Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

NEW BOOKS AND PUBLICATIONS.

BOLETIN DE LA SOCIEDAD DE GEOGRAFIA Y ESTADISTICA DE LA REPUBLICA MEXICANA. Tomo IV., Nos. 4 and 5. 1879.

We have already had occasion to call attention to the great scientific value of the papers read before the Geographical and Statistical Society of the Mexican Republic, and to the excellent style in which they are issued. The current number (a double one) of the Society's "Bulletin," recently received, maintains the high character of those that have preceded it, and contains, in addition to a record of the "Proceedings" for July, 1875: A Resume of Recent Discoveries in European and Asiatic Archæology, by Senor Brackel-Welde; Altimetric Data, by Senor Reyes; A Memoir on a Means for Improving the Canalization of Mexico, by Dr. de Belina; A Report on the Cultivation of the Mulberry and the Rearing of the Silkworm in Colima, by Senor Moreno; A Paper on the Origin of Belize, by Senor Carrillo y Ancona; Facts relating to the Discovery of the New Mineral Barcenite, by Senor Ramirez, wherein the author, while claiming for his countryman, Senor Mendoza, the priority of discovery of the new species, grants that the honor of making the first quantitative analysis of it belongs to Professor Mallet, of Philadelphia, and that the name "barcenite" given to it by the latter should be accepted; A Memoir on the Moon and Meteorology, by Senor Reyes; Influence of Altitude on the Life and Health of the Inhabitants of Anahuac, by Dr. de Belina; and The Law of Periodicity of Rains in the Valley of Mexico. In addition to the foregoing memoirs, there are several unsigned papers and translations; and, altogether, the collection is one of considerable scientific interest.

REVISTA GENERAL DE MARINA. Cuaderno, 5. May, 1879: Madrid

This ably edited Review, now in its fourth volume, is a monthly periodical of about 75 pages, most excellently printed and copiously illustrated, and devoted to the interests of the navy exclusively—being in fact the sole organ of that branch of the Spanish service. We cannot give the reader a better idea of the scope of this interesting and valuable publication than by enumerating its contents, which, in the number before us, are as follows: Santa Cruz (Teneriffe) and the Fisheries of the African Coast, by Captain Galiano; Reflections on the Formation of the National Navy, by Captain Manganos; Brief Notes on the Recent Progress in Portable Firearms, especially in France, by Lieutenant Toca; Description of a New Hydraulic Dock; The Archer and Clark Stanfield System of Raising Sunken Ships, by Lieutenant Pastorin; and "Various Notes," under this heading being included short accounts of the most recent discoveries and improvements in matters appertaining to the navy.

Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

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.

Correspondents whose inquiries do not appear after a reasonable time should repeat them.

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.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

(1) C. E. A. asks: 1. Can a boat be propelled by letting steam direct from the boiler through a nozzle under the boat pointing toward the stern? A. Yes. 2. If so, at what speed can a flat bottomed skiff, sharp at both ends, 15 feet long, 2 feet wide at bottom and 3 feet wide at top, with an upright boiler with 10 feet heat surface, with 120 lb. of steam, be propelled? A. If with the stream, the speed would be perceptible, but if against it, the stream would have the advantage. 3. Does a bullet thrown from a rifle cut with a gaining twist increase in revolutions after it has left the gun? A. No. 4. Why does a ball thrown from the same rifle make a larger hole in an animal at a long distance than at a short distance? A. Because at the short distance the substance is cut before it has time to yield.

(2) J. N. writes: Having occasion to use compressed air, and storing as large quantity as possible in a vessel containing 5 feet, if I pump air in so as to have a pressure of 15 lb. to the inch, how many feet can I discharge through a gas meter; or, in other words, how many feet of air can I pump into the vessel to make a pressure of 15 lb. to the inch? A. A quantity equal to the capacity of the vessel.

(3) "Young Mechanic" asks: 1. What branches of school study are the most necessary for a person intending to become a first class mechanic to be well versed in? A. Chemistry, physics, and mathematics. 2. What is the best book on mechanics for him to study first? A. The class books used in high schools and universities.

(4) F. W. S. asks: Which of two journals will wear the most, one running in wooden boxes and the other in metal ones, other conditions being equal? A. Those that run in wood; the wood holds dirt and grit, and all the wear falls on the journal.

(5) C. C. W. writes: I am building a small steam launch of the following dimensions: Length, over all, 18 feet, beam amidships, 4 feet 6 inches; draught aft, loaded, 18 inches; Clinker built, sharp lines, 2 plain valve engines, 2x4 inches, set on the quarter. I intend carrying 40 lb. steam and speed 200. What size screw do I need, and what pitch to do the best possible work? Please explain the principle of the injector. A. 22 inches diameter and 2 feet 8 inches pitch, you will get a moderate speed. For an explanation of the action of the injector consult Bourne's Catechism of the Steam Engine."

(6) E. P. asks. 1. Is water compressible? Is the water compressed to an appreciable extent at great depths in the ocean, 4 or 5 miles? A. Practically, no. 2. Would a wreck in sinking in the deepest part of the ocean reach a depth where it would remain stationary, owing to the density of the water, before touching bottom? A. If its specific gravity is greater than that of water it will go to the bottom.

(7) W. V asks how lime can be removed from water pipes in a dwelling house. They have only been in use two years, and all soft water which passes through them becomes so hard as to be useless. A. The lime salts cannot be removed by chemical means without doing injury to the iron pipes. Carbonic acid water (soda water) would probably dissolve the greater part of the salt with the least injury to the iron.

(8) S. S. S. asks how to separate lead from silver on a small scale. A. To separate the silver from a rich lead expose it in a large cupel (a porous dish made of bone ash, to a strong red heat, in a muffle open at both ends so as to admit of the passage of air over the melted metal. Under these circumstances the lead gradually becomes oxidized to litharge, which is absorbed by the porous dish, leaving a nearly pure button of silver and gold behind. On a larger scale Keith's new electro-chemical process gives very good results.

(9) J. J. W. asks how much tannic acid it would require to be used in a seventy-five horse power boiler. We use water slightly impregnated with lime, and forms a slight coating in about a month. What effect would the acid have upon the water distilled from boiler when the acid is used? A. We cannot recommend the use of tannic acid in a boiler under these conditions. Use ¼ ounce of soda to the barrel of feed water instead, and use the blow out every day.

(10) H. J. K. asks: Do you know of any substance, flexible, elastic, and at the same time transparent, to be used in place of wire in constructing a small machine? It must be of sufficient strength to sustain the weight of an ounce. A. Make a solution of fine gelatine in an equal weight of hot concentrated glycerine. If properly prepared and cooled slowly the resulting substance is nearly as flexible and elastic as caoutchouc, and semi-transparent.

(11) D. A. B. asks: If a chain suspended by both ends from above, the bight passing around a sheave below, to which a weight is attached, say 10 tons—is there more than 5 tons strain, on any section of chain: if so, where is the breaking point? A. No; the breaking point will be in one of the parallel sides.

(12) W. J. R. asks: Would a pair of engines, 8 inches bore and 9 inches stroke, give good results at 200 revolutions, working steam at about 30 lb. mean effective pressure? What would be a better proportion? A. It would not be economical; you had better get same speed of piston by longer stroke and less revolutions, if your work will permit it.

(13) J. J. F asks what is the heat conducting power of terra cotta, and what is the conducting power of iron? A. Taking the conducting power of gold at 1000, iron is 374, terra cotta 11.

(14) J. J. S. asks for the simplest and best method of making a lightning arrester for acoustic telephones. A. Surround the wire for a distance of three or four inches with a copper tube having a number of internally projecting points, which come very near the wire but do not touch it so as to interfere with its vibrations. The copper tube should be connected with a ground wire having good ground connections. See p. 395 (26), current volume.

(15) J. M. L. asks: What is the matter with a Blake transmitter when it loses its force? Is it the fault of transmitter or of the battery? If in the battery how can it be corrected? A. The trouble probably lies in the Leclanche battery. Put a small handful of sal-ammoniac in the jar and add a little water. If this does not remedy the difficulty you should write to the manufacturers.

(16) J. W. S. asks: 1. How large should the steam supply pipes be to make the pressure on the piston the same as that in the boiler? How large should the steam supply and ports be in proportion to the engine? A. It depends upon the pressure of the steam and velocity of the piston; usually ¼ the diameter of the cylinder is sufficient for the steam pipe, but with high speeds it should be larger. 2. How do you change the lead in an engine? A. By shifting the eccentric. 3. How much lead should an engine, 11x20, with a small fly wheel, have? A. If running at usual velocity, from 1 16 to 1-8 inch will answer.

(17) S. B. M. asks: Which requires the most power, to run a piece of machinery with cog gear or belting? A. If a large power is to be transmitted at a slow speed, the belt; if a small power at high speed, gearing.

(18) C. S. writes: I am running a cider mill and press. Would like to know which is the best, canvas or cloth, through which to press the finest ground apples? A. Fine haircloth, with a backing of strong unbleached muslin, is generally preferred, we believe, where a sand filter is not used.

(19) J. B. Z. asks what to use in steam boilers to keep them from rusting, and also what is the best article to paint the outside with. A. Fill them entirely full of water and close them up tight. Keep the outside coated with a good oil paint—brown oxide ground in pure linseed oil.

(20) J. A. M. asks: Are glass insulators indispensable or not in putting up lightning rods on buildings, for protection against the electric current? Some parties have been putting up rods here without insulators, using only strips of zinc to hold them to walls and roofs. Our people are ignorant on the subject, and would be glad to see a full explanation in your valuable scientific journal. A. Insulators should not be used. The rod should be fastened directly against the building. But the most important precaution is to make sure that the bottom end of the rod has a large conducting surface in contact with the earth. Better have no rod than simply to stick the end a few feet down into dry earth; the proper way is to solder the bottom end of the rod to a metal water pipe or gas pipe in the ground. If there are no pipes, then make a long trench and put in some good conducting material, such as fine charcoal, or hard coal dust, iron ore, or old iron, making a good connection between the bottom end of the rod and this conducting material.

(21) N. W. asks what thickness of iron to use to make the shell of a small steam boiler, about 18 inches high and 10 inches in diameter, steam pressure about 50 lb. to the square inch. A. 1-16 inch, if of good iron and well made, but we would advise not less than 1-12 of an inch.

(22) L. S. asks: What size keel would be suitable for a cat rigged boat, 12 feet long, 4½ feet wide? A. 1½ inch by 3 inches deep would probably answer, but one or two inches deeper would be more weatherly.

(23) C. C. asks: 1. Will one cubic foot of iron swim in the water if the water is 20 miles deep? A. It will sink. 2. It is said that the wall of a cistern should be built a little distance from the dirt wall. Is this correct? A. To sustain the wall, keep the earth packed close to it.

(24) C. M. writes: On page 330, present volume, Professor Wilder is made to say: "For acid poisons give acids." 1. Is this a mistake? If not, in what cases would acids be antidotes for acid poisons, and in what cases would they be harmful or dangerous? A. The statement of Professor Wilder about acids—"*similia similibus*, etc.," may well be questioned by the correspondent. Where poisonous doses of acids have been taken, the best antidotes are calcined magnesia, chalk, lime, magnesia carbonate, etc., exhibited with plenty of cold water. Every effort must be speedily made to excite vomiting. Acids are never exhibited as antidotes for acids? See "Horsely on Poisons," and Marbai's Toxicology, p. 34. 2. What is the remedy for arsenious acid? A. We believe there is no specific antidote yet known for this poison. Perhaps the most effective antidote, if administered at an early stage (otherwise remedies in this connection are rarely attended with success), is recently precipitated moist ferric hydrate, or a mixture of this with magnesia. It is most advantageously exhibited in the form of a mixture of solution of ferric chloride (liquor or tintura) with sodium carbonate—two to three ounces of the former to one ounce of the crystals of the latter. Instead of the sodium carbonate, a quarter of an ounce of calcined magnesia may be used. These quantities will render at least 10 grains of the arsenic insoluble. No chemical antidotes should ever supersede active evacuent treatment by emetics and the stomach pump.

(25) E. L. W. asks what to apply to the wooden bottom of an aquarium to render it waterproof. A. Linseed oil, 3 oz.; tar, 4 oz.; resin, 1 lb.; melt together over a gentle fire. If too much oil is used the cement will be too soft. This may be corrected by adding tar and resin, or by allowing it to simmer for a longer time. Apply warm, and do not use the aquarium for several days.

(26) J. D. asks: 1. If height of water be 17 feet, overshot wheel be 13½ feet, gate 4 feet wide and opened 1½ inch, and discharging the water 3½ feet below the surface (or at a height of 13½ feet); and again, if the height be 16 feet and all the rest be the same, what is the actual horse power in each case? A. If you have stated your case correctly: Under 16 feet fall, the power would be with wheel 4½ feet face, 11·8 horse power; under the conditions given, the power with 17 feet fall would be no more, as the water is to be delivered under the same head, viz., 3½ feet; but if this is an error, and with 17 feet fall you intend to deliver the water under 4½ feet head, the power of the wheel would be increased to about 13·4 horse power, provided the wheel and buckets are so proportioned as to receive the increased quantity of water without waste. 2. What is the number of cubic feet of water that will pass through in 1 minute in each varying height (17 feet and 16 feet)? A. 306 feet under 3½ feet, and 347 feet under 4½ feet head.

(27) I. J. M. writes: In your answer to T. E. W., No. 35, volume XL., No. 24, you decide against him. Are you not wrong? We are taught that bodies at the center of the earth weigh nothing; if so, they can certainly have no momentum. As they approach the center, gravity decreases, until at the center the attraction is equal on all sides, and having no momentum, come to a state of rest. A. We think not; the accumulated work or momentum must be expended. Gravity cannot vibrate a pendulum when hanging vertically, but draw it aside and let it swing, and the accumulated work carries it past the center line, and it continues to vibrate until friction and the resistance of the atmosphere have destroyed or used up the momentum.

(28) W. E. C. asks: 1. How can I mould a porous cup for a Bunsen battery? A. They are unglazed porcelain, and cannot be made to advantage except by a potter. 2. What solution is used on the outside of the porous cup? A. Use a saturated solution of common salt or water 15 parts, sulphuric acid 1 part. 3. How many ½ gallon jars would be required to work a telegraph line ⅛ mile in length? A. Without knowing the resistance of your line we cannot tell; try two. The gravity battery is much better adapted to telegraphy than the Bunsen.

(29) W. G. W. writes: 1. If 100 cubic inches of air were pumped into a hollow ball, and this ball would just hold up a given weight in the water, say 10 lb. and no more, would pumping 200 cubic inches in the same ball cause it to hold up any more than 10 lb. on the water? A. No, not so much by weight of air. 2. If three cubic inches of water be converted into steam, will the steam weigh as much as the water did? A. Yes. 3. If one gallon of water was converted into steam and confined in the same measure, what pressure per square inch would it have? A. You cannot convert water into steam and confine it in the same space; it will still be water, and can only change to steam by giving it room to do so.

(30) S. B. M. asks: 1. Can I make a simple and cheap battery, using copper or zinc, or both, without mercury? A Yes. 2. If so please tell me how. A. See SUPPLEMENTS, Nos. 157, 158, and 159, Batteries. 3. To insulate copper wire for an electro-magnet, will common wrapping twine do? A. No, it makes the covering too thick. Use a fine floss. 4. In wrapping wire on an electro-magnet, what do you mean by "layers?" Is it the number of times the wire is wrapped around it? A. It is the number of coils, counting from the core outward.

(31) G. B.—See Professor Wilson's paper "Hygiene of the Hair," in No. 110, SCIENTIFIC AMERICAN SUPPLEMENT.

(32) C. D. W. asks: Would not one paddle or bucket have the same propelling power swept through the water a distance of twenty feet, as twenty paddles or buckets on an endless chain one foot apart, the chain revolving on wheels twenty feet apart—the paddles the same area, and the same power applied to the single one and to the twenty? A. It will depend upon the velocity at which the paddles are driven; if so slow that the water can fill in perfectly between them, the increased number of buckets or paddles will do the most work, if, on the contrary, the speed is so great, that the water cannot fill between the buckets, then the single bucket will do the most work.

(33) H. C. M. writes In answer to S. C. C., April 10, (13), you said that when a train of cars are rounding a curve the greater weight is on the outside rail; please explain. A. The centrifugal force of the train round a curve acts to overturn the cars upon the outer rail, as the center of gravity of the mass is some distance above the top of the rail.

(34) G. T. C, asks: Does an overshot water wheel, when exercising a steady power by means of a crank attached to its shaft, exercise, or is it capable of exercising, more power at one point of revolution than at another? A. More pressure, but not power; the difference in pressure is owing to the different positions of the crank, not to any variation in the power of the wheel.

(35) E. A. W. writes: We would like to know from what height and into what liquid the copper is dropped to make it assume the granulated form, and if a tumbling barrel is afterward used? A. Pour the fused copper in as thin a stream as possible from a height of about a yard into a tub filled with cold water. A trace of sulphuric acid may be added to the water, but this is not essential. Dry the copper in sawdust, by tumbling or otherwise. Consult Larkin's and Overman's "Founder's Guide."

(36) W. F. L. asks: 1. Is it possible to line pulleys so that the belt will run horizontal and be quarter twist without the use of guide pulleys? A. Yes. 2. If so should they (the pulleys) be lined the same as in answer to A. W. D., SCIENTIFIC AMERICAN, of January 11, 1879? A. Yes. 3. I use well water in boiler, and notice in blow-off cock, which leaks some, a dirty looking scale, of which we send sample; do you think it will prove injurious to boiler? A. The incrustation consists chiefly of lime, iron oxide, silica, and alumina. If such an incrustation is permitted to increase there will be danger of overheating the plates. A small quantity (a few ounces) of carbonate of soda may be introduced daily with the feed water, and the blow-off used regularly every day, if possible after the contents of the boiler have remained quiescent for a time. Care should be taken that the water does not run low.

(37) E. C. L. writes: A discussion having arisen among some of our shipbuilders and ship owners regarding the capacity of iron and wooden ships (that is, our spruce ships) to carry dead weight, a great difference of opinion arose on this matter, and it was proposed to refer the question to you to be answered in your columns. Say a ship of 1,000 tons register, same proportions, one built of iron, the other of spruce, which would carry the greatest amount of dead weight cargo? A. It is generally estimated that iron ships will carry from 20 to 25 per cent more dead weight than an oak built ship, and it would probably be from 10 to 15 per cent more than a soft wood ship.

(38) G. M. F. asks: What is the most practical way of protecting Swiss drawing instruments against rust? A. Coat the warm metal with a very thin lacquer of shellac dissolved in alcohol.

(39) S. F. writes. Suppose a hollow globe to have the air exhausted from it, thus containing a perfect vacuum, will it then weigh more or less than it will when filled with hydrogen? A. Less.

(40) G. A. H. writes: A late number of the SCIENTIFIC AMERICAN contains the following question and answer: "What is it that carriage makers use for setting the boxes in the hub, with some kind of cement? A. The boxes are usually secured by wedges. We do not know of a cement that will answer the purpose." The "cement" used is white lead and oil mixed about the consistency of paste. A box set properly in this cement, provided the oil used for lubricating the axle arm does not penetrate the hub and thus soften the cement, will remain perfectly tight until worn out, and cannot then be forced out from the hub only by means of a powerful press, without breaking the box. Wedging the boxes by manufacturers of the finer grade of carriages, is looked upon with disfavor. With the common axle box (of which very few are now used), the shape necessitated wedging. The most improved patterns now made require no wedging for the purpose of tightening the box, wedges being used only for "truing" the box, so that the rim shall not present a wabbling appearance when the vehicle is in motion. Even this is now found to be unnecessary when the best hub boring machines are used, provided the rim of the wheel has not been forced out of true in setting the tire. Sometimes, and especially with a cheap grade of wheels, the smith is unable to set the tire without bringing the rim out of true, for the reason that proper care has not been observed in selecting the spokes. The same grade of timber is not used in all, therefore some spokes will be stiff and less flexible than others. The result being that the more flexible spokes dish more than those which are stiff, producing a rim out of true, and requiring that the box shall be trued in order to remedy the fault. When the rubber cushioned axle (now the most popular) was invented, it was found to be impossible to set one of the boxes by driving, therefore a press was made that answers the purpose of forcing in the box. The practice followed of forcing the boxes of other grades of axles, until now it is considered to be the easiest, safest as regards breaking, and the most durable method for setting a box; proper care being observed in forcing, the necessity of truing the box is obviated.

(41) J. M. writes: A says that printing is done on cylinder presses from ordinary movable type set in a cylinder which revolves. I say it is not. Which is correct? A. R. Hoe & Co. make a rotary press having one large cylinder on which the movable types are placed. The impression cylinders surround it; they vary in number in the different presses, 2, 4, 6, 8, and sometimes 10 cylinders are used. Fine printing is done on cylinder presses having flat reciprocating beds for receiving the movable types.

(42) T. Q. asks: What can I use to harden the tips of my fingers? Through daily practice on the violin they become very tender and sore, so that I have to cease playing. A. Continued practice will do it A strong solution of alum in water, or the tincture of white oak bark applied occasionally, may be beneficial.

(43) M. R. asks how the brine is made in which eggs are packed to preserve them. A. Dissolve rock salt to saturation in water and add about 5 per cent of niter.

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

Buffalo Gap.—57. The fossil is too badly damaged to admit of proper classification. 120. A magnesian limestone. 143. Argillaceous limestone. 146. Argillite containing partially decomposed orthoclase, iron, and copper sulphurets. 133. Argillaceous limestone containing small quantities of chalcopyrite. 127. A fossiliferous clay slate containing a small amount of lime phosphate. 144. Consists chiefly of lime carbonate and phosphate, and clay. 123. Marcasite, an iron sulphide. The other (unlabeled) samples consist chiefly of argillaceous and ferruginous limestones containing small amounts of organic matters.—E. C.—1. Silver bearing galena (lead sulphide) associated with hematite and iron sulphide in quartzose and doleritic rock. 2. The amount of carbonaceous matters in the shale is small. Its color is chiefly due to iron oxide.—J. F. S.—The sample is kaolinite containing a small quantity of undecomposed orthoclase and sand. As it is almost entirely free from iron it may prove valuable in the manufacture of white "stone china," etc.—W. S. H.—It consists chiefly of charcoal saturated with partially decomposed alkaline thiosulphate. The quantity sent was insufficient for confirmatory tests. Charcoal and the alkaline sulphites are excellent antiseptics. – J. R. —The rock contains nothing of any practical value.—The sample of fire clay in unlabeled tin box (Lawrence's patent) is of fair quality value, about a dollar a ton in New York.—O. B. McN.—Quartz pebbles of no value.

COMMUNICATIONS RECEIVED.

Complexity *vs.* Simplicity. By G. F. W.
On Consumption. By D. F.
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On Scientific Credulity. By G. T. B.
On a Method of Fumigating Vessels. By C. S.

[OFFICIAL.]

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Funnel, measuring, J. Pfitzenmeier ... 216,530
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Gas, process and apparatus for manufacture of, Harris & Allen ... 216,612
Gas regulator, W. Cowan ... 216,556
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Grain binder, Ross & Parker ... 216,532
Grain, bobbin of wire for binding, R. C. Fay ... 216,666
Grain crushing machine, porcelain roll for, W. Braun ... 216,553
Grain drill, E. M. Morgan ... 216,572
Grate bar, F. Steele ... 216,708
Grave guard and tombstone, M. Beckler ... 216,500
Harness coupling, Reynolds & Hayes ... 216,700
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Harvester reel and dropper, A. C. & R. W. Sriver ... 216,706
Hay and cotton press, E. Beadle ... 216,642
Hay elevator and carrier, W. L. Kinsey ... 216,521
Heel breasting machine, E. May ... 216,623
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Husking pin, W. E. Hall ... 216,672
Hydrocarbon vapor burner for heating purposes, H. H. Eames ... 216,562
Ice cream freezer dasher, J. H. Dunbar ... 216,607
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Lasting machine, R. C. Lambart ... 216,685
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Lubricator, W. P. Phillips ... 216,531
Manures, machine for distributing, Shaw & Williamson ... 216,579
Match box, E. B. Beecher ... 216,501
Meat chopper, E. M. Silver ... 216,536
Meat in cans, apparatus for packing, T. Houlahan ... 216,569
Meat, package for canned, T. Ashwell ... 216,494
Mechanical movement, D. Abrey ... 216,638
Middlings, flour, etc., feed roll for, C. A. W. Jaquett ... 216,617
Milk cooler, C. L. & S. P. Bacheller ... 216,640
Millstone driver, Smith & Cochrane ... 216,704
Millstones, dressing, D. Brubaker ... 216,597
Mirrors, protecting the backs of, G. W. Walker ... 216,587
Miter cutter, W. R. Fox ... 216,608
Monkey wrench, W. M. Green ... 216,516
Motion at regular intervals, apparatus for producing forward and backward, I. & A. Herzberg (r) ... 8,753
Motion, device for converting reciprocating into rotary, J. Skinner ... 216,537
Motion, mechanism for converting reciprocating into rotary, Ellis & Rule ... 216,560
Musical instrument, mechanical, M. J. Matthews ... 216,622
Nail picker and separating machine, M. A. Williams ... 216,713
Oils and fats, bleaching, J. Davis ... 216,558
Oxide, process and apparatus for manufacturing carbonic, Motay & Jerzmanowski ... 216,584
Pail, lunch, J. J. Tillinghast ... 216,632
Paper box, W. H. Tunis ... 216,711
Paper folding machine, Chambers & Mendham ... 216,598, 216,599
Paper folding machine, C. Chambers, Jr ... 216,600, 216,601
Paper making machines, felt guide for, J. Peaslee ... 216,696
Paper pulp, engine for preparing stock for making, C. Bremaker ... 216,505
Petroleum into a uniform, purified, and deodorized oil, converting crude, H. F. Howell ... 216,518
Picture exhibitor, P. Costa ... 216,659
Plane, H. B. Price ... 216,698
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Platform or mat, H. L. Palmer ... 216,573
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Plow, riding, G. E. Wolcott ... 216,714
Printer's galley, T. T. McNish ... 216,689
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Pump, centrifugal, E. Chaquette ... 216,603
Punch, drill, shears, combined, Bates & Wild ... 216,641
Punches, shears, and stamps, mechanism for actuating, J. T. Bedford ... 216,593
Rag washing machine for rag and paper washing engines, J. Tyler ... 216,585
Railway rails, securing fish plates to, E. Bourne (r) ... 8,762
Railway switch, H. A. Norton ... 216,691
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Sewing machine, straw braid, C. F. Bosworth ... 216,504
Sewing machine, elastic treadle for, J. W. A. Huss ... 216,616
Shingle cutting machine, J. H. Phipps ... 216,575
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Shutter worker, W. Jones (r) ... 8,756
Sifting machine, N. Bassett ... 216,549
Skate, roller, J. M. Lewis ... 216,687
Smelting fine or dust ores, H. H. Eames ... 216,561
Sock protector, F. Smith ... 216,538
Speed regulating mechanism for cotton sliver eveners, J. R. Reilley ... 216,630
Stalk cutter, J. Kraft ... 216,684
Steam and air brakes, operating valve for, G. Westinghouse, Jr ... 216,515
Steam engine, E. S. Westcott ... 216,636
Stool, camp and hunting, J. Powell ... 216,629
Stove, C. F. Hill ... 216,677
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Stove, cooking, J. F. Allen ... 216,591
Stove lining, J. Riplinger (r) ... 8,760
Surgical splint, J. E. Johnson ... 216,680
Swings, etc., device for suspending, Mayo & Noyes ... 216,624
Switch and signal, interlocking, A. G. Cummings ... 216,510
Toy, G. Muller ... 216,526
Toy, candy, R. H. Moses ... 216,628
Transportation box for fruit, etc., C. B. Sigwald ... 216,535
Treenail for ships, etc., T. W. Kirby ... 216,682
Tubular boiler, P. S. Forbes ... 216,667
Tug loop, hame, J. M. Johnson ... 216,618
Tug or loop, thill, J. A. Lazelle ... 216,619
Umbrella, W. B. Greene ... 216,566
Valve, balanced, J. H. Fairbank ... 216,664
Valve steam, F. W. Gordon ... 216,515
Vehicle spring, J. Miller ... 216,626
Ventilator, W. B. Brown ... 216,650
Vulcanizing rubber, etc., apparatus for, F. Z. Nedden ... 216,527
Wagon Jack, G. A. Bogart ... 216,645
Wagon, road, J. L. Phillips ... 216,697
Wagon, running gear, B. C. Shaw ... 216,534
Waiter, hotel and restaurant, L. Garrigan ... 216,609
Washing machine, D. F. Stambaugh ... 216,581
Wells, device for increasing the production of oil, B. Collins ... 216,658
Whiffletree, N. W. Brewer ... 216,648
Whiffletree, J. A. Chase ... 216,656
Whip socket, J. Lowth ... 216,523
Window protector and ventilator, J. L. Walton ... 216,712
Wood bending machine, F. W. C. Lange ... 216,522
Wood, preserving, Wellhouse & Hagen ... 216,589
Wooden box machine, E. Bensen ... 216,644
Wrench, R. Mikkelson ... 216,690

TRADE MARKS.

Canned Vegetables, Wilson, Stewart & Co ... 7,426
Certain fertilizer, Quinnipiac Fertilizer Co ... 7,427
Cigarette paper, W. Demuth ... 7,425
Cigars, cigarettes, and smoking and chewing tobacco, Kerbs & Spiess ... 7,414
Corsets, P. Dutoict & Co ... 7,410
Cough mixture, Newth & Lux ... 7,412
Fertilizing compositions or compounds, R. W. L. Rasin & Co ... 7,419
Flour, B. R. Pegram, Jr ... 7,417, 7,418
Insect poison, H. W. Hemingway ... 7,422
Lubricating oils & grease, Eclipse Lubricating Oil Co. ... 7,411
Medicines for the cure of throat and lung diseases, E. H. Carpenter ... 7,409
Medicinal preparation for the cure of scrofula and the like diseases, J. G. Williamson ... 7,421
Quicklime, Ohlemacher & Zollinger ... 7,413
Steam pumps, vacuum pumps, tubular and other plunger pumps, etc., W. E. Kelly ... 7,416
Tea composed of medicinal herbs and roots, A. C. Brendecke ... 7,424
Uterine pastilles and similar medicinal preparations, G. E. Swan ... 7,420
Whisky, H. H. Shufeldt & Co ... 7,423
Whisky, gin, brandy, and rum, Starkweather & Co ... 7,415

DESIGNS.

Bird cage hooks, G. S. Barkentin ... 11,245
Business card, G. H. Kendall ... 11,255
Center pieces, A. Carlewitz ... 11,247
Clock case, H. R. Frisbie ... 11,251
Clock case, Felix Meier ... 11,253
Hay racks, Wiard & Pettit ... 11,250
Metal jockey for saddle trees, E. R. Cahoone ... 11,246
Mucilage holders, W. J. Shilling ... 11,254
Photograph frame support, J. T. Reed ... 11,249
Rubber fountain syringe, A. C. Fairbanks ... 11,248
Steam pumps, L. B. Davis ... 11,252

English Patents Issued to Americans.

From June 20 to June 24, inclusive.

Break shoes, J. H. Mitchell, Philadelphia, Pa.
Governor for marine engines, C. W. Cooper, New York city.
Hammer, R. E. Hastings, Philadelphia, Pa.
Horse's nose bag, E. Forbes, Brooklyn, N. Y.
Journal boxes, S. P. M. Tasker, Philadelphia, Pa.
Key nail fastening for ships, T. W. Kirby, Grand Haven, Mich.
Rolling mill, S. P. M. Tasker, Philadelphia, Pa.
Screw machinery, H. A. Harvey, Orange, N. J.
Sewer gas stopper, C. Y. Wemple, New York city.
Type writing machine, F. Sholes *et al*, New York city.