factorily, has given the fundamental principles | of steam turbine design in their logical order. Foremost among these is the velocity of steam flow under given conditions. Many of the laws have been developed into simple and direct expressions and are coupled with numerical and graphical solutions illustrating the principles involved.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued

for the Week Ending

April 24, 1906.

April 24, 1906.	Dish washing machine, I. L. Frankem. 81 Disk jointer, T. M. Ross	318,427 318,562
AND EACH BEARING THAT DA	A I P Display rack, extensible, E. L. Rojeblo	279 780
[See note at end of list about copies of these pate	Distilling apparatus, L. Kleitz	318,831 318,842
	ents.] Door check, B. Gonyo	18,600
Alcoholic liquors, receptacle for storing, S. Schwayder	18,478 Door, grain, W. J. Cocklin. 81 Door hanger, W. P. Benson. 81	818,816 818,603
Schwayder		
ga energory T K Toles 81	Dresser, W. K. Malcolm 81	\$18,807 \$18,458
Basement and like ventilator, P. H. Jackson 81	18,491 Dye and making same, anthracene, Bally & Isler	12,414
Bath tub head support or bolster, C. Ross-	Dye and making same, sulphur, A. Schmidt 81	18,980 18,981
Bearing, ball, E. Blin	18,837 Egg beater, T. H. Perrin	18,914
Bed, folding, W. L. Caldwell	38,919 reissue 18,517 Electric light, portable, C. Hubert 81,8,874 Electrical effluvia, apparatus for indicating	12,413 18,449
tam Shahtub apparatus, H. Hoeglauer Shahtub apparatus, H. Hoeglauer Shahtub apparatus, H. Hoeglauer Shahtub apparatus, H. Hoeglauer Shahtub apparatus, Shahtub appara	18,518 the character of, L. Gerard	18.534
Bending machine, P. H. Murphy	18,488 Electro-pneumatic channeler, A. H. Gibson. 81	18,614 19,011
Bending machine, P. H. Murphy. 81. Bicycle track, S. W. Tonry. 81. Billiard cue, J. W. Wilson. 81. Binder, loose leaf, H. B. Burckhart. 81. Binder, temporary L. C. McNeal. 81. Binding post) C. Slusser. 81.	18,488 Electro-pneumatic channeler, A. H. Gibson. 81 18,597 Engine frame, locomotive, C. H. Howard 81 18,664 Engine sparking ignition controlling means, 18,548 explosive, J. 8. Moreland	18.448
Dit. See Drivie Dit.	tion, E. H. Bogart 81	
Blind adjuster, I. L. Garside	3.198 Engines. Simmerged exhaust device for ma-	
& White	8.775 W. H. Bassinger Strong 81 9.020 Envelope stacker, R. H. Strong 81 8.917 Excavating machine, J. B. Gerden 81 8.777 Exhaust, autematic, W. Ceoper 81	18,657 18,924
Book Support Clamp, F. E. Ruger	1.00 1.00	18,952 $19, •02$
Bottle, Harriss & Hogan	8,623 von Dahmen	18,939 18, 5 43
Bettle and jar cap, A. Calleson 81 Bettle clesure, E. Taylor 81	8,809 Exposure appliance, A. Leistenschneider 81 8,741 Eyeglasses, J. C. Wells 81 8,798 Fabrics, machine for extracting threads	18,720
Bottle lock, J. Solatinow	81.8,893	18,804 18,508
Bottles, jars, and other receptacles, safety clesure for, J. V. Hull	Feed device, relative, F. I. du Pont	18,556 18,859
Bexing purpeses, presser machine fer, G. N. Pond	Feeding device, E. N. Trump	18,585 18,493 18,679
Branding tool, M. P. Sullivan 811 Brick mold, J. A. Judie 811	8,482 Fence, wire, A. E. Roberts	18,710 18,797
Bridle bit, G. M. Peters	8,781 Fifth wheel, Rader & Wert	18,787 18,835
Brush, W. E. Whittemore	1.	18,693 18,868 18,679
Brush, R. Kulenkampff	8,696 Fire beat, L. Nixen	18,778 18,526
Bucket operating mechanism, clam shell,	8,668 Fire extinguishing apparatus, C. E. Buell. 81: Fire pet, adjustable, C. H. Gatchell 81:	18,999 18,949
Buckle, line and rein. F. M. Kibbey	8,780 Firearm, J. M. Brøwning	18,739 18,461
Buckle, trace, © . Rampendahl	8,668 Fire extinguishing apparatus, C. E. Buell. 81: Fire pet, adjustable, C. H. Gatchell. 81: 8,626 Firearm, J. H. Wesson 81: 8,760 Firearm, J. M. Brewning. 81: 8,761 Firearm, breech leading, F. Messberg. 81: 8,559 Firearm, magazine, V. M. Sprangel. 81: 8,881 Firearm, magazine, H. W. De Jarnatt. 81: 8,827 Fireproof metal window frame and sash, 8,827 Fireurositz W. A. Cilmon. 81: Figure 18, 18, 18, 18, 18, 18, 18, 18, 18, 18,	18, 57 0 18,669
Buggy bow spring attachment, G. A. Johnson 818 Building block, N. J. Peterson	8,827 Fireproof metal window frame and sash, 8,551 S. Keighley 81 Fireworks, W. A. Gilmer 81 8,733 Fishplate, G. H. Cornwell 81	18,969 18 950
for, C. Blesch	8.157 Fishing reel. Ernst & Patton	18.880
Butter cutting machine, E. J. Luhman 818 Button, E. A. Smith 818	8,770 Fluid pressure brake, W. P. A. Macfarlane 81: 8,983 Fly trap, Lenthier & Rouilliard	19, ● 32 18,836
Thema	8,486 Price	18.465
\$1\$ \$0¢ \$1\$	8,805 P. Bonvillain	$18,410 \\ 18,552$
Calendar, perpetual, W. B. Summerall	8,553 Fruit crier, M. Redgers	18.916 18,81 2
Cane loading apparatus, L. J. B. Trouard 818 Cannon recoil mechanism, F. B. Yingling 818	8,644 Welles	18,590 18,588
	8,815 Furnace charging apparatus, blast, J. W. 8,852 Dougherty	
Cat, brick, F. H. Reid 818,851, 818 Car coupling, A. Schulz 818 Car guard rail, street, E. P. Dandridge 818 Car journal box, railwsy, J. R. Williamson. 818	8.564 Furnace grate bar, T. E. Martin	18,409
Car lever. G. B. Sullivan	8,576 Game apparatus, E. Kuhn	12 205
Car register, F. A. Schierberg	8,629 Game apparatus, A. M. Benedic. 81: 8,563 Game board, S. M. Thomas. 81: 8,742 Game counter, O. W. Field. 81: 8,700 Garment, F. A. Platz. 81:	18,676 18,785
Car lever. G. B. Sullivan 818 Car, railway, H. L. Kerr 818 Car, register, F. A. Schierberg 818 Car, sleeping, P. P. Carroll 815 Car wheel, A. Mast 816 Carbureter, L. Renault 818 Carpenter's tool, Hause & Marlin 818 Carpet sweeper, W. H. Emmert 818 Carriage, folding baby, A. B. Todd 818 Cart, road, E. P. Hollister 818 Case. See Display case 818	8,755 Gas purifier, Jones & Wellman 818 8,487 Gas saving device, F. W. Playsted 811 8,755 Gas purifier, Jones & Wellman 812 8,487 Gas saving device, F. W. Playsted 811 8,487 Gas saving device, F. W. Playsted 811	18,748 19,018
Carpet sweeper, W. H. Emmert	8,755 Gas purifier, Jones & Wellman	18,891 18,554
Case. See Display case. Caster, . Hoffmann	8.442 Gearing variable speed friction, E. P.	18,662
Caster, © Hoffmann 818 Casting machine, E. E. Waite 818 Casting molel, J. M. Dodge 818 Cattle guard, F. V. Grimes 818 Cattle guard, F. V. Grimes 818	8.927 Cowles 81 8.941 Glass blewer's dummy, P. J. We'Brien 81 8.883 Glass securing device, plate, H. R. Ransom 81 82 8.469 Gold saving apparatus, I. P. Lambing 81 8.558 Goods handler, W. R. Calvert 81 8.15 8.16	18,747 18,705
Chain, detachable drive, L. R. Rogers	9.559 Coods handlar W D Calvart	18,834 18,869
Check back attachment and clamp for teams,	8,862 Governor, electromagnetic, D. Bacon	18,513 18,718
T. Schmeiser	8,862 Governor, electromagnetic, D. Bacon	18,830 18,711 18.944
Chuck, reck drill, Harris & Hoskin		
Cidor mill E D Cainge 818	8 682 : Grinding or polishing machine Mueller &	10,000
etc., for the preservation of, J. Hill 818 Cigar bunches, device for the preliminary	Boland	8,933 18,942
forming of, G. J. Prentice	8,786 Guns, automatic brake for tube recoil, K.	8.801
Cloth pressing machine, J. Ecker	8,462 Guns, telescepic sight fer, Meigs & Jakebs- 8,753 sen	8,546 8,468
Clutch, R. S. Kasson	Section Sect	8,638 8,589
Coke ovens, drawing machine for, R. D. Martin	8,902 Hand bag, J. D. Wood	18,729 18,796
Collar and cuff shaper, G. L. Richardson 818 Collar, horse, G. W. Hahn 818	8,915 Harness, E. H. Yule	8,930 9,029
Collar stay, L. C. Collins	8,817 Hasp, J. C. Griffin	8,685
Combing machine, gill box, etc., wool, Ormondroyd & White	Hat fastener, R. Willis 818 8,707 Hat hanger, P. F. Denning 818	8,988 8,421
Combination lock, D. H. Cleveland	Hasp, J. C. Griffin St.	8,849 8,507
Concrete mam, laminated multiple arch, S. P. Brown	Hat pin, E. Rating	8,788 8,524
Concrete, sectional girder and column of rein- forced, R. Grimm	Heat conserving apparatus, H. Lang	8,541 8,415
Contact, shoe, G. H. Fretts	Heat conserving apparatus, H. Lang. 818 8,884 Heat resisting fabric, G. F. Cole. 818 8,947 Hebby horse, progressing, A. Hitt. 88 8,579 Hoisting apparatus safety device, J. Dahlin 818	8,826 8,523
Core vent and support, combined metal, H. C. Caldwell	8,580 Hook and eye, H. A. Aldred	8,813 8,466
Corn cutting machine, C. A. Young 818	8,650 Horseshoe, clastic tread, A. W. Jones 819	9,016

Scientific	
Corn huskers and shredders, feeder for, E. F.	<u> </u>
Nash 818,549 Cotton chopper, A. Jezek 818,890 Counter, H. T. Weston 818,591	
J. E. Hunter	?
M. F. Williams 818,725 Crown and bridge work, A. H. Brown 818,661 Cuff holder, S. P. Dunlap 818,610	1
Culinary utensil, F. J. Larock 818,45t Cultivator, I. N. Van Pelt 818,49t Cultivator, R. T. Love 818,83t	
Cultivator, D. W. Strickland	31
Uurbing and sidewalk dressing implement, P. F. Connelly	.1
Corn huskers and shredders, feeder for, E. F. Nash	' }∶
Damper, belster swing, W. G. Price) - - - - -
Desk, adjustable combination, C. S. •wens. 818,910 pial, illuminated, C. F. Fernald. 818,822 Dish drier, J. Daly. 818,613	
Jish washing machine, I. L. Frankem 818,427 Jisk jointer, T. M. Ross 818,562 Display case, portable, J. W. Shaw 818,712	
Obstilling apparatus, L. Kleitz	
Ocor check and closer, combined, A. F. Bardwell	
Door check and closer, combined A. F. Bardwell S18,600	1
Drawing press, Adriance & Calleson 818,807 Dresser, W. K. Malcolm 818,458 Drier, C. A. Matcham, reissue 12,474	1
ye and making same, anthracene, Bally & Isler	
ye and making same, anthracene, Bally & Isler	
clectric circuit controller, H. W. Leonard, reissue	
Electrical switch and cut out, C. M. Dorman, et al	
explosive, J. S. Moreland	
tion, E. H. Bogart	
Algraving machines, holder or quill for holding the rotating tools of, M. Barr 818,993 invelope and message blank, combination,	
W. H. Bassinger	į
Explosives, completely exploding high, H. von Dahmen	
Angraving machines, holder or quill for holding the rotating tools of M. Barr \$18,993 invelope and message blank, combination, W. H. Bassinger \$18,962 invelope stacker, R. H. Strong \$18,852 invelope stacker, R. H. Strong \$18,952 intellegent stacker \$18,952 intellegent stacker \$18,952 intellegent stacker \$18,953 intellegen	
an, C. F. Winch	1 1
'eed ing device, E. N. Trump. 818,585 'ence, J. W. Veit. 818,493 'ence post. Eck & Trantwein 818,672	
Yence, wire, A. E. Roberts. 818,710 Yender, J. Stawartz 818,797 Yifth wheel, Rader & Wert 818,787	
Yile, bill, P. T. Lemaster 818,835 Yilter, L. W. Jones 818,693 Yilter, M. L. S. & W. T. Buckner 818,868 Yilter, J. W. Goleck 818,868	
ire beat, L. Nixen	:
ire pet, adjustable, C. H. Gatchell	1
irearm, breech loading, W. F. Mossberg \$18,461 irearm, magazine, V. M. Sprangel \$18,570 irearm, magazine, H. W. De Jarnatt \$18,669]
S. Keighley	
ishing reel, Ernst & Patton	-
orceps for handling beiled clethes, L. W. Price	,
ruit clipper, H. Petty	I
uel feeding apparatus, pulverized, G. S. Welles	I
urnace charging apparatus, blast, J. W.	i
use, saeii, w. H. Driggs	-
ame board, S. M. Thomas	
arment hanger, S. N. Cragin	<u>.</u>
urnace charging apparatus, blast, J. W. Dougherty \$18,615 Urnace grate at E. Martin \$19,019 use, shell, W. H. Driggs \$18,943 ame, A. Bolton \$18,409 ame apparatus, E. Kuhn \$18,895 ame board, S. M. Thomas \$18,595 ame board, S. M. Thomas \$18,595 ame counter, O. W. Field \$18,756 arment, F. A. Platz \$18,756 arment, F. A. Platz \$18,758 as burner, G. Machlet, Jr \$19,018 as saving device, F. W. Playsted \$18,554 as burner, Jones & Wellman \$18,554 as sing device, F. W. Playsted \$18,554 arr, silée, H. H. Buffum \$18,662 earling, variable speed friction, E. P. Cowles \$18,747	
Cowles	:
old saving apparatus, I. P. Lambing 818,834 oods handler, W. R. Calvert 818,869 overnor, electromagnetic, D. Bacon 818,513	-
overnor, engine, Walsh & Rumely	
rain dump and elevater, C. S. Upham 818,926 rasper, automatic, Bottcher & Heym 818,736 rate J. E. Frast	1
earing variable speed friction, E. P. Cowles Cowles Cowles Cowles Cowles Cowles Cowles Right Right	1
un mount, L. L. Driggs	- T
ung telegranic gight far Meigg & Igkahs-	
Sen S18,546 Air pin, F. E. Regan S18,463 Aimmer drill, W. Prellwitz S18,638 Aimmer, electric, W. F. Wegner S18,589 And bag, J. D. Wood S18,729 And press, J. Spengler S18,796 Air press, J. Spengle	т
anger. See Doi langer.	to F
asp, J. C. Grimi	1
therefor, F. L. Butterworth 818,610 at fastener, R. Willis 818,988 at hanger, P. F. Denning 818,421 at hanger, M. W. Potter 818,849 at pin, A. Woodward 818,507 at pin, E. Rating 818,788 ay rack, J. Dain 818,524 ay rack, J. Dain 818,524 ay rack, H. R. Ingiedne 818,451	Ī
at pin, E. Rating. 818,788 ay rack, J. Dain 818,524 ay rack H. R. Inginalus 919,451	1



Engine and Foot Lathes
MACHINE SHOP OUTFITS, TOOLS AND
SUPPLIES. BEST MATERIALS. BEST
WORKMANSHIP. CATALOGUE FREE SEBASTIAN LATHE CO., 120 Culvert St., Cincinnati, 0

Foot and Power and Turret Lathes, Planers, Shapers, and Drill Presses SHEPARD LATHE CO. 133 W. 2d St. Cincinnati,





The "ASTER" is the best French motor on the market for lighting houses, hotels, etc. Small, compact, simple and safe to operate. Motive power alcohol, oil or gas. 2 and 4 cylinders. Great power for small engines. Easy running. Write for illustrated Price List.

1591 Broadway

ASTER COMPANY
Broadway NEW YORK CITY



THE BARKER MOTOR

hasfrom the first shown itsel to be of superior design. Mechanical ideas of proven worth, combined with the best materials and careful attention to details make it

THE LEADER OF ITS CLASS. C. L. Barker, Norwalk, Conn.



MOTSINGER AUTO-SPARKER starts and runs

Gas Engines without Batteries. No other machine can do it successfully for lack of original patents owned by us. No evist motion in our drive. No best or switch necessary. No best or switch necessary. No batteries whatever, for make and dust-proof. Fully guaranteed.

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



The Wonder Gasoline Motors More powerfor less money than any other machine on the market. No

machine on the market. No valves, gears, etc, to gel out of order. Jump Spark. Our 1½ H. P. marine outfit is a "WIN. NER." Solid or reversing 10 peller. Our prices will surprise you. Write to-day. Marine or stationary outfits to suit any requirements up to 5 H. P.

M. Cornwell Co., 406 S. Salina St., Syracuse, N. Y.

434 Park Row Building, New York

KEROSENE OIL ENGINES



Marine Stationary Portable. NO DANGER, Maximum Power, Lightest Weight, Simple, Reliable, Economical, No Batteries, Self ignition by Compression. Fully Guaranteed. Write for Catalogue P. M. 13 No charge for packing. International Oil Engine Co.

253 Broadway, N. Y., U.S.A.

ROTARY PUMPS AND ENGINES. Their Originand Development.—An important series of papers giving a historical resume of the rotary pump and engine from 1588 and flustrated with clear drawings showing the construction of various forms of pumps and engines. 38 illustrations. Contained in Supplements 1109, 1110, 1111. Price 10 cents each. For sale by Munn & Co. and all newsdealers.



JAGER Marine 4-Cycle Engines

Skillfully designed and well built. Single lever control, com-bining automatic carburettor with spark advance. Develops wide speed range and reliability under most trying conditions. Sizes 3 to 60 h. p. Send for catalog.

CHAS. J. JAGER CO. Cor. High and Batterymarch Sts., Boston, Mass.

6 Garden St., BRIDGEPORT, CONN.



DISK DRILL FRICTION

FOR LIGHT WORK.

Has These Great Advantages:
The speed can be instantly changed from 0 to 1600 without stopping or shifting belts. Power applied can be graduated to drive, with equal safety, the smallest or largest drills with in its range—a wond-frill excaping its time and great saving in drill breakage.

W. F. & JNO. BARNES CO.,

Established 1872.

1999 Ruby Street, Rockford, Ill.

MACHINES FOR ROLLING
SCREW



		375
•	Hose rack, swinging, R. D. Wirt	818,989 818,990 818,759 818,667 818,509
	Hot water heater, C. M. Clausen. Hundred indicator, A. H. Woodward. Hydrant, W. S. Phelps. Ice creeper, C. O. Cook. Implement, combination, W. L. Iwan. Ingot mold, H. Grey. Injector, steam, W. A. Downes. Ink well, F. M. Ashley. Ink well, W. P. Swepe. Inking pad, A. C. Jackson. Iron and its alloys, manufacturing, M. Ruthenberg	818,509 818,782 818,520 818,627 818,684 818,422 818,403
3	Ink well, W. P. Swepe. Inking pad, A. C. Jackson. Iron and its alloys, manufacturing, M. Ruthenberg. Iron heater, C. Petty. Lyaning machine, H. Wondowlich.	818,581 818,692 818,918 818,847 818,728
).	enberg Iron heater, C. Petty. Ironing machine, H. Wonderlich. Jar closure, F. O'Neill. Jars and other like articles, holder for, P. E. Perry Joist hanger or stirrup, F. L. Heughes. Journal box, G. W. Meyer. Journal box ribbed, J. S. Patten Kettle, R. & J. A. Medley	818,706 819,023 818,689 818,634
9. D.	Journal box ribbed, J. S. Patten Kettle, R. & J. A. Medley Knitting machine thread feeding device, cir- cular, Neill & Taggart Knob fastening, F. J. Schwartz Labeling machine, F. O. Woodland Lacing, S. C. Abramsoh Lamp bulbs, blowing off the necks of, E. L. Elliott	818,912 818,973 818,908 818,565
	Lacing, S. C. Abramson Lacing, S. C. Abramson Lamp bulbs, blewing off the necks of, E. L. Elliott Lamp, electric incandescent, S. Feuerlein Lamp, gas, F. A. Ray	818,506 818,991 818,674 819,009 818,790
	Elliott Lamp, electric incandescent,	818,871 818,750 818,791 818,407
S	Russell Last, G. E. Belcher Lasting and sewing machine for boots and shoes, J. Keats Lathe dog, A. Krus Lawn edge trimmer and ditcher, J. M. Aldirich Lawn trimmer, H. B. Pitner	818,766 818,454 818,510 818,708
h d il	Ledger, loose leaf, F. Bollenbach	818,752 818,605 818,436 818,566
e	Light. See Electric light. Liquid meter, K. Scotti Liquors, apparatus for the manufacture of bisulfite, E. R. Barker Lock, B. Phelps Locking device, G. Holden. Locomotive roundhouses, hood and smoke nine for E. S. Piner	818,811 819,024 818,443 818,784
-	Machinery, folding, E. H. Cottrell Mail bag catcher, W. T. & E. B. Whitesell Mail bag catching and delivering machine	818,743 818,611 818,592
	Mattress stretcher, wire, J. B. Wilson Measuring and delivering liquids, apparatus for, G. L. Spencer	818,470 818,618 818,502 818,481
•	Measuring instrument, V. J. O'Connor Measuring vessel, C. Schock Mechanical motor and brake, A. W. Bart-	818,405 818,906 818,643 818,406
	Metal beams or girders, machine for cutting up or mitering flanged, J. Kruger Metal bending machine, D. M. Baxter Metallic leaf, package roll of, W. H. Coe Mines, etc., device for searching submarine,	818,453 818,932 819,001
s r	Mop head and wringer, combined, W. R. Wiley Mop wringer, T. J. Putnam Mop wringer, W. H. Wetmore	818,479 818,498 818,467 818,722 818,882
	Motor regulator, gas and petroleum, H. Crousn Music leaf turning stand, J. & J. C. Bahl. Nail receptacle, M. A. Salmon Necktie frame, T. J. Lumis	818,612 818,404 818,978 818,972
	Nut, lock, E. W. Treatt. Nut, lock, Steinert & Schimelpfennig. Nut lock, W. McCanse Nut lock, C. E. Palmer Nut lock, L. Payne	818,426 818,584 818,921 818,635 818,911 818,913
	obstetrical instrument, J. G. Gottlieb. oil saver, J. T. Callanan. oil-separator, C. H. Gameson. opera chair hat and wrap rack, F. D. Lanterman	818,953 818,740 818,431 818,542
į	• eding articles into, W. Stender	818,420 818,539 818,832 818,573 818,653
	Packing, rod. J. Garlock. Paddle wheel, feathering blade, J. A. Hicks Paper, J. A. Wiikinson. Paper making apparatus, P. Couper. Paper fountsin G. Weidlich	81,8432 818,825 818,500 819,004 818,803
	Pencil helder, A. R. Eldredge	818,879 818,433 818,538 818,574
		818,496 818,630 818,473 818,794 818,596
	Piane action, mechanical player, P. Krumscheld. Pianos, repetition action for, J. Schaaf Pile and like clamp, P. Sheridan Piling, metal sheet, J. R. Williams Pipe, C. Elkin	318,820 318,959 318,928 818,877 318,901
	Piston, horizontal cylinder, F. L. Bates	818,419 818,860 818,823 818,472 818,799
1	Planter, combined potato and corn, W. A. Hafl, Sr	818,956 818,532 819,005 818,578 818,598
1	Power by electric currents, means for trans-	818,962 818,471 818,715
1	W. Stanley	819,028 818,986 818,512 818,979
1	J. A. Loyster	818,699 818,521 818,974
İ	Morrison 8 Printing surfaces, producing, H. Barth 8 Propelling device, 6. E. Hagaman 8 Pump, duplex, P. F. Øddie 8	318,903 318,656 318,536 318,907
Ċ	Pumps time controlling machanism for I	318,522 318,636 318,686
1	Punch, hand, T. F. Philippi	318,946 318,783 318,604 318,867 318,726 318,769



"How to Remember"

You are than your memory. My course simple, increases business capacity, social and it., gives an alect, ready memory for names, faces and business on a. Develops will, conversation, speaking, etc. My booklet, there to Remember," sent free. DICKSON SCHOOL OF MEMORY, 700 Kimball Hail, Chicago

Manufactory Established 1761.

Lead-Colored & Slate Pencils. Rubber Bauds. Erasers, Inks, Penholders, Rulers, Water Colors, Improved Calculating Rules. Send for descriptive Oreular S. Send for descriptive Circular S.
44-60 East 23d Street, New York, N. Y.
Grand Prize, Highest Award, St. Louis, 1904.

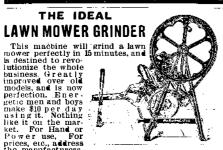
BAS & GASOLINE ENGINE

Simple, Economical, Durable Suitable for all kinds of work

BACKUS WATER MOTOR, cheapest power known

Write for circular and prices

BACKUS WATER MOTOR CO., Newark, N. J., U.S.A.



THE ROOT BROS. CO., Plymouth, Ohio

Instructive Scientific Papers ON TIMELY TOPICS

Price 10 Cents each by mail

ARTIFICIAL STONE. By I. P. Ford. A paper of immense practical value to the architect and builder. Scientific American Supplement 1500.

THE SHRINKAGE AND WARPING OF TIMBER. By Harold Busbridge. An excellent presentation of modern views; fully illustrated. SCIENTIFIC AMERICAN

excellent presentation of modern views; fully illustrated. SCIENTIFIC AMERICAN SUPPLEMENT 1500.

CONSTRUCTION OF AN INDICATING OR RECORDING TIN PLATE ANEROID BAROMETER. By N. Monroe Hopkins. Fully illustrated. SCIENTIFIC AMERICAN SUPPLEMENT 1500.

DIRECT.VISION SPECTROSCOPES.
By T. H. Blakesley, M.A. An admirably written, instructive and copiously illustrated article. Scientific American Supplement No. 1493.

MENT NO. 1499.

HOME MADE DYNAMOS. SCIENTIFIC AMERICAN SUPPLEMENTS 161 and 600 contain excellent articles with full drawings.

PLATING DYNAMOS. SCIENTIFIC AMERICAN SUPPLEMENTS 720 and 793 describe their construction so clearly that any amateur can make them. amateur can make them,

DYNAMO AND MOTOR COMBINED.
Fully described and illustrated in SCIENTIFIC
AMERICAN SUPPLEMENTS 844 and 865.
The machines can be run either as dynamos

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

Price 10 Cents each, by mail

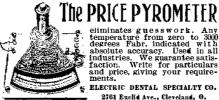
New York

Order through your newsdealer or from MUNN @ COMPANY

361 Broadway

Sc	ienti	fic	A
Railway tie, Boomer & Linkswile Railway water column, E. E. J Railways, continuous rail crossing	for street.		
Range finder, C. & H. C. Beck		818,954 819,031 818,761 818,994 818,494 818,864	W m fe lea
Ratchet wrench, Hanes & Staples Recording apparatus, A. M. Bened Refining engine, S. R. Wagg. Regulator or governer, J. W. Bey Replica, diffraction grating, F. E Resawing machine, Lavhon & Lou Rifle, gas operated, M. F. Smith. Rings, machine for forming fing Grossmann Roads or other places, compou- forms an emulsion with wa	er, R. C.	818,966 818,456 818,920 818,620	Pa
applied to the surfaces of, E. Rock drill, A. H. Gibson	Hardcastle	818,756	•
Rooning and stading material, F. In reissue. Rotary engine, J. F. Eynon. Rotary engine, J. H. Howden. Rotary engine, J. H. Corthesy. Safety pin, W. W. Brown Saliva ejector, H. S. Davis. Sand blast apparatus, J. D. Mur. Sash holder and lock, A. J. McCol Sash, window, J. B. McKeown. Saw file, P. Lord	ray	818,964 819,003 818,998 818,940 818,776 818,547	
Sash noter and lock, A. J. McCol Sash, window, J. B. McKeown Saw file, P. Lord Saw guard, circular, H. D. Melene Scaffold bracket, R. E. Irwin Scale, traveling hopper, F. J. Wol Scarf ring, T. F. Dunn Seal for envelopes, F. Corrigan Seal, snap, E. J. Brooks Seam for sheet metal vessels.	iyi	818,844 818,633 818,772 818,965 818,505 818,671	66
Seal sang, E. J. Brooks Seam for sheet metal vessels, O. Heindorf Seams in sheet metal, forming he Heindorf Lead dropper, J. D. Buckley Seed separator, herry, H. Holton	solderless,	818,671 818,746 818,659 818,438 818,439 818,936	6
Seed separator, berry, H. Holton. Self-clearing rake, E. C. Macartne Sewers, flusbing tank for, R. C. D Sewing machine presser foot lift Madison Sewing machine stitch forming me	e la Hunt er, A. L.	818,445 819,017 818,875 818,896	R St be
Lyons Sewing machines, heating system thread, Corcoran & Dobyne Shade or canopy supporting bracke	for wax	818,840 818,417 819,007 818,937	al ac 36
Burden Shade roller and support therefo Brown Shaft coupling, F. Shaw Shears. See Plate shears. Sheet metal can, Adriance & Calle Sheet metal structure, reticulated		818,516 818,476	Ĩ
Sheet metal structure, reticulated den Shirt, W. Hess, Jr. Shoe form, F. H. Nies Shoe former, F. H. Higgins. Side delivery rake, W. E. Martin, Sifter, gyratory, A. C. Brantingha. Sign, illuminated, C. L. Williams. Signal, M. D. Campbell Signal system, electric, V. W. Besilk or silk mixed goods, rubbing, and polishing machine for, A. Skirt and waist supporter, L. C. Skirt scribing platform, W. H. Po Skylight construction, J. Haslam. Slack adjuster, W. G. Price. Siasher comb. A. E. Rhoades. Sled brake, Shaffer & Harman. Sleighs, anti-tip-over device for Lohda. Soap bar, T. M. Anderson Soda, manufacturing aluminate of Emery.	m	\$18,444 818,440 818,704 818,960 818,899 818,607 818,724	
Signal, M. D. Campbell Signal apparatus, C. W. Coleman, Signal system, electric, V. W. Bet Silk or silk mixed goods, rubbing, and polishing machine for, A. Skirt and waist supporter, L. C.	rgenthal breaking, Gerber Collins	818,870 818,744 818,515 818,434 818,818	1
Skirt scribing platform, W. H. Po Skylight construction, J. Haslam Slack adjuster, W. G. Price Slasher comb, A. E. Rhoades Sled brake, Shaffer & Harman Sleighs, anti-tip-over device for	bob, R.	818,557 818,624 818,641 818,560 818,475	
Soap bar, T. M. Anderson Soda, manufacturing aluminate of Emery Sole edge trimming machine, W. F. Sole fastening, shoe, W. Beck Sole pressing machine, E. E. Wini	of, S. S. Packard	818,652 818,754 818,637 818,637 818,861	
Speed mechanism, variable, C. F.	Marhle	818,898 818,762 818,905	fo
Spout or conveyer, adjustable, S. Spring clip, wire, G. W. McGill. Sprinkler, C. A., Grane Stacker, hay, J. Dain. Stalk cutter, W. P. Dorris Stamp mill, Symons & Paull. Station indicator, Hovey & Tapley Station indicator, Tapley & Hove Steam generator, F. Fremont Still ammonis B. Thoens	7 2 y	818,938 818,749 818,876 818,985 818,447 818,483 818,985 818,988	W
Stopper cutting machine, A. Kayss Store service apparatus, E. W. W. Stove and furnace, H. E. Janes. Stove, heating, J. W. Emery. Stove lining, G. C. Hicks Strap hanger, signal bell ringer,	ser ilcox 818,690, and regis-	818,765 818,595 818,628 818,617 818,763	
Stamp mill, Symons & Paull. Station indicator, Hovey & Tapley Station indicator, Tapley & Hove Steam generator, F. Fremont Still, ammonia, B. Thoens. Stopper cutting machine, A. Kayss Store service apparatus, E. W. W. Stove and furnace, H. E. Janes. Stove, heating, J. W. Emery. Stove lining, G. C. Hicks Strap hanger, signal bell ringer, ter ringer, combined, S. S. B. Stropping machine, E. B. Gibford Stuss, clutch for, R. Fischer. Submerged heater, Flory & Barnhs Supporting device, W. B. Morewoc Swing, rocking, J. Hancock Switch, E. P. Robbins. Switch actuating device, A. Fuller Switch actuating device, A. Fuller Switch throwing device, J. H. Me Synchronism indicator, A. H. Fet Syringe, vaginal, M. L. Bosworth, Table, S. A. Nichols Table, L. C. Bullock, Jr. Tackle block, H. V. Hartz Tag, laundry, H. Higgin Talking machine, M. A. Possons. Telegraphy, Printing, R. J. Sheely Telegraphy, printing, R. J. Sheely Telegraphy, S. F. Jones. Telephone attachment, desk, Belder Telephone exchange system, E. La	rooks	818,935 818,680 818,530 818,677 818,700 818,622 818,561	MI HI
Switch actuating device, A. Fullet Switch operating and locking m A. Anderson	echanism, eyer ters	818,824 818,651 818,773 818,945 818,814	
Table, S. A. Nichols Table, L. C. Bullock, Jr. Tackle block, H. V. Hartz Tag, laundry, H. Higgin Talking machine, M. A. Possons. Tanks, basins, and the like, hange for F. J. Veitch	er support	818,663 818,663 818,886 818,441 818,975	ma 14
Telegraph, printing, R. J. Sheehy Telegraphy, S. F. Jones Telephone, S. P. Levenberg Telephone attachment, desk, Belder ier Telephone exchange system, E. La	n & Beut-	818,477 818,892 818,698 818,602 818,540	F
Telephone signal, A. V. R. Fechte Telephone system, R. H. Manson. Telephone system lock out, L. A. S. Telephone systems, signal hell for	schmidt	818,675 818,897 818,793	
Egan Telephone trunking system, W. W. Telephonic device, I. Kitsee Telescope, E. A. Trapp Telescope and means for mounting submarine, E. A. Trapp Telescope dust cap and solar eyepi Warner Temperature regulator, C. Bargam Tent pole, adjustable, A. Burton. Thill counting, I. A. Green	the same,	818,767 818,489 818,490 818,802	2006
Ticket, A. I. Blanchard	Wiltrout	818,810 818,665 818,437 818,996 818,727 818,838 818,863	1000 1000 1000 1000 1000 1000 1000 100
Tire, I. N. Bowen Tire plug, pneumatic, D. Apstein. Tire, vehicle, E. B. Sims. Tire, wheel, H. Maerker Tobacco pipe, F. A. Stegner. Toilet case, H. H. Byrne Toilet case, J. P. Stubblefiel		818,402 818,568 818,771 818,716 818,412 818,575	E
Tongue or shaft support, vehicle, Hayes Tools, diamond fastener for, C. D. Son Torpedo, automobile, T. H. Wheles Tower structure, skeleton, R. L. A. Toy, mechanical, A. W. Pocock Transmission mechanism, E. Nelson	Bobbitt &	818,408 818,682 818,987 818,511	
Toy, mechanical, A. W. Pocock. Transmission mechanism, E. Nelso Transplanter, tobacco self., A. C. Trap. See Fly trap. Tree protector, A. C. Garrison. Trolley wire support. Lane & Gulr Truck, car, W. G. Price. Truss, G. V. House. Truss, Hovey & Black Tube expanding and beading tool, Cormick	on Ur d ahl	818,845 818,586 818,678 818,631 818,640	
Truss, G. V. House Truss, Hovey & Black Tube expanding and beading tool, Cormick Tubing, flexible, S. Scognamillo Tumbler lock, N. W. Webb	W. Mc-	818,446 818,888 818,843 819,027 818,719	,
Tube expanding and beading tool, Cormick Tubing, flexible, S. Scognamillo Tumbler lock, N. W. Webb. Turbine, W. Clark Turbine, elastic fluid, J. Wilkinso Turbines, controller mechanism for stage, J. Wilkinson Turbines, driving, W. B. Sayers.	n multiple	818,723 818,499 818,85 6	

Wizard Repeating JOUID PISTOL Will stop the most vicious dog (or man) without permanent in jury. Per sectly safe to carry without danger of eakage. Free and recharges by pulling the trigger. Loads frem any liquid. No cartridges required. Over 6 shots in one oading. All dealers, or by mail, 56c. Rubber-covered holster, 5c. extra Parker, Stearns & Co., 226 South St., Dept. G, New York



eliminates guesswork. Any temperature from zero to 3000 degrees Fabr. indicated with absolute accuracy. Used in all' industries. We guarantee satis faction. Write for particulars and price, giving your require-ments.

S ELECTRIC DENTAL SPECIALTY CO. 2761 Euclid Ave., Cleveland, O.

Economo" Emery Wheel Dresser

SIZE 12 IN.

Made of an abrasive nearly as hard as a Black Diamond. With true or shape any wheels except the very wheels except the very tool placed in one end of "Econome." Send for its aroughing tool placed in one end of "Econome." Send for circular. "resser sent on approval.

NTERNA'IIONAL SPECIALTY CO., 360 Holden Ave., Detroit, Mich.

RADIUM AND THE RADIO-ACTIVE bindrom. AND LIE RADIO-ACTIVE with stances. Nobetter or clearer scientific account has been published than that contained in SCIENTIFIC MERICAN SUPPLEMENT 1429. The paper presents lithat is at present known about radium and the radio-citive substances. Price 10cents, by mail. Munn & Co., 61 Broadway, New York City and all newsdealers.



Stallman's Dresser Trunk Stellman's Dresser irunk

Easy to get at everything without disturbing anything. No fatigue in packing and unpacking. Light, strong, roomy drawers. Holds as much and costs no more than a good box trunk. Hand-riveted; strongest trunk made. In small room serves as chiffonier. C. O. D. with privilege of examination. 2c. stamp for Catalog.

F. A.STALLMAN, 61 W. Spring St., Columbus, 0. GOODELL-PRAIT COMPANY



Will Make You **Prosperous**

If you are honest and ambitious write me today. No matter where you live or what your occupation has been, I will teach you she Real Estate busmess by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big mency at once.

Unusual opportunity for men with-out capital to become independent for life. Valuable book and full par-ticulars free. Write today. EDWIN R. MARDEN, Pres't

National Co-Operative Realty Co., 1338 Athenseum Bidg., Obling





spanner Wrenches need apply. This DRILL CHUCK



can get along very well without 'em; because it's built that way. 'em; because it's ount that it is well finished, strong, durable, economic. For points, sizes and prices, refer to our cata-

logue. If you've misplaced it, better send for another.

Asbestos and Magnesia Products STEAM PIPE AND BOILER COVERINGS. ASBESTOS PACKING (For all purposes). ASBESTOS FABRICS. ASBESTOS BUILDING MATERIALS. "J-M" ASBESTOS FABRICS. KEYSTONE HAIR INSULATOR, ELECTRICAL SUPPLIES.

H. W. JOHNS-MANYILLE CO. New York, Milwaukee. Chicago, Boston, Philadelphia, St. Louis. Pittsburg, Cleveland, New Orleans, Kansas City. Minneapolis, Little Rock, San Francisco, Los Angeles, Seattle, London.

They Make Bad Roads Good No slipping or skidding of wheels on any kind of conveyance if fitted with WEED'S TIRE GRIPS

which ensure steady traveling. Can be carried in any car. Occupy but little space Easily adjusted. Anyone can apply them Protects occupants of car from flying mudetc. Indispensable in wet weather. Send or free descriptive booklet S.

EED CHAIN TIRE GRIP CO., 28 Moore St., N. Y. City



at small cost by attacying the self-starting En IE

2 H. P. Power Outlit.

This includes all parts by which anyone can easily make a powerful, duruble motorecele. Weight 38 lbs.

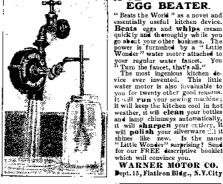
Helis to trame. Speed 2 to 30 miles an heart A mile disuber.

In use. Send stamp for outlit cutalogue.

intifreds in use. Send statup for outfit catalogue. BIORCYCLE EQUIPMENT CO., Hammondsport, N. Y.

1 9 0 6 **THOMAS**

Model No. 44, Price \$145
Three Horse Power, Simplest motorcycle on the narket. Agents wanted everywhere. Catalog free.
THE THOMAS ALTO-BI CO.
450 Niagara Street Buffalo, N. Y.



A SELF WORKING

EGG BEATER.
"Beats the World" as a novet an essentially useful kitchen device "Beats the Work" as a novel and essentially useful kitchen device. Beats eggs and whips cream quickly and the roughly while you go shout your other business. The power is furnished by a "Luttle Wonder" water motor attached to your regular water faueet. You "Turn the faueet, that's all."

The most ingenious kitchen device ever invented. This little water motor is also invaluable to you for twenty other good reasons. It will run your sewing machine; it will keep the kitchen cool in hot weather, it will clean your bottles and lamp chimneys automatically, it will sharpen your silverware ill it shines like new. Is the name "Little Wonder" surprising? Send for our FREE descriptive booklet which will convince you.

WARNER MOTOR CO.

CUTTING LATHE



For foot or power as wanted. Has power cross feed and compound rest. A strictly night grade, modern tool. Ask us for printed matter. Descriptive circulars upon request. B. F. BARNES CO.
Rockford, III.
European Branch, 149 Queen
Victoria St., London, E. C.

DRILLING Machines

Over 70 sizes and styles, for drilling either deep or shallow wells in any kint of soil or rock. Mounted on wheels or on sills. With engines or horse powers. Strong, simple and durable. Any mechanic can operate them easily. Send for catalog. WILLIAMS BROS., Ithaca, N. Y.



Automatic Water Supply

Most economical, reliable and effi-cient. If you have running water the Niagara engines will elevate 35 feet for each foot fall obtainable from spring, brook, or river, deliv-ered to any distance. Write for catalogue.

Niagara Hydraulic Engine Co

Baldwin Recoil Check For Automobiles Makes "All Roads Ride Alike"

Saves your car and tires and permits of comfortable riding on bumpy roads. Helps your springs on smooth roads. Easilyat-tached to any car, Free Booklet. BALDWIN CHAIN & MFG. CO.

200 Chandler St., Worcester, Mass,



The Genuine Armstrong's STOCKS and DIES

Acknowledged to be the best. Different sizes and capacities. Write for catalog. THE ARISTRONG MFG. CO., Bridgeport, Conn. New York Office, 139 Centre Street

RELIABLE MARINE ENGINES Reliability under all condi-tions is the characteristic of the "Lamb" Engines. Sizes from 1½ to 100 H. P. in stock. Write for catalogue. TERRY & CO. Branch
92 Chambers M.,
Yew York
Everything for Boat & Engine Everything for Boat & Engine

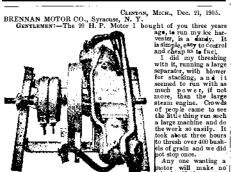


To Book Buyers

We have just issued a new 48 - page catalogue of recently published Scientific and Mechanical Books, which we will mail free to any address on application.

MUNN & COMPANY Publishers of Scientific American 361 Broadway, New York





for stacking, a nd it seemed to run with as much power, if not more, than the large steam engine. Crowds of people came to see the little thing run such a large machine and do the work so easily. It took about three hours to thresh over 400 bushels of grain and we did pot stop once.

Any one wanting a motor will make no unistake if they get a mistake if they get a MOTORE.

MOTORE

BRENNAN STANDARD MOTOR

Motors from 6 to 80 Horse Po

IT HAS GROWN **UP WITH** THE COUNTRY

The

Underwood **Typewriter**

keeps pace with the swift onward march of the times. Progressive and am-Ďitious men use **it** because it produces clean, perfect work and SAVES 25% OF THE OPERATOR'S TIME.

Visible Writing **Simplicity** Durability



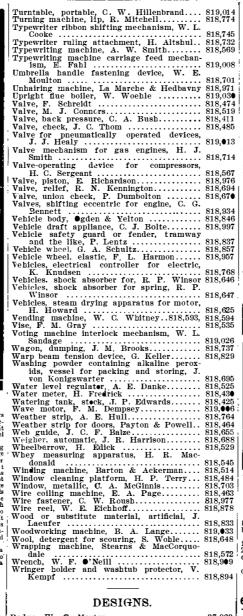


୧୫୦ USE GRINDSTONES P

If so we can supply you. All sizes mounted and unmounted. always kept in stock. Remember, we make a specialty of selecting stones for all special purposes. Senafor catalogue "1" The CLEVELAND STONE CO. 2d Floor. Wilshire. Cleveland. O.

SENSITIVE LABORATORY BALANCE. balance will weigh up to one pound and will turn with a quarter of a postage stamp. The balance can be made by any amateur skilled in the use of tools, and it will work as well as a \$125 balance. The article is accompanied by detailed working drawings showing various stages of the work. This article is contained in Scientific American Supplement, No. 1184. Price10 cents for sale by Munn & Co. 361 Broadway, New York City. or any bookseller or newsdealer.





Badge, W. C. Marten	37,963
Belt, lady's, A. E. Tomlinson	37,969
Casket trimming, W. E. Stevens	37,970
Cigar band, L. C. Wagner	
Coffee mill shell, A. E. Bronson, jr	
Lamp case, L. Schepmoes	
Reflector, O. A. Mygatt	
Vending machine casing, J. E. Cahill	37,968
TO A TO MADEO	

							
	TRADE MARKS						
	Ale, Boston Beer Co. Ale and stout, C. Machen & Hudson Ale, ginger, A. R. Holthusen Ale, ginger, White Rock Min. Spg. Co. Alfalfa, ground products of California Stock	51,776 51,802 51,818 51,855					
	Alfalfa, ground products of, California Stock Food Co. Analgesics, El Zernac Co. Antiseptics for internal and external use, T.	51,678 51,885					
	Anda	51,916 51,722					
	Bath tubs and sinks, Standard Sanitary Mfg. Co.	51,825 $51,91$					
	Batteries, dry, Nungesser Electric Battery Co	51,821 51,789					
	Beer, Hoster-Columbus Associated Breweries	51,681					
]	Beer, lager, William Peter Brewing Co Beverage, dry preparation for making a non- intoxicating, J. C. Eno, Limited	51,693 51,934					
	intoxicating, J. C. Eno, Limited Biscuts and cakes, Huntley & Palmers, 51,766, Bitters, Geo. Benz & Sons	51,836					
	Miller Aschenbach &						
	Books of fiction, Lothrop, Lee & Shepard Co. Books, pads, and tablets, blank, Boorum & Pease Co	51,744 51,814					
	Boot and shoe dressing, F. H. Young Co., 51,833, Boots and shoes and leather used in their	51,926					
	manufacture, leather, Rice & Hutchins Boots and shoes, leather, Guthmann Carpenter & Telling	51,848 51,7 0 9					
7	Boots and shoes, women's, misses', and children's leather, Derethy Dedd Shoe Ce Boots, shoes, and slippers, leather, Parker,	51,83●					
ļ	Holmes & Co	51,873 51,68● 51,945					
: i	Brandy, Geo. Benz & Sons	51,837 51,781 51,817					
	Brooms, Lee Broom and Duster Co Buttons and studs, sleeve and collar, Parks Bros. & Rogers51,701, Cameras, panoramic, Rochester Panoramic	51,9 ● 1 51,702					
[Candy, P. Wunderle51.856.	51,824 51,857					
	Candy, chocolate and all kinds of, Great American Automatic Vending Machine Co	51,838					
	Canned corn, P. Hohenadel, Jr Canned extract of green corn, Haserot Can-	51,765					

Boots and shoes and leather used in their	,
manufacture, leather, Rice & Hutchins	51,848
Boots and shoes, leather, Guthmann Car-	
penter & Telling	51,709
Boots and shoes, women's, misses', and chil-	
dren's leather, Derethy Dedd Shoe Co	51,83●
Boots, shoes, and slippers, leather, Parker,	
Holmes & Co	51,873
Braids and tapes, Dieckerhoff, Raffloer & Co.	51,68●
Braids, plain, A. H. Rice & Co	51,945
Brandy, Geo. Benz & Sons	51,837
Bread, D. R. Cone	51,781
Bread, L. Heying	51,817
Brooms, Lee Broom and Duster Co	51,901
Buttons and studs, sleeve and collar, Parks Bros. & Rogers	
Bros. & Rogers	51,702
Cameras, panoramic, Rochester Panoramic	51.824
Camera Co	
Candy, chocolate and all kinds of, Great	91,591
Candy, chocolate and all kinds of, Great	
American Automatic Vending Machine	51.838
Conned corn B. Hebenedel Tr	51,765
Canned corn, P. Hohenadel, Jr Canned extract of green corn, Haserot Can-	01,100
neries Co	51,866
Canned pineappies, Planters Packing and	01,000
Preserving Co	51,747
Preserving Co	51,868
Cans. milk. Oakes & Burger	51,905
Caramels and candies, American Caramel Co.	
Carda playing United States Playing Card	
Co 51.716, 51.737, 51.738, 51.749 to	51,756
Co51,716, 51,737, 51,738, 51,749 to Cards, playing, New York Consolidated Card	.
Co	91,041
Cartridges Winchester Repeating Arms Co	51,717
Cement for building purposes, gypsum, and	
Cement for building purposes, gypsum, and lime, Liebold & Co	51,683
Chairs, settees, tables, and stools, rustic, •ld Hickory Chair Co	
●ld Hickory Chair Co	51,685
Chests, boxes, and cabinets, I. N. Deitsch	51,828
Chocolates, Shupe-Williams Candy Co	51,692
Cigars, Rodriguez, Arguelles & Co	51,691
Cigars, Lopez y Cia	51,700
Cigars, Rodriguez, Arguelles & Co	51,714
Cigars, Sanchez & Haya Co	51,733
	51,783
Clocks and watches, Western Clock Manu-	F1 0F4
facturing Co.	51,854
Cloth having a polished finish, J. Milloy &	!

Co. 51,804
Coats, vests, and trousers, Sykes & A. B.
Kirschbaum & Co. 51,734
Coffee, Clark, Coggin & Johnson Co. 51,779



Buys This Rubber Tire Wagon Union Quality. Fully Guaranteed. Best hickory wheels, 3/2 in. Rubber Tire, long distance, dust proof

high arched axles; oil-tempered springs First quality material and finish. Worth nearly double our Factory Price. We ship for your examination, without a cent in advance, if desired, and allow

30 DAYS FREE TRIAL

Money refunded on all purchases not satisfactory. You save dealers' profits. We build 150 styles of Vehicles, from \$26.50 to \$150.00. 50 styles Harness, \$5.00 to \$60.00. Write to-day for our 200-page Illustrated Style Book. Free for the asking. UNION BUGGY COMPANY,

28 Saginaw Street, Pontiac, Mich.



"STANDARD" Two=Speed Automatic Coaster Brake Hub

Makes wheeling a delight, eliminates the druogery. Do not waste money on experiments when you can buy a perfect attachment all in one hub. Our little booklet tells all about it and is mailed free. Write to-day.

THE STANDARD COMPANY - - - Torrington, Conn.

Whitewash Your Buildings | A Perfect Ignition Device



At Lowest Cost With a Progress Universal spraying Meeting. Our man can apply effectively for the most of
Ir galkin size, insts only \$21 will lest a lifetim—and pays yes, of machines sold as Inv

Dayton Supply Co., Dept. R, Dayton, O

PORTABLE CONCRETE Block Machine

Ambitious young men can start fine business, immediately profitable, easily expanded Blocks cost 6 cents to make, sell for 18 cents. One man can make 200 blocks per day. Whole outfit costs \$125.00.

costs \$120.00.
Sand, water and Portland cement only materials required.
Sent on trial.

THE PETTYJOHN CO. 615 N. 6th St., Terre Haute. Ind.



For Gas and Gasoline Engines



is the Edison Battery and Spark Coil, Ensures constant speed in Gas Engines and Motor Boats. The Batteries deliver a high constant current to the coil which is specially wired to yield a hot spark every time. This combination obviates all ignition troubles. Is surer and more economical than any other sparking device. Sold by dealers every-

where. Send for name of nearest dealer, and Booklet "Battery Facts," containing valuable ignition informa-

Edison Manufacturing Co.

25 Lakeside Avenue ORANGE, N. J.

31 Union Square, New York 304 Wabash Avenue, Chicago 25 Clerkenwell Road, London, E.C.

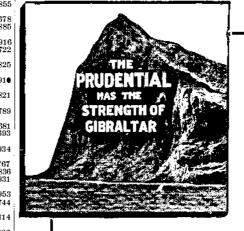
Faucet Water Motors



Large variety. They attach to any faucet instantly, run on 20 lbs. pressure, but on 80 lbs. generate. 18 to 1-2 horse power. Fully Ilhastrated and explained in the Union Water Motor Book, sent free. Outfit No. 5, the Union Hustler Motor, cast iron case, weighs 3 1-2 lbs., with emery wheel, polishing and buffing wheels, polishing campound, leather beiting wrench, etc. Complete \$8.00. Outfit No. 3, The Eggar Power Faucet Motor, 6-inch wheel, cast iron case with wood pulley, belting and wrench, \$6.00. When the complete with the complete service of the com cleaning and polishing, sharpening and grinding.

Moneyrefunded if motors are not satis-tactory. Order to-day or write for booklet.

THE EDGAR MANUFACTURING CO, Dept. N 104 Hanover Street, Boston, Mass.



"Probably No One Thing

Has Given a Greater Stimulus to Saving Than Has the Development of Insurance, and the Endowment Policies in Connection With It."-From the Principles of Economics, by Fetter.

Under this plan you can save money and insure your life at the same time.

Every Up-To-Date Man Should Look into Endowment Insurance. For an annual payment by him (which is never increased) he is guaranteed the return of a sum of money, with dividends added, all to be drawn out upon reaching a certain age.

He also has the Company's pledge to pay the full amount of policy in the event of death, even if it were to occur the day after the payment of the first premium.

Prudential Policies have many benefits such as cash loans, cash dividends, cash surrender values, paid-up insurance and automatic extended insurance. No restriction as to residence, travel or occupation of policy-holder.

Would you like to learn more about The Prudential's Excellent Endowment Policies? If so, fill out and mail coupon to-day. We will send the information by next

The Prudential

Insurance Co. of America

committing myself to any action, I shall be glad to receive, free, particulars and rates of Endowment Policies.

Without

INCORPORATED AS A STOCK COMPANY BY

JOHN F. DRYDEN, Home Office: President. NEW ARK, N. J.

Address.....

Fot

Occupation. Dept. 121 JUST PUBLISHED

Electrician's Handy Book

Prof. T. O'Conor Sloane, A.M., E.M., Ph.D.

Handsomely Bound in Red Leather, with Titles and Edges in Gold

Pocketbook Style

Price \$3.50

A thoroughly practical up-to-date book of 768 pages, covering the entire field of electricity. Contains no useless theory. Everything in it is to the point and can be easily understood by the student, the practical worker, and the every-day working electrician. The advanced electrical engineer will also receive great benefit from its perusal and study.

Fifteenth Edition Revised, Enlarged and Reset

uas, Gasoline and Oil Engines

Including Gas Producer Plants By GARDNER D. HISCOX, M. E.

The only complete American book on the subject for Gas Engine Owners, Gas Engineers, and intending purchasers of gas engines, treating fully on the construction, installation, operation and

maintainance of gas, gasoline, kerosene, and crude petroleum engines.

The new rewritten, enlarged and revised 15th edition of this work has been prepared to meet the increasing demand for a thorough treatise on the subject. Its 450 pages give general information for everyone interested in this popular motive power, and its adaptation to the increasing demand for a cheap and easily managed motor requiring no licensed engineer. It is fully illustrated by 351 Engravings and Diagrams.

MODERN MACHINE SHOP CONSTRUCTION

Equipment and Management

By OSCAR E. PERRIGO, M.E.

Nearly 400 Large Quarto Pages, Illustrated by over 200 Engravings Specially Made by the Author

A work designed for the practical and every-day use of the Architect who designs, the Manufacturers who build, the Engineers who plan and equip, the Superintendents who organize and direct, and for the information of every Stockholder, Director, Officer, Accountant, Clerk, Superintendent, Foreman, and Workman of the Modern Machine Shop and Manufacturing Plant of Industrial

SEND FOR DESCRIPTIVE CIRCULAR

Electric Wiring, Parasols and umbrellas, Weinberg, Heyman 51,850 Perfumes, including extracts, essences, etc., 51,943 Perfodical, monthly, Gardner Publishing Co. 51,865 Planos, W. W. Kimball Co. 51,812 Plastering and finishing cement, J. B. King & Co. 51,812 Plastering and finishing cement, J. B. King & Co. 51,820 Plows, Parlin & •rendorff Co. 51,822 Plows, Parlin & •rendorff Co. 51,822 Plows, cultivators, and harrows, B. F. Avery & Sons 51,813 Plows, harrows, cultivators, and planters, B. F. Avery & Sons 51,861 Poison for animals and insects, D. J. Kaufmann 51,936 Diagrams and

By Newton Harrison, E. E.

Instructor of Electrical Engineering in the Newark Technical School

PRICE \$1.50

E. Avery & Sons 51,861

Poison for animals and insects, D. J. Kaufmann 51,936

Poison or exterminator for rats, vermin, and insects, E. S. Wells 51,852

Potatoes, Irish and sweet, Eastern Shore of Virginia Produce Exchange 51,864

Powder, Cleaning and polishing, Lexington Manufacturing Co. 51,949

Powder, face, J. Tetlow 51,949

Powder, face, J. Tetlow 51,949

Powder, face, J. Tetlow 51,949

Powder, Grotellet and nursery purposes, J. Tetlow 51,907

Putch, Ginter Grocery Co. 51,790

Putch, Ginter Grocery Co. 51,790

Pierce Co. 51,763

Rallways, scenic, L. A. Thompson Scenic Rallways, scenic, L. A. Thompson Scenic Rallway Co. 51,894

Remedies, external and internal, M. B. Baxter 51,921

Remedies for certain named diseases, M. Lichtenstein Remedy, external and internal, D. Ransom, Son & Co. 51,925

Remedy for asthma, catarrh, etc., L. D. Quinn 51,988

Ribbons, velvet, W. Openthym & Sons. 51,686 A thoroughly practical treatise covering the subject of Electric Wiring in all its branches, including explanations and diagrams which are thoroughly explicit and greatly simplify the subject. Practical every day problems in wiring are presented and the method of obtaining intelligent results clearly shown. Only arithmetic is used.

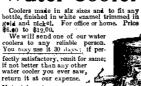
UNN & CO., Publishers, Remedy for asthma, catarrh, etc., L. D. Quinn. 51,928
361 BROADWAY, NEW YORK. Ribbons, velvet, W. Openhym & Sons. 51,686 MUNN & CO., Publishers,

	Determ	
	Combs, Dr. H. Traun & Sohne	51,911
•	Combs, J. P. Noyes & Co	51,911 51,941 51,764 51,787
	Cordials, P. Dempsey & Co	51,787
	Corsets, John C. Lewis Co.	51,775 51,728 51,851
	Combs, Dr. H. Traun & Sohne. Combs, J. P. Noyes & Co. Conveyers, contractors' dumping, J. J. Harold Cordals, P. Dempsey & Co. Cords, lines, twines, and ropes, Samson Cordage Works	51,761
	Cotton piece goods, Massachusetts Cotton Mills	51,684
	Cotton piece goods, Massachusetts Cotton Mills Cotton piece goods, Tremont & Suffolk Mills. Cotton piece goods, Parkbill Manufacturing Co.	51,705
	Cotton piece goods, Massachusetts Cotton	
	Mills Cotton plaids, checks, stripes, and cheviots, S. A. Crozer & Son Cotton, prepared, Stermoor & Co. Cream, sterilized, Pacific Creamery Co. Displaying goods in stores, fixtures for, Heimann-Miller Manufacturing Co. Dolls, Abraham & Straus Drums, Lyon & Healy Duck and capys cleaning compounds F. H.	51.679
	Cream, sterilized, Pacific Creamery Co	51,687 51,688
	Displaying goods in stores, fixtures for, Heimann-Miller Manufacturing Co	51,791
	Drums, Lyon & Healy Duck and canvas cleaning compounds, F. H. Young Co	51,695 51,729
)	Young Co	51,927
	Dye stuffs, sensitizing, Farbenfabriken of Elberfeld Co. Dynamite, dynamite cartridges, blasting gel- atin, and low powder, Aetna Powder Co. Electric switches, Hart & Hegeman Manu-	51,887
:	Electric switches, Hart & Hegeman Manufacturing Co.	51,706 51,743
	Eyeglasses, spectacles, and parts and repairs and cases therefor. E. Kirstein Sons Co.	51.884
•		
:	Fish (dried, smoked, or salted), cured G. H. Perkins51,874, 51,771 to Flavoring extracts, Schwabacher Bros. & Co. Flour, wheat, Wells Abbott Nieman Co Flour, wheat, John F. Meyer & Sons Milling	51,773 51,809
	Flour, wheat, Wells Abbott Nieman Co Flour, wheat, John F. Meyer & Sons Milling	51,757
		51,795 51,859 51,704
	Flour, wheat, Alva Roller Mills	
:	mick Co. Foundry facings or blacking, J. S. McCormick Co. Fruits and pineapples. citrus, Paso Real Fruit Co.	51,892 51,845
	Fruits and pineapples. citrus, Paso Real Fruit Co.	
	Fur garments, A. Jacobson & Bro	51,727 51,799
	Gin, P. Dempsey & Co	51,924 51,785 51,682
	Fruits and bineaphies. Citrus, Paso Keai Fruit Co. Fur garments, A. Jacobson & Bro Furnaces, Lennox Furnace Co. Furnaces, hot air heating, Charles Smith Co. Gin, P. Dempsey & Co Glass bottles, L. Rose & Co Harmonicas, mouth, Firm of M. Hobner Hats and caps, soft and stiff felt, John B. Stetson Co.	51,890
	Hats, panama, S. C. Paris	51,893 51,689 51,797
	Horseradish, T. F. Rightmire	51,823
	Co	51,886 51,690
	Hosiery, Lord & Taylor	51,801
	Co. 51,708, Hosiery, Richardson Roberts Dry Goods Co. Hosiery, Cooper Wells & Co	51,798
	man Gesellschaft mit beschran ker Haf- tung	51,843
	tung Kerseys and cassimers, W. J. Dickey & Sons Knit headgear, including tams, toques, and caps. Stephenson & Co.	51,956
,	caps, Stephenson & Co	51,8 0 6 51,805
	Leather, harness, sole, and skirting, A. B. Patrick & Co. Leather, oak tanned cowhide, skirting, and cut stock, harness, Kullman, Salz & Co. Leather, sole, J. M. Delaney & Co. Lemonades, chemical preparations for use in making, Chemische Industrie AG. St. Margrethen	51,758
	cut stock, harness, Kullman, Salz & Co Leather, sole, J. M. Delaney & Co	51,900 51,829
	Lemonades, chemical preparations for use in making, Chemische Industrie AG. St. Margrethen	51,777
	Liniment, E. F. Bautz Lotions for the skin, E. Palmer. Macaroni, spaghetti, vermicelli, and noedles,	51,920 51,944
I	Crescent Macaroni and Cracker Co	51,782
	Magazines, M. D. McAnulty	51,769 51,928
-	Co. Maline, moist proof, T. Tiedemann & Son Malt extract, •tto Huber Brewery. Maraschino, F. Drioli	51,849 51,872
Į		51,832
ļ	Mattresses, Dubuque Mattress Factory Mattresses and cushions, C. A. Fisher	51,826 51,883 51,725
	Meat extracts and essences, Bovril Limited Medical compound for a hemostatic, Knoll &	31,862
	Medical compound for an agtringent Knoll &	51,899 51,898
	Medical compounds, Owl Drug Co Medical preparations for external and inter-	51,942
ļ	Co. Medical compounds, •vl Drug Co. Medical preparations for external and internal use, Trench's Remedies Ltd. Medicated oils, D. M. Bye. Medicinal beverages, non-alcoholic, Russell M. Hughes & Co.	51,951 51,880
	M. Hughes & Co	51,732 51,932
1	Medicine as a tonic, appetizer, and strengthener, J. F. Ballard Medicine, proprietary, C. A. Maynard Medicines, certain named, Bristol-Myers Co.	51,919 51.903
	Medicines, certain named, Bristol-Myers Co. Metal plates for ceilings and side walls. A.	51,922
	Du Montier	51,831 51,827 51,748
	Mowers, lawn, A. B. Case	51,881 i
	•11. castor. Baker Castor •11 Co	51,811 51,930 51,918
	 ii, pure olive, Gennerich & Von Bremen ils, illuminating and heating, Price's Patent 	51,835
	Candle Co. ils, lubricating, Atlantic Refining Co iled clothing, A. J. Tower Co.51,676, 51,718, intment, L. C. Nickerson intment for human use, Trench's Remedies	51,808 51,677 51,719
	•intment, L. C. Nickerson	51,940
	eranges, lemons, grape fruit, and citron,	51,950
	Paint, liquid, Geo. D. Wetherill & Co Paints and colors. C. A. Willey Co	51,703 51,888 51,954
	Paper, blotting, Eaton-Dikeman Co	51,762
	Paper for wrapping food products, G. Staber	51,858 51,909
	Perfumes, including extracts, essences, etc.,	51,850
١	E. Palmer	51.943

at prices so low as to guarantee large returns. Steel and iron construction throughout, triangular shaped, open, steel tower; ball-bearing, sensitive turn table; wheel always to wind; few working parts; easily lubricated; best-simplest—cheapest—strongest. Patents for sale—Write today. Dayton Supply Co., Dayton, Ohio.

30 Days Free Trial





Note Advantages: Water can-not become contaminated c ontaminated even if impure ice is used. Water flows directly from bottle to faucet through coil of pure block tin and is cooled in transit.

No. 4 cooler finished in white ename, with two-gallon bottle. Ice capacity ten pounds. Price \$6.00.

NOTICE.—Our cooler is covered by broad basic patents and are now prosecuting vigorously several infringements.

N. B.—J. Hungerford Smith Co., Rochester, N. Y., have adopted this Cooler for dispensing their famous Golden Orangeade at first-class soda fountains and have ordered several thousand of them.

THE CONSUMERS CO., 3517 Butler St., Chicago Coolers delivered f. o. b. Chicago and New York



One Foot for Matting Tacks
One Foot for Carpet Tacks The only tool that lifts tacks easily,

inte only tool that into tacks eastly, opickly, without damage to carpets, mathing or tacks. Made of best steel, on simple lever principle—everlasting. Feet changed instantly, using only the fingers. Sent postpaid on receipt of 25 cents, also a Kangaroo TrickLock, Free, and a Package of Interesting Matter and Samples of Specialities.

GENERAL SPECIALTY MFG. CO., 1029ARCADE BLOS., PULA.

A Loose Leaf Book



Flat-Opening AND Self-Indexing

Most convenient for price books, route books, and all forms of records which should be kept in convenient books are bound in full, genuine, flexible, black leather, are perfectly flat opening and sheets may be instantly inserted or removed from any part.

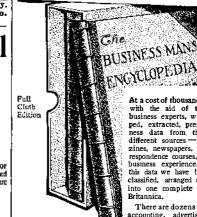
The following stronger

The following sizes sent postpaid on receipt of prices

USE	SE NO. BINDING SIZE CAPAC. OF COVER				DIEE.	DIE E	C.O.,,
002		EDGE	OF SHEET	INCHES	LEAVES	PLETE	
Vest Pocket Coat Pocket	212 4412 612 532 632 7732 1132	2 4½ 6 5½ 6 7%	2 x 4 4½ x 2½ 6 x 3½ 5½ x 3 6½ x 3¾ 7½ x 4½ 11 x 8½	KKKKKKKK	50 50 50 125 125 125 125 125	\$0.85 .95 1.20 1.70 1.75 2.10 3.90	

19 other sizes carried in stock ruling: Quadrille, Unruled, Dollars and Cents, Faint Line Double Entry Ledger and 4-Column Price-Book Ruling, Send for sample sheets and complete catalogue of longest line of loose-leaf devices in the world. Sieber & Trussell Mfg. Co., 4002 Laclede Ave., St. Louis

MANUFACTURERS! FREE FOR YOUR DESK GEM CITY WIND MILL FREE FOR YOUR DESK



At a cost of thousands of dollars, with the aid of twenty-seven business experts, we have clipped, extracted, preserved business data from thousands of different sources—from magazines, newspapers, books, correspondence courses, from actual business experience. And all this data we have boiled down, classified, arranged and indexed into one complete business Britannica.

There are dozens of books on

There are dozens of books on accounting, advertising, sales-manship, business letter-writing manship, business letter-writing and other branches of business; but the Business Man's Encyclopedia is a condensation of them all. It deals not merely with one department of business, but with all departments from the purchase of raw materials to the sale of the finished product—from advertising and selling to credits and collections.

One man under ordi- twenty-seven experts not gather in a lifetime one-tenth of the busi- And the best of what they learned they con-

mation SYSTEM the set the set THE MAGAZINE OF BUSINESS book for

b o o k s contain. Where the average business man sees one article, reads one book, meets one business man these

ployer or employee, you need these books in your office, on your desk, or in your library.

System, the magazine, is essential to business success. It tells every month all that is new in business to save time. It that is good in business to make money. 226 or more pages of indispensible information for business men. Through SYSTEM you can learn all that anyone can possibly tell you about system and business methods. It will give you each month dozens of clever advertising. of clever advertising, selling and manufacturing plans that have built some of the greatest retail, wholesale and

est retail, wholesale and manufacturing concerns in America. The price of SYSTEM is two dollars a year. It is worth a great deal more than that to any alert man with his eyes on the main chance.

W. P. Chast & Co.: "We would not have SYSTEM discountinued now though the price were raised to \$10 a year."
W. P. JOHNSON: "Secured one idea
from SYSTEM that solved the hard-

olem in my department.

Regular Departments
Building a Sales Force
Organizing an Advertising
Department
Organizing a Factory
Business Correspondence
Credits and Collections
Talks to Salesmen
Systems in Banking
Systems in In Shipping
Systems for the Rusing
Systems in the Profession
Systems in the Profession
System in the Profession
System in the Profession
Short-Cuts that Save
The Business Review
Successful through Syst
(Blographical)
Answered by Experts est problem in my department."

System in the Professions Professions System in the Professions System in the Professions System in the Professions System in the Professions Professions System in the Professions Professions System in the Professions System in the Professions System in the Professions Professions System in the Profession System In the Profession System I

THE SYSTEM COMPANY New York Desk 30, CHICAGO London



THE EUREKA CLIP The most useful article ever invented for the purpose. Indispensable to Lawyers, Editors, Studems, Backers, Insurance Companies and business men generally. Book marker and paper clip. Does not mutilate the paper. Can be used repeatedly. In boxes of 100 for 25c. To be had of all booksellers, stationers and nouton dealers. or by mail on receipt ofprice. Samplecard, by mail, free. Manufactured by Comsolidated Safety Pin Co., Box 12. Bloomfield, N. J.



Concrete Number The Scientific American Published May 12, 1906. Price 10 cents

This number will contain articles on reinforced concrete and its applications; concrete block machinery; concrete mixing machinery; applications of concrete in general.

The information conveyed will be essentially practical. A special effort has been made to select those phases of the industry which will be of interest even to the man who is closely identified with it.

Munn & Company, 361 Broadway, New York

THE POSTAL TYPEWRITER CO.'S FACTORY AT NORWALK, CONN. is Equipped to do Experimental Work. Tool Making and Manufacturing. Inventions Developed. Very Best Work Guaranteed. Correspondence Solicited.

Kaxwell

AUTOMOBILE

Sold under a positive guarantee that as good a car cannot be sold at a lower price.

The one car irrespective of price, that should be considered by every motor car buyer.

Multiple Disc Clutch. Three-Point Suspension of Motor and Transmission (Unit). Metal Bodies. No Noise. No Vibration.

20 H. P. Touring Car \$1,450

10 H. P. Tourabout **\$7**80

Write Department 22 for Catalogue. MAXWELL-BRISCOE MOTOR CO.

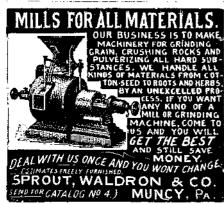
mbers American Motor Car Manufacturers' Associat Main Plant: Tarrytown, N. Y. CHICAGO PAWTUCKET

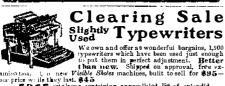
BRANCHES:

Maxwell-Briscoe, Incorporated, New York, N.Y. Maxwell-Briscoe Chase Company, Chicago, Ill. Fisher Automobile Company, Indianapolis, Ind. Morrison-Tyler Motor Company, Boston, Mass. Maxwell-Briscoe-McLeob Co. - Detroit, Mich. Maxwell Garage, - - Brooklyn, N. Y. J. W. Willcox & Son, - Los Angeles, Cal. Pichard Ivin & Co. Except Representatives Maxwell Garage, - Brooklyn, N. Y. J. W. Willcox & Son, - Los Angeles, Cal. Richard Irvin & Co., Foreign Representatives









rine we lie they last. \$45

FREE cytalogue containing unparalleled list of splendid
typewriter bargains. Send for it to-day. Rockwell-Barnes Co., 959 Baldwin Bldg., Chicago, III.

New Odell Typewriter Improved On Credit



Shipped upon receipt of \$2.25 cash Shipped upon receipt of \$2.25 cash

Express prepaid and \$1.00
per Month for Six Months.
Fractical as a \$100 Trype writer. Just the
professional for six professional orders,
professional orders,
professional orders,
professional consistency of the standard of the standard orders,
professional orders,
pr

60 YEARD EXPERIENCE TRADE MARKS DESIGNS COPYRIGHTS &C.

Anyone souding a sketch and description may nickly ascertain our opinion free whether an vention is probably patentable. Communicable strictly condential. HANDSON on Patents int free. Chiest agency for securing patenta. Patents taken through Munn & Co. receive cold notice, without charge, in the

Scientific American.

ely illustrated weekly. Largest cir-any scientific journal. Terms, \$3 a nonths, \$1. Sold by all newsdealers. MUNN & CO. 361Broadway, New York Branch Office. 62 F St., Washington, D. C.

Rubber combs, hard, American Hard Rubber Co. 51,721
Rubber stair nosings, India, Knapp Rubber Binding Co. 51,896, 51,897
Rubber syringes, hard, American Hard Rubber Co. 51,896, 61,897
Rugs, art squares, and matting made of grass twine, Oshkosh Grass Matting Co. 51,896
Scarfs, W. Trevor . 51,735
Scissors and shears, Keith Simmons & Co. 51,895
Sewing machines and parts thereof, Household Sewing Machine Co. 51,933
Sheetings and drills, cotton, K. Iwahara, 51,768, 51,844
Sheetings, drills, and ducks, Stark Mills. 51,875
Shirts, collars, and cuffs, New Columbia Sewing machines and parts thereof, Household Sewing Machine Co. 51,933
Sheetings and drills, cotton, K. Iwahara, 51,768, 51,844
Sheetings, drills, and ducks, Stark Mills. 51,875
Shirts, collars, and cuffs, New Columbia Shirt Co. 51,708
Shoe dressing, men's liquid and paste, Hamilton-Brown Shoe Co. 51,840
Shoe dressing, women's liquid and paste, Hamilton-Brown Shoe Co. 51,870
Shoe shadies', misses', and children's leather, W. B. Carhart 51,816
Silks, dress, Norfolk Silk Co. 51,870
Soap, Price's Patent Candle Co. 51,870
Soap, Cudahy Packing Co. 51,882
Soap, Anti-Grime Soap Co. 51,882
Soap, Anti-Grime Soap Co. 51,917
Sleds and sleighs, B. F. & H. L. Sweet Co. 51,870
Soap, Cudahy Packing Co. 51,882
Soap, Anti-Grime Soap Co. 51,917
Soap, Cudahy Packing Co. 51,882
Soap, Anti-Grime Soap Co. 51,917
Soap, Cudahy Packing Co. 51,882
Soap, Anti-Grime Soap Co. 51,871
Suspensory bandages, J. Ellwood Lee Co. 51,891
Tea, Hewlett & Lee 51,792
Tea, Hewlett & Lee 51,792
Tea, Hewlett & Lee 51,792
Tea, Charles & Co. 51,923
Tin plates and roofing tin, J. Meurer, 51,842
Tobacco, plug chewing, S. F. Haserot. 51,842
Tobacco, smeking, Brittain Tobacco Works. 51,879
Tonic, C. F. Taylor 51,717
Toubing adapted for use as hose or packing, Plating adapted for use as hose or packing, Plating adapted for use as hose or packing, Lastic, New Jersey Car Spring and Rubber Co. 51,946
Undershirts and arawers and union suits, Delmel Linen-Mesh System Co. 51,784
Varnishes and varnish stains, Glidden Varnish Co. 51,794
Washing fluids, E. F. Kaestner. 51,796
Whisky, G. Gilliams & Co. 51,793
Whisky, Chicago Distilling Co. 51,736
Whisky, Breen & Kennedy 51,741
Whisky, Chicago Distilling Co. 51,738
Whisky, H. Gilliams & Co. 51,786
Whisky, P. Dempey & Co. 51,786
Whisky, Breen & Kennedy 51,741
Whisky, Chicago Distilling Co. 51,786
Whisky, H. Gilliams & Co. 51,878
Whisky, H. Gilliams & Co. 51,878
Whisky, H. Gilliams & Co. 51,878
Whisky, H. Grim Grocery Co.

LABELS. La Rouge Charle," for a fluid preparation for beautifying the complexion, M. E. S. Ransford 12,813

"Lithia Holland Gin," for gin, L. M. Smith. 12,801

"Manhattan," for malt extract, Paragon Malt Extract Co. 12,797

"Mazo," for soap, Mazo Manufacturing Co. 12,807

"Old Jones Valley Whiskey," for whisky, Birmingham Distilling Co. 12,802

"100 Good Things to Eat," for preserved fruits, vegetables, and table delicacies, Erie Preserving Co. 12,804

"Portland Pointers," for cigars, C. Brinton. 12,795

"Prost," for beer, Ph. Kling Brewing Co. 12,800

"Pungent Aromatic Ginger Ale," for ginger ale, Western Carbonic Acid Gas Co. 12,798

"Puritan Massage Cream," for massage cream, Puritan Massage Cream Co. 12,814

"Sapolin Glass Frosting," for glass frosting, Gerstendorfer Bros. 12,815

"The Nightingale," for talking machine records, Englewood Co. Consolidated Factories 12,817

"The Scott Hip-Form and Bustle," for hip forms, C. H. Scott

"Verbena Hair Tonic," for hair tonic, J. Ottmann Lithographing Co. 12,812

"Zenith Brand Metal Clasp Envelopes," for envelops, C. J. Cohen & Son. 12,805 PRINTS.

"Asbestol," for gloves and mittens, Joseph N. Eisendrath Co. "Bog i Hrvati," for a liquor made from white corn whisky and brandy, J. Kova-1,627 "Juanita," for flour, Scott County Milling 1,628 "Men's Apparel," for men's apparel, W. C. Both Motor Car and Lantern Backs Bicycle Play-1,625

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 begiven. Address Munn & Co., 361 Broadway, New York.

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

Learn Plumbing Shall **Plastering** Bricklaying

The greatest demand in the history of the world exists today for mechanics.

Coyne Bros. Co. 1814 E. 40th Street. N. E., CLEVELAND, OHIO. Trade Schools

NEW YORK CHICAGO

FREE CATALOG

BUILD YOUR OWN BOAT

By the BROOKS System **10,686 NOVICES**

-most of them with no tool experience whatever-built boats by the Brooks System last year. Over fifty per cent. have built their second boats. Many bave established themsclves in the boat building business.

If you can drive a nail and cut out a piece of material from a full size pattern—you can build a Canoe—Row-boat—Sait-boat—Launch—or Yacht—in your leisure time—at home.

The Brooks System consists of exact size printed paper patterns of every part of the boat—with detailed instructions and working illustrations showing each step of the work—an iten.ized bill of material required and how to secure it.

All you need is the patterns, costing from \$2.50 ap-and materials from \$5.00 up. Only common household to 1s required.

We also furnish complete boats in the Knock Down form—ready to put together. Satisfaction guaranteed or money refunded. Our big free cata log tells how you can build boars all styles—all sizes.

BROOKS BOAT MFG. CO. iginators of the Pattern System of Boat Build 405 Ship St., Bay City, Mich., U.S.A.



You Can Tell A Truscott -You Can Trust One

The product of three generations of boat-building ex-perience, TRUSCOTT craft embody every modern fea-ture. TRUSCOTT automatic control is a marvel of ture. TRUSCOTT under-water exhaust is absolutely noiseless, causes no back-pressure, and is positively guaranteed actually to accelerate the speed of the boat. Send stampsfor our 80-page catalog.

We have bought author's rights in "The Book of Boats"—the clearest, most comprehensive book on small craft ever written. Traces the davelopment of every type. 125 pages, cloth-bound, fully illustrated—a regular dollar book. We will send a copy postpaid, with a year's subscription to our quarterly. "The Launch", for 50c. Order NOW; if you are net entirely satisfied, return the book within 10 days, and we will refund your money.

Truscott Boat Mfg. Co.

Truscott Boat Mfg. Co.

CHOICE IMPORTED **English Lawn Grass Seed**

is the best seed to use for your lawn.

It contains some ten varieties of the best, fine Lawn Grasses and is entirely free from weed seeds and coarse grasses.

It is imported exactly as used on the best of the celebrated lawns of England, is hardy and luxuriant growing.

1-lb. Carton, 25c 5-lb. Bag, \$1.00 Postage Sc extra on 1-lb. Cartan, Blatchford's Calf Meal Co. WAUKES AN, LL. Established in Leicester, Eng., in 1800.



WRITE FOR ESTIMATE ON ANY ARTICLE YOU WANT MANUFACTURED STAMPINGS, MODELS, EXPER. WORK WRITE FOR FREE BOOKLET THE CLOBE MACHINE & STAMPING CO. 970 Hamilton St., Cleveland, O.

SOCIALISM

The most important question of the day. Get posted. Read the greatest Socialist magazine in the world. $300,\!000\,\mathrm{circulation.}\,$ Send $10\mathrm{c.}\,$ silver for one year's trial.

GAYLORD WILSHIRE, Editor "Wilshire's Magazine," 800 Black Bldg., N. Y. City

FOR SALE

150 Phonograph Spring Motors.

150 Revolving Counter Stools. 150 1%-inch Electric Bells.

150 Pearl Push Buttons.

"We Analyze Everything"

Investigations and Researches. Processes improved. Patent litigation. etc. MAX D. SLIMMER, Ph.D., 403 Ellsworth Bidg., Chicago

DO YOU

Want your PATENTS Developed?

Experimentals, Models and fine instrument work. Surveying instrument repairs a specialty. Richter & Poncet, 115 Court Street, Hoboken, N. J. Two minutes from D. L. W. Depot

PROPOSALS will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 o'clock A. M., June 5, 1505, and publicly opened immediately thereafter, to furnish at the Navy Yard, Mare Island, Cal., a quantity of machine tools, as follows: Lathe, moding machine, gear shaper, milling machine, helve hammer, and die sinking machine. Applications for proposals should refer to Schedule 5:23. Blank proposals will be furnished upon application to the Navy Pay Office. San Francisco. Cal., or to the Bureau. H. T. B. HARRIS, Paymaster-General, U. S. N. 4-11-66

and Bottlers Machinery. THE VILTER MFG. CO. 850 Clinton St., Milwaukee, Wis.

MODELS & EXPERIMENTAL WORK.

Inventions developed. Special Machinery.

E. V. BAILLARD. 24 Frankfort Street. New York.

RUBBER Expert Manufacturers Fine Jobbing Work PARKER, STEARNS & CO., 228-229 South Street, New York

Old Gold, Silver and Platinum Bought. Ship o us and we will remit cash immediately. ASHER KLEINMAN, 250 8th Ave., N. Y. City, N. Y.

DRYING MACHINES. S. E. WORRELL Hannibal. Mo.

THE NATIONAL MODEL WORKS. Experimental Work, Models, Patterns, and Light lanufacturing. 85-87 Fifth Avenue, Chicago.

Special Machinery designed and built to order. G. M. MAYER, M.E., 1131 Monadnock Bl., Chicago, Ill.

Experimental & Model Work

Electric Supplies Telephones Novelties, Dynamos, books, toys. Big carning & We underselled. Want agts. OHIO E.ECTRIC WORKS, Cleveland, Ohio

NOVELTIES & PATENTED ARTICLES
MANUFACTURED BY CONTRACT. PUNCHING DIES, SPECIALMACHINERY.
E.KONIGSLOW STAMPING & TOOL WORKS, CLEVE LAND, 0.

We manufacture METAL SPECIALTIES of all kinds to order largest equipment: lewest precess Send sample or Send sample of THE EAGLE TOOL CO., Dept. A. Cincinnati, O.

ELESCOPES CATALOGUE W.& D. MOGEY. BAYONNE CITY. N.J

Telegraphy

Circular free. Wonderful automatic teacher. 5 styles \$2 up. 0 MN IGRAPH CO., Pept. 52, 89 Cortinandt St., New York.

Magical Apparatus.

Grand Book Catalogue. Over 700 engravings 25c. Parlor Tricks Catalogue, free.
MARTINKA & CO., Mfrs., 493 Sixtb Ave., New York.

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

STEEL TYPEWRITER TYPE We make, or will furnish complete outfit for making, all styles. NEW YORK STENCIL WORKS, 100 Nassau Street, New York.

EARN WATCHMAKING

We teach it thoroughly in as many months as it formerly took years. Does away with tedions apprenticeship. Money earned while studying. Positions secured Easy terms. Sent for eatalog. cured. Easy terms. Send for catalog. ST. LOUIS WATCHMAKING SCHOOL, St. Louis, Mo.

ANGLE BENDERS Give up the old expensive vise method and use our quick and powerful hand power benders. Form angles in stock up to 1½ inch. Write to-day for catalogue Waltace Supply Co., 921 Garden City Block, Chicago, III-

W. B. KNIGHT MACHINERY CO. Mirs. of Special Machinery and Tools 2019 to 2025 Lucas Ave.. ST. LOUIS