

### The Search for Work

The man who can do something better than anyone else doesn't search for work. Employers search for him. We teach the theory of engineering and the trades to men already at work. Thousands of our students have secured a

### Salary-Raising Education

in Mechanical, Electrical, Steam, Civil or Mining Engineering, Chemistry, Architecture, Plumbing, English Branches. When writing state subject in which interested.

International Correspondence Schools, Box 942, Scranton, Pa.



### ELECTRICAL ENGINEERING TAUGHT BY MAIL.

Write for our Free Illustrated Book. "CAN I BECOME AN ELECTRICAL ENGINEER?"

We teach Electrical Engineering, Electric Lighting, Electric Railways, Mechanical Engineering, Steam Engineering, Mechanical Drawing, at your home by mail. Institute founded by Thos. A. Edison and others.

ELECTRICAL ENGINEERS INSTITUTE, Dept. A, 240-242 W. 28d St., New York.

### LEARN TO WRITE ADVERTISEMENTS

Employed Graduates are making good salaries. More than they ever commanded. TAUGHT THOROUGHLY BY MAIL. Ad. Writing is not genius but an easily acquired business. Answer this now.

Page-Davis School of Advertising, Suite 20, 167 Adams St., Chicago.

### SPEED!

A high-grade tire, to be worthy of its name, should possess four virtues—speed, easy riding qualities, ability to wear, ease of repair.

G & J Tires have all these virtues. When punctured, take off the outer cover, repair the inner tube and go on your way in a jiffy.

So simple a child can do it. Catalogue free.

### G & J TIRE COMPANY,

Indianapolis, Ind.

### YOUR BICYCLE

May need a new crank handle or higher gear. We can furnish it. Complete with caps and cones, to fit any wheel. Write us for full information.

The Avery & Jenness Co., 60 S. Canal St., Chicago, Ill.

### BY-THE-BYE, WHEN YOU BUY A BICYCLE

Be sure and buy the best, and that means the

### BUFFALO KING.

either "Racer" or "Special." The "Queen" is for a lady. No better built wheels on the market—every rider satisfied. Thoroughly up to date in improvements. All parts of best materials. Put together by skilled workmen. Prices, \$35 and \$40. Illustrated Catalogue free on application.

THE W. M. HENDERER CO., Buffalo, N. Y., U. S. A.

### THE BICYCLE: ITS INFLUENCE IN Health and Disease

By G. M. Hammond, M.D. A valuable and interesting paper in which the subject is exhaustively treated from the following standpoints: 1. The use of the bicycle by persons in health. 2. The use of the bicycle by persons diseased. (Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 1002. Price 10 cents. To be had at this office and from all newsdealers.

### THE HUB

will keep you posted on Automobiles.

At news stands or by mail, 25 cents. Six months' subscription \$1.00.

### THE HUB,

Room 6, 24 Murray St., New York.

### THE GOODYEAR Puncture Proof Tire Outwears ALL OTHERS.

Write for Catalogue and Prices.

The Goodyear Tire and Rubber Co., Akron, O. LARGEST TIRE MAKERS IN THE WORLD.

### RIDER AGENTS WANTED

One in each town to ride and exhibit sample 1901 bicycle. BEST MAKES 1901 Models, \$10 to \$18

'99 & '00 Models, high grade, \$7 to \$12.

500 Second-hand wheels all makes and models, good as new, \$5 to \$8. Great Factory Clearing Sale at half factory cost. We ship anywhere on approval and ten days trial without a cent in advance.

EARN A BICYCLE distributing Catalogues for us. We have a wonderful proposition to Agents for 1901. Write at once for our Bargain List and Special Offer. Address Dept. 62 L.

### MEAD CYCLE CO., Chicago

Truck for carrying barrels, etc., W. P. Cherrington	673,700
Truck, hand, Heiss & Ricardo	673,681
Truck, radial, J. Player	673,727
Tunnel boring apparatus, A. W. Manton	673,717
Tunneling devices, tubing for, W. S. MacHarg	673,852
Twister machine stop indicator, D. Clark	673,813
Twyer for cupola furnaces, G. A. True	673,668
Twyer for forges or furnaces, J. Overall	673,505
Typewriter, long distance, A. J. Farmer	673,429
Typewriting machine, J. H. Dyett	673,426
Typewriting machine, E. B. Cram	673,514
Valve, R. Bonnell	673,812
Valve and operating means, T. Barrow	673,573
Valve for hydrants, auxiliary, W. H. Baker	673,974
Valve mechanism, E. B. Roth	673,455
Vaporizer, liquid burner, L. D. Leugel	673,545
Varnished surfaces for revarnishing, preparing, C. P. Staley	673,665
Vehicle driving mechanism, F. B. Stearns	673,739
Vehicle, motor, Haynes & Apperson	673,619
Vehicle spring, pneumatic, W. W. Humphreys	673,682
Vehicle washer, S. V. Hauley	673,433
Vehicle wheel, J. P. Erie	673,390
Vehicle wheel, A. Pinover	673,845
Vein opener and clamp, C. B. Dolge	673,598
Vending box, P. M. & F. W. Claus	673,744
Vending machine, U. Di Marco	673,704
Vessel stand, portable, Happe & Israel	673,746
Vise and pliers, combined hand, I. Jacques	673,605
Voting machine, Cunningham & Major	673,793
Wagon, dumping, W. Ross et al	673,454
Walls and ceilings, sheet metal lining for, M. Van Zanten	673,510
Wardrobe, J. Kennerly (reissue)	673,820
Water closet, F. S. Perrin	673,820
Water cooler and filter, combined, T. T. Moulton	673,722
Water meter, H. Fredrick	673,431
Weather strip, W. O. Mikessell	673,581
Welding, automatic, F. C. Stuckel	673,740
Welding steel and copper, Smith & Sherry	673,664
Well drilling apparatus, N. G. Hall	673,500
Well tubes, filter or strainer for, Keller & Jeffers	673,398
Wire coil machine, J. H. Tompkin	673,588
Wire fabric, woven, T. W. Klippel	673,642
Wire splicing tool, Stoolfire & Mitchell	673,459
Wire winding apparatus, J. Farrell	673,599
Wrapper, mailing, M. C. McCord	673,471
Wrapping machine, newspaper, R. G. Clyne	673,421

### DESIGNS.

Ash tray, L. N. Moss	34,472
Badge, H. S. Stovall	34,466
Badge, E. L. Logee	34,468
Bedstead side rail, G. C. Luther	34,401
Billiard table, O. F. Bartel	34,493
Bottle, E. Greiner	34,474
Cup, R. Harris	34,473
Drill bar, Guthrie & Wilson	34,484
Fabric, D. Seeman	34,494
Grinding mill casing, W. H. Dodson, Jr.	34,485
Holdback iron, C. R. Shivers	34,487
Lace fastening, shoe, F. B. Yarbro	34,479
Musical instrument body, A. Nordwall	34,476
Napkin ring blank, J. I. Burt	34,471
Pen and pencil holder, E. S. Devlin	34,478
Pliers, jaw member for carbon cutting, E. O. Lundin	34,483
Shaft iron, J. Teschler	34,486
Sharpening steel, knife, C. E. Miles	34,470
Spoon, W. F. Ehmman	34,469
Spring joint plate, J. A. Traut	34,481
Stove, gas, C. C. Malton	34,490
Switch stand standard, A. A. Strom	34,489
Telephone supporting bracket, R. V. Griggs	34,482
Towel holder, J. S. Walker	34,492
Umbrella runner operator, N. D. Ingram	34,480
Violin cases, bow holding spring for, N. E. Kennedy	34,477
Wagon body, W. Leonard	34,488
Water bag, C. W. Meinecke	34,475

### TRADE MARKS.

Blackboards, American School Furniture Co.	36,394
Boots and shoes, Munroe, Packard & Linscott	36,365
Boots, shoes, and slippers, Colonial Shoe Co.	36,363
Boots, shoes, and slippers, Kenny & Fitzpatrick	36,364
Carpet cleaner, C. O. Parkinson	36,387
Cement, Portland, Helderberg Cement Co.	36,397
Chicory preparations, Aktien-Gesellschaft Emil Seelig	36,372
Corsets, best-supply, and corset steels, B. Altman & Co.	36,361
Fish and oaten flour powder, Patent Fish Food Syndicate	36,376
Flat and hollow ware and cutlery, certain named, Simeon L. & George H. Rogers Co.	36,395
Flour, wheat, Clark-Jewell-Wellis Co.	36,374
Fuses, Climax Fuse Co.	36,392
Grocers' sundries, certain named, Acme Tea Co.	36,375
Guano, C. M. Colchester	36,390
Gum, chewing, American Physicians Supply Co.	36,379
Harmonicas, Strauss Bros. & Co.	36,393
Lenses, U. Nebring	36,368
Medicinal preparations, Calenduline Co.	36,384
Medicines, certain named, J. Miller	36,382
Medicines for certain named diseases, E. E. Sutherland Medicine Co.	36,381
Nerve calamine, Day Chemical Co.	36,379
Paint, Akron Mining, Milling and Manufacturing Co.	36,389
Painters' and glaziers' supplies, certain named, E. E. Nice	36,391
Paper and chemicals used therewith, collodion and gelatin coated photographic, Monarch Paper Co.	36,369
Peanuts, Love & Sunshine Co.	36,373
Pins, toilet, John V. Farwell Co.	36,367
Remedy for certain named diseases, M. E. Houchens	36,380
Remedy, proprietary, M. Graham	36,383
Respiratory sedative, Schiefelin & Co.	36,378
Sardines, F. W. Williams	36,377
Sarsaparilla, K. Mandell & Co.	36,385
Sewing machines and their attachments, certain named, E. J. Carey	36,396
Shoes, men's and women's, Sidney Shoe Co.	36,366
Silk and woolen mixtures, Perkins, Van Bergen & Co.	36,362
Stove polish, Eureka Mfg. Co.	36,388
Toilet cream and toilet soap, G. W. Stringer	36,380
Umbrellas, B. Altman & Co.	36,360
Wine, white, Schroder & Schuyler & Co.	36,371

### LABELS

"Booster," for cigars, Berriman Brothers	8,360
"Catechee," for sheetings, Norris Cotton Mills	8,357
"Dr. Price's Delicious Table Syrup," for table syrup, Price Flavoring Extract Co.	8,362
"Dunn's Own Compound for the Blood, Liver and Kidneys," for a medicine, J. M. Dunn	8,365
"Home Guard," for cigars, P. A. Gerke	8,361
"Our Greenbriar Axe," for axes, Loewenstein & Sons	8,359
"Sennol," for a medicine, J. W. Smith	8,364
"The Gum that Cleans the Teeth," for a gum, American Physicians Supply Co.	8,363
"Uncle Sam Mite Exterminator," for a mite exterminator, D. Driscoll	8,366
"Union Made," for cloth hats and caps, United Cloth Hat and Cap Makers of North America	8,358

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. In ordering please state the name and number of the patent desired, and remit to 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, provided they are simple, at a cost of \$45 each. If complicated the cost will be a little more. For full instructions address Munn & Co., 361 Broadway, New York. Other foreign patents may also be obtained.

### GENTLEMEN:—The GOODFORM Trousers

Hanger is made of fine, specially rolled spring steel, heavily nickel-plated on copper. The parts in contact with the fabric are wide and the edges rounded. It operates automatically. "You press the button," and the keeper does the rest. Sample by mail, 35c.; 3 for \$1.00; 6 and a closet loop, \$2.00. All express prepaid. This is what you want if you want the best.

Sold by Hardware and Furnishing stores, or prepaid for the price. Remit to the maker.

### CHICAGO FORM CO., Dept. 76, 124 La Salle St., CHICAGO

### MORROW COASTER BRAKE.

FITS ANY CYCLE. 100,000 IN USE. ADDS PLEASURE AND SAFETY—ALL DEALERS SELL THEM.

RIDE 50 MILES—PEDAL ONLY 35. ECLIPSE MANUFACTURING CO., BOX X, ELMIRA, N.Y.

### PATTON'S Sun Proof Paints

are guaranteed to protect the lacquer from fading. Send for free book about paint. Inducements to dealers.

PATTON PAINT CO., 227 Lake St., Milwaukee, Wis.

### FOR SALE - A CHILD'S KNIFE BLADE

PATENTED April 23, 1901

To the highest Cash bidder within thirty days from date. All communications addressed to patentee

MRS. MARY A. BERK, Cape Girardeau, Mo.

### MORAN FLEXIBLE JOINT

for Steam, Air or Liquids. Made in all sizes to stand any desired pressure.

Moran Flexible Steam Joint Co., Inc'd, 149 East 3d St., LOUISVILLE, KY.

### DRIVING A PLEASURE

when holding your horse with an IMPERIAL BIT, giving 100 per cent more leverage than any other. Any lady can control the most vicious horse. Positive care for tongue-lolling. Will prevent side pulling and driving on one line. Sent to any address, postpaid, upon receipt of price. In X or plate or imitation rubber, \$1. In fine silver plate, \$2.

Imperial Bit and Snap Co., 14th Street, Racine, Wis.

### SALESMEN AND AGENTS WANTED

BIG WAGES—Our Famous Puritan Water Still, a wonderful invention—not a filter. 22,000 already sold. Demand enormous. Everybody buys. Over the kitchen stove its furnace purifies distilled, aerated drinking water, pure, delicious and safe. Only method. Distilled Water cures Dyspepsia, Stomach, Bowel, Kidney, Bladder and Heart Troubles; prevents fevers and sickness.

Write for Booklet, New Plan, Terms, etc. FREE

Harrison Mfg. Co., 207 Harrison Bldg., Cincinnati, O.

### 50 YEARS' EXPERIENCE

# PATENTS

TRADE MARKS, DESIGNS, COPYRIGHTS & C.

Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. Handbook on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. 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. 361 Broadway, New York

Branch Office, 625 F St., Washington, D. C.

### WANTED DRAFTSMEN. AN EXAMINATION

of applicants will be held at the Navy Yard, New York, May 23, 1901, for one mechanical draftsman at \$4.48 per diem, and two assistant architectural draftsmen at \$4.00 per diem. The examination will be open to all comers who can give evidence of experience in the kind of work for which they seek employment and who are citizens of the United States. Applications will be addressed to the Commandant, Navy Yard, New York, and must be delivered to him on or before Wednesday, May 22. No application received after that date will be considered. Each applicant will state in his application his name, age, residence, citizenship, present occupation and previous employment or work done. The applications will be accompanied by evidence of citizenship and by certificates, preferably from previous employers, as to character, habits of industry and sobriety, and skill and experience in work of the kind required.

F. W. HACKBURN, Acting Secretary of the Navy.

### ICE MACHINES, Corlies Engines, Brewers' and Bottlers' Machinery. THE VILTER MFG. CO., 899 Clinton Street, Milwaukee, Wis.

### MODELS & GEARING

CATALOGUE FREE. UNION MODEL WORKS, 193 CLARK CHICAGO.

### H. P. GAS ENGINE CASTINGS

Materials and Blue Prints. Write for Catalogue 9.

PARSELL & WEED, 129-131 W. 31st Street, New York.

### SHORTHAND BY MAIL. Pioneer home course

Catalogue and First Lesson Free.

Pott's Shorthand College, Box 33, Williamsport, Pa.

### TYPE WHEELS, MODELS & EXPERIMENTAL WORK. SMALL MACHINERY

NOVELTIES & ETC. NEW TYPE STENCIL WORKS 100 NASSAU ST. N.Y.

### MODELS & EXPERIMENTAL WORK.

Inventions developed. Special Machinery.

E. V. BAILLARD, Fox Bldg., Franklin Square, New York.

### D'AMOUR & LITTLEDALE MACHINE CO.

130 WORTH ST., NEW YORK.

PATTERN AND MODEL MAKERS.

### SALE IN EUROPE, particularly in France, of patented American Machines and Industrial Apparatus, and of patented American inventions.

L. SIMON, Civil & Mechanical Engineer, Troyes, France.

### DIAMONDS & SAPPHIRES

for all mechanical purposes.

MENDES CUTTING FACTORIES, 12-16 JOHN ST., NEW YORK.

### STATLER'S HOTEL

The Largest in the World. Send for map of city and Exposition grounds also folder telling how to SAVE MONEY and secure accommodations.

F. C. STATLER, Prop., Statler's Hotel, at Exposition, Buffalo, N. Y. (Statler's Restaurant, Elliott St. Sq.)

### D. L. HOLDEN

SOLE MANUFACTURER

## REGALED ICE MACHINES

SEE FIRST PAGE SCIENTIFIC AMERICAN MAY 22, 1901.

### REVERSING STEAM TURBINE.—PARSON'S

recently perfected turbine for boats. Illustrations showing details. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 1158. Price 10 cents, by mail, from this office, and from all newsdealers.

### LYON & HEALY'S BRASS BAND

Own Make

INSTRUMENTS. Indorsed by the great Jules Levy as the best in the world. Big Catalogue, 400 illustrations, FREE. Positively the lowest prices on Band Instruments, Uniforms and Supplies of all kinds. Also contains Music and Instructions for New Bands. Lyon & Healy, Manufacturers, 28 Adams St., Chicago. (Lyon & Healy are the largest music house in the world—Editor.)

### TOBIN BRONZE Non-Corrosive in SEA WATER.

CAN BE FORGED AT CHERRY RED HEAT. TRADE MARK (Registered).

Round, Square and Hexagon Rods for Studs, Bolts, Nuts, &c. Pump Piston-Rods, Yacht Shafting, Rolled Sheets and Plates for Pump Linings, Condensers, Rudders, Centerboards, &c. Hull Plates for Yachts and Launches, Powder-Press Plates. For Tensile, Torsional and Crushing Tests. See Descriptive Pamphlet, furnished on application.

### THE ANSONIA BRASS & COPPER CO.

Sole Manufacturers, 99 JOHN STREET, NEW YORK.

### The Improved BELL ODOMETER

APPLIED TO YOUR AUTOMOBILE OR CARRIAGE

will give you the exact distance traveled, and announce each mile passed by the stroke of a bell.

Send for Descriptive Circular S.

### S. H. DAVIS & CO.

Cor. Portland & Sudbury Sts., Boston, Mass.

### WILL SHIP C. O. D. FOR \$25.00

WITH PRIVILEGE OF EXAMINATION. FREIGHT PREPAID TO YOUR STATION.

### "THE WILLARD STEEL RANGE"

Has 6 1/2-in. lids, oven 17x21x12, 15-gallon reservoir and warming closet, lined throughout with asbestos, burns wood or coal. This special inducement is offered for a limited time only. Mention this paper.

### WM. G. WILLARD, Manufacturer, 619 and 621 N. 4th St., St. Louis, Mo.