

## Business and Personal.

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## Notes &amp; Queries

## HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.  
References to former articles or answers should give date of paper and page or number of question.  
Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all either by letter or in this department, each must take his turn.  
Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.  
Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.  
Scientific American Supplements referred to may be had at the office. Price 10 cents each.  
Books referred to promptly supplied on receipt of price.  
Minerals sent for examination should be distinctly marked or labeled.

(7633) J. N. D. asks: 1. About what would be the required dimensions of the glass plate in a simple electric machine, to charge a small Leyden jar? A. Holtz machines are made with plates as small as 12 inches in diameter. These will charge Leyden jars and perform many experiments. We should advise you to purchase the SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 279, 282, price 10 cents each, in which many experiments are described. 2. At what speed should it be revolved? A. The speed of the plates of a Holtz machine is only limited by the strength of the glass. 3. Where should a body be placed, to be affected most by the earth's attraction? A. A body is affected most by the earth's attraction at the surface of the earth, that is, bodies weigh most at the surface; less, both above and below the surface of the earth. 4. State three proofs that the earth is an oblate spheroid. A. One method of determining the form of the earth is by measuring arcs of meridians at different latitudes. A second is by taking the times of vibration of a pendulum at different points on the earth, and from these are calculated the intensity of gravity at those points. See Young's "General Astronomy," pages 99 to 107, price \$2.50 by mail. We do not know any third mode of finding the form of the earth.

(7634) F. V. writes: While experimentally testing the efficiency of a ground wire of a telephone line from Winsted to the railroad station at Lester Prairie, six miles south of here, the ground wire of the telephone at that point was connected with the telegraph wire. A great improvement was found in the transmitter and also in the receiver at Lester Prairie; and while still commenting on this, the operator at New Germany, a station on the Great Northern four miles east of Lester Prairie, called and told the operator at Lester Prairie, by telegraph, that he had heard the whole conversation, and even recognized the voice of the speaker at Winsted, which was later actually verified, more than once. The remarkable feature of this, however, is that there is no telephone of any kind at or near the station or even in the town of New Germany. Teela and Marconi may send their messages without wire, but they must have their instruments. But here we have an instance of receiving messages without any apparent instruments over a wire a distance of ten miles. [A. We regret to say that this matter is neither new nor strange, though doubtless your observation of it was entirely original with yourself. The SCIENTIFIC AMERICAN as long ago as 1881 contained an account of using a telegraph key as a transmitter and a sounder as a receiver of articulate speech. So far from your having no wires, you had a direct connection of your telephone wire to the telegraph line. All this rest was plain. The telephone message then went over the telegraph line, and the operator heard it at his sounder, which chanced to be well situated and adjusted for the purpose.—Ed.]

(7635) P. N. writes: I am interested in a scientific problem on which I desire the evidence of or decision of a second party, and would ask you to answer the following: Suppose a man weighing 150 pounds will require to expend a force of 50 foot pounds (or a certain amount of force) to walk a certain distance, can the same man travel the same distance over the same road on a modern bicycle of 20 pounds weight with less force expended? The man is supposed to lift himself 2 inches at every step, the road is supposed to be perfectly level and smooth, time not being taken in consideration. By the above you may judge the simple question to answer. Is the human body a mechanism that,

in its natural way of locomotion—walking—is superior in economy of force to one seated on a bicycle and imparting the force to the wheel? A. The bicycle is a great conservator of animal power. A man on a bicycle who can only exert one-eighth of a horse power for a few hours is more than a match for a horse in the long run. He can outdo his own walking power on a good road at least four times. If the weight of the bicycle is taken into account, the proportional conservation of energy will be somewhat greater.

(7636) J. K. asks the difference between a marine, field, and night glass. A. Marine glasses are also termed night glasses when they have a large diameter object glass, which is used at full area at night and reduced area by day, by placing a diaphragm cap over the object glass. A field glass may be a terrestrial telescope of the same combination of lenses with a very short focus, or a pair mounted for each eye. For the lower powers for field glasses, the opera glass form is used, only made longer than an opera glass, the object glass and eye lens being achromatic.

(7637) E. S. asks for the formula for a compost to imitate marble, which will be very hard and will take a high finish, and how to polish the same. It seems to be a secret; there are only a few men in this city that can mix it. A. Reduce marble dust or white limestone to a very fine powder by grinding and sifting, mix with it intimately about  $\frac{1}{4}$  its weight of zinc oxide (zinc white) and  $\frac{1}{2}$  its weight of Portland cement, and mix thoroughly into a thick paste with a sufficient quantity of a hot aqueous solution of waterglass, containing about 40 per cent of the glass. Mould the paste under pressure while warm, and expose the moulded form for a week or ten days to warm dry air, before finishing.

## TO INVENTORS.

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INDEX OF INVENTIONS  
For which Letters Patent of the  
United States were Issued  
for the Week Ending  
MARCH 28, 1899.

## AND EACH BEARING THAT DATE.

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

Adding machine, T. Lanston..... 622,157  
Adding machine and register, J. A. Turck..... 622,091  
Advertising apparatus, railway, C. J. Feder..... 622,185, 622,186  
Air brake, Ansley & Topham..... 622,179  
Air brake mechanism, automatic, Robinson & Hitchcock..... 622,020  
Alarm. See Burglar alarm.  
Alarm lock, H. E. Carlton..... 621,913  
Alcohol, manufacture of, Collette & Boidin..... 621,796  
Alkyl derivative of uric acid and obtaining same, E. Fischer..... 621,804  
Alkyl derivative of uric acid, making, E. Fischer..... 621,805  
Amalgamator, G. W. Williams..... 621,985  
Animal trap, E. A. Mathias..... 622,057  
Axle, self-lubricating, J. L. Dolson..... 621,905, 621,906  
Axle, self-lubricating, J. Grotage..... 622,003  
Bales any tie and covering therefor, means for binding cylindrical cotton, W. E. Anderson..... 621,955  
Barrel, knockdown, P. Mayotte..... 622,058  
Bat forming mechanism, M. Swenson..... 621,951, 621,952  
Bath tub, F. Johnson..... 621,920  
Battery. See Secondary battery.  
Bearing, antifriction, P. W. Grant..... 622,041  
Bed attachment, J. H. Greene..... 622,000  
Bed bottom, spring, W. L. Antes..... 622,030  
Beer, device for drawing steam, Farley & Jackson..... 621,998  
Bell, bicycle alarm, Mossberg & Brink..... 622,159  
Bell, conveyor, A. Hasper..... 621,816  
Bicycle, E. C. Doolittle..... 621,835  
Bicycle frame, J. C. Parker..... 622,066  
Bicycle gear, Kolb & Foehl..... 621,925  
Bicycle gear, Whitney & Lazarus..... 621,883  
Bicycle handle bar, Rosenbauer & Schowalter..... 621,946  
Bicycle pedal, E. Baker..... 622,032  
Bicycle saddle, P. Brody..... 621,836  
Bicycle spring frame, W. J. Pierce..... 621,942  
Bicycle variable speed gear, Young & Drake..... 622,029  
Bicycle wrench nipple grip, W. Herrick..... 622,005  
Billiard table leveling device, W. Welz..... 622,028  
Biscuit, crackers, etc., method of and means for packing, F. M. Peters..... 621,974  
Bolt. See Door bolt.  
Book cover protector, G. Cornwall..... 622,178  
Boot cleaner, E. Shaw..... 622,024  
Boot or shoe, R. E. Kelsall..... 621,922  
Bottle stopper retainer and extractor, C. V. B. Reeder..... 622,074  
Bottle wrapper, F. M. Wade..... 621,983  
Box. See Cigarette box. Fare box. Letter box. Powder box.  
Box corner locking device, F. L. Chase..... 622,118  
Box covering machine, paper cutting attachment, L. Dreyfus..... 622,131  
Brake. See Air brake. Fluid pressure brake.  
Brooder, chicken, E. F. Hodgson..... 622,148  
Brush cleaner, M. C. Ryan..... 622,082  
Brush, hair, W. H. Hippisley..... 621,917  
Buckle, back band, J. W. Kirkman..... 622,155  
Burglar alarm, J. E. Cummings..... 621,781  
Burglar alarm, J. E. Cummings..... 622,087  
Burner. See Gas burner. Hydrocarbon burner.  
Butter forming machine, J. E. Hunsinger..... 622,048  
Button, separable, G. W. Lee..... 621,831  
Cabinet, F. Tunc..... 621,889  
Car coupling, J. J. Malloy..... 621,836  
Car coupling, railway, Schellinger & Kleiner..... 621,978  
Car door, grain, W. A. McGuire..... 621,842  
Car sand box, A. W. Ham..... 621,815  
Car seat, P. M. Kling..... 621,825  
Cars, number displaying device for caboose, H. J. Small..... 621,802  
Carburetor, C. Kemp..... 622,008  
Card setting machine guide, E. Ashworth..... 621,988  
Cardboard scoring machine, G. W. Jordan..... 621,965  
Carpet sweeper, S. J. Reynolds..... 622,017  
Carriage, baby, M. W. Mahar..... 622,158  
Cartridge reloading tool, E. S. Farmer..... 621,941  
Cash depository, E. Zinsmayer..... 622,051  
Chair, S. N. McCloud..... 622,062  
Chair fan attachment, rocking, J. T. Cowan..... 622,123  
Chart for drafting garment pattern, M. Tueck..... 622,092  
Cigar, Pollak & Teiser..... 621,975  
Cigarette box, D. J. Campbell..... 621,792  
Cigarette machine, pocket, W. L. Gravely..... 622,142  
Cigarette making machine, W. G. Pedersen et al..... 622,163  
Cistern or arch pattern, T. W. & L. B. Faus..... 622,134  
Closet seats, attachment for raising or lowering, Burser & Williams..... 621,790  
Clutch, friction, H. S. Kelly..... 622,007  
Coal pocket, D. A. Robinson..... 622,018  
Coating, machine for covering small articles with liquid or semiliquid, G. S. & W. K. Baker..... 622,102  
Cock for ash ejectors, plug, Trewent & Proctor..... 622,090  
Coffee pot, L. Stockett..... 621,887  
Coloring matter and manufacturing same, blue, K. Heumann..... 622,139  
Compound engine, T. E. Chandler..... 621,988  
Compound or composition of matter, J. L. Curtis..... 621,797  
Compressing and baling apparatus, W. A. Patterson..... 622,161  
Concentrator, G. W. Williams..... 621,986  
Conveyer chain chair, J. T. Neacy..... 622,054

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Cooking and heating apparatus, J. H. Goodfellow..... 621,813  
Corn husking machine, R. J. Holmgren..... 621,919  
Coupling. See Car coupling. Thill coupling..... 621,787  
Cue tip, H. Braun..... 621,894  
Cultivator, L. L. Boyer..... 621,894  
Cultivator, P. Frazier..... 621,905  
Cultivator, J. W. Pattison..... 622,062  
Cultivator, J. M. Wright..... 622,093  
Cultivator attachment, Welch & Dickey..... 621,865  
Cutter. See Twine cutter.  
Cycle driving mechanism, H. E. Shepard..... 622,085  
Cycle or other road vehicle, J. R. Heath..... 622,044  
Cycle rear fork end, A. Jerome..... 622,006  
Cycles, means for holding, H. A. Ivatt..... 621,814  
Decorative plate, tile, etc., S. Rosenberg..... 621,841  
Dental disk holder, G. E. Zinn..... 621,847  
Dental nerve broad, W. Vajna..... 621,873  
Dipping tank, Moulton & Jones..... 621,934  
Diab cleaner, C. E. Drake..... 621,944  
Display, duplicate design, W. Macdonald..... 621,835  
Distillation, preparing wood for dry, F. W. J. F. Schmidt..... 622,194  
Door bolt, E. Burns..... 621,886  
Door cap, sliding, E. H. Doane..... 622,123  
Door fastener, sliding, G. L. Reensterna..... 622,167  
Door lock, gravity, J. H. Canaday..... 621,898  
Door stop and catch, combined, J. R. Lavigneur..... 621,830  
Draught equalizer, Maxwell & Dimock..... 621,837  
Draught rigging, G. S. Marshall..... 622,056  
Draughting and measuring tool, combined, W. C. Day..... 622,198  
Dress or skirt holder, A. Urtel..... 622,027  
Easel, J. Schwarz..... 621,856  
Egg carriers, machine for making, S. E. Davis..... 622,038  
Electric circuits, overload safety device for, L. G. Rowand..... 621,976  
Electric heater, D. S. Reeder..... 622,166  
Electric switch, M. H. Caspar..... 622,116  
Electrical distribution system, W. H. Knight..... 621,827  
Electricity from machinery of locomotives, means for generating, H. F. Roach..... 622,078  
Electrolytic cell, H. H. Dow..... 621,907  
Electrolytic cells and producing same, porous diaphragm, for H. H. Dow..... 621,908  
Elevator controlling apparatus, M. B. McLauthlin..... 621,970  
Elevator swiveled spout, D. A. Robinson..... 622,019  
Engine. See Compound engine. Internal combustion engine. Rotary engine.  
Engine, P. Gately..... 621,916  
Excavator, A. F. Nims..... 621,938  
Exhibition cabinet, R. T. Swann..... 621,870  
Expansion joint separator, D. O'Hair..... 621,940  
Extractor. See Honey extractor. Stump extractor.  
Eyeglass guard, J. A. T. Obrigg..... 621,939  
Fare box, registering, O. Katzenberger..... 621,921  
Fastener, W. S. Seymour..... 621,859  
Fastening device, C. A. Feaser..... 621,913  
Fence posts, coating metallic, R. Kennedy..... 622,009  
Fibrous materials, apparatus for cleaning, combined, and applying, W. S. Archer..... 622,031  
Filter, C. L. Charvat..... 621,899  
Filter, T. Linke..... 622,052  
Filter for attachment to water taps, J. H. Niemann..... 621,937  
Filter, water, S. M. Boyer..... 621,786  
Filtering, cider or spirits, apparatus for, O. N. Felt..... 621,803  
Fire escape, J. O. Miller..... 622,059  
Fire escape, E. Kobigle..... 622,079  
Fire hose reel, J. S. Patterson..... 622,067  
Fish hook, J. V. Payton..... 622,069  
Fluid pressure brake, automatic, J. J. Finney..... 622,135  
Fluid pressure regulator, I. H. Spencer..... 622,025  
Furnace. See Hot air furnace.  
Furnace implement, W. L. Williams..... 622,094  
Furnaces, etc., apparatus for burning liquid fuel and the application thereof to heating, De Roussy de Sales & Charbonnel..... 622,172  
Furnaces, preventing smoke and improving combustion in, J. M. Wilson..... 621,884  
Fuse, protective, E. B. W. Reichel..... 622,075  
Game, H. E. Coombs..... 621,930  
Game, A. Dreher..... 621,960  
Game apparatus, Huggins & Pollak..... 622,152  
Game board and apparatus therefor, W. H. Degges..... 621,799  
Garment, R. E. Lowe..... 622,010  
Garment stretcher, J. F. Brock..... 622,112  
Gas burner, W. Friebertshausen..... 622,157  
Gas burner, Mulach & Wiedersheim..... 622,040  
Gas burner, electric lighting, J. M. Anck..... 621,778  
Gas burner, fuel, J. C. Kurtz..... 621,968  
Gas burner, incandescent, A. Bandsept..... 621,783  
Gas burner, incandescent, J. B. De Lery..... 621,927  
Gas burner, etc., means for lighting incandescent or other, P. Bardot..... 621,784  
Gas globes, spring holder for, D. O. Sayre..... 621,948  
Gas lights, apparatus for forming incandescence mantles for, W. H. A. Sieverts..... 621,979  
Gas meter, coin controlled, Cort & Langwith..... 621,902  
Gas regulator, J. Duncan..... 622,099  
Gate, J. T. Arce..... 621,969  
Gate, J. B. Miesse..... 622,016  
Gate, W. R. Pitt..... 621,794  
Glass working machine, I. W. Colburn..... 621,795  
Globe, smoke consuming, J. Durlam..... 621,910  
Glove fastening, C. A. Frenning..... 622,164  
Golf sticks, holding rods, etc., handle grip for, E. Crozier..... 621,933  
Governor, astatic centrifugal, M. Tolle..... 621,871  
Grain or hay, cover or roof for protecting, J. B. Deems..... 621,798  
Grain or seed cleaner and grader, A. D. Ferguson..... 622,012  
Grain steeping trough or cistern, F. Knutzel..... 621,834  
Graphophone, coin controlled, T. H. Macdonald..... 621,821  
Graphophones, etc., trumpet for, J. W. Kemp..... 622,077  
Grate bar, D. S. Richardson..... 621,810  
Grinding machine, J. Gilson..... 622,050  
Gun barrel cleaning device, J. D. Soper..... 622,027  
Hack clamp, J. G. B. Rouse..... 622,081  
Hair pin, C. M. Dissoway..... 622,039  
Hame fastener, H. M. Sheer..... 622,084  
Handle. See Stamp handle.  
Harrow, spring tooth, J. H. Young..... 621,954  
Harvester, horse carrier, J. Macphail..... 621,929  
Hat, coachman's, H. Falkenbach..... 622,040  
Hat fastener, H. J. Grote..... 622,002  
Hat tray, G. E. Farwell..... 621,911  
Heater. See Electric heater.  
Heel, boot or shoe, Ford & Starr..... 621,914  
Hoisting and conveying apparatus, H. R. Palmer..... 621,845  
Holdback attachment, vehicle, F. J. Hess..... 622,156  
Honey extractor, centrifugal, A. Kuschel..... 622,110  
Hook. See Fish hook.  
Horse power, J. C. Bowsher..... 621,818  
Horseshoe studs or calks, apparatus for manufacturing, R. Hornsteine..... 622,132  
Hose and nozzle holder, J. M. Dungan..... 621,884  
Hose signal system, electric, H. Sargent..... 621,806  
Hot air furnace, P. F. Filliez..... 621,999  
Hot water circulating apparatus, R. R. Gibbs..... 622,146  
Hydrocarbon burner, Moon & Marks..... 621,932  
Hydrocarbon burner lighting device, O. F. Moon..... 621,933  
Impact tool, T. H. Phillips..... 622,165  
Indicator. See Interest indicator.  
Insulating compound, B. Ford..... 621,807  
Interest indicator, C. O. Adams..... 622,047  
Internal combustion engine, H. C. L. Holden..... 622,049  
Jacquard machine, open shed, Stafford & Keimel..... 621,949  
Joint. See Rail joint.  
Knob, electrical, C. M. Brown..... 622,177  
Lamp, acetylene gas, E. E. Peck..... 622,015  
Interest indicator, C. O. Adams..... 622,047  
Lamp chimney packing device, T. F. W. Schmidt..... 621,855  
Lamp, electric arc, R. Scheffbauer..... 621,876  
Lamp, electric arc, E. P. Warner..... 622,151  
Lamp, electric incandescent, C. Howard..... 622,087  
Lamp filament, incandescent electric, C. H. Stearn..... 622,087  
Lamp globe holder, D. O. Sayre..... 621,947  
Lamp, incandescent gas, L. Denayrouze..... 622,062  
Lamp, miner's, H. J. Richards..... 622,123  
Lamp spring carrier, J. Kirschbaum..... 622,123  
Lamps, keyless switch socket for incandescent, M. Meyberg..... 622,188  
Lantern holder, A. Cornish..... 622,122  
Latch stop, H. G. Voight..... 621,874  
Letter box, K. J. Peers..... 621,973  
Limb, artificial, W. E. Ginn..... 622,140  
Lock. See Alarm lock. Door lock. Permutation lock. Pin lock. Wagon gate lock.  
Looping in switch, J. Short..... 621,940  
Malt drying apparatus, W. H. Prinz (reissue)..... 11,723  
Match, E. G. Boby..... 622,109  
Match machine, W. H. Wussow..... 621,886  
Measuring apparatus, automatic water, L. Jonker..... 621,820  
Mechanical Seward & Jones..... 622,189  
Metal bending machine, J. Nall..... 622,189  
Meter. See Gas meter.  
Mill. See Windmill.  
Mould. See Water tank mould.  
Moulding machine, A. Dickey..... 621,801  
Money order blank protector, cutter, and hand rest, G. Johnson..... 622,153  
Monkey wrench, J. Stynsberg..... 621,869  
Motor. See Mechanical motor.

(Continued on page 224)



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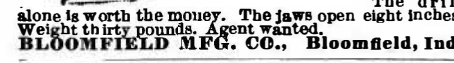
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Windmill gearing, R. A. Thompson.	622,089
Wrench. See Monkey wrench.	
Yarn treating apparatus, J. Gregson.	622,001

## DESIGNS.

Badge or similar article, E. S. Anderson.	30,386
Badge or similar article, H. F. Smith.	30,387
Badge or similar article, Smith & Messier.	30,388
Basin stand, F. E. Bryant.	30,424
Basin support, Morrison & Neal.	30,425
Beil gong, R. W. E. Christensen.	30,429
Bicycle fork crown, N. Berglund.	30,450
Bicycle frame, L. H. Manson.	30,415
Bottle cap fastener, C. K. Sherwood.	30,403
Bottle or jar top, J. D. Miller.	30,454
Bottle, water, C. A. Tatum.	30,432
Box, R. N. Colgate.	30,412
Box, paper, S. Hamburger.	30,428
Cabinet, cracker, A. W. Meyer.	30,426
Cabinet, kitchen, A. B. Johnson.	30,398
Candlestick, miner's, W. H. Pleasants.	30,406
Carpeting, A. G. Greig.	30,451
Carpeting, A. M. Rose.	30,453
Chair seat, bent wood, H. Koehn.	30,400
Chair leg tip, F. Watt.	30,425
Cuff bolder, E. M. La Veine.	30,389
Cultivating scraper, A. E. Thompson.	30,422
Display box, M. W. Weston.	30,427
Dresser and commode, combined, D. Hartley.	30,394
Dough board, E. Sargent, Jr.	30,397
Fence, wire, J. H. Srofe.	30,420
Furnace, L. S. Pfouts.	30,414
Game board, W. C. Breitenbach.	30,395
Game board, A. H. Howard.	30,396
Gear case member, C. H. McQuinn.	30,409
Glass light, S. Marcus.	30,410
Hammer and staple and nail puller, J. McCormick.	30,445
Jar, milk, J. D. Miller.	30,431
Knob top or cap, A. T. Matthews.	30,430
Lamp, bicycle, E. Hayell.	30,448
Lamp, gas, W. A. Barrows.	30,447
Lever, W. H. Fullington.	30,444
Lock bar for covers, H. Kahn.	30,411
Mantel, A. S. Nichols.	30,402
Mirror frame, etc., H. E. Miller.	30,392
Nut book.	30,385
Nut lock washer, Padfield & Cornelius.	30,440
Nut pick holder, A. Baumgarten.	30,392
Pick, Schlageter & Klein.	30,408
Pin, safety, A. Bippart.	30,390
Pipe clamp, L. A. Vahlert.	30,441
Printing device, frame for paper roll holders, J. L. Rankley.	30,423
Railway girder rails, girder connection for street.	30,419
Rubber gasket, H. K. Gilbert.	30,405
Rubber scraping knife, L. F. Booker.	30,404
Sash balance hanger, A. D. Cuny.	30,406
Scale dial, W. N. Pelouze.	30,399
Spoons, forks, etc., handle for, S. Stohr.	30,391
Tire, elastic vehicle, G. B. Dryden.	30,417
Tire, wheel, F. W. Huestis.	30,416
Tooth handle, J. S. Pitner.	30,418
Tray, B. C. Bradley.	30,435
Vehicle body loop, H. A. Meyer.	30,418
Vulcanizers, locking bar and handle for, F. F. Scholl.	30,443

## TRADE MARKS.

Antiseptic in powdered form, G. A. Candler.	32,654
Asphaltum, Western Oil and Asphalt Company.	32,637
Boots and shoes, Korner Brothers.	32,629
Boots, shoes and lasts, Heywood Boot and Shoe Company.	32,628
Canned goods, certain named, H. C. Baxter & Brother.	32,641
Chemical, pharmaceutical, and dietetic preparations, food, and nutriment, Bauer & Cie.	32,649
Coffee, H. Hackfeld & Company.	32,638
Coffee, condensed, New York Condensed Milk Company.	32,639
Collars, Bohne Brothers & Company.	32,626
Cotton fabrics, Burton Brothers & Company.	32,631
Drugs and chemicals, Silenette Proprietary.	32,632
Embalming fluid, Max Hunkeler Chemical Company.	32,656
Groceries, certain named, Oliver-Flinnie Grocer Company.	32,642
Hydrants, pumps, water nozzles, lawn sprinklers, and street washers, H. H. Neumeier.	32,658
Lamp chimneys, Nave & McCord Mercantile Company.	32,653
Leads, zincs, and mixed paints, F. O. Pierce Company.	32,635
Medicated tablets or confections, W. C. Enck.	32,652
Medicinal and chemical substances and remedies in the form of tablets, disks, and pills, Fairchild Brothers & Foster.	32,650
Mineral waters and carbonated beverages, J. Ries.	32,647
Perfumed ribbons, Hamburger & Company.	32,627
Powder for the extermination of insects and vermin, certain, H. H. Conley.	32,653
Puzzle, W. H. Denner.	32,624
Roofing fabrics, R. J. Redick.	32,632
Salves for certain named diseases, Foley & Company.	32,655
Shoes, P. C. Saul.	32,630
Soap, polishing, Royal Soap Company.	32,634
Soda, either alone or mixed with a powder, acid, as is common to form a baking powder, baking, Chureb & Dwight Company.	32,643
Surgical instruments and appliances, Silenette Proprietary.	32,657
Teas and coffees, Springfield Coffee Company.	32,640
Tobacco, smoking, G. H. McCann & Company.	32,645
Tonic, Fairchild Brothers & Foster.	32,649
Watchcases, Fahys Watch Case Company.	32,625
Whisky, Garrett Williams Company.	32,646

## LABELS.

"Beaume Analesque Bengue," for a cure for rheumatism, gout, and neuralgia, J. Bengue.	6,855
"Blue Jacket Brand," for canned salmon, Delafield, McGovern & Company.	6,852
"Filippino Solitaire," for a game, C. F. & O. C. Kade.	6,851
"Hammond's Cattle Comfort," for a veterinary preparation, B. Hammond.	6,858
"Mellin's Food (alimento de Mellin) Para Ninos y Enfermos," for food for infants and invalids, Mellin's Food Company.	6,854
"Peanut Butter," for a nut food, Atlantic Peanut Refinery.	6,853

## PRINTS.

"Old Dominion Baking Powder," for baking powder, C. K. Sauer Company.	117
"St. Andrews Cold Cream," for cold cream, Manufacturing Company.	118 to 120

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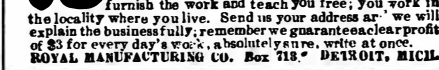
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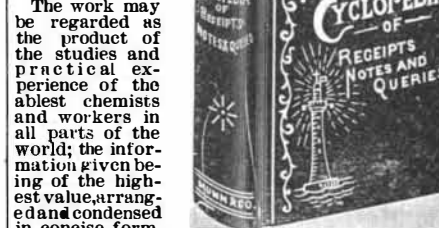
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