 Haymarket Square, Boston, Mass. Schlin N. Y. City by Acket-Marcell's, Macy's, Siegel-Cooper,



Kerosene Oil Engine Nothing but Kerosene Oil to run it

Simple, Sate and Efficient. Needslittle attention, is less likely to get out of order, and is cheaper to run than any other engine manufactured. Economical and Easily Operated. International Power Vehicle Co.

A Free Trial Bottle of

sent on receipt of roc. to pay postage. Positively relieves and cures Oak or Ivy Poisoning, Sunburn, Prickly Heat, Hives, and immediately takes the sting out of Mosquito Bites. A marvelous remedy for burns, and will positively prevent blood poisoning from cuts or abrasions.

Sold by leading druggists. None genuine without my signature.



Dept. U. 63 Prince St. New York Send for free Booklet on "How to treat diseases," containing hundreds of testi-nonials of wonderful cures.

water a per per value of the value of value of the value of value of the value of t Niagara Hydraulic Engine Co.,

Chester, PA.



"The Sharer" A new foot power that can be applied to all light machinery. A kick starts the machine and an occasional kick keeps it going. Send for our Booklet.

SLUIR... 210A Canal St., SLOTKIN & PRAGLIN,

If You Want the Best Lathe and Drill 🔼 GHUGKS 🚐 🗀 WESICOII'S
Strongest
Grip, Greatest Capacity
and Durability, Cheap and Accurate.

Westcott Chuck Co., Oneida, N. Y., U. S. Ask for catalogue in English, French, Spanish or Gere

Instructive Scientific Papers ON TIMELY TOPICS

Price 10 Cents each by mail

DIRECT-VISION SPECTROSCOPES.
By T. A. Blakesley, M.A. An admirably written, instructive and coi ionsly illustrated article. SCIENTIFIC AMERICAN SUPPLEMENT NO. 1493.

HOME MADE DYNAMOS. SCIENTIFIC AMERICAN SUPPLEMENTS 161 and 600 contain excellent articles with full drawings. PLATING DYNAMOS. SCIENTIFIC AMERICAN SUPPLEMENTS 720 and 793 describe their construction so clearly that any

amateur can make them. DYNAMO AND MOTOR COMBINED.

Findly described and illustrated in SCIENTIFIC AMERICAN SUPPLEMENTS 844 and 865 The machines can be run either as dynamo or motors.

ELECTRICAL MOTORS. Their Construction at Home. Scientific American Supplements 759, 761, 767, 641.

THE MAKING OF A DRY BATTERY SCIENTIFIC AMERICAN SUPPLEMENTS 1001, 1387, 1383. Invaluable for experimental

ELECTRICAL FURNACES are fully described in Scientific American Supplements 1182, 1107, 1374, 1375, 1419, 1420, 1421, 1077.

MISCELLANEOUS PAPERS ON ACETYLENE GAS will be found in SCIENTIFIC AMERICAN SUPPLEMENTS 1082, 1083, 1084, 1085, 1086, 1015, 1016, 1057.

Price 10 Cents each, by mail

Order through your newsdealer or from

MUNN @ COMPANY 361 Broadway New York Grate sifting attachment, J. G. & J. B. Lamotte (C. W. Smith (769,749) Grillework, C. W. Smith (769,749) Grindstone truing machine, rotary (C. W. Howland (C. M. Howland (C Grate sifting attachment, J. G. & J. B. Lahatton, hydrocarbon meanacscent, G. Washhigton 770,135
Lamps, manufacture of electric incandescent,
F. M. F. Cazin 770,222
Lantern, dark room, W. S. Davenport 769,631
Last, H. O. Davis 770,048
Lead gage and arbor level, M. C. Barry 770,150
Life preserver, A. Tann 769,847
Lightning arrester, W. H. & J. E. Geist 769,784
Liquid cooling apparatus, A. Siebert 770,190
Lock, B. Phelps 769,768
Lock and latch keeper plate, B. Phelps 769,770
Log carriage steam feed strainer, F. S. Stevens Lock, B. Phelps 168,770
Log carriage steam feed strainer, F. S. Stevens, C. Common for tufted or pile fabrics, C. Vorwerk 769,851
Loom for tufted or pile fabrics, C. Vorwerk 769,851
Loom harness motion, C. F. Roper 770,116
Loom head motion, R. Crompton 770,167
Loom head motion, B. Crompton 770,167
Loom shuttle, Steere & Wardwell 769,921
Loom shuttle, Steere & Wardwell 769,845
Loom shuttle, Steere & Wardwell 769,845
Loom shuttle, self threading J. Northrop 769,845
Loom weft replenishing mechanism, C. Haning Adming machine, E. S. Reed 769,854
Mandrel holding and operating machine, W. N. Jones 770,072
Maroons, preserving, G. B. Raffetto 770,187
Mattress, sbring, C. G. Smith 769,843
Measuring device, foot, Hertzler & Smith 769,843
Measuring instrument, combination, W. B. Terry 769,844
Measuring instrument, clectrical, T. Dupean 769,849
Measuring instrument, electrical, T. Dupean 769,849
Metallurgical furnace, tilting, J. A. Potter, 769,185
Mold, Schoellhoru & Albrecht 770, 186
Mold, Schoellhoru & Albrecht 770, 189
Moldling, F. E. Marhe 769,867
Molding machine, J. Reid, Jr. 770,243
Mosaic, W. Mainzer 769,704
Mosaic, W. Mainzer 769,704
Music playing instrument, penumatic, C. L. Davis 769,889
Music sheet with guarded fastening device, perforated, E. R. Perkins 770,005 Music playing instrument, pneumatic, C. L.

Davis

Music playing instrument, pneumatic, C. L.

Davis

Music sheet with gnarded fastening device,
perforated, E. R. Perkins

Nail clipper, manicure, H. Wilcox

Nail extractor, W. C. Morrill

Necktie retainer, L. N. Marcil

Nest, hen's, C. W. Glandt

Net holder, fy, J. Warmbsgans

Nut holder, Ky. J. Warmbsgans

Nut lock, C. Ryan

Oil strainer and journal preserver, A. R.

Warner

Otteal illusions, apparatus for producing,
M. C. Hopkins

Packing, metallic piston rod, F. S. Miller

Paint tube or receptacle, non-collapsible, A.

W. Ziegler

Paper holder, toilet, A. E. Sexton

Paper milk bottle, J. C. Kimsey

Pattern, J. E. Price

Paving or rooting composition, manufacture
of, H. F. Williams

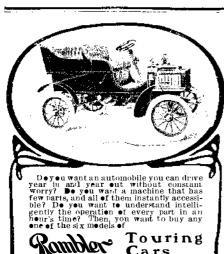
Pawl and ratchet device, A. B. Case

Pencil sharpening device, A. D. Fagrelius

Perfuming device, C. D. Hall

Phonographs, etc., horn for, Ruggiero & Bon
Pletography, color, W. C. South 770,103 769,928 770,137 769,982 Perfuming device, C. D. Hall
Phonographs, etc., horn for, Ruggiero & Bongiorno
giorno
G. C. B. Klock
Phonographs, color, W. C. South
Piano action, C. B. Klock
Piano action, C. B. Klock
Piano player, C. Warren
Picture hanger, J. H. Fowler
Picture hanger, A. M. Hewlett
Pipes, connecting lead, T. B. Miller
Pipes, connecting lead, T. B. Miller
Pipes, connecting lead, T. B. Miller
Planter check row attachment, corn, E. C.
Robects
Planter, corn, J. N. Blevens
Planter, corn, J. N. Blevens
Planter, corn, J. N. Blevens
Plates means for staying, J. M. McClellon
Polyst
Polishing wheel, L. F. Thompson
Prolishing wheel, L. F. Thompson
Proctoo fruit sorter, D. W. Lamb
Proctoos metals from ores or slimes, extracting, H. R. Cassel
Printing, checking and recording machine, the cking and recording machine, the cking and recording machine, the cking and recording machine, the printing press paper feeding apparatus, J. W. Hong
Pumping or conveying device, pneumatic, W. J. Fell
Punch, T. H. Lowejoy
Pyrographical instrument, J. F. Burns
Polysta Conversion, J. F. Burns
Polysta Conversion, J. F. Burns
Proposition, W. P. & S. G. Thomson
Proceeding, third, T. Buckfey
Procedure, T. P. S. G. Thomson
Procedure, T. P. S. G. Thomson
Pyrographical instrument, J. F. Burns
Polysta Conversion, P. & S. G. Thomson
Pyrographical instrument, J. F. Burns
Procedure, P. & S. G. Thomson
Pyrographical electric, A. F. Batchelder
Procedure T. P. S. G. Thomson
Pyrographical electric, A. F. Batchelder
Pyrographical form of the procedure proc

Rail joint, suspended, W. P. & S. G. Thomson Son ... 770,026
Railway, electric, A. F. Batchelder ... 770,041
Railway sarety device, P. A. Savyer ... 769,362
Railway sanding device, C. Allenbach ... 769,929
Railway signaling system, F. Bongrand ... 769,921
Railway substructure, S. E. Duff ... 769,730
Railway switch operating device, street, H. S. Hale ... 769,900
Railway switches and signals by means of a single lever, apparatus for directly operating, Bleynie & Ducousso ... 769,934
Railway tie, Chipman & Reed ... 770,224
Railway tie, metallic, E. M. Kenly ... 770,234
Railway track wrench, E. F. Miltenberger ... 769,759
Receptacle Stopper, E. C. Staudinger ... 769,775



Rambler Touring Cars

Model "H" \$850 at the factory

Model "H" here shown, will carry four
people anywhere any car can go. It has full
elliptic springs, two powerful brakes, 28-in.
wheels, 3-in. tires, 81-in. wheel base, large
evilinder, 7 actual h. p engine, two lamps
and born, detachable tenneau, and sells for
only \$850 at the factory.

Six different models, \$75\$to \$1.350
at the factory. Write for new Art
Catalogue and "A Little History"

THOMAS B. JEFFERY & COMPANY
Kenosha. Wisconsin, U. S. A.
Chicago Branch, 302-304 Wabsah Avenue
Boston Branch, 145 Columbus Avenue
Phila telphia Branch, 242 N. Broad Stre t

Light Tonneau Car



HE graceful elegance of the Olesmobile Light Tonneau Car, its simplicity and its well-known reliability, so strikingly displayed on the recent St. Louis Automobile Tour, rank it with the high-priced cars, while selling at a price well within the reach of the average income. Its commodious tonneau, divided front seat, tilting steering post, its Oldsmobile motor equipment and all the various distinctive features resulting from years of successful experience stamp it as more than ever the best thing on wheels. Send for our book about Oldsmobiles.

Address Dept. 21 OLDS MOTOR WORKS, Detroit, U. S. A.

Member of the Association of Licensed
Authorobile Manufacturers



To Owners of Gasoline Engines, Automobiles, Launch es, Etc

TOOLS AS A TOPIC must be interesting to every handieraftsman. There is a mine of information in

Montgomery & Co.'s Tool Catalogue
which enumerates thousands of tools.
Capital handbook of reference. Profusely illustrated. Sent by mail for
25 cents discount sheet included.
MONTGOMERY A. CO.,
105 Fulton St... New York City.







Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldestagency for securing patents. Patents taken through MUNN & Co. receive Special Notice, without charge, in the

Scientific American

A handsomely illustrated weekly. Largest cir-culation of any scientific journal. Term., \$3 a ear; four months, \$1. Sold by all newsdealers

MUNN & CO.361 Broadway, NewYork Branch Office 626 F St. Washington, D. C.



Threshing machine sieve adjuster, O. E. Ol.

Automobiles, Launches, Etc.

The Auto = Sparker

does away entirely with all starting and running batteries, their analysnes and expense. No beful no switch—no batteries. Can be attached to any engine now samp batteries. Fully grammal teries. Edge write for descriptive catalog.

Motsinger Device Mfg. Co.,

14 Main St., Pendleton, Ind.

A TOPIC

TOOL

15 A TOPIC

TOOL

15 Tool Catalogue
the usands of teels.
of reference. Pressent by mail for heet included.

ERY (**CO):
Something New!

Our Hand IGNITER needs no batteries to -tart your gasoline engine. A few turns of the bandle produces a large spark. Purchase one of these igniters and save trouble and expense with batteries. By carry a tull line of Magnetic with and expense with batteries. By carry a tull line of Magnetic with and the succession of the service of the serv





Rifles For All Kinds Of Hunting

The longer you use a Winchester the better satisfied you will be that it is the most effective and reliable make of hunting rifle on the market to-day. Winchester rifles are designed to handle all desirable types of cartridges and to meet the requirements of all kinds of shooting and a wide diversity of tastes. If you want satisfactory results, always use Winchester guns for all your shooting and Winchester make of ammunition for all your guns. See our Exhibits in Manufactures and Fish and Game Buildings at St. Louis.

WINCHESTER REPEATING ARMS CO. - - NEW HAVEN, CONN.

AMERICAN JUMP SPARK IGNITION OUTFITS



AUTOMOBILE



MOTORCYCLE



🗾 HOT CONTICONT CONTROL 🖘

Sunshine in the house makes bliss. Sunshine on the house makes blisters unless it is protected by

PATTON'S SUN-PROOF PAINTS

A perfect shield against sun and weather. Let Old Sol do his worst—Patton's Sun-Proof Paints will look their best. They never blister, peel, nor chalk off. Their lustre lasts. Go farther and cost no more than common paints. Guaranteed for five years—last nearer ten, under ordinary conditions. Valuable Paint Book mailed free on request. Write for conv.

PATTON PAINT COMPANY, 227 Lake St., Milwaukee, Wis.
PITTSBURGH PLATE GLASS CO., General Distributors.



Do You Want Good Information Cheap?

Write to us and we will refer you to a SCIENTIFIC AMERI-CAN SUPPLEMENT that will give you the very data you need.

Scientific American Supplement articles are written by men who stand foremost in modern science and industry.

Each Scientific American Supplement costs only to cts. But the information it contains may save you hundreds of dollars. Write for a catalogue of SUPPLEMENT articles. It costs nothing.

Act on this suggestion!

MUNN & COMPANY

361 Broadway, New York