may be rapidly carried on and the books delivered from the machine in a strong and neatly finished condition. The general plan is shown in the patent formerly granted to Mr. Blauvelt.

ATTACHMENT FOR CLEANING COTTON-GIN SAWS .- H. J. FITZPATRICK, Athens, Ga. Gin-saws must always be dry, and in ginning wet or green cotton the saws become clogged. Lint when freshly separated from seed and when slightly moist through any cause is exceedingly adhesive and clings to the saws, and renders perfect action of the gin impossible. renders perfect action of the gin impossible.

Thus gummed or clogged with wet cotton lint, the saws can no longer separate the lint and seed, and it is necessary to stop the gin, take out the cotton, remove parts of the gin, and clean the saws by taking off the wet lint by hand. The use of the invention obviates this the saws of the gin, and the saws by taking off the wet lint by hand. The use of the invention obviates this trun.

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. hand. The use of the invention obviates this

#### Musical Devices.

SELF-PLAYING PIANO.-H. MEYER. New York, N. Y. The object of the invention is to provide a piano arranged to insure accurate playing of the keys and with the proper touch and expression and to allow the use of a single note-sheet containing a number of pieces of music, only one of which is played at the introduction of a coin, the note-sheet being automatically rewound at the end of the last piece of music to start playing the first piece But is it not also true that when both eyes on the introduction of another coin.

MUSIC-LEAF TURNER.—E. R. ELDRIDGE, Sumter, S. C. In the operation of this improvement the folio is placed upon the support with the back thereof engaged by clasps, and the individual leaves are engaged with jaws of the turning arms, all of said arms being arranged upon the right side of the support. When it is desired to turn the leaf, the uppermost arm may be swung to the other than the fect, provided the head and hand have been the steady. If there are any expections to port. side of the support by means of a finger-piece.

#### Prime Movers and Their Accessories.

ROTARY ENGINE .- A. GLIDIE. New York. N. Y. This invention pertains to certain improvements in rotary engines adapted to be rate, when both eyes are open the alignment operated by steam, compressed air, or other is made by but one of the two. It would seem, fluid under pressure; and the object of the therefore, that the sportsman who keeps both inventor is to provide certain improvements in eyes open has the advantage, since the closing means for controlling the admission and exbaust of the motive fluid in order to gain the also. Any way, I should advise the beginner maximum efficiency.

PUMP .- W. Y. CRUIKSHANK, Freeland, Pa. This invention relates to pumps, and especially to rotary lift-pumps. The object is to construct a pump of the class described having an improved arrangement of the vanes whereby the efficiency of the pump will be much increased. When a rotation is imparted to the shafts the two hollow shafts will be rotated in the same direction, while the inner shaft which extends longitudinally within the hollow shafts will be rotated in a reverse direction.

#### Railways and Their Accessories.

CAR-REPLACER.-W. Cook, Hoboken, N. J. In this instance the invention relates to cartrains upon the track. The object of the im- not permit the smoke to ascend. provement is to produce a device of this kind which can be readily set in position and which falls toward the ground the air is light, so will be reversible in its nature, enabling the device to replace a car moving toward it in either direction.

HAND-CAR.-J. W. FINCH, Elizabeth, Miss upon its bearings the parallel arms are rocked about a counter-shaft, and since the stubmovement is further multiplied on the axle.

#### Pertaining to Recreation.

FISHING-REEL .- G. W. BLACKBURN, Sarasota, Fla. The principal objects in this case on the face of the device to injure the hands or any washers to wear out or clog.

#### Designs.

DESIGN FOR A HAND-BAG, PURSE, OR SIMILAR ARTICLE.-F. D. KAHN, New York, N. Y. The design in this case shows a handbag or purse suspended by a ring-linked chain. The form of the bag keeps well within the decidedly life-like and attractive result is se-

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 this paper.



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

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.

(10487) W. T. H. writes: In your reply to C. B. R. of March 16, page 239 (10437), you state in your closing sentence that "some' people "habitually use the right and others the left eye at their ordinary work." are kept open the alignment is always made with the right eye? Let any one with both eyes open hold out either his right or his left hand at full length of his arm, and then range the point of his forefinger with a distant ob-Let him then while holding his hand steady close his right eye, and he will find that his finger is not in line with the object. But if he closes the left eye the alignment is perheld steady. If there are any exceptions to this I have never yet found them, and I have tested a goodly number. There possibly may be people who are left-eyed as there are people who are left-handed. If so, the alignment with such must be made with the left eye. At any of the eye not used tends to close the other to keep both eyes open. But to those who have long accustomed themselves to the closing of one eye, it is probably best to continue. We are not able to agree with you that a person always sights with the right eye when he has both eyes open. We have tested many classes of students, and have seen many who found the alignment perfect when the right eye was closed, that is, they were left-eyed. We have also many times in lectures upon the eye made the test on members of miscellaneous audiences, and found left-eyed people

(10488) J. J. G. writes: Referring to query No. 10426, issue of March 16, second question: A claims that in foggy weather, when smoke descends to the ground, the atmosphere is light and will not support the replacers, such as used for replacing derailed smoke. B claims that it is heavy, and will trains much the track. The object of the important the smoke to ascend. Which is correct? You answer by saying: "When smoke that the hot smoke is heavier than the air. In fine weather the air is heavier, and smoke rises." Now, if I am not presuming, I wish to differ with you, and to state my reasons: In operation when the rock-lever is rocked Moist air is lighter than dry air, but even so, it is difficult for me to reason that "hot smoke" would be heavier than moist air. shaft is rigid with the pitman and a gear-does not seem that hot smoke could descend wheel is rigid with the stub-shaft, another till its loss of temperature permitted it to gear-wheel which meshes with the first one is contract to the density of its neighboring constrained to rotate and carries the counter-strata. Then if the smoke remained drier shaft therewith at a much higher speed than than its neighboring strata, it would sink were the parallel arms secured directly to very, very slowly. But while the process of the counter-shaft and acting thereon as a conduction is lowering its temperature, like crank-arm, and since one sprocket-wheel is of wise the percentage of humidity is rising, and relatively greater diameter than the other this I believe it would soon adjust itself and become in equilibrium with its neighboring air before any lowering could be perceptible. However, it is a fact that smoke does descend in damp or foggy moderately tranquil atmosphere, and I attribute the cause to be due to sota, Fla. The principal objects in this case the rapid coalescing of the water particles of are to provide reels with an improved friction the atmosphere on the dust particles of the are to provide reels with an improved friction: the atmosphere on the dust particles of the drag, with an automatic stop, with means for smoke. These nuclei, which are the smoke, setting the drag for any desired pull, with a locking device to prevent the nut of the reel post from working loose, and with other adversarial and the smoke. There was no emphasis upon the "hot smoke" there was no emphasis upon the "hot smoke" vantageous features without using any screws in the answer to query 10426, nor do we know why we used the word het. It seems to us unnecessary, since smoke is always hot as it G. H. CURTISS MFG. CO., emerges into the air. Nor does the theory of the condensation of water upon the particles of carbon in the gases from the chimney seem to us to greatly help the matter, since it is a matter of common observation that the smoke does not first ascend in stormy weather while hot and then after cooling and taking on a load of water drop again. The fact is usual lines, yet exactly represents a sitting that smoke comes down instantly from the "Teddy Bear." The top of the bear's head and chimney top. Many a time the smoke of a its ears are capped by the hinged frame of train of cars at full speed gets down fast the purse. The figure of the bear is pressed enough to fill the cars and be very uncomfortin strong relief on the material used and a able when no wind is blowing. In the country we have seen the smoke of the chimney drop from the housetop into the yard close beside the house without any visible rise from the chimney. We still think the smoke rises the chimney. We still think the smoke rises in fine weather because it is lighter than the air at the time, and falls in stormy weather Graham & Goodman, Sole Mfrs., 55 W. 93d St., N. Y. Bottle and the like closure, T. C. Booth... 848,097



Engine and Foot Lathes MACHINE SHOP OUTFITS, TOOLS AND SUPPLIES. BEST MATERIALS. BEST WORKMANSHIP. CATALOGUE FREE SEBASTIAN LATHE CO., 120 Culvert St., Cincinnati, O.

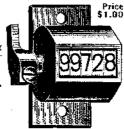
Foot and Power and Turret Lathes, Plan-SHEPARD LATHE CO., 133 W. 2d St. Cincinnati, O.

### Veeder Counters

to register reciprocating movements or revolutions. Cut full size,

Booklet Free VEEDER MFG. CO.

Cyclometers, Odometers, Tachometers, Counters and Fine Castings;





CLIPPER MFG. CO., 401 West 124th St., New York, U.S.A.

FOR MECHANICS.

Send for Free Catalogue No. 16 B. The L. S. Starrett Co., Athol, Mass., U. S. A.

## Chain Drill

that is built right—not only in spots, but all the way through. It has a three-jawed chuck for holding round shank drills 0 to 1/2 inch. The square shank style can't come within a mile of it for accuracy. \$5.00 each. This Automatic Drill is made in the shops of GOODELL-PRATT COMPANY, Greenfield, Mass. Send for catalogue—free.



THE B. F. BARNES 14-INCH DRILL

is adapted for work from 1-16 inch to 46 inch. A strong, substantial, well built drill. Plain lever or powerfeed as desired. We build a full line of Drills. All sizes furnished in Gangs. Also bave 9-inch, and 11-inch Serew Cutting Lathes, and a 24x2-inch Wet Tool Grinder. Catalog 8 on request.

B. F. BARNES COMPANY, Rockford, III.

# FRICTION DISK DRILL

FOR LIGHT WORK. Has These Great Advantages: e speed can be instantly changed from 0 to 1500 without pping or shifting belts. Power applied can be graduated drive, with qual safety, the smallest or largest drills thin its range—a wonderful continuous in time and great ing in drill breakage. FS Send for Drill Catalogue.

W. F. & JNO. BARNES CO.,
Established 1872.
Ruby Street, . . Rockford, Ill. 1999 Ruby Street,



MOTSINGER AUTO-SPARKER starts and runs Gas Engines without Batteries No other machine can do it successfully relack of original patents owned by us. No twist motion in our drive. No belt or switch necessary. No batteries whatever, for make and break or jump-spark. Water and dust-proof. Fully guaranteed.

MOTSINGER DEVICE MFG. CO. 14 Main Street, Pendleton, Ind., U.S. A.

#### BARKER MOTORS

Reliable .-- 1 1/4 to 10 H. P-- Economical

Their perfect operation and reliability are due to common sense mechanical ideasand good construction. While low in price, they are made of best materials with careful attention to details.

C. L. BARKER, NORWALK. CONN.



### Curtiss Airship Motors

7 H. P., 50 Pounds. All extras ready to install. Now used by every successful aeronaut. High-est Award at Lewis & Clark Exposi-tion. World's Record, Ormond Beach, Fla. Send for Catalog B.

Latestrecord, one mile in 46 2-5 seconds.

Hammondsport, N. Y.

Pipe Cutting and Threading Machine 🛕 For Elther Hand or Pawer machine is the regular hand machin a power base, punnon, countershaft be worked as an ornitary power hine or taken from its base ter use as a hand machine. Length pipe ¼ in. to 15 m, handled easily is small room. Diustrated catalogue-price list free on application.

THE CURTIS & CURTIS CO.

Branch Office, 60 Centre St., The One Practical Spring Governor for All Automobiles is the

### Graygood Hydraulic SHOCK ABSORBER

Write for booklet telling why, and giving our unique guarantee—the only real guarantee given with any shock absorber.

because it is heavier than the air at the time. without taking time to cool and take on water drops by condensation. Nor can the cooling of the smoke be by conduction as stated above, but by radiation into the air, since neither air nor carbon is a conductor of heat.

(10489) C. E. B. asks: 1. Is it theoretically possible to get as much work out of a permanent magnet as it takes to magnetize it? For instance, suppose a certain magnet takes 100 foot-pounds of work to magnetize it, and suppose further that the work done by this magnet at one lift is 1-10 foot-pound. Will it be possible to make the magnet do one thousand lifts, removing the armature each time by outside power? Magnet and armature to be laminated to prevent as much loss in currents as possible. A. The work done in magnetizing a steel magnet and the work which can be done with the magnet in lifting weights have no relation to each other. A magnet does not lose strength by lifting. It tends to gain strength rather. Pulling the weight off a magnet tends to magnetize it to a higher degree rather than to take away the magnetism. After a magnet has made one thousand lifts it should be in just as good condition as at first. Magnetism is a molecular condition of steel, and not an effect of work done upon steel. 2. If the magnet in No. 1 lasts for the thousand lifts, has it really done 100 foot-pounds of work? Is it possible that it uses up its total active power in the first lift, and that this power is restored to it (when the armature is pulled away) at the expense of the temporary magnetism of the armature and the outside power applied to move armature? A. If a magnet will hold up a pound, it may be used to lift a pound to any height desired, and it should not let the weight drop. When the weight has been raised 1,000 feet, the man who has lifted the weight has done 1,000 foot-pounds of work. The magnet has not done the work of lifting the weight. It has simply held the weight, and to hold a weight is not doing work. 3. What quantity of electrical energy in watts is necessary to magnetize a suitable hardened steel bar weighing 1 pound? A. We do not know the watts necessary to magnetize a bar of steel.

(10490) F. A. McD. writes: Referring to your answer to query No. 10428, for a process for electro-plating with aluminium, in your issue of March 16, I beg to refer you to Prof. Richards's book on "Aluminium," the last edition of which contains several formulas for this deposition, and is, I believe, a more reliable volume in this connection than the one you mention, Watt's "Electrodeposition." A. So many formulas for plating alumintum have proved unreliable that we should look with distrust upon any positive claim upon this subject. We give the above letter for our readers' benefit and can furnish the book for \$6. We hope that reliable modes both for plating with aluminium and for soldering the metal will be found.

### INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending March 26, 1907.

AND EACH BEARING THAT DATE [See note at end of list about copies of these patents.]

	avenus.
Acids, bromin derivative of fatty, E. Fischer Addressing machine, A. E. Grapp. Adjustable table, E. Kohler Air, moistening, H. Bentz Air, moistening apparatus, H. Bentz Air, regulating the temperature of, Mande- ville & Walker Air, ship, G. Schwabek Alumina and alkali sulfur salts, manu- facture of, A. Clemm Ammunition case, G. Schwarz Amusement apparatus, E. A. Smith Anastomotic clamp, G. F. Roosevelt Animal trap, J. M. Dubois Annunciator, D. H. Coker Apron supporter, J. G. Kountz Armor plate, E. Gathmann Automobile wheel, E. C. Phillips. Awning, F. Thoms Axles, nut retainer for vehicle, O. F. Jordan Bag attachment, L. McCann Baling press, J. S. Tuttle Baling press, C. E. Wehrenberg, Baling press, C. E. Wehrenberg, Baling press, J. S. Tuttle Baling press, J. B. Weir, et al. Bank, pocket, J. B. Weir, et al. Bank, pocket, J. B. Weir, et al. Bank, sopoket, J. B. Weir, et al. Bearing, adjustable, E. S. Clough Bed, sofa, G. E. Holmes, et al. Beer or other beverage cooler, J. Ettel. Belt stretcher and tightener, A. Y. Foltz, Biltners, alarm attachment for self, L. J. Phillips	848 230
Addressing machine. A. E. Grapp	848,546
Adjustable table, E. Kohler	848,469
Air, moistening, H. Bentz	848,340
Air moistening apparatus, H. Bentz	848,341
Air, regulating the temperature of, Mande-	949 E0E
Air shin G G Schwahek	848.055
Alumina and alkali sulfur salts. manu-	010,000
facture of, A. Clemm	848,612
Ammunition case, G. Schwarz	848,500
Amusement apparatus, E. A. Smith	848,061
Animal tran T M Dubais	848 205
Annunciator. D. H. Coker	848,535
Apron supporter, J. G. Kountz	848,470
Armor plate, E. Gathmann	848,024
Automobile wheel, E. C. Phillips	848,046
Awning F Thoms	848 500
Axles nut retainer for vehicle. O. F.	010,000
Jordan	848,176
Bag attachment, L. McCann	848,481
Baling press, J. S. Tuttle 848,411,	848,412
Balling press, C. E. Wenrenberg	848,420
Raling press grunger, G. Schubert	010,001
J. S. Tuttle	848,413
Ball cover clamp, base, F. A. Brusseau	848,007
Bank, pocket, J. B. Weir, et al	848.218
Bank, pocket coln, W. P. Harvey	848,302
Bearing, adjustable, E. S. Clough	848.224
Bed, sofa, G. E. Holmes, et al	848,305
Beer or other beverage cooler, J. Ettel	848,228
Belt stretcher and tightener, A. Y. Foltz	848,300
Bicycle attachment, J. H. Sager	848,324
Binders, alarm attachment for self. L. J.	
Phillips	848,491
Binding device, temporary, A. G. Hoel-	040040
Bin. See Storage sin. Binders, alarm attachment for self, L. J. Phillips Binding device, temporary, A. G. Hoelsching device, temporary, A. G. Hoelsching machine, electrical, L. W. Bowman Bleaching cabinet, W. E. Strong Blower and suction device, Brown & Dahl. Bobbin stop mechanism, R. H. Cook. Bobbin stop, twister, R. H. Cook. Bobbin stop, twister, R. H. Cook. Body conformer, C. Munter Boller cleaning device, multitubular, J. Alexander	848,242
man	848.153
Bleaching cabinet, W. E. Strong	848.138
Blower and suction device, Brown & Dahl.	848,343
Bobbin stop mechanism, R. H. Cook	848,013
Bobbin stop, twister, R. H. Cook	848,012
Roiler cleaning device multitubular I	040,419
Alexander	848.082
Boilers, means for promoting circulation in	•
steam, S. J. Ross	848,496
Book combination shock M H Borns	848,544
Books, etc., file, J. H. Horwitz	848.245
Book manufacturing machine, Marvin &	_ 10,= 10
Vessey	848,563
Boilers, means for promoting circulation in steam, S. J. Ross	848,038
ters for also trimming machines for	
G. E. Fuller	848,097
Boring or milling outtons manufacturing	,- 3.

# Wonderful Edison Phonograph Offer

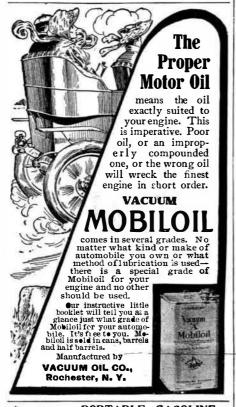
Mr. Edison Says:

Mr. Edison 32ys:

"Iwant a Phonograph inevery American kome."
To any RESPONSIBLE party we will ship a genuine Edison phonograph on 48 hours FREE TRIAL at your own home—ne money down; no 0.0.D.; returnable at our expense.—Play the endless variety of Edison records, beautiful music, minstrel shows, etc., etc.; then if satisfactory send the cash after FREE TRIAL or pay on easiest monthly terms; \$2.00 A MONTH ormorefor agenuine Edison—and at positively rock-bottom prices. Remember—you pay us nothing unless satisfied after the free trial. Write at once for the free Edison catalogs.

FREDERICK BABSON, Edison

Write at once for the free Edison
FREDERICK BABSON, Edison
Phonograph Distributers, 149-150
Michigan Av. Dept. 1224, Chicago



# PORTABLE GASOLINE Submerged Propeller

Attached and detached ANY BOAT "in a jiffy." (an be raised and lowered to run in shallow water. Largest, most practical, most powerful. Bnbre Outfit is Outside of Boat. Perfectly Safe. A Money Maker for Summer Resorts. Send for Details and Price List.

SUBMERGED MOTOR CO. 84-86 Washington St., Chicago

#### "REX" The King of Hill Climbers



Made in London, England, by largest Motorcycle concern in the World. English Road Record 836 miles in 48 English Koad Kecord 856 miles in 48 hour, 36 efminutes. A high class imported machine, same price as American machines. Let us send you tuil details and price list. The "REX" sold only by

FRANCO - AMERICAN AUTO & SUPPLY CO., 1404-1406 Michigan Avenue, Chicago.

# Everything for the Automobile



WRITE FOR NEW 1907 CATALOG LARGEST PARTS AND SUPPLY HOUSE IN AMERICA

Neustadt Automobile and Supply Co.

AUTOMOBILES
BOUGHT, SOLD AND EXCHANGED
The largest dealers and brokers in New and Second-hand Automobiles in the world. Send for complete bargain sheet No. 120

TIMES SQUARE AUTOMOBILE CO. New Main Entrance 1599-1601 Broadway and at 217 West 48th Street, New York

#### VICTOR HAND-FORGED AUTOMOBILE



Water cooled; engine 416x4; wheels 37 inches: 136 inch Goodyear cushion tires; runs from 1 to 25 miles per hour. No country too rough or billy for the Hand-Forged Victor. Price \$450, including leather top, fenders, lamps, horn, tools, etc. Write for full particulars. Address

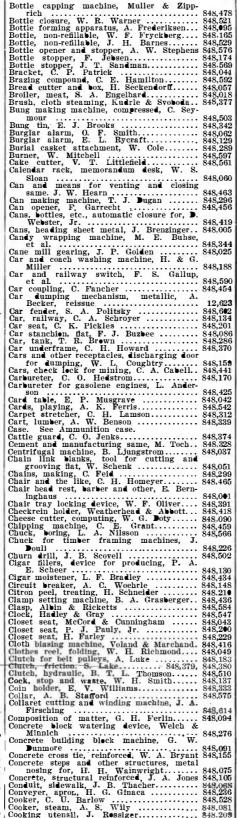
VICTOR AUTOMOBILE MFG. CO., St. Louis, Mo.

# \$40 MOTORCYCLE



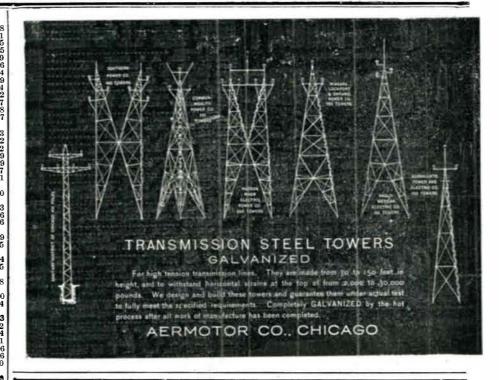
We have the largest line of New and used Motor Cycles, Parts and Supplies in the country, at the lowest prices. Every machine guaranteed. We are the largest guaranteed. We are the larges and only exclusive Motorcycle House in the world. Send for ou 1907 Catalog. Repairs a specialty

Harry R. Geer Co., 851 McLaran Ave., St. Louis, Mo



Bottle capping machine, Muller & Zipp-

Engines, antirecoil device for explosive, D. H. Reimers S48,004
Engines, balancing locomotive, H. F. Shaw S48,004
Envelop machine, F. Grant S48,009
Eraser holder, M. M. Olmstead S48,392
Exchange selector, automatic, J. G. Roberts S48,398



#### SHARP—SPEEDY—POSITIVE—PORTABLE



ADVERTISING

3000 REVOLUTIONS PER MINUTE. WHAT IS IT?

1731 ANSWERS TO OUR FIRST AD. IN SCIENTIFIC AMERICAN ISSUE. That, the public are extremly anxious for good, new and competent tools.

competent tools. Here is a chance for good Live Agents to make more money on the easiest selling article ever produced, than ever made before. Write for terms and description at once. We have a few correct answers to above mentioned ad, and awards will be made next week. Every CARPENTER, PLUMBER, HARDWARE MAN, BLACKSMITH, TINSMITH, ARCHITEC FURAL IRON WORKER. WAGON MAKER, AWNING HANGER, TINER, HOUSEHOLDER, and FARTIER, should write for our booklet at once. IT WILL, SAVE TIME AND MONEY FOR YOU and you need it. Booklets will be mailed to all inquiries week commencing April 15th.

RAPID TOOL WORKS

RAPID TOOL WORKS





BABBITT METALS.—SIX IMPORTANT formulas. Scientific American Suppliement 1123.

Price 10 cents. For sale by Munn & Co. and all newsdealers. Send for catalogue.





Automatic Water Supply Most economical, reliable and efficient, If you have running water the Niagara engines will elevate 35 feet for each foot-fall obtainable from spring, brook, or river, delivered to any distance. Write for catalogue. Niagara Hydraulic Engine Co.













200 S. Front St., Grand Rapids, Mich.



# SORE THROAT Hydrozone

Sore Throat Sufferers, I will send One 25 Cent Bottle Free to anyone mentioning this paper and sending to cents to pay postage and packing. Hydrozone is a harm-less germicide, indorsed and successfully used by leading physicians. Not genuine without my signature on label. Ask for Booklet on Treatment of Diseases. Sold by Leading Drug-



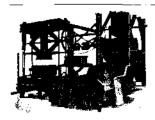


Runabouts, Touring Cars and Limousines The NATIONAL is always popular because it gives periect satisfaction in the HANDS OF THE OWNER.

National Engines have Ball-Bearing Crank-Shafts and Cam-Shafts. Hence, their wonderful power.

Model F, 4 cyl., 40 H.P. Model H, 4 cyl., 50 H.P. Model L, 6 cyl., 75 H.P.

NATIONAL MOTOR VEHICLE CO. 1019 E. 22d Street, Indianapolis, Ind.
Members American Motor Car Mfvs. Assn., N. Y.



Makes Hollow Concrete Building Blocks. Perfect form uniform size and quality. Concrete accurately measured, mixed by power under pressure over 100 tons. Full Details, List of Machines in Operation,

on Application. THE PERFECTION BLOCK MACHINE CO.

321 Kasota Bld., Minneapolis, Minn.

GAS ENGINE DETAILS.—A VALUAble and fully illustrated article on this subject is contained in SUPPLEMENT No. 1292. Price 10 cents. For sale by Munn & Co. and all newsdealers.

#### An Exhausted Storage Battery



poses. Write to-day for complete information. The Dayton Electrical Mfg. Co., 98 St. Clair St., Dayton, Ohio

Publish Post Cards AND MAKE 300 PER CENT. PROFIT

Buy from the Manufacturer and save all Middlemen's Profits. We make Post Cards exclusively for you from any size Photo or Print you send us and deliver them in 10 days time and guarantee not to use your subjects for anyone else. Hand colored cards a specialty. Send for samples and terms.

RICH PHOTO-PROCESS CO.
28 East 23d Street, New York

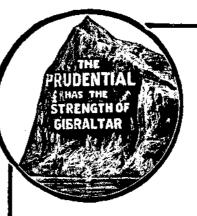




Catalog Aby mail to Mount Birds



00	Scientific A
ORE THROAT	Exerciser for felines, W. E. Smith
To prove the Efficiency of	Explosive charges, device for inserting,   R. Torras
lydrozone	R. Torras
lyui ozom	Feed regulating mechanism, boiler, W. Loudon
O Sore Throat Sufferers, I will send One 25 Cent Bottle Free anyone mentioning this paper	Fortilizer and lime distributor I M
and sending 10 cents to pay postage and packing. Hydrozone is a harmess germicide, indorsed and success-	Early
ally used by leading physicians. Not enume without my signature on	Fishing rod, E. Holzmann
bel. Ask for Booklet on Treatment  Diseases. Sold by Leading Drugists.	Floor scraper D E Dampman 4 848 160
Grof. Charles Hour hand	Floor surfacing machine, A. Poelke
ept. U, 63 Prince Street, New York	Fracture apparatus, S. G. Hubbell
	Bacon & Nelson
	Bacon & Nelson
THE	Gas machine, acetylene, R. H. Walter
National	Gear for reversing mechanism, variable speed, W. H. Hørstmann
inabouts, Touring Cars	Gearing, friction, C. B. Hatfield
and Limousines The NATIONAL is always popular because it gives	Goods, apparatus for processing packaged, E. K. Hood
perfect satisfaction in the HANDS OF THE OWNER.	& Duvel 848,616 Grapple, J. K. Flynn 848,231 Hat pin, R. I. Pryce-Jones 848,048 Harrow, H. V. & N. W. Abbott 848,525
Shafts and Cam-Shafts, Hence, their wonderful power. el F. 4 cyl., 40 H.P. Model H, 4 cyl., 50 H.P.	Harvester and binder shocker attachment, grain, J. Ostrum
Model L, 6 cyl., 75 H.P.  ATIONAL MOTOR VEHICLE CO.  E. 22d Street, Indianapolis, Ind.	Webb
Members American Motor Car Mfrs. Assn., N. Y.	Hat frame machine, A. Kindermann. 848,467 Hat frame machine, A. Kindermann. 848,467 Hay rake, horse, E. D. Bond. 848,532 Heating, electric, S. S. Eveland. 848,163 Hoisting apparatus, V. R. Browning. 848,287 Hoisting system, electric, inlider & Scott. 848,372 Horse detacher, J. E. Nilsson. 848,388 Hose, metallic, E. T. Greenfield. 848,238 Hose reel, L. A. Grimsrud. 848, 239
The	Horse detacher, J. E. Nilsson
Perfection Power	Hose reel, L. A. Grimsrud 848,238 Hose reel, L. A. Grimsrud 848,239 Hot air furnace, H. P. Fish 848,543 Hot air heater, J. E. Albinson 848,220 Hydrant or fire plug, C. E. Cotton 848,014 Incubator heating system, J. V. Lindsey 848,313 Indicating mechanism J. H. Forsythe 848,232 Indicator, C. V. Versteer 848,813
Block	Indicator, C. Versteeg 848,519 Inhaler, G. A. Thiede 848,579 Insect trap, C. W. Pelton 848,125 Insulating clamp, T. B. Lee 848,473 Insulating material for electrical purposes,
Machine Hollow Concrete Building Blocks. Perfect form,	production of J. Meyenberg
m size and quality. Concrete accurately meas- nixed by power under pressure over 100 tons. Full Details, List of Machines in Operation,	Walluer       548,029         Jack, W. Umstead       848,516         Jainer's clamp. A. Kruger       848,036
on Application.  PERFECTION BLOCK MACHINE CO.	
321 Kasota Bld., Minneapolis, Minn.  ENGINE DETAILS.—A VALUA- d fully illustrated article on this subject is con- in SUPPLEMENT No. 1292. Price 10 cents. For	pianofortes, J. H. Laudenbach. 848,471 Ladder, folding, P. A. M. Lanier. 848,108 Ladder, gymnasium, F. Medart 848,114 Ladder, step, M. E. Trafton 848,513 Ladder, store, W. Fickett 848,021 Lamp, acetylene generating, E. Wachter. 848,074 Lamp, convertible gas and oil, M. S. Thorud 848,070
winn & Co. and all newsdealers.	Thorus 848,070 Lamp jack, F. Conrath 848,443 Lamp suspension device, electric, C. Smart. 848,573 Lantern, foot actuated, F. C. Lyon 848,184 Latch, H. Tysinger 848,515 Latch, H. Tysinger 848,515 Latch, H. C. Lyon 848,034
Exhausted Storage Battery is as bad as no battery at all when your automs ble or motor boat is 'stalled' miles from home. The ma-	Lathe tool holder, R. E. Colton
chize ea uipped with an Apple Battery Charger has an inexhausible source current. The charger keeps the batteries full of the kind of current that is best for iguitton pur-	Leather finishing composition and making same, W. W. Crooker 848,445 Leaves, treatment of, G. R. McGahan 848,386 Lenses, manufacturing bifocal, J. Wimmer. 848,335 Lever operating mechanism, vibrating, L.
poses. Write to-day for complete information.  ayton Electrical Mfg. Co., 98 St. Clair St., Dayton, Ohio	Onderdonk S48,263  Lifter and carrier, W. F. Peeler 848,124  Lifting jack, A. E. Schocke 848,499  Lifting jack, E. C. Yeager 848,524  Lightning arrester, J. H. Pearson 848,045  Lime hydrating machine P. C. Forrester 848,358
blish Post Cards	Linotype machine, D. S. Kennedy, 848,308 to 848,310 Linotype machine, R. M. Bedell 848,338
D MAKE 300 PER CENT. PROFIT from the Manufacturer and save all Middlemen's S. We make Post Cards exclusively for you from se Photo or Print you send us and deliver them in	Linotype machine, R. G. Clark
S' time and guarantee not to use your subjects for e else. Hand colored cards a specialty. Send uples and terms.  RICH PHOTO-PROCESS CO.	
28 East 23d Street, New York	H. Heward 848,369 Locomotives, etc., apparatus fer holding connecting rod brasses for, M. & H. E. Morton 848,192 Locomotives, etc., shaper for crowning and mishing driving boxes on, M. & H. E.
The Strelinger Marine lead in every point of Excellency. Unexcelled in Durability. Challenge comparison with any other	Morton
tenge comparison with any other make in material and work-make in material and work-manship. Mechanical or Jump Spark equipment. Our 1907 prices will interest you. Write for our	Lubricating system, G. Crowell
new Catalog and Price List. THE STRELINGER MARINE ENGINE CO. 28 Fort St., East, Detroit, Mich.	Mail bag catcher, G. H. Nichols 348,196 Mail transportation system, E. S. Upright 488,517 Manicuring tool. C. Bailey 488,337
log by mail to Mount Birds and animals. Fascinating work for Men.	Manifolding pad and holder, W. F. Beck, reissue
Women and Boys. Quickly learned in your own home. Satisfication grantened or no tuition tee. Save your fine specimens. Decorate home and den. Highly profitable business or side line. Fine catalog and	Measuring wheel, tailor's, E. G. Agnell \$48,996   Medical apparatus, electric, C. Van Bergh. \$48,518   Merry-go-round and teeter, combination, J. W. Arney
Taxiformy magazine free. Write today, N. W. Beboot of Taxiformy, 90 R	Metal working tools, manufacturing, H. H.  Dierig 848,161  Metals, production of homogeneous bodies
Fish Will Bite Like Hungry Wolves, all the season it you use Magic Fish Lure, Most	from tantalum or other, M. von Pirani. 848,600 Middlings purifier, G. T. Smith 848,404 Mill. See Rolling mill. Milling machine, W. Schenk 848,052 Mold for sash weights, etc., W. S. Myers. 848,480 Molten or semimolten materials by means
wonderful bait ever discovered for attracting all kinds of fish. If you like to pull out the	the fluidity of F Wynne 848 422
string every time you go fishing, don't fail to try this wonderful balt. Sent by mail prepaid for 25 cents. Perfect satisfaction or money refunded. Full particulars and Catalog Free Address J. F. GREGOR Y, Desk 9 3319 Oregon Ave., St. Louis, Mo	Motors and generators. brush holder for, J. Lindall
•	1041 144104 1 1 1 1 1 1 1 1 1 1 1 1 1 1



# Life **Insurance Essentials**

#### PREMIUM RATES:

Low; commensurate with absolute safety.

LIBERAL POLICIES: Every proper freedom

and benefit to Policyholder. SIMPLICITY: The Pru-

dential Policy has all privileges, options, and values plainly set forth.

SECURITY: A founda-

tion principle of all Prudential contracts.

#### GOOD ADMINISTRA-

**TION:** The Prudential has always kept ahead of the times. Integrity, Honesty and Economy characterize the Administration.

**DIVIDENDS:** Liberal Dividend returns to Policyholders.

Send for booklet by Alfred Henry Lewis, "My Conversion to Life Insurance' and information of Policy at your age. Dept. 121

# The Prudential

INSURANCE COMPANY OF AMERICA Incorporated as a Stock Company by the State of New Jersey

JOHN F. DRYDEN, President.

HOME OFFICE: Newark, N. J.

### Cement Concrete Reinforced Concrete Building Blocks Concrete

SCIENTIFIC AMERICAN SUPPLEMENT 1543 contains an article on Concrete, by Brysson Cunningham. The article clearly describes the proper composition and mixture of concrete and gives the results of elaborate tests

SCIENTIFIC AMERICAN SUPPLEMENT
1538 gives the proportion of gravel and sand
to be used in concrete,

to be used in concrete.

SCIENTIFIC AMERICAN SUPPLEMENTS 1567, 1568, 1569, 1570, and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

SCIENTIFIC AMERICAN SUPPLEMENT 997 contains an article by Spencer Newberry in which practical notes on the proper preparation of concrete are given.

SCIENTIFIC AMERICAN SUPPLEMENTS
1568 and 1569 present a helpful account of
the making of concrete blocks by Spencer
Newherry

SCIENTIFIC AMERICAN SUPPLEMENT
1534 gives a critical review of the engineering value of reinforced concrete.

SCIENTIFIC AMERICAN SUPPLEMENTS 1547 and 1548 give a resumé in which the various systems of reinforced concrete con-struction are discussed and illustrated. SCIENTIFIC AMERICAN SUPPLEMENTS 1564 and 1565 contain an article by Lewis A. Ilicks, in which the merits and defects of reinforced concrete are analyzed.

SCIENTIFIC AMERICAN SUPPLEMENT 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

SCIENTIFIC AMERICAN SUPPLEMENT 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

SCIENTIFIC AMERICAN SUPPLEMENT 1574 discusses steel for reinforced concrete. SCIENTIFIC AMERICAN SUPPLEMENTS CIENTIFIC AMERICAN SUPPLEMENTS 1575, 1576, and 1577 contain a paper by Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, sidewalks, details of construction of reinforced concrete basis effe. struction of reinforced concrete posts, etc.

SCIENTIFIC AMERICAN SUPPLEMENT 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.
SCIENTIFIC AMERICAN SUPPLEMENT 1396 discusses the testing of cement.
SCIENTIFIC AMERICAN SUPPLEMENT 1325 contains an article by Professor William K. Hatt giving an historical sketch of slag cement.

and R. Hatt giving an instoreal sketch of slag cement.

SCIENTIFIC AMERICAN SUPPLEMENTS 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

testing and composition, by the well-known authority, Spencer B. Newberry.

SCIENTIFIC AMERICAN SUPPLEMENTS 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

SCIENTIFIC AMERICAN SUPPLEMENT 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENTS 1465 and 1466 publishes an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

SCIENTIFIC AMERICAN SUPPLEMENT 1491 gives some fallacies of tests ordinarily applied to Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENT 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

SCIENTIFIC AMERICAN SUPPLEMENT 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

SCIENTIFIC AMERICAN SUPPLEMENT 1533 contains a resumé of the cement industry and gives some valuable formulæ.

SCIENTIFIC AMERICAN SUPPLEMENT
1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

SCIENTIFIC AMERICAN SUPPLEMENTS

1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the United States.

industry of the United States.

SCIENTIFIC AMERICAN SUPPLEMENT

1586 contains a review of concrete mixing
machinery by William L. Larkin.

SCIENTIFIC AMERICAN SUPPLEMENT

1583 gives valuable suggestions on the selection of Portland cement for concrete blocks.

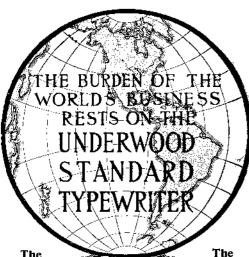
SCIENTIFIC AMERICAN SUPPLEMENT. SCIENTIFIC AMERICAN SUPPLEMENT 1581 splendidly discusses gates. A helpful paper.
SCIENTIFIC AMERICAN SUPPLEMENT

1595 presents a thorough discussion of sand for mortar and concrete, by Sanford E.

Each number of the Supplement costs 10 cents. A set of papers containing all the articles above mentioned will be mailed for \$3.50

Order from your Newsdealer or from

MUNN & CO., Publishers, 361 BROADWAY, NEW YORK CITY



The Machine that Revolutionized Type= writer Making



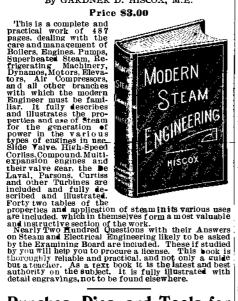
Machine that Makes a New Speed Record at Every " National Business Show'

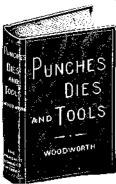
Send for Speed Record of March 21, 1907 UNDERWOOD TYPEWRITER COMPANY

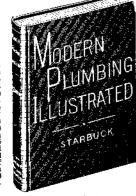
### Modern Steam Engineering in Theory and Practice

By GARDNER D. HISCOX, M.E.

Price \$3.00







polisher, E. L. Buzzell.....puller, A. P. Schnyder ...., hen's, J. H. Blank. Nest, hen's, J. H. Blank. 848,430
Nut lock, A. Baker 847,998
Nut lock, J. G. Wenninger 848,080
Nut lock, J. Jacoby 848,523
Nut lock, J. Jacoby 848,523
Nut lock, C. S. Wilson 848,523
Nut lock, Ellis & Bowen 848,541
Nut wrench, magazine socket, A. L. McMurtry 848,194
Murtry 848,194
Oil burner, C. N. Moore 848,384
Oil burner, A. J. Blackford 848,384
Oil cake trimmer, J. B. Belanger 848,428
Oil cake trimmer, J. B. Belanger 848,607
Oysters, shucking, Torsch & Parker 848,607
Dysters, shucking, Torsch & Parker 848,608
Packing, priston rod, E. G. Bostwick 848,533
Pallet setting implement, J. B. Bouchard 848,033
Pen, self-filling fountain, M. Z. L. Fuller 848,023 The proper time and application of stem units various may be are included, which in themselves form an over valuable and unity repetity specified of the profession of the most with their Answers on Steam and Electrical Empireering likely to be asked by your will being all more controller. Profession of the subset. It is fully flustrated with detail engravings, not to be found elsewhere.

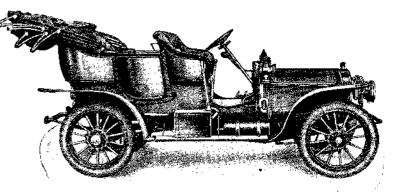
Punches, Dies and Tools for Manufacturing in Presses

By Joseph V. Woodwarth

Price 84.00

A practical work of tool page the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the profession of the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly and the subset. It is fully flustrated by hearly flustrated by hearly and the subset. It is fully flustrated by hearly flustr

# Costs Little To Run It



# Stoddard=Dayton

A concern that enters the field of automobile manufacture and within three years passes well-established competitors like a steam launch distancing a cat-boat must put out a car that possesses qualities better than good. The STODDARD-DAYTON shot to the front among dependable machines as noiselessly as the car itself moves. While we have been busy increasing our capacity and filling fast multiplying orders, our cars built for service—have moved into public favor. They have the bottom and stamina to keep there.

#### FOR SERVICE BUILT

The STODDARD-DAYTON is the car that is MADE good and the car that HAS made good

Those who own STODDARD-DAYTON cars are their warmest endorsers. In "Satisfaction," a book of tributes from car owners, Herbert L. White, North Tonawanda, N. Y., says: "I have run my STODDARD-DAYTON 6,500 miles and have had practically no repairs on it. It has been the cheapest machine from the standpoint of repairs I have ever had and to my mind is the leader of its class.'

> Model F-A 5-passenger touring car, 30-35 H. P., 4 vertical cylinders, cast in pairs, 4½ x 5 inches. Selective type transmission, three speeds and reverse, Price, with full lamp equipment, \$2,500

Send for our illustrated 1907 STODDARD-DAYTON literature, Free to those interested.

THE DAYTON MOTOR CAR CO., DAYTON, OHIO

### **NOW READY**

# **Industrial Alcohol**

### Its Manufacture and Uses A PRACTICAL TREATISE

DR. MAX MAERCKER'S "INTRODUCTION TO DISTILLATION" AS REVISEO BY ORS. DELBRÜCK AND LANGE

COMPRISING

Raw Materials, Malting, Mashing and Yeast Preparation, Fermentation, Distillation, Rectification and Purification of Alcohol, Alcoholometry, The Value and Significance of a Tax-Free Alcohol, Methods of Denaturing, Its Utilization for Light, Heat and Power Production, A Statistical Review, and The United States Law

By JOHN K. BRACHVOGEL, M. E.

528 Pages

105 Engravings

Price, \$4.00



HE value and significance of a tax-free alcohol have been so widely discussed in the press and periodical literature of the entire country, that it is unnecessary to emphasize the great importance of the subject, especially to our agricultural and industrial interests. For years we have been far behind the nations of Europe in this regard, and in consequence our literature has been sadly lacking in anthoritative works covering this phase of industrial activity. This book was designed with the especial purpose of filling this want, and it is the latest and most comprehensive work of its kind which has been published in this country.

It is based upon the researches and writings of the most eminent of Germany's specialists in the sciences of fermentation and distillation. It covers the manufacture of alcohol from

the raw materials to the final rectified and purified product. An introductory section deals with the importance of the new law and what it means to the farmer and the manufacturer. Additional sections cover the methods of denaturing, domestic utilization of alcohol for heating and lighting purposes, alcohol as a fuel for power production, and a statistical review. The full United States law is given in an Appendix.

The 105 illustrations are of especial value and excellently supplement

the text.

Few in number are those to whom this book would not prove of interest and value. The farmer, the manufacturer, the power-producer, the house-holder, will all find that denatured alcohol is of such importance to them, that its use and introduction will effect savings and economies which were hitherto impossible of accomplishment.

Send for Descriptive Circular.

MUNN & COMPANY. Publishers. 361 Broadway. New York

## **Classified Advertisements**

Advertising in this column is  $50\ cents$  a line. No less than four nor more than ten lines accepted. Count seven words to the line. All orders must be accompanied by a remittance. Further information sent on

#### BUSINESS OPPORTUNITIES.

OWN AND HAVE FOR SALE two recent patents on Combination Metal and Cement Fence Posts. Also patent (wire fence) fastener, something new, cheaper and better than staples now used. Quick fortune selling county and state rights. Address G. G. Schroeder, Washington, D. C.

I MADE \$50,000 in five years in the mail order business. Begansmall. Any one can do the work at home in sparetime. Send for free booklet. Tells how to get started. For particulars address Manager, Box 570 A, Lockport, N. Y.

AN established, successful, dividend paying manufactory, wants executive for active, salaried position. Must invest \$10,000 to \$25,000. Full investigation allowed. Address Executive, Box 773, New York.

ATTORNEYS AND INVENTORS, ATTENTION!
Practical course by mail—Patent Laws and Office Practice. Free booklet and specimen pages. Cor. School of
Patent Law, Dept. A, 1853 Mintwood, Wash., D.C.

WANTED. — Party with latest ittpreved gaseline engine, have a finely equipped plant for manufacturing same. For further particulars address Box 114, Arlington, Vermont.

A FEW DOLL ARS will start a prosperous mail order business. We furnish catalogues and everythinkneessary. By our easy method failure impessible. Write today. Milburn-Hicks Co., 718 Pontiac Building, Chicago.

INCORPORATE YOUR BUSINESS. Over sixteen hundred charters proorred for my clients. Write for corporation laws, blanks free, to former Ass't Secretary of State, Philip N. Lawrence, Huron, South Dakota. PATENT'S SOLD ON COMMISSION.—If you wish to buy or sell a patent write for particulars to E. L. Perkins, 72 Broad Street, Boston. Patent Sales Exclusively.

I SELL PATENTS.—Tobuy or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.

#### HELP WANTED.

SALESMEN.—Excellent openings for men with technical training and experience to act as salesmen and demonstrators for high grade concerns. Salaries \$2.000. Write us to-day. Hapgoods, 305 Broadway, N.Y.

AGENTS.-Gas lamp with detachable heater and cooker. Lamp makes own gas. Equais electricity, Heater heats any room; cooker cooks everything. Ali three cost one cent daily. Booklet free. Agents making big money. Monarch Co., 123 Liberty St., N. Y.

WANTED, AS ASSISTANT SUPERINTENDENT, a man with progressive ideas, having a thorough knowledge of mechanics and capable of takingcharge of help. Steady position to the right-man. Give age and reference. Address A. Doughorts, 80 Centre St., New York.

#### PATENTS FOR SALE.

OLD PATENTS Bought or State Rights, Lighting, Power, Lamps, Cables, Boilers, Engines, Machinery, Transmission, Meters, Motors, Storage Batteries, and others. Caldwell. Box 773. New York.

FOR SALE.-Outright or on royalty, Patent No. 846,-272, a wood-turner's tool and caliper combined. For particulars address R. S. Whipple, 6326 Haverford Ave., Philadelphia, Pa.

NEW ARTICLE IN CIGAR TRADE. Basic patent granted. American rights only for sale. Price \$700. Ready sale for this. Nothing like it on market. Address Aetna, Room 6, 33½ North High St., Columbus, • bio.

#### SOUVENIR POST CARDS.

25 BEAUTIFUL POST CARDS mailed to any address for 12c. A great variety of subjects. Sold by some stores at 2 for 5c. and others at 5c. each. Defiance Studio, 65 West Broadway, New York. Price list free.

LIFE-MOTION POST CARDS.—New York's latest fad. Application of a likth produces moving picture effect. An evening's fun can be provided with a set of these cards. Special Offer—Set of 9 assorted subjects. postpaid, 50c. Eagle Card Co., 2 Park Place, N. Y.

#### FACTORY AND MILL SUPPLIES.

FACTORIES, CUT DOWN YOUR INSURANCE by puting in a Caldwell Tank and Towerforfire protection. Once up, no further expense. Endorsed by all insurance companies. References in every section. Arkay Stave Co., of Columbus, Miss., says: "Saves us \$20 a month." Illustrated Catalogue and Price List free. W. E, Caldwell Co., Station DD, Louisville, Ky.

#### MACHINERY.

REMOVED to larger quarters, we offer our large stock of new and second-hand machinery; also boilers, engines, dynamos, motors, mater als and supplies. Liberty Machinery Mart, 153 West Street, New York.

BLACKSMITHS AND MACHINE MEN.—Braze cast iron with Neverfail Brazing Compound Simple, Sure. Strong. Sold under positive guarantee in \$1,\$2.50 and \$5 lots, Neverfail Brazing Company, LeMars, Iowa.

#### TYPEWRITERS.

CLEARANCE SALE—Remingtons Densmores, Jewetts, Blickensderfers, Williams, \$12.50; Postals, Hammonds, \$10; Underwoods, •livers, \$55. •rders filled or money back. Standard Typewriter Excb., Suite 45, 231 Broadway, N. Y.

SAVE MONEY.—Send to Lineograph Co., 112 Fulton St., New York City, for Duplicators and Supplies. Being the actual makers, you will save 40 cents on the dollar. Circulars sent on application.

TYPEWRITERS—Caligraphs, \$5; Visible Writers, \$8; Hammond, \$10; Reminuton, \$12; Reminuton, two-color ribbon attachment, \$15; all guaranteed. Send for catalog. Typewriter Co. (Dept. X.), 217 W. 125th St., N.Y. City

SPECIAL BARGAINS.—Remington No. 2, writing two colors: Densmore, Hammond, Franklin \$15 each, shipped privilege of examination. Write for complete caralogue "F," Eagle Typewriter Co., Suite 11, 237 Broadway, N.Y.

STANDARD MAKES BETTER THAN NEW at prices as low as anywhere. Theroughly overhauled and rebuilt machines at 1-3 manufacturers' prices. Atlantic Typewriter Exc., 246 B way, N. Y. Reliable repairing. Telephone 6828 Cortlandt.

#### ELECTRICAL.

TEDDY BEAR SKULL, DEVIL, SCARF PINS.—Hand carved, best ivory. When illuminated produce marvellous effect. Vest Pocket and Flash Lights, Medical Batteries. E. J. Tardie, 221 Sixth Avenue New York City.

CALL AND SEE OUR UP-TO-DATE Electric Cigar Lighter just patented. Pocket-lamps, flashlights, scarf pins, etc. All modern improvements. Atlas Electric Mfg. Co., 40 West B'way. Tele. 6049 Cortlandt.

#### SCHOOLS AND COLLEGES.

GE♠H. WILSON, the World's Champion, has written a booklet. "Yaudeville. Stage Danong and Entertais-ing." It is absolutely free and very interesting. Just address Wilson's Vaudeville School. 23 W. 42d St., N. Y.

#### EXPERIMENTAL ELECTRICS.

STUDY ELECTRICITY AT HOME. Complete course, R-ug. dotnil-book, 29-pg. text-book, 20 experiments, over 100 pieces of apparatus. Only \$5.60. Bulletin "A S" explains. Thomas M. St. John, 85 Minth Ave., N. Y.

#### ASTRONOMY.

BARRITT-SERVISS STAR AND PLANET FINDER. The only combination Sun. Moon, Star and Planet Map. Requires no technical knowledge to use it. Cuts away all the red tape that has befogged the study of the Stellar Worlds. Send for circular. For further particulars apply to Leon Barritt, 150 Nassau Street, New York City:

#### BOOKS AND MAGAZINES.

RARE OPPORTUNITY TO SECURE AT BUYER'S PRICE set of ten well preserved volumes of the revised and amended Americanized Encyclopedia Britannica. Write for interview or particulars, F. W. G., Box 773, New York.

STEAM TURBINES by French. \$3.00. Just published. Clearly written, with mathematics simplified. Every mechanic and en gineer needs a copy to keep up to data. Machinery, New York, says: "Can be referred to as a standard of what a technical work should be." Send for circular. Technical Press, Brattleboro, Vt.

#### PHOTOGRAPHY.

INTERESTED IN PHOTOGRAPHY? Then send 25c. for 3 mo. trial subscription to the leading American photographic magazine for a generation. The Photographic Times, Room S, 39 Union Square, N. Y. City.

BARGAIN TIME IS HERE. Spendid opportunity in high grade lenses and cameras. If you want to buy, sell on exchange, write us for lists. National Specialty Co., 49 W. 28th St., New York City.

#### EYE-GLASS SPECIALTIES.

REMARKABLE MAGNETIC SPECTACLE AND EYE GLASS OFFER. Send stamp, no postals, for Free Pair, coupon and testimonials. S. A. Fredrick Optical Co., Toledo, Ohio.

#### DEAFNESS.

TO THOSE HARD OF HEARING.—An efficient aid sent for trial, no expense, no risk, no contract, no money unless device be kept, For full particulars address A. O. Tiemann & Company, 107 Park Row, New York.

#### MISCELLANEOUS.

THE "PNEU-WAY" of lighting gas! Lights Welsbachs without electricity from button on wall! Easily installed, ever lasting. Ask your gas company or write Pnematic Gas Lighting Company, 10 Nassau St., N. Y.

POLARITY INDICATOR, 25 cents, works on any voltage, can be carried in pocket, unbreakable, satisfaction guara need J. H. Gravell, 1965 Drexel Huiding, Philadelphia, Pa.

GENERAL ENGRAVING ON STEEL AND COPPER WHATE.—Monograms, address dies, visiting cards and wedding invitations my specialty. Estimates furnished who all classes of engraving. F. J. Maiduof, S. W. 18th St., N. Y.

THE DUPLEX FILTER is positively hygienic, because it is self-cleaning, Leased by 257 physicians, 6 hospitals, thousands of private families. Rout. 2 cents per day. Duplex Filter Co., 1140 Broadway, New York.

OUR VACUUM CAP when used a few minutes each day draws the blood to the scalp, causing free and normal circulation, which stimulates the hair to a new, healthy growth. Sent on trial under guarantee. Write for free particulars. The Modern Vacuum Cap Co., 417 Barclay Block, Denver. Col.

WANTED-A PRACTICAL NON-REFILLABLE Bottle, one that is already on the market preferred. For full information and particulars, address T. F. A., Box 773, New York.

WANTED-A No. 1 TOOL MAKER ISED TO small work. To take care of Special Machines. For full information, address Cleveland Dental Mfg. Co., 3307 Scranton Rd., S. W., Cleveland, Ohio.

SEND SKETCH for estimate if you have anything you want made on contract. Experimental work. Inventions developed. Metal patterns a specialty. Osborne Manufacturing Co., Erie, Pa.

Otennian - but to the second	
Steering wheel for autovehicles, W. F. Towne	
Stongila making A B Flahan	848,140
Stop machanism omorganor II D. Contrar	848,557
Stencils, making, A. D. Klaber Stop mechanism, emergency, H. R. Tooker. Storage bin, J. H. Tromanhauser	848,511 848,410
Stove foraminant ladge P I Moorey	848,314
Stovenine M A Flannary	848,164
Stove, foraminous ledge, P. J. Moorey Stovepipe, M. A. Flannery Straw cutter, D. A., J. F., & R. C.	010,104
Stewart	848,066
Street and station indicator, • E. Kellum	848,249
Street sweeper, A. R. Monette	848,040
Street sweeper, A. R. Monette	848,181
Surgical table top, M. I. Young	848,423
Sweeper, J. B. Scevell	848,571
Swing, A. P. Boyer	848,534
Switch point lock, Kaiser & Oakes	848,247
Surgical table top, M. I. Young Sweeper, J. B. Scevell Swing, A. P. Boyer Switch point lock, Kaiser & Oakes Switch points and signals, system for	•
Switching device, J. A. Birsfield Target, registering, J. N. Michel Telegraphy, J. C. Barclay Telephone booth, B. F. Merritt	848,283
Talagraphy I C Barclay	848,477 848,221
Colonhone booth P F Morritt	848,116
Telephone detector A. R. Pichn	848,568
Telephone receiver modulating K M	040,000
Turner	848,073
Telephone toll line system, W. W. Dean	848,448
Telephone detector, A. R. Piehn Telephone receiver, modulating, K. M. Turner Telephone toll line system, W. W. Dean. Telephone toll lines, apparatus fer, T. R. Laing Temperature regulater, automatic, F. A. Beckwith Terminal base, interlocking, I. Steinberger	,
Laing	848,378
Temperature regulator, automatic, F. A.	
Beckwith	848,280
Terminal base, interlocking, L. Steinberger.	848,505
Terminal base, interlocking, L. Steinberger. Theodolite or similar instrument, Schneider & Rimailho Thermometer, clinical, W. P. Grafton Thilt, shifting, J. Triestram Thimble, E. Barnett Thin leaf or fabric, H. R. Gregory Threading tool, T. W. Nt.rse Threshing machine feeder, portable, D. Still Tile or slab, reinforced, C. C. Davis Tiles provided with flanged edges, apparatus for ferming. A. Weill	
& Kimaiino	848,132
Thermometer, clinical, W. P. Grafton	848,458
Think and thig, J. Triestram	848,514 848,530
Thin losf or febric H P Crocory	848,301
Threading tool T. W Nirse	848,489
Threshing machine feeder, nortable D Still	848,577
Tile or slab, reinforced, C. C. Davis	848,537
Tiles provided with flanged edges, apparatus	010,00.
for forming, A. Weill	848,078
Tilting gate, J. A. Schertz	848,498
for forming, A. Weill Tilting gate, J. A. Schertz Timber framing machine, J. Doull	848,225
Tine recorders etc. ribbon mechanism for	
J. & A. Dey	848,294
The protector, C. E Kimball	848,177
Tire shrinking machine attachment, cold,	040 550
S. N. House	848,552
Toothnick machine Teinter & Stanfor	848,030
S. N. House Tobacco pouch, B. J. Head Toothpick machine, Tainter & Stanley Trace fastener, Frye & Green	<b>848,406 848,359</b>
Trace fastening device for whiffletrees, I.	0 10,008
B. Martin	848,596

Tubular fabric and making the same, G.  D. Moore	848,189
D. Moore D. Moore D. Moore D. Moore Tunneling machine, J. P. Karns Tunnels under water, device for constructing, I. T. McCemas Turbine, elastic fluid, Callan & Hanzlik Turbine, elastic fluid, D. Nishizaki.348,485, Turbine geverning mechanism, W. L. R. Emmet	848,107
Tunnels under water, device for construct-	
ing, I. T. McComas	848,315
Turbine, elastic fluid, Callan & Hanzlik	848,157
Turbine, elastic finid, D. Nishizaki. 848,485,	848,486
Turbine, clastic nulu, C. W. Dake. 040,001,	848,588
Emmet	848,093
Turbine governing mechanism, . Junggren	848,106
Turbine motor, W. A. Warman	848,106 848,417
Turbine motor and muffler, combination, W.	
Emmet Turbine governing mechanism, W. L. R. Turbine motor, W. A. Warman. Turbine motor and muffler, combination, W. Ruff Turbine regulater. D. Nishizaki Turbine steam, A. Benem	848,127
Turbine regulator. D. Nishizaki Turbine, steam, A. Benem Type casting machine, Drummond & Lieber- Knecht Type cleaning device, Bentz & Capron Typewriting machine, J. C. McLaughlin. Typewriting machine, R. Seidelinger. Typewriting machine, R. Seidelinger. Typewriting machine, E. F. Kunath Typewriting machine and the like, F. X. Wagner Typewriting machine type bar bearing, O. C. Kavle Valve and valve seat for steam traps, J. E. L. Ogden Valve for engines, balanced, J. M. Cosper. Valve, and valve seat for steam traps, W. R. Dawe Valve, towle, J. C. Kitton Valve pop safety, J. Porteous Valve, steam cylinder drain, F. Weiss. Valve, vacuum, F. E. Kingsley Valves, controlling means for release, S. C. Moore Valves, machine for setting locomotive, Connelly & Herron Vault cover mold, J. H. Denney Vehicle, meter driven, Schmidt & Schwein- Vehicle fender, Frayer & Miller Vehicle rim, P. Ebner	848,487 848,432
Turo costing mechine Brummand & Licher	010.102
knecht	848,352
Type cleaning device. Bentz & Capron	848,151
Typewriting machine, J. C. McLaughlin	848,316
Typewriting machine, R. Seidelinger	848,402
Type writing machine, H. L. Wagner	848,402 848,520
Typewriting machine, E. F. Kunath	848,560
Wagner machine and the like, r. A.	848,274
Typewriting machine type har hearing	040,214
C. Kayle	848,248
Valve and valve seat for steam traps, J.	,
E. L. Ogden	848,389
Valve, double, J. C. Kitton	848,311
Valve for engines, balanced, J. M. Cosper.	848,536
Valve, gate, L. D. Castle	848,009
R. Dawe	848,447
Valve, pop safety, J. Porteous	848,202
Valve, steam cylinder drain, F. Weiss	848,079 848,178
Valve, vacuum, F. E. Kingsley	848,178
Valves, controlling means for release, S.	
U. Moore	848,598
valves, machine for setting locomotive, Con-	848,011
Vault cover mold T H Denney	848,538
Vehicle fender. Frayer & Miller	848,022
Vehicle, meter driven, Schmidt & Schwein-	í l
ler	848,267
Vehicle rim, P. Ebner	848,017
Venicle running gear, J. W. Bentler	848, <b>017</b> 848,281 848,103
Vehicle stake, G. L. Harvey	848,103
C. Silcott	848,059
Vehicle wheel, W. S. Hadley	848,461
Vending machine. C. Forth	848,589
Ventilator, W. D. Robinson	848,050
Ventilator, A. Konsalik	848,376
Ventilator, A. Konsalik  Vessels, means for effecting escape of occu-	848,376
Vensels, means for effecting escape of occu- pants from sunken, I. Fripp	848,376 848,615
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp Vessels, means for retarding the movements of J. England	848,376 848,615
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp. Vessels, means for retarding the movements of, J. Englund Vine and weed cutter. C. F. Hippard.	848,376 848,615 848,297 848,464
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund  Wagon brake, automatic, H. A. Kennard. Wagon brake, automatic, H. A. Kennard.	848,376 848,615 848,297 848,464 848,250
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp Vessels, means for retarding the movements of, J. Englund Vine and weed cutter, C. F. Hippard Wagon brake, automatic, H. A. Kennard Wagon, dump, D. S. Watson343,076,	848,376 848,615 848,297 848,464 848,250 848,077
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp Vessels, means for retarding the movements of, J. Englund Vine and weed cutter, C. F. Hippard Wagon brake, automatic, H. A. Kennard Wagon, dump, D. S. Watson	848,376 848,615 848,297 848,464 848,250 848,077 848,261
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund  Vine and weed cutter, C. F. Hippard  Wagon brake, automatic, H. A. Kennard  Wagon, dump, D. S. Watson  S48,076, Wagon seat, W. P. Norrington  Washing machine, R. Woerner  Vesting machine, R. Woerner	848,376 848,615 848,297 848,464 848,250 848,077 848,261 848,219
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp. Vessels, means for retarding the movements of, J. Englund Vine and weed cutter, C. F. Hippard Wagon brake, automatic, H. A. Kennard Wagon, dump, D. S. Watson Washing machine, R. Woerner Washing machine, Ellis & Ayett Watchease, G. A. Schlechter	848,376 848,615 848,297 848,464 848,250 848,077 848,261 848,219 848,452 848,131
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund Vine and weed cutter, C. F. Hippard Wagon brake, automatic, H. A. Kennard Wagon, dump, D. S. Watson	848,376 848,615 848,297 848,464 848,250 848,077 848,261 848,219 848,452 848,452
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pents from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund  Vine and weed cutter, C. F. Hippard  Wagon brake, automatic, H. A. Kennard  Wagon, dump, D. S. Watson  S48,076,  Wagon seat, W. P. Norrington  Washing machine, R. Woerner  Washing machine, Ellis & Avett  Watchease, G. A. Schlechter  Vatches in the cases, means for fastening the movements of, E. J. Martel	848,376 848,615 848,297 848,464 848,250 848,077 848,261 848,219 848,452 848,131
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund Vine and weed cutter, C. F. Hippard Wagon brake, automatic, H. A. Kennard Wagon, dump, D. S. Watson Wagon, dump, D. S. Watson Wagon, seat, W. P. Norrington Washing machine, R. Woerner Washing machine, Ellis & Avett Watchease, G. A. Schlechter Watches in the cases, means for fastening the movements of, E. J. Martel Watchmaker's tool, D. Dekle	848,376 848,615 848,297 848,464 848,250 848,077 848,261 848,219 848,4131 848,186 848,449
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund Vine and weed cutter, C. F. Hippard. Wagon brake, automatic, H. A. Kennard. Wagon brake, automatic, H. A. Kennard. Wagon brake, automatic, H. A. Kennard. Wagon seat, W. P. Norrington Washing machine, R. Woerner Washing machine, Ellis & Avett. Watchease, G. A. Schlechter Watchease, G. A. Schlechter Vatches in the cases, means for fastening the movements of, E. J. Martel. Watchnaker's tool, Dekle Water closet flushing tank, L. Lipp.	848,376 848,615 848,297 848,464 848,250 848,077 848,261 848,219 848,452 848,131 848,186 848,449 848,381
Ventilator, A. Konsahk Vessels, means for effecting escape of occu- pents from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund  Vine and weed cutter, C. F. Hippard Wagon brake, automatic, H. A. Kennard Wagon, dump, D. S. Watson  Vagon, dump, D. S. Watson  Vagon, dump, D. S. Watson  Vashing machine, R. Woerner  Vashing machine, Ellis & Ayett  Watchease, G. A. Schlechter  Vatchmaker's tool, D. Dekle  Water closet flushing tank, L. Lipp  Vater gage, recording, Hardesty & Stewart  Veter gage, recording, Hardesty & Stewart	848,376 848,615 848,297 848,464 848,250 848,077 848,219 848,452 848,452 848,452 848,486 848,486 848,486 848,486 848,481
Vehicle fender, Frayer & Miller.  Vehicle meter driven, Schmidt & Schwein- ler  Vehicle rim, P. Ebner  Vehicle rim, P. Ebner  Vehicle stake, G. L. Harvey  Vehicle tops, removable bottom frame for,  Vehicle wheel, W. S. Hadley  Vending machine. C. Forth  Ventilator, W. D. Robinsen  Ventilator, W. D. Robinsen  Vensels, means for effecting escape of occupants from sunken, I. Fripp  Vessels, means for retarding the movements  of, J. Englund  Vine and weed cutter, C. F. Hippard  Wagon brake, automatic, H. A. Kennard.  Wagon dump, D. S. Watson	848,376 848,615 848,297 848,464 848,250 848,261 848,219 848,219 848,452 848,131 848,186 848,449 848,449 848,449 848,449 848,449 848,449
Ventilator, A. Konsalik Vessels, means for effecting escape of occu- pants from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund Vine and weed cutter, C. F. Hippard Wagon brake, automatic, H. A. Kennard Wagon brake, automatic, H. A. Kennard. Wagon brake, automatic, H. A. Kennard. Wagon seat, W. P. Norrington Washing machine, R. Woerner Washing machine, Ellis & Avett. Watchease, G. A. Schlechter Watchease, G. A. Schlechter Watchease in the cases, means for fastening the movements of, E. J. Martel. Watchmaker's tool, Dekle Water closet flushing tank, L. Lipp Water gage, recording, Hardesty & Stewart Water tank, C. Willms Weed cutter and cultivator, rotary, A. A. Febrenbacher	848,376 848,615 848,297 848,464 848,250 848,250 848,250 848,250 848,452 848,452 848,452 848,452 848,452 848,449 848,381 848,136 848,147 848,131
Ventilator, A. Konsahk Vessels, means for effecting escape of occu- pants from sunken, I. Fripp.  Vessels, means for retarding the movements of, J. Englund  Vine and weed cutter, C. F. Hippard  Wagon brake, automatic, H. A. Kennard  Wagon, dump, D. S. Watson  Wagon seat, W. P. Norrington  Washing machine, R. Woerner  Washing machine, Ellis & Ayett  Watchcase, G. A. Schlechter  Watchcase, G. A. Schlechter  Watchmaker's tool, D. Dekle  Water closet flushing tank, L. Lipp  Water gage, recording, Hardesty & Stewart  Water stank, C. Willins  Weed cutter and cultivator, rotary, A. A.  Febrenbacher  Vell cleaner, oil, F. N. Scofield	848,376 848,615 848,297 848,464 848,250 848,061 848,261 848,261 848,462 848,462 848,463 848,464 848,381 848,381 848,192 848,192 848,613 848,613 848,613
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield	848,613 848,501
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products	848,613 848,501 848,433 848,142 848,325 848,383 848,522 848,303 848,562
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Neel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from, T. Newnham Vood substitute, F. Schnell	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Neel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from, T. Newnham Vood substitute, F. Schnell	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Neel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from, T. Newnham Vood substitute, F. Schnell	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Neel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from, T. Newnham Vood substitute, F. Schnell	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Neel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from, T. Newnham Vood substitute, F. Schnell	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, B. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from, T. Newnham Vench, J. T. Schnell Vench, J. T. Shepherd Venches, adjusting means for monkey, S. V. Rehart	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Neel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from, T. Newnham Vood substitute, F. Schnell	848,613 848,501 848,433 848,142 848,383 848,383 848,522 848,303 848,562 848,484 848,133
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from T. Newnham Vood substitute, F. Schnell Vrench, J. H. Shepherd Vrenches, adjusting means for monkey, S. V. Rehart	848,613 848,501 848,423 848,142 848,325 848,522 848,522 848,523 848,662 848,484 848,133 848,058 848,058
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from T. Newnham Vood substitute, F. Schnell Vrench, See Nut wrench Vrench, J. H. Shepherd Vrenches, adjusting means for monkey, S. V. Rehart  DESIGNS.	848,613 848,501 848,433 848,142 848,325 848,325 848,383 848,562 848,562 848,484 848,133 848,058 848,058
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from T. Newnham Vood substitute, F. Schnell Vrench, See Nut wrench Vrench, J. H. Shepherd Vrenches, adjusting means for monkey, S. V. Rehart  DESIGNS.	848,613 848,501 848,423 848,142 848,122 848,522 848,522 848,522 848,523 848,562 848,433 848,058 848,058 848,204
Weed cutter and cultivator, rotary, A. A. Fehrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Vood, apparatus for extracting by-products from T. Newnham Vood substitute, F. Schnell Vrench, See Nut wrench Vrench, J. H. Shepherd Vrenches, adjusting means for monkey, S. V. Rehart  DESIGNS.	848,613 848,501 848,433 848,142 848,325 848,325 848,522 848,522 848,523 848,623 848,562 848,433 848,058 848,204
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whiel, B. H. Sills Whiel B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Wood, apparatus for extracting by-products from, T. Newnham Wood substitute, F. Schnell Verench, See Nut wrench. Verench, J. H. Shepherd Verenches, adjusting means for menkey, S. V. Rehart  DESIGNS. Lutemobile horn, G. Marchesini. Sadge, J. J. Davis Sadge, J. J. Davis Sadge, R. C. Sherrard Ligar band or wrapper, L. C. Wagner, 13493 to	848,613 848,501 848,433 848,142 848,325 848,522 848,522 848,522 848,562 848,562 848,562 848,562 848,562 848,484 848,133 848,058 848,204
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, G. W. Walk Wheel, B. H. Sills Whiel, B. H. Sills Whiel B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel J. N. Whitner Window stop, W. A. Heartt Wire cloth supporting and measuring apparatus, W. W. March Wood, apparatus for extracting by-products from, T. Newnham Wood substitute, F. Schnell Verench, See Nut wrench. Verench, J. H. Shepherd Verenches, adjusting means for menkey, S. V. Rehart  DESIGNS. Lutemobile horn, G. Marchesini. Sadge, J. J. Davis Sadge, J. J. Davis Sadge, R. C. Sherrard Ligar band or wrapper, L. C. Wagner, 13493 to	848,613 848,501 848,433 848,142 848,325 848,522 848,522 848,522 848,562 848,562 848,562 848,562 848,562 848,484 848,133 848,058 848,204
Weed cutter and cultivator, rotary, A. A. Febrenbacher Well cleaner, oil, F. N. Scofield Whalebone for bodices, mixed, E. M. Bossuet Wheel, B. W. Walk Wheel, B. H. Sills Whip socket, G. B. Mankins Wind or water power wheel, J. N. Whitner Window stop, W. A. Heartt Window stop, W. A. Heartt Wood, apparatus for extracting by-products from, T. Newnham Vrond, J. H. Shepherd Vrench, See Nut wrench Vrench, J. H. Shepherd Vrenches, adjusting means for monkey, S. V. Rehart  DESIGNS.  Lutemobile horn, G. Marchesini. Sadge, J. J. Davis Sadge, R. C. Sherrard Ligar band or wrapper, L. C. Wagner,	848,613 848,501 848,433 848,142 848,325 848,522 848,522 848,522 848,562 848,562 848,562 848,562 848,562 848,484 848,133 848,058 848,204

DESIGNS.		ı
Autemebile hern, G. Marchesini	38,499	i
Badge, J. J. Davis		r
Badge, R. C. Sherrard		
Cigar band or wrapper, L. C. Wagner,		
38,493 to		
Glass vessel, cut, W. C. Andersen		
Locket or similar article, Crees & Court	38,491	
Stove, A. T. Wehrle	38.4981	
Stove, heating, J. H. Higert	38,497	
	- 1	
<del></del>	Ì	
TRADE MARKS.	- 1	

Agricultural machines, certain, International Harvester Company of America	[
Harvester Company of America	61,512
Anonyme Des Anciens Etablissements	
Panhard & Levassor	61,503
Bakery products, cereal foods, and yeast, cer-	21 550
Rad and unhalatory aprings Dismond Fabric	61,553
Company of America	61,557
Beer, El Dorado Brewing Co	61,480 i
Baselit, fruit, National Biscuit Co	61,529 61,593
Boots and shoes, leather, H. L. Purdy	61,575
Company of America  Beer, El Dorado Brewing Co.  Books, law, American Law Book Co.  Books, law, American Law Book Co.  Boots and shoes, leather, Regal Shoe Co.  Boots and shoes, leather, Regal Shoe Co.	61,608
Boots, shoes, and slippers, leather, Paul	61.623
Bread, I. R. Bergeron	61,551
Brothers  Bread, I. R. Bergeron  Bronze, manganese, Manganese Bronze &	
Brass Co	61,603
Butter, creamery, Kirschbraun & Sons Butter, creamery, Kirschbraun & Sons Buttons, tie clasps, studs, etc., link, Stern Brothers & Co.	61,601
Brothers & Co.	$61,612 \\ 61,472$
Calcimine, Alabastine Co.	61,472
Calcimine, Alabastine Co. Candy, National Biscuit Co. Canned fruits and vegetables, W. R. Roach	61,568
& Co.	$\frac{61,615}{61.622}$
Canned hash meat, A. Oemler	
Car wheels steel Taylor Iron & Steel Co	61,625 61,516
Checolate, cocoa, and bonbons, "Lucerna"	01,010
Canned fruits and vegetables, W. K. Roach & Co. Canned hash meat, A. Demier Canned salmon, C. Schmitz & Co. Car wheels, steel, 'Taylor Iron & Steel Co. Checolate, cocoa, and bonbons, "Lucerna" Anglo-Swiss Milk Chocolate Co. Cigars cabinets, Cooper & McKee Cigars, Fritz Bros. Ce. Cigars, Park & Tilford Cleaners, carpet, cloth, and glove, Citizens' Wholesale Supply Ce. Clothing, certain, Heidelberg, Welff & Co. Coal, Jewett Bigelow & Brooks	61,528
Cigar cabinets, Cooper & McKee	$61,555 \\ 61,510$
Cigars, Park & Tilford	61,607
Cleaners, carpet, cloth, and glove, Citizens'	
Wholesale Supply Co	61,473
Coal. Jewett Bigelow & Brooks	61,60 <b>•</b> :
Clothing, certain, Heidelberg, Welff & Co Coal, Jewett Bigelow & Brooks Coffee and tea, W. S. Quinby Co Confectioners' paste for making candies, Mallow Cream Co. Corsets, Madame Irene Cotton, cotton and silk, and cotton and wool piece goods, C. C. Copeland & Co Cotton piece goods, American Printing Co. Custard powder, Iviny, Limited Dolls and toy animals, Rouech-Bowden Co Press shields, Omo Manufacturing Co Electrical Manufacturing Co Electrical machines and apparatus, certain, Electrical machines and apparatus, certain,	61,466 61,616
Confectioners' paste for making candies,	
Corsets Medema Irana	61,566 : 61,482 ·
Cotton, cotton and silk, and cotton and wool	
pièce goods, C. C. Copeland & Co	61,479 61,476
Cotton piece goods, American Printing Co	61,476
Dolls and toy animals, Rouech-Bowden Co	61,490
Dress shields, Omo Manufacturing Co	61,486
Electric lighting outlits, decorative, Sterling	61,548
Electrical machines and apparatus, certain.	01,116
Electrical Manuracturing Co 61,515, Electrical machines and apparatus, certain, Societe Anonyme Des Anciens Establissements Panhard & Levassor Erasers, india-rubber pencil, L. & C. Hardtmuth Fertilizers, Ashepoo Fertilizer Co 61,543, Fertilizers, Virginia-Carelina Chemical Co 61,543, Fertilizers, Virginia-Carelina Chemical Co Files and rasps, Henry Disston & Sons Fire extinguishers, chemical engines, etc.	
lissements Panhard & Levassor	61,502
muth	61,599
Fertilizers, Ashepoo Fertilizer Co	61,504
Fertilizers, Craven Chemical Co 61,543,	61,544   61,549
Files and rasps. Henry Disston & Sons	61,499
Fire extinguishers, chemical engines, etc.,	·
American-La France Fire Engine Co	61,494
Flour, wheat, Standard Milling Co	61,533 61,554
Flour, wheat, M. H. Davis	61,556
Flour, wheat, P. Trent Co	61,571 61,582
Foods, certain sea, E. T. Smith Ce	$61,582 \mid 61,596 \mid$
Files and rasps, Henry Pisston & Sons.  Fire extinguishers, chemical engines, etc.,  American-La France Fire Engine Co  Flour, wheat, Standard Milling Co  Flour, wheat, M. H. Davis  Flour, wheat, M. Trent Co.  Flour, wheat, P. Trent Co.  Food, poultry, Illinois Seed Co  Foods, certain sea, E. T. Smith Co.  Furniture polish Lyon & Healy  Games and sports, certain named goods used  in athletic, Victor Sporting Goods Co  Gin, H. R. Myers  Gloves, leather, F. J. Raymond  Gum, chewing, Soda Mint Gum Co.  Gum, chewing, Doctor Wemm's Eucalyptus  Cure Co.	61,470
Games and sports, certain named goods used	
IN AUDICTIC, VICTOR Sporting Goods Co	61,492 61,621
Gin, H. R. Myers	61,586
Gloves, leather, F. J. Raymond	61,488
Gum, chewing, Soda Mint Gum Co	61,532
Gum, chewing, Doctor Wemm's Eucalyptus	61.559

# April 6, 1907. 2 H.P. Engine Swiftest, most powerful, efficient and reliable engine of its size on earth. Drivas Came, Ruccisant, no 14 to 29 ft. Lazach, with lead, 5 to 10 miles per hour Reversible, cacy to install and operate Runs on Gasdine. Bistillate, Revenue or Alcohol. FEEE Sold under 5-Year Guarantee. Colla lete Mater Co Pent " Petroit, Mich. Sparking Storage Batteries 1000 Miles On One Charge BEST for LEAST MONEY Guaranteed for One Year BELL PUMPS Will Save Your Tire Franco: American Auto & Supply Co. Sole Agents 1404-1406 MICHIGAN AVENUE CHIC CHICAGO, ILL.

### :INVENTORS': OPPORTUNITY

#### JAMESTOWN EXPOSITION

will admit models, plans, inventions, etc., to be displayed and operated and sold. A special opportunity not previously granted at other expositions. For details, cost, arrangements, etc.,

BUREAU OF INVENTIONS
JAMESTOWN EXPOSITION NORFOLK, VIRGINIA

## The Choice of a Profession

An address by President Southworth sent free on ap plication to the Recorder's Office, Meadville, Pa.

THE MEADVILLE THEOLOGICAL SCHOOL

trains men and women for the present day ministry. Founded 1844. No doctrinal tests. Generous beneficiary and scholarship funds. Fellowsbip for study abroad yielding \$510, awarded annually to a computent, graduate. Special lecturesbips. Member of the American Committee for Lectures on the History of tempions.



## INNER TUBES

# **Obviate Tire Troubles**

STRONGEST TUBES Imported or Domestic

PARKER, STEARNS & CO. 228 and 229 South St., New York, U.S.A.



Typewriter Bargains All Standard Makes \$15.00 to \$65.00

Most of these machines have been only slightly used—are good as new. Shipped on approval. Don't buy a typewriter before writing us. We will give you the best typewriter bargains that can be offered. McLaughlin Typewriter Exchange, 201 N. 9th St., St. Louis, Mo.

#### -LENSES.

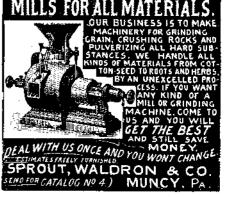
Besides making all kinds of PHOTOGRAPHIC LENSES we manufacture to order lenses of every description, including stereoscope, surgical instrument, lantern lenses, magnifying mirrors, etc. Write for estimates and samples. We make 35 different styles and sizes of PHOTOGRAPHIC SHUTTERS and our factory is especially equipped to manufacture fine

and our factory is especially equipped to manufacture fine small metal articles of all kinds, furnishing the dies if de-sired. Estimates on application. Wollensak Optical Co., 292 Central Ave., Rochester, N. Y.

# MAJESCO PHOTO

graph to any surface. Indestructible. Pillow Tops, etc. Can be washed. For sale by all dealers in Photo Supplies. Or sent to any address on receipt of 25 cents, Sample on Satin Free.

CHEMICAL ART CO., 263 La Salle Street, - Chicago





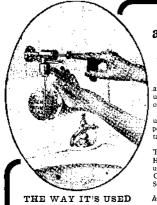
# The Fame of the

Accuracy, reliability, durabilityin fact every requisite of a perfect timepiece is expressed when you mention the name-ELGIN.

There are different grades of ELGIN movements at different prices. The G. M. WHEELER Grade ELGIN is "The Watch that's made for the Majority," This popular movement is finely adjusted; 17 jewels;—a watch that can be depended upon, at a popular price. Ask to see the G. M. WHEELER Grade ELGIN in thin models and sizes so desirable for men and boys.

ELGIN Watches of equal grade for ladies, at moderate prices.

ELCIN NATIONAL WATCH CO.. Elgin. III.



#### A New and Better Kind of Soap We all useSoap,

and often many use the same cake of soap.
Thisis wronguncleanly, and positively unsani-

tary. Bender's Liquid Bender's Liquid Toilet Soap and Holder gives each user Pure, Fresh, Clean. Individual Soap at each using. What you use has never been used before—conare impossible.

tagion and contamination of any kind are impossible.

As you draw from the Holder only the quantity needed, there is absolutely no waste—rather, a 50 per cent, saving

#### BENDER'S LIQUID TOILET SOAP

is made of only the purest ingredients, is most beneficial to the skin, and is delicately perfumed.

Indispensable in cleanly bemes, and a sanitary necessity in Hotels, Clubs, Public Buildings, Steamships, Parlor Cars, and all public lavatories.

Sprinkle-top Bottles, 25e.
Quart Bottles, 57e.
Bender Liquid Soap Holder, \$2.00

With for, illustrated circular, 0, este at Pure Stores

Write for illustrated circular. On sale at Drug Stores, Department Stores, or direct from

Bender Mfg.Co.,540 Land Title Bldg., Philadelphia, Pa.

#### HOW TO MAKE MONEY



Send today from FREE book and descriptive mattreeling all about the profits that can be made in the manufacture of concrete building blocks. With FRANCIS BLOCK MACHINE any man of ordinary ability can make from \$5 to \$15 a day. No capital or experience necessary. Building blocks are constituted and profit frost proof, freetproof, and will not cruck or crumble. Contractors at a builders in your town need your entire output. Facts and figures showing why you can make more money with a Francis Machine sent FREE. Write today.

FRANCIS MACHINERY COMPANY, nut Street,



Anyone sending a sketch and description may accided ascertain our opinion free whether an invention is probably patentable. Communications strictly condidential. HAMDBOM on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Uo. receive special notice, without charge, in the

## Scientific American.

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$3 a year; four months, \$1. Sold by all newsdealers. MUNN & Co. 361Broadway, New York Branch Office. 625 T St., Washington, D. C.

I	1
Harrows, plows, seeders, rollers, etc., Cut- away Harrow Co.	61,507
Heaters and furnaces, gas and vapor, Snit- jer Co.	61,514
Heaters and furnaces, gas and vapor, Snitjer Co. Honey compounds, Gordon, Wolf and Co. Horseshoes, Chillington Tool Co. Jars, fruit or preserving, Ball Bros. Glass Mfg. Co. Journal, weekly, Agricultural Publishing Co. Knit hosiery and underwear, M. & C. Mayer Knitted undershirts and drawers. Robischon	61,581 $61,495$
Mfg. Co	61,527
Co	61,617
Mayer	61,604
& Peckham Co	61,489 61,561
	61,547
tric Mfg. Co	61,508
Lamps, incandesce it electric, Franklin Electric Mfg. Co. Lead and zinc, combination of white, W. W. Lawrence & Co. Leather, Pfister & Vogel Leather Co.	61,475
Leather, C. A. Schieren & Co	61,574 61,577
Leather, C. A. Schieren & Co Leather blackings and dressings, Citizens' Wholesale Supply Co	61,496
Leather blackings and dressings, Citizens' Wholesale Supply Co Leather fobs, match cases, and pocket books, Weiss M't'g Co Leather, lace, American Lace Leather Co Leggins, H. Jacob & Sons Linoleum, oil cloth, etc., varnish-like preservative for, G. N. Baker Magnetos, Bridgeport Specialty Co. 61,506, Malt extract, Ebling Brewing Co. Matthus, frietion, Union Match Co Matting, Atkinson, Mentzer & Grover. Meats, fresh, smoked, and cured, Charles	61,578
Leggins, H. Jacob & Sons	61,526 61,483
servative for, G. N. Baker	61,464 61,538
Malt extract, Ebling Brewing Co	61,518
Matting, Atkinson, Mentzer & Grover Meats, fresh, smoked, and cured, Charles	61,477
Meats, fresh, smoked, and cured, Charles Roesch and Sons Co.  Metal manufactures, certain, Hibbard, Spencer, Bartlett & Co.  Metal plates and steel, Fried, Krupp Aktien-	61,595
Metal plates and steel, Fried. Krupp Aktien- gesellschaft	61,511 61,509
gesellschaft	61,517
Publishing Co	61,626
Publishing Co. Odometers, kilometer counters, and tachymeters, A. Schneider Oil for certain named purposes, G. W. Cole Co 61.545, Oils, certain, Citizens' Wholesale Supply Co.	61,611
Cole Co	61.546 61,619
Hasslacher Chemical Co	61,624
paint J. Lucas & Co. Paint and varnish, composition for removing, J. Lucas & Co.	61,536 61,469
Paint and varnish, composition for removing, J. Lucas & Co	61,467
Paper, drawing, Keuffel & Esser Co. 61,564, Paper for use in writing, printing, and en- graving, high grade, Parsons Paper Co.,	61,585
Pastry, certain, A. T. Dietz	61,589 61,558
Pastry, certain, A. T. Dietz. Pencils, lead, Eagle Pencil Co. Porcelain articles, certain, Owen China Co. Pork relish, M. M. Bodine Razors, Wm. 1715 at Co. 61,520 to 61,525, Rubber clothing, certain, Lawton & Hall Saddle housings and pads. Smith-Worthington Co.	61,620 61,570
Pork relish, N. M. Bodine Razors, Wm. Elist & Co. 61,520 to 61,525,	61,618   61,550
Rubber clothing, certain, Lawton & Hall Saddle housings and pads. Smith-Worthington	61,602
Co. Salad dressing, catsup, and mince meat, Pressing & Orr Co. Scrapers, soil, Wells-Jones Plow Co	61,591 61,590
Scrapers, soil, Wells-Jones Plow Co Seeds, grass, clover, and field, Illinois Seed	61,519
Co. Sewing machines, National Sewing Machine	61,562
Shirt waists and shirt waist suits. I. Rand.	61,513   61,487 61,485
Shirtings, Minot, Hooper & Co	61,542
Shoes, ladies', misses', and children's leather, Clarke Bros	61,552
Clarke Bros. Shoes, men's leather, Clarke Bros.	61,540 61,539
Clarke Bros. Shoes, men's leather, Clarke Bros. Silk, broad, J. S. Castell & Co. Silk dress goods, Lebigh Valley Silk Mills. Silks broad, dress, and piece, J. Wana-	61,478 61,484
maker Silks, dress, A. H. Sands	61,493 61,491
makec Silks, dress, A. H. Sands Soap, Pompeian Mfg. Co	61,474
Cordes, Hermanni & Co	61,465
Stove polish, J. A. Wright & Co.	61,500
Thirdles. Stern Brothers & Co	61,613
Thirshles. Stern Brothers & Co. Tobacco, cigars, cigarettes, and snuff, smoking, De Erven De Wed. J. Van Nelle. Tool and implement bandles, wooden, Neuss,	61,497
Toys, paper, M. A. Glen	61,481
Type, Barnhart Brothers & Spindler Varnishes and japans. J. Lucas & Co Vault sidewalk door and window lights	61,505 <b>61,468</b>
Type, Barnnart Brothers & Spindler Varnishes and japans, J. Lucas & Co Vault, sidewalk, door, and window lights, American Bar Lock Co Washing machines and wringers, Nineteen Hundred Washer Co. Woton material Federal Manufacturing, Co.	61,537
Washing machines and wringers, Nineteen Hundred Washer Co. Water motors, Edgar Manufacturing Co Wheat grits, Rugby Milling Co Whips, horse, G. C. Morgan Whisky, R. S. Strader	61.501 61,498 61.576
Wheat grits, Rugby Milling Co	61.576 61,567 61.535
Whisky, R. S. Strader 61,534, Whisky, Kamp Distilling Co. Whisky, B. W. Le Compte Whisky, Delaney & Murphy Whisky, Pretberg, Meyer & Co. Whisky, W. H. Jones and Co. Whisky, Stor Distillore, Co.	61.535 61.563 61,565
Whisky, B. W. Le Compte	61,579 61,580
Whisky, W. H. Jones and Co.  Whisky, Star Distillery Co.	
Whisky, Star Distillery Co. Whisky, M. Salmon Whisky, Sample & Co.	61.609
Whisky, Straus, Gunst & Co.	01,014
LABELS.	
"Baking Powder," for baking powder, Berlin	40.40:

"Baking Powder," for baking powder, Berlin 13,424 "Baking Powder," for baking powder, Berlin Laboratory 13,424
"Big Jane." for baking powder, Berlin Laboratory 13,423
"Bisco," for a baking compound, Berlin Laboratory 13,422
"Corn Crystals." for a cereal food, Corn Crystal Co. 13,425
"Good Luck," for cigars, O. L. Schwencke Lithographic Co. 13,418
"Just Right." for cigars, O. L. Schwencke Lithographic Co. 13,416
"Kaffee Khisch," for coffee, Berlin Laboratory 13,421
"Lion Washing Powder," for washing powder, R. H. Keagy 13,426
"Orela," for cigars, O. L. Schwencke Lithographic Co. 13,417
"Se-ba-20," for a carbonated beverage, R. R. Armstrong 13,429
"Schub's Export," for beer, Williams Bros. Co. 13,420

#### PRINTS.

"? Fall 1907 Guess." for men's and boys' coats, vests, and trousers, Ed. V. Price & Co.

"Fine Varnishes and Japans." for varnishes and japans, Bigelow Varnish Co.

"Jumped Into Favor From The Start," for whisky, Lanahan & Son

"Men's and Boys' Apparel, for men's and boys' apparel, H. C. Lyton......

"Perry's Fashions for Spring 1907," for men's clothing, Perry & Co.

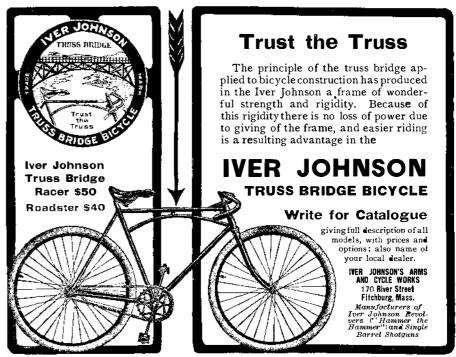
"Rimless Eyeglass Snap," for eyeglass snap, Chapin & Hollister Co.

"Sapolin Powders for all Kinds of Gilding," for gilding powders, Gerstendorfer Bros. Who's Your Tailor?" for men's and boys' coats, vests, and trousers, Ed. V. Price & Co. 1,940 1,941 1,936 1,938

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 10 cents, provided the name and number of the patent desired and the date be given. Address Munn & Co., 361 Broadway, New York.

York.

Canadian patents may now be obtained by the inventors for any of the inventions nemed in the foregoing list. For terms and further particulars address Munn & Co., 361 Broadway, New York.



I WILL MAKE YOU **PROSPEROUS** 

If you are honest and ambitious write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mall; appoint you special Representative of my Company in your town, start you in a profitable business of your own, and help you make big money at once. Unusual opportunity for men without capital to become independent for life. Valuable book and full particulars free. Write today. Address nearest office.

NATIONAL CO-OPERATIVE REALTY CO. NATIONAL CO-OPERATIVE REALTY CO. 1049 Maryland Building, Washington, D. C. 1049 Athenaeum Building, Chicago, Illinois



SEALED PROPOSALS.

SEALED PROPOSALS.

PRO POSALS FOR CONSTRUCTION, Etc. Office of the Constructing Quarter master, Fort Bliss. Texas, March 8th, 1907. Sealen proposals, in duplicate, for the sinking of a twelve-inch tubular Deep Well. Installing a beep Well Pump over same: For ennetruening a Deep Well Pump Shelter and Trestle: an 150.000 as 10m Steel Tank on a 70 foot Trestle, and furnishing and installing two 40 H. P. Boilers, at this post, will be received here until 12 M. June 3rd, 1907, and then opened. Applicants for plans and specifications must enclose a signed receipt to insure the safe return of the same. Envelopes containing proposals should be endorsed "Proposals for Construction to be opened June 3rd, 1907." and addressed to the Constructing Quartermaster.

NVENTORS. P. Bellows 299 Broadway, New York, can make the working drawings of your inventions.



and Bottlers Machinery. THE VILTER MFG. CO. 899 Clinton St., Milwaukee, Wis.

MODELS & EXPERIMENTAL WORK, Inventions developed. Special Machinery, E. V. BAILLARD. 24 Frankfort Street. New York.

Expert Manufacturers Fine Jobbing Work RUBBER PARKER, STEARNS & CO., 228.229 South Street, New York

STUDENTS' and Draftsmen's Library Club. Send for Catalogue and information as to buying technical books on easy terms of payment.

Wm. T. Comstock, 23 Warren St., New York

# MODEL'S CHICAGO MODEL WORKS 178 E MAD SONS TOHICAGO, 1/2 L ESTABLISHED 1887 E WHIE FOR CARLOGGE OF MODEL SUPPLIE

MR. INVENTOR

Send us your models or drawings for our lowest prices. We can develop, perfect or manufacture your invention. MONARCH TOOL CO., 128 Opera Place, Cincinnati, O.

# Dies, Tools, Madels and Special Machinery, Metal Specialises of the Machinery of the Metal Specialises of the Machinery of the Metal Specialises of the Machinery of the Metal Specialises of the Machinery of the

Specialties & Patents Bought and Sold

### DRYING MACHINES for all kinds of gran-ular materials. S. E. Worrell, Haunibal, Mo. THE SCHWERDTLE STAMP CO. STEEL STAMPS, LETTERS & FIGURES. BRIDGEPORT CONN.

**Experimental & Model Work** 

We have No Rent ing you Prices on Stamping. LARIMER MFG. CO., Eola, Ill. (near Chicago)

MASON'S NEW PAT. WHIP HOIST for Cutrigger hoists. Faster than Elevators, and direct from teams. Saves handling at less expen Manfd. by VOLNEY W. MASON & CO., Inc. Providence, R. I., U. S. A.



55c. Parlor Tricks Catalogue, free.
MARTINKA & CO., Mfrs., 493 Sixth Ave., New York

We manufacture METAL SPE-CLALTIES of all kinds, to order, largestequipment: lowest pric-es. Send sample or model for low estimate and best expert ad vice FREE THE EAGLE TOOL . Dept. A. Cincinnati. 0.

## College Men Wanted

Profitable Summer Work. Permanent Employment If You Want It



E want an energetic man or woman in every county to handle an extraor dinary new book proposition. Nothing like it for big sales and big commissions. Write at once to

THE REVIEW OF REVIEWS COMPANY Astor Place, Room 414, New York

# **MANUFACTURERS**



Telegraphy Circular free. Wonderful automatic leacher. Styles Styles Styles (M.), Devil 32, 48 Curtiandt St., New York.

Are you interested in Patents, Model or Experimental work? Our booklet entitled

WHAT WE DO-HOW WE DO IT will be sent to you on request.
KNICKERBOCKER MACHINE WORKS, Inc.,
8-10-12 Jones Street, New York.

NOVELTIES & PATENTED ARTICLES
MANUFACTURED BY CONTRACT, PUNCHING DES. SPECIAL MACHINERY. E. RONIGSLOW STAMPING & TOOL WORKS, CLEVE LAND, O.



# EARN WATCHMAKING

We teach it thoroughly in as many months as it formerly took years. Does away with tedious appreraiceship. Money earned while studying. Positions setured. Easy terms. Send for catalog. ST. LOUIS WATCHMAKING SCHOOL, St. Louis, Mo.

STUDY High-Grade Instruction by Correspondence Established 1892

Prepares for the bar of any State. Three Courses: College. Post-Graduate and Combining theory and Practice.

One student writes: "I have learned mere law in three menths under your instruction than I learned in six months in a law office."

APPHOYED BY HENCH AND RAB

APPROVED BY BENCH AND BAR Classes begin each month. Uniform rate of tui-tion. Send for our 48-page catalogue in which we give a synopsis of the rules for admission to the bar of the several States.

Chicago Correspondence School of Law Reaper Block, Chica**80** 

