Notes & Queries

HINTS TO CORRESPONDENTS.

Name 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 This is for our information, and not for publication.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 mail, each must take his turn.

Special Information requests on matters of personal rather than general interest, and requests for **Prompt Answers by Letter,** should be accompanied with remittance of $1 to $5, according to the subject, as we cannot be expected to perform such service without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Minerals sent for examination should be distinctly marked or labeled.

(1) J. H. B. B. asks: How can I determine the velocity of water in a pipe? I have an artesian well, and it is suspected that there is a loss of water by percolation through the joints of the pipe. If there is some simple device which I could let down 250 feet and ascertain the velocity there, and then get it at the top, I could of course settle the question of loss, and ascertain the amount of water. A. We know of no method of accomp ishing what you want by getting the difference of velocities; if you could run down a self-packing plug to the bottom of the pipe, you could then discover if there are any leaks by the subsidence of the water in the pipe.

(2) J. A. R asks: 1. Would it do to attach the engine shaft direct to the saw shaft by a coupling? A. With a slow saw and fast feed the saw would wedge and heat. Do not think it advisable to attach engine shaft to saw shaft under any circumstance. 2. I had a dispute with several persons about the length of belt used on common steam thrashing machine. I claim after the belt has all the grip the pulleys will allow, then any more length of belt is lost weight and harder on the machinery. How is it? A. There is no advantage in extremely long belts.

(3) A. D. writes: Is it necessary to oil well fitted bearings (light work) as often as customary? I know of a case where a shaft, through neglect of an employe, was allowed to run three months on one oiling at 10,000 revolutions per hour. Not the slightest damage was done to the "Babbitt" or to the shaft, nor was there noise or heat. A. This looks rather extravagant. There is a patent for dry journal boxes. As far as known to us, they have been failnres. Probably the shaft in question did not bear upon the journal box.

(4) L. D. B. asks what Bessemer steel is, and if nails made of it are as good or any better than the common iron nail. A. Bessemer steel is a low grade of steel made by blowing air through molten iron in a converter. It is tough and strong, and is the very best material for nails if you can afford it.

(5) J. A. L. asks: 1. What is compound spirits of ammonia? Can I compound it? A. For compound spirits of ammonia, the aromatic spirits of ammonia are usually dispensed by druggists. Its preparation is simple to those familiar with pharmaceutical manipulations, and its formula according to the United States Pharmacopœia, which describes its manufacture, is:

Carbonate of ammonium	40	parts.
Water of ammonia	100	"
Oil of lemon	12	"
Oil of lavender flowers	1	"
Alcohol	700	"
Distilled water sufficient to make	1000	"

2. Are spirits of turpentine and oil the same? A. They are. 3. Will the sun draw the temper from saws and other edged tools? A. It is generally considered that such is the case.

(6) W. R. G. asks: What will cure a dog of the mange? A. Any of the following can be used as lotions for the mange:

Corrosive sublimate	¼ ounce.
Hydrochloric acid	¼ "
Water	1 quart.

or:

Corrosive sublimate	1 drachm.
Ammonium chloride	½ ounce.
Water	1 pint.

or, to the last add a strong decoction of white hellebore, half a pint.

(7) J. H. G. asks: Is the cause of the potato "scab" known, and what is the cause and remedy? A. Potato "scab" and "skin crack," though not identical diseases, ought to be considered together, for their causes are apparently the same. They proceed from an irregular supply of moisture to the growing root and plant. Where the growth has been vigorous and rapid, and has been then checked by drought, the skin of the potato becomes firm and strong; if now a sudden and rapid growth starts, this firm skin is cracked by distention, and the cracks extend down into the starchy substance; this is "skin crack." In another case, where the new and rapid growth is perhaps not quite so sudden in its start, the skin instead of cracking becomes rough and thickened in patches and scales; this is "scab," and results from excessive development of the cork cells forming the inner surface of the skin. In either case, "scab" or "skin crack," the tissues beneath become diseased and die to the depth of half an inch more or less, of course injuring the value of the crop. In this decayed tissue, various miles barely visible, and others too small to be detected without the help of a microscope, make their home, and have been erroneously supposed to be the cause of the injury. These forms of disease were first described by Dr. Herman Schacht in his report to the Prussian Board of Agriculture, in 1858.

(8) S. D. R writes: We want to make some cider jelly. Will you please inform me how much gelatine to use to a gallon of cider? A. To make cider jelly, 2 ounces of gelatine are dissolved in a pint of cold water, and when dissolved, 1 pint of hot water and 1 quart of cider are added, that is, 8 ounces to the gallon.

(9) C. B. H. writes: I wish to decolorize red wine vinegar. I think of leaching it through animal charcoal. Will the commercial variety of that article answer my purpose, or would the vinegar be too much contaminated by dissolving the phosphates, carbonates, etc., in the coal? If so, how could the coal be prepared so as to be fit for the purpose? Would wood coal answer? A. To take away the color of vinegar, 2 pints red wine vinegar are mixed with 1½ ounces bone charcoal, or bone black, in a glass vessel. Shake this mixture from time to time, and in two or three days the color completely disappears. When the process is to be performed in the large way, throw the bone black into the cask of vinegar, shaking it from time to time. Wood charcoal if ground fine would answer, and the impurities contained in it are so slight in quantity that they can be entirely disregarded.

(10) J. B. asks what kind of cement to use to fix a glass eye with. A. Dissolve fine glue in strong acetic acid to form a thin paste, or use Canada balsam or clear glue (gelatine) to which has been added a small quantity (one fiftieth) of potassium bichromate. The latter soon loses its yellow tint, and becomes unaffected by dampness when exposed to daylight.

(11) J. F. S. asks how near a complete vacuum can be produced by an exhaust fan. Or in other words, how low can the mercury in a barometer be reduced in an air tight chamber or vessel, from which the fan is exhausting the air? A. An exhaust fan will produce a draught, but not an appreciable vacuum, only about equal to one or two ounces negative pressure, say about one-quarter inch on the barometer. 2. I wish to produce a partial vacuum in an air tight cylinder 2x10 feet, and with either a rotary pump or fan instead of the regular air pump. Which would be preferable? A. A rotary pump or any air pump.

(12) W. P. W. writes: I have a steam pump used for raising water. Pump 3¼ and 5x7 inches, I run this pump continuously 10 hours, and pump say 9,000 gallons during that time. The lift from the surface of the well to top of tank is 55 feet distance, of well from the pump is 68 feet; suction pipe 2¼ inches; delivery pipe, 1½ inches; I throttle the valve so as to run slow. The boiler pressure averages 60 pounds, the boiler furnishing steam to run an engine and for other purposes. I wish to find out some method of getting at the cost of raising this amount of water to the tank on a basis of coal price say at three mills per pound. I also would like to know the method used to obtain the result. A. The computed lift of the pump in volume of water is about 18,500 pounds 1 foot high per minute. The computed work of the pump at the pressure you name is about 40,000 pounds 1 foot high per minute. So you must lose over 100 per cent in friction. The indication by steam is 1¼ horse power, which, considered with the uncertain economy of boiler, you may safely assign at 8 pounds per horse power, or say 100 pounds coal per day, or 30 cents for coal alone. Oil, attendance, and interest must be added to this for obtaining a proper value of the cost of pumping. For the detail of these computations we refer you to Haswell's Engineer's Pocket Book.

(13) G. W. F. asks the process for cleaning and polishing steer horns. A. Rough down the horn with a rasp or file to make the surface even. Then scrape with broken glass or a steel scraper, such as cabinet makers use for finishing hard woods. Then finish with a buff of felt (wheel or hand) with tripoli and water. Gloss with whiting and water on a soft buff, finishing the gloss with a cloth and dry whiting.

(14) H. L. R. asks for the best glue or substitute for glue of a waterproof nature, to use in gluing the white kid leather to the pine ribs of an organ bellows, where the bellows is situated in a damp room, under which circumstances ordinary glue softens, and allows the leather to come off from the wood. A. The addition of a small quantity of bichromate of potash to your glue and the subsequent exposure of the glued material to light would probably secure the desired results.

(15) E. L. desires a receipt for making a good stove polish or paste. A. Black lead pulverized, 1 pound; turpentine, 1 gill; water, 1 gill; sugar, 1 ounce; mix.

(16) Z. D. asks: How many gallons of water per minute should a 3¼ inch pipe one foot long with a head of 103 feet discharge? A. 6,930 gallons per minute, free from other friction than the one foot nozzle.

(17) B. J. B. writes: I am digging quite a large cistern (13 feet diameter and 10 feet depth); would be glad to know if it will be safe to put the cement directly over the clay sides, or whether a brick wall must be introduced. The cistern is circular. Is there any good recent work on the construction of cisterns? A. You may make a good cistern wall with a concrete of equal parts Portland cement, sharp clean sand, and broken stone. But to make it thoroughly substantial the concrete should be rammed between a crib and the clay wall, so as to have a solid outside bearing suitable for the arch or cover. If you make a cover of concrete, make the arch nearly hemispherical, or half a sphere, for safety, although experienced persons could make it much flatter. For the arch use 50 per cent more Portland cement than noted above. Build the support with scantling and boards nearly to the form required, and cover with sand to give it a true form, and tamp the concrete around the outside first, filling in solid against the earth bearing for supporting the arch; finish at the hole in the center last. Make the arch at least 8 inches thick at center and 12 inches at the outside bearings. We know of no book on this subject.

(18) A. L. P. asks: 1. How do astronomers calculate the distance to the sun or any heavenly body? I am at a loss to see where the starting point is, to obtain the angle. A. By making a triangle of which a part of the earth is the base; observing the zenith distance of the sun's center at simultaneous moments, the chord of the arc between the places of observation being computed from measurements actually made upon the surface of the earth for the purpose of establishing its diameter, upon which is based this method of computation. The transit of the inner planets, particularly Venus, has given a more refined method of triangulation, which is somewhat complicated. You may obtain a clearer insight into this subject by reading any technical work upon astronomy. 2. A vessel moving at the rate of 10 or 15 knots an hour. Does it leave a vacuum or hollow in the water at the stern of the vessel, or does the water follow up the vessel, so as to keep in constant contact with the stern? A. The motion of vessels through the water produces a slight depression under the stern from the inertia of the water, or inability to acquire the momentum necessary to instantly fill the cavity.

(19) E. L. M. writes: 1. Do you know of any machine shops where they take apprentices? If so, please give their addresses. A. Taking apprentices in machine shops is always dependent somewhat on the appearance of the applicant, and is largely a matter of personal judgment with the employer; the opportunities have been often better than they are just at present, but any young and intelligent man earnestly desiring such an engagement, and applying in any considerable manufacturing locality, would not, we presume, have long to wait for an engagement, though we do not now know where there are any vacancies. 2. Would two cylinders 3x5 inches develop more power than one 6x6 inches? Which is most economical and lightest, so horse power of first? A. The 6 inches by 6 inches would be more than double the power of two 3 inches by 5 inches. We cannot estimate the power, as you give neither the pressure of steam nor velocity. 3. Give best size of ports, pipes, and thickness of cylinder, cylinder heads, etc., for high speed two cylinder 3x5. A. Steam openings, five-sixteenths inch by 2¼ inches, exhaust openings ⅝ inch by 2¼ inches. Your cylinders, heads, etc., may be made about as light as they can be cast, bored, and turned. 4. Would the boiler described in SUPPLEMENT, No. 182, furnish abundance of steam for the above engine? A. No, not half large enough for the two engines; boiler should have 130 feet fire surface. 5. Would above engine and boiler furnish enough power to run a boat 35x6 14 miles per hour; if not, what size boat? A. No; but little more than 7½ miles with a boat 28 to 30 feet by 6 feet. You may get with good model 9½ to 10½ miles per hour. 6. Could sails be applied to above steam yacht at the same time profitably? A. Sails would be a detriment generally.

(20) W. D. writes: Will you let me know how many miles an hour a catamaran boat ought to go when propelled by six paddles? The face of each paddle is two feet six inches by two feet; three paddles dip at a time and as they pass out the other three enter. They enter the water vertically, and leave it the same; there is one yard of space between each paddle, and each paddle revolves in its own circle; and to run at seven hundred revolutions per minute, and have a dip the full length of the paddle, namely, two feet six inches; the two hulls fifty feet long by three feet wide and four feet depth, to draw two feet six inches of water when in sailing trim; width of boat twelve feet, paddles in middle of boat, three and three, parallel to each other. It is my opinion I can make the run from Philadelphia to Wilmington in one hour, and it is thirty-five miles; the grip of the paddles is good for one hundred revolutions more, if need be. Can I do it with a boat and paddles as I have described to you? A. There is no data upon which your question can be answered, but we do not hesitate to say that you cannot accomplish what you propose, and advise you not to expend time and money upon the expectation.

(21) J. D. B. writes: Referring to SCIENTIFIC AMERICAN, August 23, 1884, Notes and Queries, No. 31, what size screw, number of blades, and pitch of same would work best for engine mentioned in this number, also size of boat, and probable speed of boat? I have an engine and boiler 2x4, 3 inches stroke, but my boiler is a little bigger, it is 14x28, including firebox, 14x9; 12 1-inch flues, but have much trouble with flues getting stopped up; what would you advise to use for fuel, except wood? I have used soft chunk coal; broke them to size of walnut. A. Propeller about 17 inches diameter and 26 inches pitch, three blades. Boat 15 to 16 feet long, and 36 inches to 40 inches wide. Speed 5 to 5½ miles per hour. Your boiler is too small; it should be about 18 inches diameter, and 32 inches high. Furnace not less than 12 inches deep, and should have 28 to 30 feet fire surface. Use coke or anthracite coal, chestnut size.

(22) E. P. S. asks for some formula for soap powders. A. Use any suitable kind of hard soap, baked and ground.

(23) Upsilon wants to know recipe for an acid mixture that will restore files and other cutting tools, when blunt from use. A. Thoroughly clean from grease or oil by alkali, soda, or potash. Then dip in solution made with 1 part nitric acid, 3 parts sulphuric acid, 7 parts water by weight, 5 seconds to 5 minutes according to fineness of cut. Then wash in hot water, dip in milk of lime, dry, and oil.

(24) B. S. writes: I have a bunch of small chains entirely coated with rust. I have used coal oil to clear the chains of rust, but to no avail. Could you recommend a better method? A. Shake them in a bag of fine sand or emery.

(25) D. T., Jr., asks: 1. When is "24 o'clock" by the twenty-four hour system—at 12 M., or 12 midnight? A. Midnight, civil time; at meridian, astronomical time. 2. Does the astronomical day begin at 12 M. or 12 midnight? At 12 M.

(26) C. B. B. writes: With engine 2x4 inches for a very small, light launch or canoe, say 15 feet by 2½ feet sharpie, why would not a plain cylindrical vertical boiler without tubes or flues run it at a moderate rate of speed? What should be height and diameter of smallest boiler that would answer? If tubular, what should be height and diameter of shell, length, size, and number of tubes, and distance of boiler above grate? Object being to have boiler as small and light as possible. A. A plain vertical boiler without tubes would be too heavy. Your boiler should be about 18 inches diameter and 32 inches high, with tubes, so as to give say 28 to 30 feet fire surface. Use coke or anthracite coal, chestnut size. You should make a drawing of boiler to see what tubes you can get in. The furnace should not be less than 12 inches deep.

(27) J. H. B. asks: How many horse power engine would be required to drive a single paddle wheel 5 feet in diameter, face 2 feet 6 inches, buckets 6 inches deep? The boat is a light draught catamaran 30 feet in length. Please state the size and stroke of cylinder and the number of square feet of heating surface of boiler. Would it be as economical to have a long stroke engine with direct connection with crank shaft, and thus avoid the noise of the gearwheels, or a short stroke geared? How many turns should she be geared up? How many revolutions should the paddle wheel make to insure a fair speed to the boat? A. One engine 4 inches cylinder by 10 or 12 inches stroke, direct connection to shaft. Boiler to have about 60 feet fire surface; 40 to 45 revolutions per minute.

(28) J. R. C. asks: Will you please let me know in the next number of your paper the heating power of crude petroleum as compared with the best bituminous coal, that is to say, how much petroleum will equal one ton of coal? A. Two-thirds of a ton of petroleum equals one ton of the coal. Heat of combustion, 20,240 units. Evaporative power at 212°, 20·33 pounds water to 1 pound petroleum. Best coal, ¾ of these amounts.

(29) H. B. S. writes: I want something to stick paper labels on to wood or glass that will stand being wet or put into water. It need not stand hot water. A. In order to render glue insoluble in water, even hot water, it is only necessary when dissolving the glue for use to add a little potassium bichromate to the water, and to expose the glued part to the light. The proportion of bichromate will vary with circumstances, but for most purposes about one-fiftieth of the amount of glue will suffice.

(30) N. B. H. writes: 1. What would be the cost of machinery including engine, boiler, propeller, and shaft, with all fixtures, such as is described in SCIENTIFIC AMERICAN SUPPLEMENT, No. 81 (July 21, 1877), on the boat Flirt? A. Probably $280 to $300. 2. Would it be suitable for one of the Sharpie model boats described in SUPPLEMENT, No. 177? We want the boat to run on the St. John River, N. B., where in the lowest water there is not more than 18 or 20 inches. Smooth, gravelly bottom. If that machinery would not be suitable for such a boat, could you suggest any that would answer the purpose, with cost? A. Yes, but would suggest that you make the "Sharpie" 5 or 6 feet longer than that shown in No. 177. The machinery would do very well for such a boat, giving her a speed of about 6 miles per hour.

(31) C. A. P. asks: Will you please be kind enough to state why and when the kaolin should be added to a hektograph; whether the glue, glycerine, etc., should be boiled? If so, how long, and how to prevent bubbles from forming on the surface of the hektograph? A. The kaolin should be added when the solution of the glue and glycerine is complete. It is added simply to give the pad a light color. For the other information consult article on copying process in SUPPLEMENT, No. 374.

(32) E. K. E. asks: 1. What is the benefit to be derived by searching for the north pole? A. The practical benefit is doubtful, but scientists hope information so obtained may guide us in researches on magnetism and electricity; also teach us more of the history of this planet, give us a better knowledge of ocean currents, and throw light on many other obscure points of geology and physical investigation, though it must be confessed a great many people doubt whether the probable benefits are worth the cost. 2. How would the explorers know when they would reach that that point? A. The explorers know their latitude by observations there, the same as on any other part of the earth.

(33) J. N. B. writes: I am troubled to coat cast iron perfectly with tin, having it roll off in places as though the work was greasy. Have tried boiling it in strong potash water after it was pickled in dilute oil of vitriol, and then rinsed in water, passed through dilute muriate of zinc, but have never been able to coat cast iron with the same perfect coat and gloss that I can wrought or malleable iron. I have seen some lots of malleable iron that were imperfectly annealed that the tin would act in the same manner as with cast iron. What is the cause of it? A. Your trouble in tinning cast iron is not yours alone. The carbon in the cast iron is repellent to tin. The inventor of a perfect tinning process that is not expensive for cast iron will make a fortune if he can secure the process for his own benefit.

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For which Letters Patent of the United States were Granted

September 30, 1884,

AND EACH BEARING THAT DATE.

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

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Lamp, incandescent electric, Hickman & McCoy 305,817
Lamp, vapor burning, street, Z. Davis 306,002
Lathe, wood turning, E. H. Hudson 306,016
Lifting jack, Robinson & Goodwin 306,033
Light. See Head light.
Lock. See Alarm lock. Firearm safety lock.
Lock, N. J. Coté 305,796
Locomotive sanding attachment, Annis & Farrand 305,992
Loom belt shifting device and stop motion, S. S. Allen 305,775
Low pressure boiler, D. S. Robilliard 305,848
Lubricator, W. H. Craig 305,744
Marker for weather boards, flooring, and jambs, J. Hamm 305,920
Match box, J. Lines 305,941
Measure and register, automatic grain and seed, J. L. & E. D. Caudin 306,000
Measuring tank, E. A. Smead 305,973
Meter. See Rotary meter. Water and steam meter.
Mica sheet, composite, F. Peckham 305,956
Micrometer gage, F. H. Richards 305,963
Mill. See Grinding mill.
Mining drill, H. C. Burk 305,791
Mining machine, coal, A. J. & J. T. Baggs 305,994
Mold. See Candle mold.
Motion, device for converting, L. Chevallier 305,999
Motor, W. Chilton 305,792
Motor, C. D. Vadersen 306,039
Mowing machine, C. W. McKelvey 305,833
Mowing machine, knife, J. M. Hamblin 305,813
Mucilage, gum, etc., distributing roller for, J. A. Conwell 305,895
Musical instrument, mechanical, M. Gally 305,806
Nut lock, A. B. Clark 305,793
Oil can, M. A. W. Louis 306,027
Oil for lubricating, etc., composite, G. W. Banker 305,782
Ores, apparatus for treating, T. R. Jordan 306,019
Ovens, heat indicator for, E. G. Nunn 306,030
Overshoe, rubber, F. Richardson 305,964
Oxidizing and chloridizing furnace, J. R. Brett 305,788
Package fastener, E. C. Bruen 305,892
Package, merchandise, Spross & Meeker 305,977
Paint, J. A. Shephard (r) 10,528
Paper box machine, M. Marques 305,830
Paper hanger's table, L. A. Young 305,774
Paper in a continuous web, apparatus for and process of tub sizing, air drying, and calendaring, Kites & Fillio 305,824
Paper pulp digester, E. H. C app 305,740
Pin. See Safety pin.
Planter and fertilizer distributer, combined, corn, W. Cassill 305,738
Planter and fertilizer distributer, combined, cottonseed, N. H. Davis 305,804
Planter, check row, corn, S. E. Williams 305,874
Plow, T. C. Belding 305,795
Plow point, self-sharpening, T. Cox 305,800
Plumb bob, G. Morrison 305,951
Pole, vehicle, A. A. Holt 305,926
Power. See Churn power.
Power, device for transmitting, G. L. Kitson 305,931
Precious stones, incrusting in relief on, T. Peiter 305,957
Printing machine delivery apparatus, C. B. Cottrell 305,797
Printing machine sheet delivery apparatus, C. B. Cottrell 305,798
Printing marginal newspaper advertisements, G. E. Jones 305,930
Printing press cutting apparatus, C. B. Cottrell 305,799
Printing press numbering attachment, A. R. Baker ..... 305,778 to 305,781
Pulley, O. R. Olsen 305,840
Pulley, J. E. Sanders 305,965
Pulley, friction, P. Peartree 305,842
Pump, L. G. Careaga y Saenz 305,997
Pump, Paxson & Coffield 305,955
Pump, E. M. Turner 305,982
Pump, chain, G. W. Derrick 305,902
Pump, double-acting, H. C. Stouffer 305,036
Pump, mining, A. Sjogren 305,972
Pumping engine, steam, C. Sintz 305,971
Quoin diver, W. Cox 305,897
Rack. See Feed rack.
Railway rail chair, Thompson & Race 305,864
Railway rail joint, A. W. Wright 305,773
Railway track cleaner, W. H. Ferguson 305,911
Ratchet, gravity, friction, A. D. Simpson 305,764
Reflector, C. J. Higgins 305,749
Reflector, window, A. Holberg 305,750
Refrigerator, J. P. E. Willfhagen 306,043
Roaster. See Coffee Roaster.
Roofing cleats, machine for bending tin, S. A. Phillips 305,757
Rotary meter, S. Shaw 305,763
Safe, Johnston & Rogers 306,018
Safety pin, G. H. Smith 305,974
Sash holder, T. A. Bereman 305,783
Saw lifter, circular, W. G. Baumgardner 305,883
Sawmill dog, F. M. Underwood 306,038
Sawing machine, C. M. Pierce 305,960
Sawing machine, circular, J. W. Robbins 305,760
Seal, car, J. W. Burd, Jr 305,789
Sewing machine feeding and channeling device, B. F. Landis 305,937
Sewing machine needle guide, B. F. Landis 305,936
Sewing machine take up, B. F. Landis 305,934
Sewing machine take up, C. A. Sisson 305,855
Sewing machines, heating attachment for wax thread, B. F. Landis 305,932
Shade catch, G. A. Crisson 305,801
Shaping machines, adjustable table for, H. J. Hendey 305,922
Shell, explosive, J. L. Bachelder 305,881
Shower bath, portable fountain, J. C. Reed 305,847
Shuttle, B. F. Landis 305,933
Skate roller, H. E. Gifford 305,915
Skate, roller, E. Hall 305,919
Skate roller, H. J. Moore 306,029
Skate roller, J. Morss 305,837
Smoke consuming furnace, Grewcox & Yeiter 305,918
Snap hook, C. L. Pond 305,844
Solder, making granulated, A. M. Randolph 305,758
Soldering apparatus, C. McDonald 306,028
Sole edge setting machine, A. Harden 305,814
Spectacles and eyeglasses, C. Marsh 305,944
Spike roll, H. Greer 305,808, 305,809
Spinning machine spindle bearing, A. R. Sherman 305,969
Spoke socket, F. W. Starr 305,978
Spoon bowl, H. Nickolds, Sr 305,839
Spring. See Carriage spring. Vehicle spring.
Spring plates, die for forming ribs on, W. Evans 306,010
Square, tailor's, S. C. Rugland 305,849
Stationery package, C. W. Cook 305,896
Steam alarm and damper regulator, J. C. Jones 305,822
Steam boiler and sediment collector, combined, J. Spaulding 305,857
Steam boilers, steam generator, attachment to, B. Davis 305,803
Steam engine, B. W. Grist 305,811
Steam engine lubricator, C. W. Boluss 305,887
Steering mechanism, ship, G. F. Clemons 305,741
Stove, W. T. Lewis 305,940
Table. See Game table. Paperhanger's table.
Tank. See Measuring tank.
Telegraph local circuit, B. E. J. Eils 305,906
Telegraph, quadruplex, B. E. J. Eils 305,907, 305,909
Telegraphic transmission, biplex, B. E. J. Eils 305,908
Telephone receiver, G. M. Hopkins 305,927, 305,928
Telephone receiver, T. F. Taylor 305,980
Telephone transmitter, C. W. Long 306,026
Telephonic transmitter, W. S. Davis 305,901
Telephonic transmitter, electric, W. B. Hale 305,812
Telephonically, apparatus for communicating, W. N. Marcus 305,829
Therapeutic apparatus, electro, C. L. Clarke 305,894
Thermometers and weather glasses, case for, E. P. Haff 306,014
Thill coupling, J. F. Albee 305,991
Thill coupling, J. A. Bragaw 305,890
Thrashing machine straw carrier, I. Starr 305,979
Tile for grates, jamb, J. V. Nicolai 305,756
Time detector, watchman's, W. Bauer 305,882
Tool, combination, H. K. Austin 305,993
Torch, coal oil, Z. Davis 306,004
Tree protector, B. J. Downs 306,007
Truck, hand, J. Annin 305,880
Tube. See Well tube.
Tubular boiler, A. D. Davis 305,802
Twine holder, W. B. Bisbee 305,786
Type locking device, C. A. Dirr 306,006
Underground conductors, conduit for, D. H. Dorsett 305,904
Valve and cock, Mitteistenscheid & Memmler 305,948
Valve for traps of wash basins, C. W. Garland 306,012
Valve, safety, Sargent & Warren 305,966
Vaporburner, Z. Davis 306,003
Vat. See Dye vat.
Vehicle running gear, S. M. Chester 305,998
Vehicle spring, C. W. Saladee 305,850
Vehicle top, T. C. McCurdy 305,832
Vehicle, two wheeled, H. J. Bruhn 305,734
Velocipede, E. T. & D. Higham 305,925
Velocipede, E. E. Sell 305,968
Vermin destroyer, Wofford & McCord 306,041
Victual carrier, R. Burgess 305,790
Wagon brake, A. J. Branham 305,891
Wagon pole attachment, Hawk & Scott 305,815
Washing machine, M. W. Palmer 305,841
Watches, hair spring regulating pin, G. F. Johnson 305,821
Water and steam meter, A. C. Christensen 305,898
Well cleaner, automatic, A. Wright 306,042
Well tube, R. Gogin 305,916
Wheel, S. T. Williams ..... 305,469 to 305,772
Wheelbarrow, J. Annin 305,878, 305,879
Whiffletree and neck yoke ferrule, P. S. Crawford 305,745
Wire machine, barb, S. Thompson 305,865
Wires, etc., device for stringing, S. McAuliffe 305,946
Wrench. See Carriage wrench.
Wrench, H. Reber 305,961

TRADE MARKS.

Ale, porter, and beer, Long Island Brewery 11,528
Beer, E. W. Voigt 11,537
Campaign light, Masten & Wells 11,530
Cartridges for breech loading firearms, Winchester Repeating Arms Company 11,540
Cigars, Haskell & Adams 11,525
Crockery ware, china, and porcelain, Shaw & Son 11,534
Dyes, package, Dunn & White 11,522
Fireplace fixtures, C. L. Page 11,533
Gin, wines, and distilled liquors, A. C. Harris 11,524
Knives, razors, and shears, F. Westpfal 11,538
Medicine for men, horses, and cattle, H. Hinrichs. 11,526
Medicine for urinary disorders, A. B. Goodyear 11,523
Medicines, various, proprietary, A. C. Meyer 11,531
Nerve pencils, G. L. Lawrence 11,527
Oil, high test burning, Beacon Oil Company 11,520
Oil, standard illuminating, Beacon Oil Company 11,519
Oils and their products, essential and volatile vegetable, A. M. Todd 11,525
Optical goods, T. Mundorff 11,532
Perfumery, J. S. Tyree 11,536
Plows, A. G. Starke 11,541
Saws, E. C. Atkins & Co. 11,518
Screws, round head, P. & F. Corbin 11,521
Shirts, Martin Brown Company 11,529
Velveteens, A. Wimpfheimer & Bro 11,539

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