Business and Personal.

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References to former articles or answers should give date of paper and page or number of question.

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(4446) W. J. H. says: Please inform me if there is any way to prevent a boiler from priming. Would you advise using potatoes for removing scale. If so, would 20 pounds be more than advisable for a 60 horse power tubular boiler, cut small and dropped in in the steam drum? I would like to have your idea about using coal oil for removing scale in boilers. A. The priming of a boiler may arise from incrusted tubes or dirty water, which lessens steam production, or possibly from overtaxing its capacity. Although potators are said to have been used for removing scale in boilers, we have too little faith in their efficiency to recommend them. Coal oil has the tendency to gather the dirt into a cake, which is liable to settle on the fire sheet and injure the boiler. The easiest to obtain and cheapest boiler cleaner is the ordinary sal soda or crystallized washing soda. One half pound to a boiler horse power, dissolved in the feed water and pumped into the boiler where, after a day's boiling in the regular use of the boiler, it can be blown out by repeated filling up and blowing down three cocks at a time, while the boiler is running. Repeat and clean out the boiler.

(4447) H. M. T. asks: 1. If cocaine were applied to one spot of the body frequently, would it kill the nerves at that place? A. No. 2. What work on psychology would you recommend for the general reader? A. We recommend and can supply Sully's "Outlines of Psychology," price \$3 by mail post paid, also Munsell's " Psychology," price \$1.75.

(4448) T. H. says: 1. There is a spring coming out of a precipitous hill 250 feet from its base. It fills a 11/2 inch pipe. There is anxiety to know what horse power could be developed if it were brought to the base in a perpendicular pipe if properly handled. Also how much less would be the power if brought down in three perpendicular sections, that is a horizontal pive from the bottom of one to top of another? Also what horse power at a grade 221/2°. Has a hammer with a sharp screw thread in the eye for receiving the handle ever been known or is it now original? If distilling water will not remove the odor of volatile
matter, how can it be said that distillation can purify

Bridge gate, J. W. Rhodes.

it? A. We cannot rate the power of a spring without knowing the quantity of water flowing in gallons or cubic feet per minute, or the length of the pipe and the vertical height of the spring above the point of discharge, which must be open to the full capacity of the pipe. A direct line of pipe down the slope of the hill will give the greatest efficiency over the other line, as stated. We have no knowledge of a hammer with a screw eye. Distillation purifies water by separating mineral and organic matter from the distillate. Odors if not eliminated by open boiling, may be absorbed by filtration through animal carbon.

(4449 H. B., Munich.—In regard to your numerous queries, we assure you that the United States naval authorites are thoroughly posted as to all the known improvements in naval armament, both for offence and defense. All the steel alloys have been tested and the nickel steel found to be the best for all purposes. The Mannesman tube process has not yet been made practicable for the great-gun tubes.

(4450) D. E. S., Eaton, O., says: Early in the spring of this year water works were put in operation here, the supply of water being taken from ten wells drilled 100 feet deep in a sandy loam near a creek. The wells are cased up with iron pipe. Up to a month ago the water seemed as fine for drinking purposes as any I ever saw, being slightly soft. For the past month the water has been tasting bad and has been getting worse. When drawn out of the hydrant it strongly resembles milk in appearance. A glass full will clear in about two minutes, leaving no sediment. By holding the glass to the ear a singing noise similar to that produced by soda water is heard, and quite a vapor or steam will rise. By holding a lighted match in this vapor the flame will brighten up perceptibly. The water smells and tastes like oil. Is the water healthy, or how can we test it (some simple way) to find what is the matter with it? After the water settles an oily substance can be seen on the surface. Would the water in our wells be as healthy or more so than the hydrant water? Population 3,500, closely built, no sewers, land flat, too much so for cellars. Will the water likely improve? The county infirmary is located a half mile up the creek from the wells, with its sewer emptying into the creek. Would that contaminate the wells? A. The indications are that you have gas or oil at a lowerdepth than the wells, and that the pumping has drawn the gas or oil into the water stratum. The singing noise is probably the gas escaping from the water. The water may not be injurious or unhealthy, yet we cannot say that it is healthy, but the taste and smell condemn it. The sewage from the county infirmary will not contaminate the wells, as the filtration of the creek water through the soil will purify the water. We should judge the well water better than the hydrant water, provided that the wells are at a distance from water closets and cesspools. It is very doubtful if your deep well water improves. Probably a new set of wells nearer the creek and not so deep, say 50 feet, and at quite a distance apart, will give you better service. The filtrate from the creek is better than the present supply.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for pa tents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere. synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices which are low, in accordance with the times and our ex tensive facilities for conducting the business. Address MUNN & CO., office Scientific American, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

June 28, 1892,

AND EACH BEARING THAT DATE

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

١	(See note at end of hist anout copies of these pate	ents.j
1	Addressing machine, F. D. Belknap	
	Alarm lock, R. G. Vassar.	478.071
	Alloving furnace, metal, W. A. Baldwin	477.792
	Alarm lock, R. G. Vassar	-11,102
	man	478,067
	Anchor, C. H. Eaton.	477,745
l	Animal trap, H. J. Steiner	477 966
	Axle box, A. Miller	477 768
	Axle lubricator, E. H. Benners	478.041
	Axle washer, N. M. Brinkerhoff	477.639
	Axles, machine for forming lubricator grooves in	,000
	vehicle, C. W. Brewer	477,638
	Axles of electrically-propelled vehicles, thrust	,000
ı	collar for, R. P. Osgood	477,695
١	Bar fixture, A. Brandon	477.987
ł	Barrel elevator, C. A. Sterling	477.874
I	Bath apparatus, electric, H. E. Waite	477,975
١	Battery, See Secondary hattery, Voltaic body	,
١	battery.	
ı	Battery, W. A. Childs Bearing for screw nuts, ball, C. E. Brunthaver	477,645
ı	Bearing for screw nuts, ball, C. E. Brunthaver	477.C42
١	Bearing, roll, A. Paterson Bed bottom, coiled wire, T. W. Klipfel	477,718
١	Bed hottom, coiled wire, T. W. Klinfel	477.662
ı	Bed, folding, H. Stevenson	477,967
١	Bed. sofa. W. Anderson	477.881
ı	Bed, sofa, W. Anderson. Bee smoking apparatus, A. G. Hill	478,00G
ı	Bell gong, door, J. P. Connell	477,649
ı	Be't stretcher, G. P. Kenehan	478,060
ı	Bicycle, S. E. Mosher	477,772
ı	Bell gong, door, J. P. Connell. Bett stretcher, G. P. Kenehan Bicycle, S. E. Mosher. Bicycle stand, M. J. Russell.	477,705
١	Bicycle wheel, C. H. Metz	478,064
	Bit. See Bridle bit.	
	Block. See Curbing block.	
	Board. See Electrical keyboard.	
	Boiler. See Steam boiler.	
	Boiling and precipitating tower, G. E. Hanisch	477,755
	Bolster standard, L. G. Cook	477,650
	Book, account, J. E. Ames	477,631
	Boomerang, C. H. Emerson	477,748
	Boomerang gun, C. H. Emerson	477.747
	Boot or shoe fastening, W. E. Bennett Boots or shoes, machine for inserting screw-	477,923
	Boots or shoes, machine for inserting screw-	
	threaded wire into the soles of. L. Goddu.	
	478.055.	478,056
	Box, See Letter box, Sheet metal box, Brake. See Car brake, Wagon brake.	
	Brake. See Car brake. Wagon brake.	
	Brake beam, J. Green	477,057
	Brick cutting machine, J. A. Snell	477,915
	Brick kiln, Conley & Wolfe477,993,	477,994
	Bricks, composition of matter for, A. S. Baker	477.632
	Bridge gate, J. W. Rhodes	477,700

Stromberg	Jar fastening, R. I. Patterson
3utton, G. Heuser	Keys, device for carrying, J. C. Taylor
Cable traction mechanism, W. A. Butler	Knitting machines, electrical stop motion for, A. Beyer. 477,986 Rob strechment Doebler & Bryant 477,886
An cleaning machine, G. Roth	Knitting machines, electrical stop motion for, A. Beyer
Ar brake, D. L. Barnes 47(,392) Lar brake, W. F. Gibbs 478,003 Ar brakes, slack adjuster for, G. L. Harvey 477,342	Ladder hook, extension, J. A. Weston. 477,877 Ladder, step, S. Keeling. 477,843 Lamp, R. H. Plass. 477,698
Car coupling, Callaway & West 477,989 Car, railway, Hoadley & Bemis 477,935 Car window dust and cinder protector E. B.	Lamp, central draught, W. C. Homan
Loomis 477,948 Carpet fastener, stair, T. H. Spurrier 478,028	Homan 477,864 Lamp or conductor support, electric, C. Bell. 477,894 Lamp socket, incandescent, Smith & Foster. 477,786 Lamps, receptacle for portable electric, H. Molendo. 477,810
an. See Jacketed can. an cleaning machine, G. Roth. 477,703 anning device, fruit, J. J. Isler. 477,805 an brake, D. L. Barnes. 477,902 ar brake, W. F. Gibbs. 478,003 ar brakes, slack adjuster for, G. L. Harvey. 477,542 ar coupling, Callaway & West. 477,983 ar, railway, Hoadley & Bemis. 477,935 ar window dust and cinder protector, E. B. Loomis. 477,948 arpet fastener, stair, T. H. Spurrier. 478,003 arpet stretching device, J. T. Lemon. 477,802 art, dumping, L. Rodenhausen. 477,702 artridge, J. M. Pollard. 478,020 asse. See Hat packing case.	Lamp socket, incandescent, Smith & Foster 477,786 Lamps, receptacle for portable electric, H. Molendo 477,810
	Lamps, receptacle for portable electric, H. Molendo. 477,810 Lamps, wick raiser for central draught, W. C. Homan. 477,862, 477,863 Lantern, signal, J. H. Parsons. 477,862, 477,863 Lasting machine, A. E. Stirckler. 477,788, 477,789 Latch, door, H. D. Wheatley. 477,790 Latch, gate, A. R. Grimes. 477,654 Latch, reversible, A. A. Dovey. 477,929 Lath bolter, J. H. Peterson. 477,956 Latbe grinding attachment, G. A. & O. W. Mueller. 477,911
ash indicator, register, and check printer, W. H. Gilman. Gilman. 477,840 ash register actuating device, G. Boemermann. 477,845 atamenial sack, N. M. Dyer. 478,053 ement, etc., machine for applying, H. D. Stone. 478,053 hain coupling link, drive, C. E. Hart. 478,055 hange maker and check receiver, automatic electric, T. Mangan. 478,011 harcoal kilns, arresting and extinguishing com- bustion in, A. Vickers. 477,875	Lasting machine, A. E. Stirckler
Chain coupling link, drive, C. E. Hart 477,895 Chain coupling link, drive, C. E. Hart 477,895 Change maker and check receiver, automatic	Latch, reversible, A. A. Dovey 477,929 Lath bolter, J. H. Peterson 477,956
Distern cleaner, C. R. Jenne	Knabe
harcoal kilns, arresting and extinguishing combustion in, A. Vickers	Leather, skins, etc., machine for coloring, C. 477.761 Knabe
Reaner, See Cistern cleaner. Dish cleaner.	Locomotive, street, E. Dederick
Flue cleaner. Fl	Lubricator. See Axle lubricator. Mail pouches, means for lecking and unlocking,
Coin-controlled mechanism, Powell & Chandler 477,871 Color grinding machine, H. J. Weckauf 477,722 Column structural A. Coffin 477,925	A. J. Shaw
Compass, mariner's, R. Oliver	Meat, preservation of, Laubheimer & Salzer 477.844 Meat, preserving, H. Salzer
Corveyer, pneumatic, E. McConnell	Meter. See Gas meter. 478,025 Mill. See Rolling mill.
Cotton press, J. L. Pridemore. 478,070 Counter, J. Gaetje. 478,002 Counting Sector counting 478,002	Mill appliance, J. A. Potter. 477,822 Motor, S. Peterson 478,068 Music leaf turner, E. Von Trautvetter 477,898
Curbing block, street, S. A. Webb	Musical instrument, key, C. E. Whitney 477,830 Musical instruments, vibrator for reed, H. Janes. 477,661
Cuttery hardening apparatus, G. E. Smith 477,785 Cutter. See Butter cutter. Fruit or vegetable cutter. Thread cutter.	Nail making machine, L. Goddu
Dental reflector and tongue guard, W. E. Andrews 477,791 Desk tool table, G. Larsson 477,762 Detector. See Pickpocket and coat thief detector.	J. Christie. 477,647 Nut lock, J. D. Jolley 477,941
Desk tool table, G. Larsson	Nut lock, S. C. Pettegrew. 448,019 • pera glass holder, A. W. Buch binder, Jr. 477,643 Order holder, J. A. Thuge. 478,035
Dish cleaner, Harman & Polk. 477,860 Doll, J. & P. Fleischmann 477,892 Door hanger A. G. Denmar 477,892 Hanger A. G. Denmar 477,892 Hanger A. G. Denmar 477,892	Ore concentrator, H. F. Hicks
10	Packing, metallic rod, G. R. Dolf. 477,741 Packing, steam joint, J. G. Broman. 477,640
Drawer, C. W. Nevel. 478,014 Dredging machine, C. H. Souther 477,827 Drier. See Clothes drier.	Meter Se Gas meter. Mill. See Rolling mill. See Rolling mill. Mill appliance, J. A. Potter
Dredging machine, C. H. Souther. Drier. See Clothes drfcr. Drinks, apparatus for dispensing, W. M. Fowler. 477,797 Drinks, apparatus for dispensing, W. M. Fowler. 477,807 Electric alarm, S. M. Mathews. Electric conductor, C. T. Snedekor. Electric conductor, C. T. Snedekor. Electric current regulator, C. D. Sigsbee et al. 477,851 Electric current responsive, N. T. Wilcox. 477,877 Electric lock, Hollar & Holmes. Electric regulating apparatus, J. M. Bradford. 477,897 Electric regulating apparatus, J. M. Bradford. 477,897 Electric switch, Pilkington & White. Electric witch, mast arm, T. Dillon. 477,893 Electrical key board, W. E. Blodgett. 477,837 Electrical secondary battery, H. G. Osburn. 475,018 Elevator, See Barrel elevator. 476,017	Passenger recorder for public vehicles, J. M. O'Kelly 478,016
Electric conductor, C. T. Snedekor. 477,787 Electric conductor, composite, C. A. Mezger. 477,951	Penholder, E. N. Gifford 478,073 Penmanship, system of, H. R. Fuller 477,653
Electric current regulator, C. D. Sigsbee et al	Photographic paper holder and cutter, T. E. Wood. 477,728 Photographic plate holder, A. E. Paige. 477,696
Electric machine, dyname, J. J. Wood	Piano, A. Holmstrom. 477,938 Piano, N. Marston. 477,609
Electric switch, mast arm, T. Dillon. 477,693 Electrical key board, W. E. Blodgett. 477,635	Picker. See Grape picker. Picker. See Grape picker. Pickpocket and coat thief detector, J. F. Hurd. 477,940 Pigments, making white, J. Blair
Ployated structure C C Locksteadt 477 007	Dine leving device sewer water and drain F H
Elevator, C. W. Baldwin	Pipe or flue header and expander, C. A. Frayer 478,000 Planing machine, W. H. Doane. 477,928
Elevator reversing mechanism, E. T. Young (r). 11,251 End gate, wagon, J. Butler	Plant fender, R. Jones. 478,074 Planter guide marker, corn, H. A. Behrns. 477,983 Planting purposes, guide line for, H. Nichols. 477,776
Elevator, See Barrel elevator. Elevator, C. W. Baldwin. 478,040 Elevator, P. Wright. 477,730 Elevator reversing mechanism, E. T. Young (r). 11,251 End gate, wagon, J. Butler. 477,988 Engine, J. M. Andersen. 477,921 Evaporator. See Fruit evaporator. Excavating and shoveling machine, E. Henne-	Plow point, G. C. We stervelt 477,723 Plow, reversible, A. Pirch 477,912
Excavating apparatus, J. T. Dougine. 477,837 Feed trough, G. W. Dunks. 478,052	Procketbook fastening, A. Goertz. 477,798 Poke, animal, W. T. Elliot. 477,651
Feed trough, J. A. Whitmore	Rose 478,024
Evaporator. See Fruit evaporator. Excavating and shoveling machine. E. Hennebers bery. 477.933 Excavating apparatus. J. T. Dougine. 477.837 Feed trough, G. W. Dunks. 478.052 Feed trough, J. A. Whitmore. 477.724 Feed water heater and condenser, E. Nelson. 477.815 Fence construction, G. F. St. John. 477.816 Fences, adjustable brace for slat and wire and picket, T. H. Smith. 478.027 Fender. See Plant fender. Filtering apparatus, D. Williamson. 477.727 Fire indicator, M. W. Iles 477.727 Fire indicator, M. W. Iles 477.758 Fishing reel, T. Greason. 477.733 Fibus cleaner, W. Pharr 477.937 Flue cleaner, W. Pharr 477.937 Flue stopper, J. A. Brown. 478.043 Floding stand or trestle, J. T. Miller 478.045 Food articles, means for packing, H. Salzer. 477.89 Ford, See Hay tedder fork. 477.89 Fruit evaporator, J. W. Doty 477.86	Press. See Cotton press. Printing press. Printing and folding machine, combined, C. Chambers, Jr. 477,886 Printing machines, bed motion for cylinder, L. C. Printing machines, bed motion for cylinder, L. C.
picket, T. H. Smith	Printing machines, bed motion for cylinder, L. C. Crewell. 477,738 Printing press, perfecting, J. C. Fowler. 477,999 Protector. See Waistcoat protector. 477,999 Pump, plumber's force, J. H. Lawless. 477,808 Pump, steam I. Washin. 477,040
Filtering apparatus, D. Williamson 477,727 Finger ring, C. A. Russell 477,825 Fine indicator M. W. Hes 477,727	Protector. See Waistcoat protector. Pump, plumber's force, J. H. Lawless. 477,808 Pump, steam, J. Maslin 477 949
Fireproof building, C. Aikin	Pump, steam, J. Maslin. 477,949 Punching flange plates, machine for, H. C. Jones . 477,899 Purse and pocketbook frame and catch, A.
Flower stemming device, S. J. Russell 477,704 Flue and fire box, steam hoiler, D. B. Morison 477,779 Flue cleaner, W. Pharr 477,957	Goertz. 477,799 Rack. See Meat rack. Rail and cross tie, combined, A. J. Moxham. 477,679
Flue stopper, J. A. Brown	Rail joint, A. J. Moxham
Forge, blacksmith's W. J. Ptomey 477,699 Fork. See Hay tedder fork.	Rack. See Meat rack. Rail and cross tie, combined, A. J. Moxham
Fork. See Hay tedder fork. Frame. See Tile frame. Fruit evaporator, J. W. Doty	
Fuel, artificial, H. Zahn	Railway crossings, frog or cross for, A. J. Mox- ham. 477,824
Furnace door opener, D. Curry	Railway expansion rail, A. J. Moxham
Gas making apparatus, Williams, Jr., & Peoples. 477,725 Gas meter. W. N. Milsted. 477,910	Railway rail, A. J. Moxnam
Gas retort, A. Coze	Railway rail curve, J. G. Jordan. 477,678 477,690 477,699
Gate, J. H. Tudor. 478,036 Geological formations, apparatus for illustrating,	Railway track switch pieces, A. J. Moxham
D. M. Barringer	Razor strop, F. Kampfe t al. 477,902 Reamer, expanding, J. H. Phillips 478,963 Reclining chair, C. C. Lockstaedt 477,906
Carter & Hughes. 477,990 Glass grinding machinery, R. Friedel. 477,857	Railway crossings, frog or cross for, A. J. Mox- ham. 477,684 Railway, electric, J. W. Bates. 477,672 Railway expansion rail, A. J. Moxham. 477,672 Railway guard rail, E. A. Trapp. 477,673 Railway rail, A. J. Moxham. 477,673 Railway rail and making the same, A. J. Moxham 477,674 Railway rail prace chair, W. M. Brown 477,674 Railway rail prace chair, W. M. Brown 477,680 Railway rail curve, J. G. Jordan. 477,678 Railway rail curve, J. G. Jordan. 477,678 Railway rail curve, J. G. Jordan. 477,680 Railway track, combination safety, S. G. Howe 478,659 Railway track switch pieces, A. J. Moxham 478,658 Railway track switch pieces, A. J. Moxham 478,686 Railway track switch pieces, A. J. Moxham 478,686 Railway track switch pieces, A. J. Moxham 478,686 Railway track combination safety, S. G. Howe 478,699 Railway track switch pieces, A. J. Moxham 478,686 Razor strop, F. Kampfe, tal 478,668 Razor strop, F. Kampfe, tal 477,902 Reamer, expanding, J. H. Phillips. 478,699 Reconder, See Passenger recorder. Reel. See Fishing reel.
Grain binder, P. P. Coler. 477,992 Grain preparatory to grinding, process of and ap-	Refrigerator, B. W. Kolb. 477,944 Register. See Cash register. Valve register.
paratus for dampening, Meier & Fritsche	Ring. See Electric current regulator. Ring. See Finger ring. Hat packing ring. Rolling mill. J. A. Potter. 477.821
Grape picker, Moore & Jory	Roof, portable, J. H. Rice
Gun barrels, manufacture of, F. Meixner 477,763 Gun, magazine, W. E. Loomis 477,666	Sad iron, W. Hunter 477,660 Safe, M. S. Goldsmith 477,860
Gun, magazine, A. Mercer. 477,04 Gun, spring, J. W. Atkinson. 477,982 Guns, shell extractor for bolt, P. Mauser 477,671	Sash fastener, J. N. Euwer. 477,891 Sash holder, H. B. Hayes 477,801
Halter, A. E. Chambers, Jr	Saw, cut-off, E. B. Hayes. 477,758 Saw guide, G. M. Hinkley. 477,861 Saw guide, G. M. Hinkley. 477,861
Harvester, J. F. Steward 477,709 Hat bodies, seam for securing sweat bands to, W.	Sawing machine, F. M. Teeguarden 477,972 Scraper, cotton, McAlister & Waddell 477,691
P. Gammons, Jr. 477, 751 Hat bolder and case, H. Stevenson. 477, 989 Hat packing case. A brams & Langsdorf. 477, 981	Screws, atthe attachment for cutting, R. Norwell 477,777 Scuttle and skylight, G. Weber. 477,876 Secondary battery, W. L. Silvey 477,914
Hat packing ring, S. T. Newman	Seed huller, cotton, J. J. Faulkner. 477,997 Separator. See Grain separator.
Hat rounding machine, A. T. Clason. 478,321 Hatch, elevator, C. P. Stanford. 478,021 Hay stacker, C. A. Purvis. 478,021	Sewing machine, J. P. Stiles
Hay stacker, F. W. Whitney 477,878 Hay tedder fork, A. B. Pixley 477,820 Hester See Feed water bester Vehicle	gett. 477,636 Sewing machine work guiding and grooving at-
Fuel, artificial, H. Zahn. Furnace. See Alloying furnace. Hot air furnace. Smoke consuming furnace. Smoke consuming furnace. Furnace door opener, D. Curry. Gauge. See Surface gauge. Garment hanger, C. W. Lauhin. Gas meter, W. N. Milisted. Gate, J. H. Tudor. Gate, J. H. Tudor. Gate, J. H. Tudor. Geological formations, apparatus for illustrating, D. M. Barringer. Glass annealing oven, J. P. Whitney. Glass for windows, etc., manufacture of stained, Grater & Hughes. Glass annealing oven, J. P. Whitney. Glass from windows, etc., manufacture of stained, Grater & Hughes. Grain preparatory to grinding, process of and apparatus for dampening, Meier & Fritsche. Transper of dampening, Meier & Fritsche. Grain preparatory of grinding, process of and apparatus for dampening, Meier & Fritsche. Transper of dampening, Meier & Fritsche. Grain preparator, G. A. Schraud. Grain preparator, G. A. Schraud. Grain pringer, M. Montgomery. Grate bar, J. Montgomery. Gun, barrels, manufacture of, F. Meixner. 477,683 Gun, magazine, W. E. Loomis. Gun, magazine, A. Mercer. Gun, magazine, A. Mercer. Gun, magazine, W. E. Loomis. 477,693 Gun, syring, J. W. Atkinson. Hatten, S. F. Steward. Hatter, S. F. Steward. Hatter, S. F. Steward. Hat pocking case, A brams & Langsdorf. 477,594 Hatter, B. C. Purvis. Hat polishing and cleaning machine, C. Simis. 477,595 Hat polishing and cleaning machine, C. Simis. 477,594 Hatter, See Feed water heater. Vehicle heater. Hemp breaking and cleaning machine, J. Breslin.	Reamer, expanding, J. H. Phillips
Holder. See Hat holder. Opera glass holder. Order holder. Penholder. Sash holder. Slip	Shearing machine, Devel, H. C. Jones. 475,023 Shearing machine, bevel, H. C. Jones. 477,300 Shears, J. H. Stratton. 477,711
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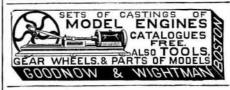
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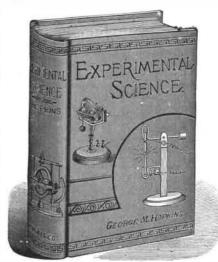
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