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RECENTLY PATENTED INVENTIONS. Railway Appliances.

CAR COUPLING.-Daniel Kint, Alpena, South Dakota. Two operating levers are pivotally connected together at their inner ends, and there is connection between the levers and the coupling pin, to raise and lower it, in connection with a latch and hand levers connected with the latch, there being a keeper on the end of the car adapted to engage the latch. The device may be conveniently coupled with the ordinary link coupler, and opposing cars may be uncoupled without the trainmen passing between them, while the coupling pin may be locked in elevated position if de sired.

RAIL JOINT.-John N. Lewis, Coulee City, Washington. The chain is, by this invention. formed with a base plate, a side plate, and a transverse portion within the hollow formed by the juncture of the plates, and provided with a seat for the fish plate and locking plates. The transverse portion and the fish plate sections serve to hold the lock plates in position, and the lock plates operate to prevent the nuts from jarring loose, the whole forming a strong, secure rail joint.

RAILROAD GATE.-David M. Dewitt, Bee Branch, Ark. This is an automatically working device, the gate being designed to beopened and closed by an approaching and departing train or wagon. The construction is such that an approaching train passes from the fixed rails to rails on a hinged platform, the depression of the latter operating through shafts and links to open the gate, which is afterward closed by connected weights and levers. The device is also applicable, with some modifications, to a wagon road, the gate being then opened by the weight of the wagon and afterward similarly closed.

ELEVATED RAILROAD.- Eliphalet L. Arnold, Georgetown, Texas. This invention provides a construction designed to be comparatively cheap and absolutely safe, with which the cars will ride easily, and which can be readily adapted for hoth passenger and freight traffic. The railway is supported upon sectional hollow posts, from whose upper ends extend lateral arms, which pivotally uphold a continuous steel trues, the base plate of which forms a support for the track rails, the cars being suspended from the tracks through yokes. If desired, the cars may be brought near enough from the ground to be entered therefrom, or the entire mechanism may be light enough for the cars to be operated by horse power.

Electrical.

ARC LAMP. - Robert H. Thurston, Ithaca, N. Y. This invention provides a lamp having broad, flat carbons moving in the same vertical line or in approximately parallel lines, with the carbons arranged in planes intersecting at a small angle to prevent their slipping by each other, or jamming and welding together, thus extinguishing the lamps when shaken by the wind or other force. The angle in practice is not so large as to make any material difference in the length of the arc formed between the center and the ends of the carbons.

Mechanical.

WOOD TURNING MACHINE.-Abraham Stoner, Stony Point, La., and Francis M. Pennebaker, Pleasant Hill, Ky. This is a machine for turning solid staveless hulls or bodies of tubs, buckets, or similar wooden ware from a solid block, the invention being an improvement on a former patented invention of one of the inventors. By the improvement increased simplicity and strength of parts is secured, greater accuracy of adjustment and reliability of operation, with tains 120 different types, the type holder being mounted more compactness and better adaptation for convenient manipulation and control of the machine by the operator, doing better work more quickly and economically.

CARPENTER'S SQUARE .- Mark P. Paterson, New Rochelle, N. Y. This square is so constructed that one arm may be manipulated to strike a right angle or an angle more or less obtuse, as may be desired, several alides containing scales being located. if wished, in an arm of the square for use as needed. One of the slides may be removed from the arm and used in conjunction with and adjustable upon both arms to form triangles as required, and the square has scales for facilitating the calculation of the length, pitch, or angle of rafters, and for various other work useful to carpenters in house building.

WIND MOTOR.-Hagbarth Winge, Miles City, Montana. This motor has a frame with a central post carrying a pivot, on which turns a wheel having masts on its rim carrying sails, a gear wheel on the hub connected with the machinery to be driven. The motor

tion extending through it with brushes on its sides and with a revoluble brush turning at one end,

LUBRICATOR GLAND.-Fortunatus G. Kellogg, Brainerd, Minn. This is a device designed to be conveniently applied to reciprocating shafts, such as piston rods, valve stems, etc., to be readily held on the shafts and keep them well lubricated. It consists of a box composed of two sections hinged together and having opposite their place of hinging a staple and hasp, while there is a peripheral funnel on each section, and the adjacent or meeting sides of the sections have registering semicircular openings forming the shaft passage.

Agricultural.

POTATO DIGGER.-William H. Van Voorhis, Spearville, Kansas. This is a machine of simple and durable construction for digging potatoes, peanuts, etc., separating them from the dirt and weeds and also separating the small and large sizes and passing the latter into a bag. A plow on the front end of the digger plows up the potatoes so that they pass rearwardly to an elevator, the weeds being cut off by cutters or shears, and the potatoes being turned over and screened on the elevator slats until they are finally passed on to a separating plate and thence to a hopper

from which they are removed to a bag. TETHER.-William E. Bradley, Roscoe, N. Y. This is a tether in which the rope is paid out

when pulled upon by the animal, and the slack is automatically taken up and wound in by suitable winding devices, the tether being cheap, durable, and compact, easily portable, and suitable for stalls as well as outdoor use. The body or frame of the device has a vertical rack, and a gravity winding wheel for the tether rope, there being friction disks on the axle of the gravity wheel, and pins on the hub of the wheel engaging the rack. Means are provided for securing the tether to a stall, or to a post, tree, or fence. [Address Tether Mfg. Co. 325 North st. North Middletown, N. Y.]

COTTON CLEANER AND CONDENSER.-William B. Wherry and William F. Smith, Overton, Texas. This is a cheap and simple machine for use in connection with a cotton gin, for rapidly separating the dirt from the cotton and condensing the latter to be easily handled and baled. The case or frame has an inlet at one end and an outlet at the other, between which an endless screen belt is held to move, a sand box being within the belt, and air pipes opening from the sides of the sand box to convey the dust and dir away. The drums for the carrying belt are arranged beneath the inlet and above the outlet, and a springpressed corrugated hood is hinged to the case and extends above the upper drum.

SCRAPER.-Benjamin F. Shuart, Billings, Montana. This is a device which may be quickly adjusted to scoop or scrape up any desired amount of earth, delivering it where wanted, or strewing it evenly over the adjacent land, being especially adapted for use in grading land preparatory to irrigation. The frame of the machine consists of two parallel runners, be tween which a scraper with beveled edge is held to move vertically, a pivoted lever affording means for raising and lowering the scraper. By manipulating the leverthe dirt may be gradually allowed to escape and be spread evenly on the ground.

Miscellaneous.

TYPEWRITING MACHINE.-Allard E. Benedict, Cairo, Neb. This is a machine designed to be easily manipulated, and arranged to print directly without the use of a ribbon single characters, such a letters of the alphabet, numerals, etc., and also words of two, three, four, or more letters each. Inking rollers are provided to ink the type, and the type holder conto travel longitudinally on the carriage. The arrangement is such that no separate key or lever need be pressed to make space between two succeeding words.

TYPEWRITER REGISTER. - Harry I Cromer, Rapid City, South Dakota. This is a simple device, adapted for attachment to any form of typewriter, and, by the movement of the keys and space bars, will accurately count and register the number of words printed by the machine. A recessed sliding bar to operate the register is arranged adjacent to the space bar, a spring on the sliding bar having a lug to enter the recess and a lug on the space bar contacting with a ing on the spring, while a stud on the sliding bar and a block on the spring are arranged in the path of the type rod and space rod lugs.

JEWELER'S FORCEPS.-David Mendelson, Eureka, Utah Territory. An article, or several articles, may be held at any desired angle by the use of these forceps, which are especially adapted for holding of the wheel meshing with a series of gears on a shaft or clamping articles to be soldered, the device being also suitable for use in other lines of manufacture. In is simple and durable in construction, and is designed a supporting post, slotted at its upper end, is mounted to swing a bolt, to which arms are adjustably secured at their inner ends, being gradually curved upon themselves at their outer extremities, tweezers provided with evebolts being adapted to slide from the arms around upon their curved extremities. The articles to be operated upon are clamped in the tweezers, when the latter are brought into the desired position and held there by various thumb nuts.

of one another, and adapted to be fastened by their legs to the folds of the sides and ends of the bellows,

CHANGE RECEIVER AND TRANSFER.-Weet R. Uchtmann, New York City. This is a device to be applied to a counter or similar support to receive change, and it is adapted to be readily manipulated to transfer the change from the receiving section to the hand of the person for whom it is intended. The arrangement is such that when a person receiving the change places his hand and presses upon a hinged section of a table, palm upward, a change-receiving receptable is tilted so that the change will slide into the hand.

ROLL PAPER HOLDER AND CUTTER. Edwin E. Sentman, Philadelphia, Pa. The construction of this device is such that the knife, by means of which the paper is to be severed into lengths, will follow the roll downward as the latter decreases in diameter, and the knife will, through the medium of a roller interposed between it and the roll of paper, exert constant tension upon the paper. The construction is very simple and inexpensive, and the frame of the device, with the knife and roll, may be carried upward and held in an elevated position to admit of insertion into the frame of a roll of paper.

COOKING UTENSIL-Augusta R. Isaacs, New York City. This is a vessel to be inserted in a pot of water, where its contents may be steamed or boiled without escaping therefrom, the contents being then removed to a platter in bulk without injury. It consists of a perforated body, preferably made of sheet metal, with an open top and bottom, an opening in one side near the bottom and brackets on the inside below the opening, on which slides a perforated plate.

Note.-In the description of Mr. C. N. Wall's feeding attachment for paper folders for use in newspaper offices, the following typographical error occurred : The notice states that the feeder will place the papers in position to be folded with the aid of any gripping mechanism or any hand operated machinery. It should read : without the aid of any gripping mechan-It ism or any hand-operated machinery.

NOTE .- Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

SCIENTIFIC AMERICAN BUILDING EDITION

JUNE NUMBER.-(No. 80.)

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- 1. Handsome plate in colors of a residence recently erected at. Plainfield, N. J. Perspective views. floor plans, etc. Oscar S. Teale, architect. Cost about \$12,000. An excellent design.
- Plate in colors of a cottage erected at Bensonhurst, Long Island, N. Y. Perspective elevations and floor plans. Cost \$3,450 complete. P. F. Higgs, architect, New York.
- 3. Engravings and floor plans of the Crescent Block of six houses erected on Golden Hill, at Bridge port, Conn. An excellent design. Total cost of six houses \$55,000 complete. Messrs. Lougstaff & Hurd, architects, Bridgeport, Conn.
- A handsome residence at Babylon, Long Island, N. Y., recently erected for F. H. Kalbfleisch, Esq. Cost \$17,500 complete. Two perspective views and floor plans. H. J. Hardenberg, New York, architect.
- A school house at Upper Montclair, N. J. Perspective view and ground plans. Cost \$12,200 complete, including heating and ventilating apparatus. Geo. W. Da Cunha, architect, New York.
- 6. Perspective views of several very attractive dwellings located near New York.
- A suburban residence of attractive design erected at Lowerre, N. Y. Cost \$2,800 complete. Floor plans and perspective view.
- 8. The St. James' Episcopal Church at Upper Montclair, N. J. A picturesque design. Cost \$8,000 complete. Messrs. Lamb & Rich, architects, New York. Perspective view and ground plan.
- A residence at Ludlow, N. Y. Perspective and floor plans. Cost \$8,500 complete. 10. A comfortable summer residence at Asbury Park
- N.J. Perspective and floor plans. Cost \$6,250 complete.
- 11. Proposed railway tower for the Columbian Exposition at Chicago.
- 12. Sketch of the new City Hall, Philadelphia. A magnificent structure.
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Business and Personal.

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INDEX OF NOTES AND QUERIES.	
Boiler, management of	
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(4418) G. S. J. savs: I would like to ask a question (to be answered in Notes and Queries) on which there seems to be a great difference of opinion among engineers. On a plain horizontal tubular boiler, what stage of water is most economical (as regards labor and fuel) just as low as safety will permit, or as high as is possible without drawing water through the engines? A. The safest and best practice is to carry the water 4 inches over the tubes in boilers of 3 feet diameter, 6 inches over in boilers 4 feet diameter, and 8 inches in boilers 5 feet in diameter, when the rear end of such boilers are set from one to two inches lower than the front or gauge end. This gives the largest safe water surface for the liberation of steam and lessens foaming High water makes wet steam, and is no safeguard to a boiler that is properly cared for. Wet steam is wasteful of fuel. Uniform feed and a uniform gauge measure as above indicated gives the best results. (4419) C. E. B. says: In your reply to W. H. P., query No. 4360, date of May 21, you say: The water power of an artesian flowing well may be obtained by measuring the quantity of water delivered at the highest available point in cubic feet per minnte, etc. This is true in theory. I would like to hear your opinion as to where the most power is exhibited in the following actual tests of a 7 inch well. Pressure when closed 130 pounds, gives 2 inch stream 80 pounds, 21/2 inch stream 72 pounds, 3 inch stream 62 pounds, 4 inch stream 58 pounds. Is the power in proportion to the product of the quantity multiplied by the pressure? The 7 inch well referred to is in Woonsocket, Sanborn County, South Dakota. It is driving a 3 foot Pelton wheel which is running a 150 barrel flour mill, owned by Northy & Duncan. I think they are using less than an inch nozzle and have plenty of power. I finished the well in November, 1891. The tests were made through short pieces of standard pipe from 6 to 18 inches in length. The depth is 775 feet. This is a fair example of the way the pressure decreases as more

to actuate pumps and other machinery.

MOULD FOR ELECTROTYPE SHELLS. ETC .- Jacob C. Wolfe, New York City. This is a mould capable of being quickly and conveniently knocked down or separated in sections, and disconnected from the block when cast, while its construction is such that it may be utilized for casting large or small backings or blocks, as desired. The flask has a shoulder around its interior and within is a series of core blocks of less height, each block having an external shoulder and having their lower adjacent faces inclined, core plates resting against the faces of each block and against the inner walls of the flask, and there being wedge-shaped spacing blocks or keys between the lower included faces of the blocks. This backing is very light and durable being braced in every direction, and the blocks are quickly, accurately, and economically made.

FUR SEWING MACHINE DEVICE. -Catharina Booss, New York City. This is an improved guide attachment, for use in sewing fur, leather, and other goods, to bring the parts into the exact proper position, and provide means for brushing the fur away from the seam, exposing the skin to the action of the needle and keeping the fur away from it. The device consists of an open-ended hood having a central parti- ing a series of rounded-off corners arranged alongside

WATCH CASE SPRING .- John E. Ketchem and Thomas C. Nixon, Morrillton, Ark. The spring, according to this invention, is provided with a stiffly turning rivet or screw, having its head provided with a nick or other means for turning it, and having on each of its opposite sides a projecting lip, whose outer portion is sharpened to a knife edge, to bury into the metal of the bezel and hold the spring in place with a positive and firm connection.

BELLOWS.-John G. Gareis, Brooklyn, N. Y. This invention relates to rectangular bellows, such as used in accordions, photographic cameras, etc. providing therefor a simple and durable construction. with which the bellows will be perfectly air and light tight. The bellows are provided with corner strips, each formed of a single picce of material and contain

lustrated .- The sick room temperature. - Stair builder's goods, illustrated,-Ornamental hardwood floors .- Large winding partition doors. The "Alberene" laundry tub.-House heating and ventilation .- Nolan's hot water and steam heater, illustrated .- The crushing resistance of bricks. - An excellent motor, illustrated.- A successful hot water heater, illustrated.-The lacquer tree .- A self-retaining dumb watter, illustrated. Architectural wood turning, illustrated.

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water is used in South Dakota wells. A. This is the most reliable record that we have had of the condition of the flow under different heads and nozzle sizes from the artesian wells of South Dakota, and we give with pleasure our deductions. The standard wrought iron pipe of the sizes used for the streams are about 2 per cent larger than their nominal diameter, which will nearly equalize their flow to the coefficient of properly formed nozzles of the stated sizes. We find that the water head for the closed pipe is 299 feet, the static pressure of the well. With the 2 inch stream the head is 184 feet with a flow of 135 cubic feet per minute, equal to 47 gross horse power, or 40 developed horse power from a Pelton wheel. With the 216 inch stream the head fell to 1651/2 feet with a flow of 2071/2 cubic feet per minute, with 65 gross horse power, or 55 horse power developed. For the 3 inch stream the head fell to 1421/2 feet and 277 cubic feet per m. with 74 gross horse power=62 developed horse power. For the 4 inch stream the head fell to 1331/2 feet, with a flow of 480 cubic feet per m., with 121 gross horse power=102 developed horse power. These ranges of variation in head and flow go to show the almost perfect freedom of inflow at the bottom of the 7 inch tube, as in some wells the head falls very fast under the enlarged flow. For the power used in the flour mill the pressure head is probably 250 feet, having a nozzle velocity of 7,600 feet per minute; and with the 1 inch nozzle and a flow of only 411/2 cubic feet per minute, the 3 feet Pelton wheel is equal to 17 horse power, developed, and sufficient for the 150 barrel flour mill as stated. The figures show that the present use of this well is far below its capacity.

(4420) C. V. S. asks (1) for a corn salve. A. Dried carbonate of soda, 1/2 ounce; lard, 1 ounce; smalts (to color), q. s. Mix. The above are applied on a piece of rag, and renewed night and morning. Use for corns only. 2. How to clean carpets. A. If brooms are wet with boiling suds once a week, they will become very tough, will not cut a carpet, and will last much longer. A handful or so of salt sprinkled on a carpet will carry the dust along with it and make the carpet look bright and clean. A very dusty carpet may be cleaned by dipping the broom in cold water, shaking off all the drops, and swceping a yard or so at Wash the broom and repeat until the entire carpet has been swept. 3. For a fiber that would make a good letter that would look like the enameled white signs. A. Nothing hetter than white cloth or white enameled leather.

(4421) W. M. asks: Will you kindly explain to me in the columns of your valuable paper the meaning of the term " radius of gyration," that is the radius of gyration of an iron column, I beams, or an angle iron, etc.? Kindly explain fully and clearly. Have been studying for quite a long time, but cannot solve it. A. The radius of gyration of a column or a the positive or negative brush? Does the fan of a cenbeam is such distance from its central line or axis that, if all the material in the section across the axis wer concentrated there, its moment of inertia would in the steam pipe connection to the receiver of the low equal that of the eection. The moment of inertia pressure cylinder for starting the engine. You can the product of the mass of the beam by the square of its radius of gyration. This is the basis upon centrally over it. The north pole will point to the which the strain due to the whole section under flexure south pole of the dynamo. Then trace the wiring to is computed. For details of various forms of columns and beams, see Trautwine's "Engineer's Pocket Book,' rives its power. over both force and suction side, from \$5 mailed.

(4422) D. M. asks how to make an electric bell work from each end of the line of the telephone described in the SCIENTIFIC AMERICAN of December 14. 1889. A. To make a signal work at opposite ends of a single line wire you require a closed circuit. With two wires and the ground, you can work your signals on an open circuit.

(4423) T. M. R. writes: I am going to build a small motor, and wish to know if there is any way in which I can make it run slowly without waste of power, and also the best size of wire to use for the field and armature. A. By making your armature of large diameter, you can produce a slow speed motor that will operate without loss of power.

walnut with shellac. A. Orange shellac, 2 ounces; wood naphtha, 1/2 pint ; benzoin, 2 drachurs. Mix and put in warm place for a week and keep the materials from settling by shaking it up. To apply it, make a rubber of cotton wool and put some old calico over the face, and till you have a good body on your wood keep the rubber well saturated with polish. When your rubber sticks, put a very little linseed oil on and rub your polish up. Allow it to stand a few hours and give it another coat, using rather more linseed oil on your rubber, so as to get a finer polish. Then let it stand again, and finish off with spirits of naphtha; if not, add a small quantity of polish to your spirit. 2. Fora walnut stain. A. Water, 1 quart; sal soda, 1/2 ounce; Vandyke brown, 21% ounces; potassium bichromate, 1/4 to 1/4 ounce; boil for ten minutes, replacing water lost by evaporation. Use hot and allow the work to dry thoroughly before oiling or varnishing. Another reliable walnut stain for furniture, mostly hard wood: Spirits of turpentine, 1 gallon; pulverized asphaltum, 2 pounds; dissolve in an iron kettle on a stove, stirring constantly.

length of a pendulum making one vibration in five seconds? A. 64 666 feet. 2. Power of eighty pounds applied to a wheel whose diameter is five feet, balances four hundred pounds. What is the diameter of the axle? A. One foot.

rust from finely polished steel, such as drawing instru-ments, etc. A. Polish the rust from fine steel articles to white lead in oil restore the lead to its former metalwith flour of emery paper and gloss with crocus on leather. 2. How to remove dandruff? A. For dandruff wash the head once a week with weak borax water, an ounce to a quart of water. 3. How to prevent excessive A. No exact proportion can be given. White lead itself perspiration of the feet? A. For sweating feet bathe em often in salt water.

(4430) H. E. T. writes: I have one of se electric cigar lighters, and I cannot seem to make it work any more. At one time it worked all right. There is a thin spiral of some kind of wire which when upon pushing the zinc in the solution becomes a white ; therein given : heat, and lighting a small alcohol lamp. Of late, the wire will only get warm. What can I do to remedy that and repair the concern? A. Apparently your battery has run down and needs renewal. As we do not know the style of the battery, we cannot give a formula for the solution. Better write the makers of the apparatus.

(4431) D. W. McG. asks: In transmitting motion by friction gears at right angles, using a flat disk for the driver and a square-faced wheel for the driving wheel, what percentage of power will be lost by friction? Is it practicable to use this style of gearing to transmit 8 horse power, and what is the relative efficiency of thisstyle of gear, and ordinary bevel gear? Is the perpetual screw or worm wheel a practical method of transmitting 8 horse power, and what percentage of power will be lost by friction? A. The transmission of power as above described is not admissible for continuous action or for large quantities of power The system is not economical, but may be very convenient for variable motion. The friction depends so much upon the width of the bearing surface and its distance from the center of the driving wheel that no definite percentage can be given. It should only be used for light and variable motion. If definite speed only is required, there is but little loss of power by friction trans mission to angular lines with bevel wheels faced with leather, such being in use on centrifugal driers. The transmission by worm screw gear is practical and very useful for great reduction in speed, and is fully as conomical in friction as the same reduction of speed by toothed gear.

(4432) F. W. J. asks: What is meant by the pass-over valve on a triple-expansion marine engine? Also, how can I find the north and south poles of a dynamo when in motion? How can I tell which is trifugal pump force the water through the discharge or does it form a vacuum? A. The pass over valve is used pressure cylinder for starting the engine. You can find polarity of the dynamo by placing a compass needle find the polarity of the brush. A centrifugal pump dethe centrifugal force of the revolving water between the blades of the pump.

(4433) E.J. G. says: I wish to put in closets and bath rooms. We have no sewerage system. Would there be any objection to using a well for the sewer pipe to discharge into if properly covered? It being about 30 feet deep and not closer than 300 feet from any other wells? A. It would be dangerous to use the well as a receptacle for sewage. It would be likely to poison the neighboring wells, perhaps within a radius of half a mile or more. The safer way will be to make a tight cistern, for the sewage contents, to be emptied and taken away periodically.

(4434) C. H. B. asks: Will you kindly inform a constant reader, which is the proper way to lay a bell joint water pipe? Should the bell point (4424) O. W. C. asks (1) how to polish toward the pump and against the pressure or point the opposite way. There is a right and a wrong way. Will you kindly give me the correct way? A. The practice in long lines is to lay the spigot end down stream or down hill. The bell end against the direction of flow or toward the pump. This is not always practicable in short lines with tees and crosses. Hence convenience of making joints is first considered. In vertical lines the bell end mnst always be up.

(4435) H. P. L. asks: 1. Give formula by which I may use certain chemicals which will gradually develop a steady pressure when confined, and not in a sudden or energetic manner. A. Magnesium limestone, and hydrochloric acid or a very compact marble may be used instead of the limestone. 2. Also a solution which willimparta bright, silver-like appearance to metals, and which will cause it to remain so for some

(4428) Reader asks: 1. What is the lution should be used to give the best results ? A. Yes; dilute strong acid with five volumes of water,

(4438) T. B. W. writes: 1. Give a simple method of determining the purity of the so-called dry white lead and lead in oil now on the market. A. Drywhiteleadshould be completely soluble in nitric (4429) W. J. C. asks (1) how to remove acid. If ground in oil, the oil may be removed by benlic state ? A. It will more or less completely, depending on the percentage of the oil present? 3. If so, what proportion of lead should be gotten from same i varies in composition, and the oil may be of different proportions.

Replies to Enquiries.

The following replies relate to enquiries recently published in SCIENTIFIC AMERICAN, and to the number

E. F. H.-The United States public debt, less cash in the Treasury, has decreased each year for the last five years, and each year since 1871. The 1st of July, 1887, it was \$1.175,168.075. The 1st of June. this year, it was \$843,353,356.

TO INVENTORS.

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(4425) C. B. S. ask for an ink eraser. A. 1. Mix equal parts of oxalic and tartaric acids in powder. When to be used, dissolve a little in water. It is poisonous. 2. Oxalic acid mixed with citric acid may be used. 3. Equal parts of cream of tartar and citric acid in solution with water.

(4426) D. L. N. asks for a sticky fly rection as his horse ?" A. The proper word is mopaper. A. 1. Melt resin and add thereto, while soft, sufficient sweet oil, lard, or lamp oil to make it, when cold, about the consistency of honey. Spread on the condition of a body as to its weight and volume for writing paper, and place in a convenient spot. It will soon be filled with ants, flies, and other vermin. 2. Boiled linseed oil and resin, melt and add honey. Soak the paper in a strong solution of alum and then dry before applying the above.

chess game are called? A. The chessmen are called kings, queens, castles, knights and pawns. 2. How much is an ounce chloride of platinum worth? A. Chloride of platinum is worth \$90 a pound.

time. A. A solution of nitrate of mercury in water will work on brass or copper, but will ruin the metal. 3. What sort of battery would be best for a small neck tie pin light as regards, power, size, and expense? A. A pocket storage battery. It is best to buy one rather than to attempt to make one.

(4436) T. E. R. asks: What is the difference between momentum and inertia ? Is it proper to say, " The trick rider in acircus finds it easy to jump from his horse through a ring and back to the horse again, as his inertia carries him along in the same di-

mentum, which indicates weight under motion. Inertia is from mert-motionless, and in physics means receiving or resisting motion.

(4437) "Inventor" asks: 1. What acids have the effect of acting upon or softening granite or other stone, or what tools would give the best results besides the ordinary drills ? A. No acid has this effect (4427) H. W. asks how the dolls of a to a sufficient extent to be of any practical value. The sand blast and McCoy's pneumatic tool are of value. For the former, see SUPPLEMENT 416: latter, see Sci-ENTIFIC AMERICAN, No. 9, vol. 61. 2. Wouldaguafortis act upon cast steel ? If so, to what extent ? What sol Ca

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