also of the same without the cut off. A. To find the horse power, the mean pressure during the stroke must be known, and this can only be determined by experiment.

What does squaring the circle mean in a mathematical sense? A. Finding a square whose area shall equal that of the circle.

(32) J. R. D. asks: 1. Should a launch be built, 26 feet by 5 feet, with lines moulded after the Flirt (Scientific American Supplement No. S1), what should be the increased dimensions of the boiler, engine, screw, etc., to speed 10 or 12 miles easily per hour? A. Make everything to scale throughout. 2. About what difference in cost of boiler between steel or iron, the latter to sustain a safe working pressure of 200 lbs. per square inch, the former in inch thick? A. Probably not more than 20 per cent 3. What is the most suitable wood material in all respects for such boat building? Is not red cedar, and will it conform well when steamed? A. The most suitable wood for small boats is common cedar, with oak or hackmatack frame.

(33) W. L.—To harden magnets heat them to a dark cherry red, plunge them in cool water, then draw to a straw color. You will find methods of magnetizing given in No. 142 of Scientific American Sup-PLEMENT in "How to make a Working Telephone."

(34) C. T. A. asks: 1. What is the expansive bulk of mercury per degree of heat in an open vessel? A. The rate of expansion varies with the temperature. Between 32° and 212° Fah. 1,000,000 parts of mer cury become 1,018,153. 2. What is the expansive bulk of mercury per degree of heat under a vacuum? A The same as in an open vessel. 3. If a bottle is half filled with morcury and half air, a glass tube, open at both ends, inserted through the cork and descending into the mercury, will the mercury rise higher than if the bottle was filled to the cork? A. Yes. 4. Would the difference in those proportions vary the rise of mercury in the tube? A. Yes. 5. If air is used in combination with mercury, will the elasticity of the air render the rise of the mercury in the column unreliable for thermometers? A. Yes.

(35) W. H.—Consult an advanced treatise on algebra.

(36) A "music teacher" writes: Do you know of any device that will do away with pen and ink to copy notes (in music) from the original, do it cheap, and at the same time enable anybody to use it? A. We think a series of rubber stamps would facilitate the

(37) J. M. W. writes: I am building a small steam engine (horizontal), 3 inches bore and 5 inches stroke, to run 300 revolutions per minute, with from 50 to 90 lbs. of steam, cutting off at 34 stroke. Will steam ways 1 inch by 1/4 inch be large enough? Exhaust 1 inch x 1 inch, bridges 1/2 inch, steam pipe 1/2 inch, exhaust pipe 34 inch. How will these proportions answer? A. These proportions seem to be ample.

(38) H. C. S. asks: 1. What is the difference between ferrocyanide of potassium and the yellow prussiate of potash? A. They are the same. 2. What is the difference between bichromate of potash and red prussiate of potash? A. Potassium bichromate $(K_2Cr_2O_1)$ is a potassium salt of chromic acid (H_2CrO_4) . The red prussiate (potassium ferricyanide— $K_6(FeCy_6)_2$ is the potassium salt of hydroferricyanic acid.

Can you give me a recipe for artificial honey? A You may try the following: Glucose (grape or starch sugar), 1 lb.; cane sugar, 2 ozs.; water, q. s. To this add a sufficient quantity of potato or corn starch boiled with water to a jelly, and about an ounce of gum arabic. Small amounts of molasses and flour are sometimes

What is used for strengthening essence of orange! A. As we understand you, tartaric acid.

(39) A. S., Jr., asks: What per cent of glycerin will prevent the congelation of water at 0° Fah , at -24° and at -32° , respectively, under ordinary conditions? A. An aqueous solution containing 10 per cent of glycerin, specific gravity 1.024, freezes at 30.2° Fah.; with 50 per cent of glycerin, specific gravity 1'127, freezes at -24'2° Fah.; with 60 per cent, freezes below -31° Fah.

(40) I. F. B. asks for the best way of freeing gas from aqua ammonia while passing through lime drier after leaving the retort. A. If you refer to coal gas, the ammoniacal vapors are not removed in the lime purifier, but in the hydraulic main, the condenser, and washer. See Scientific American Supplement No.

(41) W. T. P. asks why a cannon ball when shot up perpendicular from the earth does not have the same velocity or force in coming down as in going up? A. Because the force of gravitation which causes the ball to descend is less than the force of the gunpowder which sent it up.

(42) F. J. F.—For information on canning see article on p. 122, current volume, Scientific Amer-

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

Judham, Ontario.-No. 1 is chalcopyrite. No. 2 is amethystine quartz. No. 3, dark muscovite. No. 4, apatite in quartz. No. 4, ferropyrite. The rock is probably auriferous. No. 6. pink orthoclase. No. 7. fluorite. No. 8, garnets in dolerite. No. 9, hematite and orthoclasc. No. 10, rich magnetite. No. 11, cyanite.-W. G. S.-Quartz with iron sulphide-probably contains a trace of gold.-A. F. J.-It is a quartz pebble-sample returned.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges with much pleasure the receipt of original papers and contributions on the following subjects:

The Telephone. By J. H. R. The Phonograph. By H. L., Jr.

HINTS TO CORRESPONDENTS.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Many of our correspondents make inquiries which cannot properly be answered in these columns. Such inquiries, if signed by initials only, are liable to be cast into the waste basket.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

August 27, 1878, AND EACH BEABING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering

please state the number and date of the patent desired,	Machanical movement I II Karaar	207 425
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Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Egg opener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley. 207,391 Engine, hydraulic, Chandler & Silver. 207,391 Engine, road, W. L. Hussey. 207,524 Engine, wind, I. H. Palmer. 207,524 Feed cutter, L. Becker. 207,479 Feene, P. Hayden. 207,537 Fence, P. Hayden. 207,537 Fence, J. B. Robertson. 207,550 Fender, J. S. Lester. 207,362 File, bill and paper, H. Baldwin. 207,477 File arm, electrical, J. O. Fowler, Jr. 207,516	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr Telephone, mechanical, S. S. Parsons et al. ThiM and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, J. T. Hards Thill coupling, A. E. Mook. Thinsler and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow. Toy, bandelore, W. Katz Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther	207,881 207,531 207,575 207,575 207,578 207,579 207,399 207,496 207,496 207,496 207,496 207,496 207,500 207,500 207,500 207,503 207,500 207,504 207,500 207,504 207,500 207,504 207,504 207,503 207,504 207,50
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for sait, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark 207,503 Drills, colter for grain, J. T. West 207,577 Egg opener, G. W. H. Krey 207,551 Embalming, tubular needle for, S. Rodgers 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley 207,377 Engine, poad, W. L. Hussey 207,524 Engine, wind, I. H. Palmer 207,545 Feed cutter, L. Becker 207,479 Feed water heater and filter, W. J. Austin 207,531 Fence, P. Hayden 207,518 Fence, K. McKinnon 207,537 Fence, J. B. Robertson 207,550 Fender, J. S. Lester 207,802 File, bill and paper, H. Baldwin 207,477 Filter, liquid, C. T. Haas 207,515	Suspenders, H. Knopf. Switch chair, J. C. Eggleston. Table, tailor's, A. Warth. Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards. Thill coupling, J. T. Hards. Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow. Toy, bandelore, W. Katz. Trace carrier, Goodrich & Parker Track clearer, A. Day (r) Truck, car, J. Belou.	207,381 207,581 207,575 207,578 207,578 207,578 207,579 207,496 207,496 207,496 207,507 207,458 207,507 207,507 207,503 207,503 207,504 207,504 207,504 207,504 207,504 207,507 207,513
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Egg opener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley. 207,331 Engine, hydraulic, Chandler & Silver. 207,324 Engine, road, W. L. Hussey. 207,524 Ergeine, wind, I. H. Palmer. 207,524 Feed cutter, L. Becker. 207,479 Feed water heater and filter, W. J. Austin. 207,837 Fence, P. Hayden 205,18 Fence, J. B. Robertson 207,537 Fence, J. B. Robertson 207,550 Fender, J. S. Lester. 207,362 Filter, bill and paper, H. Baldwin 207,477 Filter, liquid, C. T. Haas. 207,510 Fire alarm, electrical, J. O. Fowler, Jr. 207,510 Fire sexcape, D. F. Hunt 207,449	Suspenders, H. Knopf. Switch chair, J. C. Eggleston. Table, tailor's, A. Warth. Tackle block, J. L. Pope. Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards. Thill coupling, J. T. Hards. Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker. Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow Toy, Bandelore, W. Katz. Trace carrier, Goodrich & Parker Track clearer, A. Day (r) Truck, car, J. Belou. Truck, car, G. Souther Track, hand, W. B. Allen. Turning tool, metal, H. Smith. Type writing machine, C. L. Sholes. 207,557, 207,558,	207,881 207,503 207,575 207,575 207,578 207,579 207,599 207,496 207,496 207,496 207,496 207,507 207,507 207,507 207,507 207,508 207,507 207,508 207,507 207,508 207,507 207,508 207,50
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Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for sait, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark 207,503 Drillis, colter for grain, J. T. West 207,503 Drillis, colter for grain, J. T. West 207,527 Egg opener, G. W. H. Krey 207,426 Embalming, tubular needle for, S. Rodgers 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley 207,877 Engine, proad, W. L. Hussey 207,524 Engine, wind, I. H. Palmer 207,545 Feed cutter, L. Becker 207,479 Feed water heater and filter, W. J. Austin 207,337 Fence, P. Hayden 207,558 Fence, J. B. Robertson 207,558 Fence, J. S. Lester 207,352 File, bill and paper, H. Baldwin 207,352 Fire alarm, electrical, J. O. Fowler, Jr 207,515 Fire sam, magazine, G. F. Evans 207,350 Fire escape, D. F. Hunt 207,419 Flour bolting machine, A. W. Schoenleben 207,437 Fork, manure, B. F. Barr 207,347	Suspenders, H. Knopf. Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr. Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith Toy, W. S. Clow Toy, Bandelore, W. Katz. Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Track, hand, W. B. Allen Turning tool, metal, H. Smith Type writing machine, C. L. Sholes 207,557, 207,559, Types, dresser for printing, T. Mason.	207,881 207,581 207,575 207,576 207,579 207,579 207,599 207,496 207,496 207,496 207,498 207,500 207,500 207,507 207,507 207,500 207,50
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Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for sait, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Drillis, colter for grain, J. T. West. 207,575 Egg opener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, bydraulic, Chandler & Silver. 207,391 Engine, bydraulic, Chandler & Silver. 207,224 Engine, wind, I. H. Palmer. 207,545 Feed cutter, L. Becker. 207,545 Feed water heater and filter, W. J. Austin. 207,837 Fence, P. Hayden. 207,555 Fence, J. B. Robertson. 207,550 Fender, J. S. Lester. 207,832 File, bill and paper, H. Baldwin. 207,417 Filter, liquid, C. T. Haas. 207,510 Fire alarm, electrical, J. O. Fowler, Jr. 207,510 Fire asarp, D. F. Hunt. 207,419 Flour bolting machine, A. W. Schoenleben. 207,419 Fork, manure, B. F. Barr. 207,338	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr Telephone, mechanical, S. S. Parsons et al. Thill coupling, J. T. Hards Throsher and separator, grain, A. J. Hoag Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow. Toy, bandelore, W. Katz Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Track, hand, W. B. Allen. Turning tool, metal, H. Smith Type writing machine, C. L. Sholes. 207,557, 207,558, Types, dresser for printing, T. Mason. Umbrella, A. G. Kuball. Valve, air, J. H. Blessing. Valve, oscillating steam, C. J. Van Depoele. Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano.	207,831 207,531 207,538 207,575 207,579 207,599 207,495 207,495 207,495 207,493 207,498 207,504 207,504 207,504 207,505 207,498 207,498 207,498 207,498 207,498 207,562 207,562 207,498
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for sait, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark 207,503 Drillis, colter for grain, J. T. West 207,503 Drillis, colter for grain, J. T. West 207,527 Egg opener, G. W. H. Krey 207,426 Embalming, tubular needle for, S. Rodgers 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley 207,877 Engine, hydraulic, Chandler & Silver 207,824 Engine, wind, I. H. Palmer 207,545 Feed cutter, L. Becker 207,479 Feed water heater and filter, W. J. Austin 207,337 Fence, P. Hayden 207,551 Fence, J. B. Robertson 207,553 Fence, J. B. Robertson 207,553 Fence, J. S. Lester 207,352 File, bill and paper, H. Baldwin 207,447 Filter, liquid, C. T. Haas 207,515 Fire arm, magazine, G. F. Evans 207,350 Fire scape, D. F. Hunt 207,419 Flour bolting machine, A. W. Schoenleben 207,449	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr. Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, J. T. Hards Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow. Toy, W. S. Clow. Toy, bandelore, W. Katz. Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Truck, hand, W. B. Allen Turning tool, metal, H. Smith Type writing machine, C. L. Sholes 207,557, 207,558, Types, dresser for printing, T. Mason. Umbrella, A. G. Kuball. Valve, air, J. H. Blessing Valve for barrels, etc., self-closing J. A. Moffitt. Valve, oscillating steam, C. J. Van Depoele Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano Vise, T. E. Dutton	207,881 207,551 207,569 207,579 207,579 207,579 207,486 207,486 207,486 207,482 207,482 207,482 207,482 207,500 207,498 207,500 207,50
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Ergo pener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley. 207,391 Engine, hydraulic, Chandler & Silver. 207,832 Engine, road, W. L. Hussey. 207,524 Engine, wind, I. H. Palmer. 207,547 Feed cutter, L. Becker. 207,479 Feed water heater and filter, W. J. Austin. 207,837 Fence, P. Hayden 207,516 Fence, J. B. Robertson 207,550 Fence, J. B. Robertson 207,550 Fender, J. S. Lester. 207,362 Filte, bill and paper, H. Baldwin 207,477 Filter, liquid, C. T. Haas. 207,515 Fire aarm, electrical, J. O. Fowler, Jr. 207,510 Fire ascape, D. F. Hunt 207,419 Flour boiting machine, A. W. Schoenleben 207,419	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, J. T. Hards Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow Toy, Bandelore, W. Katz Trace carrier, Goodrich & Parker Track clearer, A. Day (r) Truck, car, J. Belou. Truck, car, G. Souther Track, hand, W. B. Allen. Turning tool, metal, H. Smith Type writing machine, C. L. Sholes. 207,557, 207,558, Types, dresser for printing, T. Mason. Umbrella, A. G. Kubail. Valve, oscillating steam, C. J. Van Depoele. Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano Vise, T. E. Dutton Wagon jack, R. W. Marshall.	207,881 207,531 207,575 207,578 207,579 207,579 207,496 207,496 207,418 207,418 207,418 207,418 207,418 207,500 207,490 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,571 207,573
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Drillis, colter for grain, J. T. West. 207,551 Egg opener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley. 207,391 Engine, hydraulic, Chandler & Siver. 207,273 Engine, road, W. L. Hussey. 207,524 Fengine, wind, I. H. Palmer. 207,545 Feed cutter, L. Becker. 207,476 Feed water heater and filter, W. J. Austin. 207,837 Fence, P. Hayden 207,551 Fence, J. B. Robertson 207,552 Fence, J. B. Robertson 207,552 Fender, J. S. Lester. 207,552 File, bill and paper, H. Baldwin 207,475 Fire alarm, electrical, J. O. Fowler, Jr. 207,516 Fire aram, magazine, G. F. Evans 207,535 Fire escape, D. F. Hunt 207,419	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr. Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, J. T. Hards Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow. Toy, W. S. Clow. Toy, bandelore, W. Katz. Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Truck, hand, W. B. Allen Turning tool, metal, H. Smith Type writing machine, C. L. Sholes 207,557, 207,558, Types, dresser for printing, T. Mason. Umbrella, A. G. Kuball. Valve, air, J. H. Blessing Valve for barrels, etc., self-closing J. A. Moffitt. Valve, oscillating steam, C. J. Van Depoele Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano Vise, T. E. Dutton	207,831 207,531 207,538 207,575 207,579 207,599 207,897 207,493 207,493 207,498 207,504 207,504 207,504 207,504 207,505 207,498 207,498 207,498 207,498 207,562 207,562 207,493 207,595 207,493 207,493 207,595 207,493 207,595 207,493 207,595 207,493 207,595 207,493 207,595 207,493 207,595 207,495 207,595 207,495 207,59
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Ergo pener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley. 207,391 Engine, hydraulic, Chandler & Silver. 207,832 Engine, road, W. L. Hussey. 207,524 Engine, wind, I. H. Palmer. 207,547 Feed cutter, L. Becker. 207,479 Feed water heater and filter, W. J. Austin. 207,837 Fence, P. Hayden 207,516 Fence, J. B. Robertson 207,550 Fence, J. B. Robertson 207,550 Fender, J. S. Lester. 207,362 Filte, bill and paper, H. Baldwin 207,477 Filter, liquid, C. T. Haas. 207,515 Fire aarm, electrical, J. O. Fowler, Jr. 207,510 Fire ascape, D. F. Hunt 207,419 Flour boiting machine, A. W. Schoenleben 207,419	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr. Telephone, mechanical, S. S. Parsons et al. Thill coupling, J. T. Hards Throsher and separator, grain, A. J. Hoag Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith Toy, W. S. Clow. Toy, bandelore, W. Katz Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Track, hand, W. B. Allen. Turning tool, metal, H. Smith Type writing machine, C. L. Sholes. 207,557, 207,558, Types, dresser for printing, T. Mason. Umbrella, A. G. Kuball. Valve, air, J. H. Blessing Valve, oscillating steam, C. J. Van Depoele. Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano Vise, T. E. Dutton Wagon jack, R. W. Marshall. Waistband, L. T. Smith	207,881 207,578 207,578 207,578 207,579 207,579 207,486 207,379 207,486 207,498 207,498 207,500 207,50
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,432 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Drillis, colter for grain, J. T. West. 207,551 Egg opener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley. 207,391 Engine, hydraulic, Chandler & Siver. 207,237 Engine, road, W. L. Hussey. 207,524 Fengine, wind, I. H. Palmer. 207,545 Feed cutter, L. Becker. 207,426 Feed water heater and filter, W. J. Austin. 207,837 Fence, P. Hayden. 207,518 Fence, J. B. Robertson. 207,550 Fence, J. S. Lester. 207,550 File, bill and paper, H. Baldwin. 207,477 Filter, liquid, C. T. Haas. 207,515 Fire alarm, electrical, J. O. Fowler, Jr. 207,516 Fire alarm, electrical, J. O. Fowler, Jr. 207,419 Fork, manure, B. F. Barr. 207,43	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr. Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, J. T. Hards Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow. Toy, Bandelore, W. Katz Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Truck, car, G. Souther Track, hand, W. B. Allen. Turning tool, metal, H. Smith Type writing machine, C. L. Sholes. 207,557, 207,558, Types, dresser for printing, T. Mason. Umbrella, A. G. Kuball. Valve, oscillating steam, C. J. Van Depoele. Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano Vise, T. E. Dutton Wagon jack, R. W. Marshall. Waistband, L. T. Smith Washing machine, M. L. Scivalley. Washing machine, M. L. Scivalley.	207,831 207,531 207,538 207,575 207,579 207,599 207,859 207,438 207,433 207,433 207,433 207,433 207,438 207,438 207,438 207,438 207,438 207,438 207,438 207,527 207,552 207,552 207,552 207,453 207,553 207,453 207,553 207,453 207,553 207,453 207,553
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,434 Drill, grain, T. C. Clark 207,503 Drills, colter for grain, J. T. West 207,503 Drills, colter for grain, J. T. West 207,527 Egg opener, G. W. H. Krey 207,426 Embalming, tubular needle for, S. Rodgers 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley 207,371 Engine, bydraulic, Chandler & Silver 207,224 Engine, road, W. L. Hussey 207,527 Engine, wind, I. H. Palmer 207,545 Feed cutter, L. Becker 207,545 Feed cutter, L. Becker 207,545 Fence, P. Hayden 207,537 Fence, J. B. Robertson 207,538 Fence, J. B. Robertson 207,535 Fence, J. B. Robertson 207,535 Fender, J. S. Lester 207,362 File, bill and paper, H. Baldwin 207,417 Filre alarm, electrical, J. O. Fowler, Jr 207,510 Fire aram, magazine, G. F. Evans 207,419 Fork, manure, B	Suspenders, H. Knopf. Switch chair, J. C. Eggleston. Table, tailor's, A. Warth. Tackle block, J. L. Pope Target thrower, ball, A. A. Call Telegraph, fire, etc., J. O. Fowler, Jr. Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, J. T. Hards Thill coupling, A. E. Mook Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell Torpedoes, raising and lowering, W. D. Smith Toy, W. S. Clow Toy, Bandelore, W. Katz. Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Truck, car, G. Souther Truck, car, G. Souther Truck, and, W. B. Allen Turning tool, metal, H. Smith Type writing machine, C. L. Sholes 207,557, 207,558, Types, dresser for printing, T. Mason Umbrella, A. G. Kuball. Valve, air, J. H. Blessing Valve for barrels, etc., self-closing J. A. Moffitt. Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano Vise, T. E. Dutton Wagon jack, R. W. Marshall. Washing machine, M. L. Scivalley Washing machine, T. Stumm Washing machine, T. Stumm Washing machine, T. Stumm	207,831 207,531 207,568 207,575 207,569 207,599 207,495 207,495 207,496 207,500 207,496 207,500 207,496 207,500 207,50
Ditching machine, J. H. Wilson. 207,376 Drain trap, J. H. Blessing. 207,432 Dredger for salt, etc., L. Morgan. 207,432 Drill, grain, T. C. Clark. 207,503 Drillis, colter for grain, J. T. West. 207,503 Drillis, colter for grain, J. T. West. 207,551 Egg opener, G. W. H. Krey. 207,426 Embalming, tubular needle for, S. Rodgers. 207,551 Engine, etc., electro-magnetic fire, L. G. Woolley. 207,391 Engine, hydraulic, Chandler & Siver. 207,237 Engine, road, W. L. Hussey. 207,524 Fengine, wind, I. H. Palmer. 207,545 Feed cutter, L. Becker. 207,426 Feed water heater and filter, W. J. Austin. 207,837 Fence, P. Hayden. 207,518 Fence, J. B. Robertson. 207,550 Fence, J. S. Lester. 207,550 File, bill and paper, H. Baldwin. 207,477 Filter, liquid, C. T. Haas. 207,515 Fire alarm, electrical, J. O. Fowler, Jr. 207,516 Fire alarm, electrical, J. O. Fowler, Jr. 207,419 Fork, manure, B. F. Barr. 207,43	Suspenders, H. Knopf Switch chair, J. C. Eggleston. Table, tailor's, A. Warth Tackle block, J. L. Pope Target thrower, ball, A. A. Call. Telegraph, fire, etc., J. O. Fowler, Jr. Telephone, mechanical, S. S. Parsons et al. Thill and harness, combined, R. B. Boynton. Thill coupling, J. T. Hards Thill coupling, J. T. Hards Thill coupling, A. E. Mook. Thimble skein, A. M. Disbrow. Thrasher and separator, grain, A. J. Hoag. Tobacco cutter, A. S. Bunker Tool, combined, P. Campbell. Torpedoes, raising and lowering, W. D. Smith. Toy, W. S. Clow. Toy, bandelore, W. Katz. Trace carrier, Goodrich & Parker Track clearer, A. Day (r). Truck, car, J. Belou. Truck, car, G. Souther Track, hand, W. B. Allen. Turning tool, metal, H. Smith Type writing machine, C. L. Sholes. 201,557, 207,558, Types, dresser for printing, T. Mason. Umbrella, A. G. Kuball. Valve, air, J. H. Blessing Valve for barrels, etc., self-closing J. A. Moffitt. Valve, oscillating steam, C. J. Van Depoele Valve, stop, J. O. Morse. Ventilator, A. Unger Vessels, construction of, B. F. Delano Vise, T. E. Dutton Wagon jack, R. W. Marshall. Waistband, L. T. Smith Wasthing machine, M. L. Scivalley. Washing machine, T. Stumm Washing machine, T. Stumm Washing machine, pounder, T. Snow Weather strip for door sills, G. B. Norton	207,881 207,581 207,575 207,578 207,579 207,579 207,486 207,486 207,482 207,482 207,482 207,482 207,500 207,482 207,500 207,482 207,500 207,483 207,500 207,483 207,500 207,483 207,500 207,483 207,500 207,483 207,562 207,583 207,480 207,480 207,480 207,483 207,480 207,483 207,480 207,483 207,480 207,483 207,483 207,483 207,483 207,483 207,483 207,483 207,483 207,483 207,483 207,483 207,485 207,485 207,485 207,585 207,585 207,585 207,585 207,585 207,585 207,585 207,585 207,585 207,585 207,585 207,585 207,585 207,585

Hat. folding. J. A. Harrington	207 959
Hat, folding, J. A. Harrington Hatchway, J. M. Van Osdel	207,573
Heating buildings, J. Johnson	207,422
Heel scouring machine, S. N. Corthell Hinge for sleeping berths, Carlton & Crager	207,390
Hoeing machine, H. N. Prout	207,443 207,437
Hog cholera compound, E. Anderson	207,474
Hog picking machine, H. G. Locke	207,534
Horse checking device, J. Davies	207,574
Horse power, E. Golucke	207,547
Horseshoe nails, forging, S. S. Putnam	207,414
Hose coupling, F. W. Wolf	207,470
Jointflunges, forming, F. P. Cady	
Knife cleaning apparatus, L. Guex	207 969
Lamp, J. J. Thomas	207,460
Lamp burner, W. N. Weeden	207,576
Lamp, street, W. R. Underhill	
Lantern, C. T. Ham Lead, manufacture of white, J. C. Martin	207,516
Leather stretching machine, H. N. Dodge	207,508
Lock, permutation, A. HeilbrunLubricator, P. Hoffman	207,355
Lubricator, vehicle axle, W. J. Drew Lubricator, vehicle axle, L. Llewellyn	207,493
Malt plow, C. Fey	207,495
Medical compound, J. Powers	207,368
Medicine case, J. C. Litzelle	207.401
Mirror attachment, G. H. Wilcox	
Nut lock, E. BourneOil cloth, manufacturer of, A. F. Buchanan	207,386
Organ, reed, J. R. & S. R. Perry	207,438
Ozone, producing, J. Buchanan	207,407
Paper cutter and winder, I. Frank	207,411
Paper pulp, treating wood, G. E. Marshall	207,428
Paper stock, separating fibers of, P. & G. C. Rose Peanut roaster, G. B. Hall	207,414
Pen, fountain, Dieckman & Burgau	207,399 207,402
Photographic printing frame, W. H. Laird Picture frame, A. Komp	207,358
Picture frame clamp, E. N. Porter	207,441
Planter, seed, W. T. Easterday Plow beam, Bump & Gear	207,497
Plow, side hill, Wilson & McCanles	207,468 207,530
Pump, cattle, E. Taylor	207,458
Pump, lift, W. Loudon	207,536
Pump regulating valve, J. H. Blessing207,483, Printing machine, block, A. F. Buchanan Printingpress, J. Burreil	207,485
Printingpress, J. Burreil	
Railway car signal, electric, Mecs & Sherman Rake, horse hay, W. P. & C. E. Clark	207,538
Refrigerator, W. Horn, Jr. et al	207,356
Refrigerators, ice grate for, J. M. Ayer Rock channeling machine, A. G. Webster	207,374
Rolling hoes, picks, etc., machine for, J. Pedder. Rowlock, J. Weyman	207,367
Baw, circular, G.F.& D.Simonds & Marsball	207,450
Saw gummer, H. C. Strong Scissors sharpener, W. H. Barwick	207,339
Screw cutting die stock, T. II. Rose	
Seal, metallic, J. Sweeney	207,567
Sewing machine, A. Steward	
Sheave or pulley, H. Loud	207,529
Sign, E. Powell	
Bled, W. Chegwin	207,344
Spring, vehicle, B. F. Fuller	207,511
Sprinkler, external window, etc., J. Bennison	
Steam or gas, nozzle for, G. Beck	207 484
Stench or basin trap valve, W. E. Worth Stench trap, B. J. Downey	207,472
Stovepipe drum, G. H. Simon	
Stump extracting machine, A. M. Michael	207,541
Stump extractor, A. J. Alley	207.531
witch chair, J. C. Eggleston	207,408
Fackle block, J. L. Pope Farget thrower, ball, A. A. Call	207.548
Telegraph, fire, etc., J. O. Fowler, Jr	207,509
Telephone, mechanical, S. S. Parsons et al ThiM and harness, combined, R. B. Boynton	
Phili coupling, J. T. Hards	207,415
Thimble skein, A. M. Disbrow	207,507
Phrasher and separator, grain, A. J. Hoag Pobacco cutter, A. S. Bunker	207,498
Fool, combined, P. Campbell	207,500 207,564
Toy, W. S. Clow	207,346
Frace carrier, Goodrich & Parker	207,513
Prack clearer, A. Day (r) Pruck, car, J. Belou Pruck, car, G. Souther	8,388 207,480 ;
Frack, hand, W. B. Allen	207,478
Curning tool, metal, H. Smith	207,562
Types, dresser for printing, T. Mason	207,429
Jmbrella, A. G. Kubail	207,357 207,481
Valve for barrels, etc., self-closing J. A. Moffitt	207,492 207,463
7alve, stop, J. O. Morse	207,365
Ventilator, A. Unger	207,505
Vagon jack, R. W. Marshall	207,349 20 7,3 63
Waistband, L. T. Smith	207,563
Vashing machine. M. L. Scivalley	

[For the week ending August 20th.	
TRADE MARKS.	

Accordions and other reed, pipe, and flute instru-
ments, The National Musical Instrument Manu-
facturing Company 6,497
Chemicals, Anthony Pirz
Cigars, etc., Levy Brothers 6,503
Cigars, California Cigar Box Company 6,490
Cigars, etc., Kerbs & Spiess 6,493
Cigars, etc., Edward Hilson 6.500
Cologne, J. A. Lansing 6,502
Cologne water, J. M. Farina 6,482
Grapbite for stove polish, etc., The Joseph Dixon
Crucible Company
Marble, Pleasantville Land Company 6,507
Marking ink, Blackwood & Co 6,498
Medicinal preparation, J. C. Kerr 6,494
Medicinal preparation, Mrs. Joe Person 6 495
Medicinal preparation, The Franklin Company 6,496
Mustard, Burns & Byram 6.499
Paper collars and cuffs, H. A. Mann, Jr 6,506
Piastic composition, The Bonsilate Company 6,509
Printed publications, Keppler & Schwarzmann 6,501
Salt, Richard Evans 6,492
Shovels and scoops, E. H. Linley 6,484
Smoking tobacco, etc., American News Co6.489, 6,508
Smoking tobacco, B. Leidersdorf & Co.,6,504, 6,505
Smoked, etc., beef, pork, etc., C. J. Comstock 6,487
Soap, Day & Frick 6,491
Stove polish, J. C. Jacoby & Co 6,4%
Woven cotton and woolen fabrics, 11. Fogg & Co 6,483
DEGLEMA.
DESIGNS.
Counterpane or quiit, William O'Hanion 10,786
Funeral ornaments, C. E. McFarlan 10,784
Toilet cover, counterpane, etc., John Crossley 0,785

NEW PATENT LAW Spain, Cuba, Porto Rico, etc.

Umbrella handle, Amasa Lyon. ... 10,783

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