Scientific American.

TO CORRESPONDENTS.

G. S., of Ind.-John Rosch, optician, No. 79 Nassau st., manufactures good daguerreotype apparatus, also James Green, 422 Breadway. S. D. M., of Pa .- The Wilson Sewing Machine

would probably answer your purpose better than any other, if you wish it for family sewing or for a small tailoring establishment. Lerow& Blodgettconstruct a good machine, but theirs is betteradapted for large establishments.

P. R. & Co., of O .- For the same device as yours, see engraving of David Anthony's patent HorsePower, on page 393, Vol. 3, Sci. Am. Mr. Anthony's claim covers all the parts found in your machine ; see page 12, same Vol

J. R. L., of Fla .- You are is an error as regards the first principles of ballooning, it is apparent from your communication. Had we time we could quote from those who had lived ages before you were born, who had precisely the ideas you advance, but, like yourself, they were never quite able to demonstrate the thing by experiment.

L. B. G., of Pa.-If such a claim as you mention would answer your purpose, we think a patent might probably be obtained for you. Send in your model and let us see that.

H. G. H., of N. C .- Your name we have entered upon our subscription book, and have sent the back numbers as you requested. Your subscription will not expire again until the end of Vol. 8. The information you solicit concerning Kirkpatrick's Thresh ing Machine we cannot give.

W.H. of Ind.-Your letter, with funds, came duly to hand.

G. W. C., of Ind.-Scott's Engineers' and Mecha nics' Assistant is the work you need : price \$24, 2 Vols. You can order it through our office if you desire it.

W. P., of N. Y .- You are not quite correct, for the rollers and the water are different-the logs are partly submerged-but the analogy is nearly correct. B., of Boston.-Yours will be attended to.

E. M. C., of R. I.-" Momentum " and " quantity" of "motion" are synonomous-it is the product of

the mass by the velocity. In estimating the momentum of two moving bodies, we multiply the virtual velocity of each into its weight. If the large ball has a velocity of S feet per second, and the small one 6 times that, it comes to about the same thing. The other partto which you refer, was noticed the day before your letter was received, and will be set right.

L. T., of N.Y.-Malleable iron is manufactured at Worcester, Mass., by Macfarlane & Co., but yours is quite a new process, and we believe a good and patentable one.

S. C., of Phila.-If an assignment of a patent isnot recorded in the Patent Office three months after date, it does not affect the right of the assignee, it does not go back to the patentee. The neglect of recording only prevents the assignee from suing for infringement until it is recorded. You must sue for your notes.

J. W. O., of N. Y.-We received yours on the "Sci. Men.," but waited for the completion of the record from you before commencing to publish. Will you send the second part soon ?

C. S. J., of Cin .- If the application for the patent was not made for two years after the said machine was exhibited, it might be considered an abandon ment of the myention, but this could only be decided at a court of law. We believe the patentees would be successful against you, and would advise you to be cautious in the matter.

8. H. N., of Phils .- The hydraulic machine you refer to, was nothing more nor less than a rotary water engine, like Hale's. We have seen Hale's operate by steam, and also by a Croton water pipe. The power of the machine is according to the quantity of water and height of the fall.

G. W. P., of Williamsburg.-You are perfectly right; the "water pendulum," as it has been termed, is familiar to astronomers.

J. B., of N. J .--- The government has published n work on explosions since 1848. The best way to collect statistics on the subject, is to perase files of some daily papers. B. H., of N. Y.-A moving horizontal cutter and

pressure rollers, is not patentable, neither is it an infringement : it is old and is not to be compared with the revolving cylinder.

T. H. S., of M. D .- The owners of property in Broadway object to a railroad in toto, on account of private carriages, not omnibuses. It would do no good topublish your letter.

H. H. H., of N. Y.-If you will peruse the second volume of the Scientific American, you will find a complete series of articles on various kinds of painting, among which is a chapter on water colors well

J. C. S., of N. Y .- Yours on the raft has been rewived and will be published next week. It will be very difficult to base a elaim on the form of the hull. but if it is new and useful it is patentable : theshape itself is patentable, also the mode of producing the proper form.

W. Mt. S., of N. Y .- There is Parnella's Applied Chemistry, which is valuable on coal, oil, and other gases ; the price is \$15. Johnson on American Coals isa U.S. Report, and is a good one-not sold. Knapp's Chemistry is \$4 per volume, and is good on caloric and the gases. The best work on caloric-the use of fuel-is a French work, the name of which we forget : if you could get the evidence adduced before Chancellor Walworth, on the Wheeling Bridge Case, you would get much of the information you desire. J. S. M. of 0.-Our correspondence is so large that it is difficult to answer letters. The flax movement

description was from the London Mechanic's Magazine. We have got a full description, but it would require us to write you a number of pages to give you the proper idea.

J. A. S., of St. Louis .- Your tale is well told and interesting, but not of universal interest enough to bear publishing in the Sci. Am.

W. H. C., of Mass .- We are obliged to you for directing attention to the error; it should have been three times instead of four, as it acquires the velocity of 32 feet per second, which, if added to the 16, make 48 feet. It will be corrected.

Money received on account of Patent Office busi ness since June 10 :

E. S. C., of Mass., \$15; R. W. P., of Mass., \$25; G. A. W., of Pa., \$30; G. H. K., of Ill., \$3,50; R. M. F., of N. Y., \$40; N. S., of N. Y., \$20; A. R., of Vt., \$100; E. G. B., of Me., \$10; T. H. D., of N. II., \$20; E. B., of N. Y., \$25; G. S., of O., \$10; C. S. G., of Vt., \$30. Specifications and drawings of inventions belonging

to parties with the following initials, have been for warded to the Patent Office since June 10 ;

R. W.P., of Mass.; E. S. C., of Mass.; G. H. R., o Ill; R. M. F., of N. Y.; G. S., of O.; C. S. G., of Vt

Post Office Stamps.

In consequence of the change of rates on the first of next month, we would respectfully notify the public that henceforth, until further notice, Post Office Stamps will not be received at this office in payment for subscriptions to the Scientific American.

New Edition of the Patent Laws.

We have just issued another edition of the American Patent Laws, which was delayed until after the adjournment of the last Congress, on account of an expected modification in them. The pamphlet contains not only the laws but all information touching the rules and regulations of the Patent Office We shall continue to furnish them for 121-2 cts. per copy

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years can obtain a copy by addressing a letter to this office; stating the name of the patentee, and enclosing one dollar as fee for copying.

Back Numbers and Volumes.

In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement :

Of Volumes 1, 2, and 3-none. Of Volume 4, about 20 Nos., price 50 cts.

Of Volume 5, all, price, in sheets, \$2; bound, \$2,75 Of Volume 6, all back Nos., at subscription price.

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Terms of Advertising : One square of 8 lines, 50 cents for each insertion 12 lines, 75 cts., " " " " 16 lines, \$1.00 Ad ertisements should not exceed 16 lines, and outs sannot be inserted in connection with them at any

price.

American and Foreign Patent Agency.

Agency. IMPORTANT TO INVENTORS.—The under-signed having for several years been extensively esgaged in procuring Letters Patent for new mechani-cal and chemical inventions, offer their services to in-ventors upon most reasonable terms. All business entrusted to their charge is strictly confidential. Pri-vate concultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not mour the expense of attending in person, as the preliminariescan all be arranged by letter. Mo-dels can be sent with asfety by express or any other convenient medium. They abound not be over 1 foot

MECHANICS' FAIR.—The Middlesex Mecha-nic's Association will epen their first exhibition for the encouragement of the mechanic arts and manufactures in the city of Lowell, on Tuesday, Sept. 6, 1851. The Committee of Arrangements for this l 6. 1851. proposed Fair, respectfully invite and solicit all per-sons engaged in the various branches of mechanism. manufactures, science, and art, to present specimens, of their various products for exhibition and premium. Ladies are cordially invited to present specimens of their ingenuity and taste. Preminms will be awardet a the articles presented may merit. Articles for exhibition should be sent on or before Sept. 10th. For more particular information or copies of the circular, address (post-paid) J. A. Beard. Esq., Supt., Lowell, Mass. Ly order, OLIVER M. WHIPPLE, Chairman. M. C. BEXANT. See'y M. C. BRYANT, Sec'y. 40 6+

CHOOL FOR ENGINEERING, 650 Honeton st., N. Y.-Mr. VICTOR BEAUMONT, Civil En-gineer, graduate from "L'Ecole Centrale des Arts et Manufactures," of Paris, is about opening a new course of lessons in the French and English langua-ges, in all the branches, theoretical and practical, con-nected with Civil Engineering. For details and refe-rences apply at the School. 334*

AW'S PLANER FOR PLANK, BOARDS LA AW'S PLANER FOR PLANER, BOARDS, JACO., is now attracting much attention on account of its effectiveness, the excellence of its work, its simplicity, and consequent economy. Machines are now in operation in Brooklyn, New York City, and at various points South and West. Rights or ma-chinesfor sale by H. LAW, 23 Park Row. 35 tf

MECHANICS' INSTITUTE FAIR.-MECHANICS' INSTITUTE FAIR.—The at-tention of Mechanics, inventors, and artisans is especially called to the Polytechnic Exhibition, which will open at the rooms, cor. Bowery and Division st, on the 15th; of May. Those who wish to exhi-bit models, machinery, &c., of mechanical skill, and those who would like to carry on, permanently, any mechanical occupation that would be in any way cu-rious or attractive to visitors, are requested to call on the Actuary. Steam power will be provided. Well-ighted, warmed, and airy rooms can be had on liberal terms. As this Exhibition is permanent, an excellent opportunity is offered to skillful mechanics to bring themselves into notice. Articles may be sent in im-mediately and will be taken care of and insured. Z. PRATT, Prest.; T. C. DODD, Actuary. 34tf -Theat

PRATT, Prest.; T. C. DODD, Actuary. 34tf LEONARD'S MACHINERY DEPOT, 109 Pearl st. 60 Beaver, N. Y.—The subscriber is constantly receiving, and offers for sale, a great va-rlety of articles connected with the mechanical and manufacturing interest, viz., Machiniste' Tools—en-gines and hand lathes, iron planing and vertical drilling machines, cutting engines, slotting machines, bolt cutters, slide rests, universal chucks, &c. Car-penters' Tools- mortising and tennoning machines, woodplaning machines, too Etsem Engines and Boil-ers, from 5 to 100 horse power. Mill Gearing,— wrought iron shafting, brassand iron castings in ide to order. Cotton and Woolen Machinesry furnished from the best makers. Cotton Gins, hand and pow-er, and power pressee. Leather Bandmg of all widths, m de in a superior manner, from the best oak tanned leather, Manufacturers' Findings of every de acription—bobbina; reede, abuttles, temples, pickers, oard clothing, roller cloth, potato and wheatstarch, oils, &c. P. A. LEONARD. 33tf.

PATENT CAR AXLE LATHE.—I am now manufacturing and have for sale the above lathes: they will turn and finish six sets per day, weight 5,000 lbs., price \$600. I have also for sale my Patent Engine Screw Lathe, for turning and chucking tapers, cutting screws, and all kinds of common job work; weight 1500 bs., price \$225, if the above lathes do not give good satisfaction, the money will be refunded on the return of the lathe, if within six months J. D. WHITE, Hartford, Conn. nonths. 3213*

COTTON MACHINERY FOR SALE.-Viz., 4 Filling Frames, almost new; 1-16 Strand Speeder; 1 Warper; 1 Sapper; 2 Wind-mill Fans; 1 Reel; 1 Yarn Bundling Press; 1 Band Machine, and a large lot of tin cans. Apply to ELI WHITNEY, New Haven, Ct. 37 6*

WOODWORTH'S PATENT PLANING MACHINES: 1851 TO 1856.—Ninety-nine hundredths of all theplaned lumber used in our large cities and towns continues to be dressed with Woodoncess and towns continues to be dressed with Wood-worth's machines. Persons holding licenses from the subscriber are protected by hum against intringement on their rights. For rights in the unoccupied coun-ties and towns of New York and Northern Pennsyl-vania, apply to JOHN GIBSON, Planing Nills, Alba-ny, N. Y. 28 7ecw*

WOODWORTH'S PLANING MACHINE. For sale, the right to use this justly celebra-ted labor-saving machine in the following States, viz.: Pennsylvania west of the Allegheny Mountains, Vir-ginia west of the Blue Ridge, Ohio, Indiana, Kentac ky, Tenneesee, Wisconsin, Iowa, Missouri, Arkansas, Texas, Louisiana, Florida, Alabama, and Mississippi. For particulare apply to the Proprietor, ELISHA BLOOMER, 344 Broadway. BLOOMER, 364 Broadway.

GREAT REDUCTION IN PRICE.-Themost **G** REAT REDUCTION IN PRICE.—Themost and medical recipes, rules with regard to the recove-ry and preservation of health, an account of the dif-ferent medical theories of the day, useful tables, &c., entitled "THE GRAEFENBERG MANUAL OF HEALTH." It is complete in one volume of seven parts, and is beautifully printed upon fine paper, in a convenient form of 300 pages. The immense success which has attended the sale of previous editions, has warranted a reduction in the price of this (the 7th) edition, from 50 to 25 cts. per copy. Any number of copies, from one upward, will be forwarded upon the receipt of the money, (post-paid). Address THE receipt of the money, (post-paid). Address THE GRAEFENBERG COMPANY, 214 Broadway, NY., or this Office.

A CARD.—The undersigned beg leave to draw the attention of architects, engineers, machi-nists, opticians, watchmakers, jewellers, and manu-facturers of all kinds of instruments, to his new and extensive assortment of fine English (Stubs) and Swiss Files and Tools, also his imported and own manufactured Mathematical Drawing Instruments of Swiss and English style, which he offers at very rea-sonable prices. Orders for any kind of instruments will be promptly executed by F. A. SIBENMANN. will be promptly executed by F. A. SIBENMANN, Importer of Watchmakers' and Jewellers' Files and Tools, and manufacturer of Mathematical Instru-ments, 154 Fulten st. 29 3m*

ments, 154 Fulten st. 29 3m* D ICK'S GREAT POWER PRESS.—The public are hereby informed that the Matteawan Company, having entered into an arrangement with the Patentee for the manufacture of the so-called Dick's Anti-Friction Press, are now prepared to exe-oute orders for the following, to which this power is applicable, viz.—Boiler Punches, Boiler Plate Shears, Saw Gummers, RailStraighteners, Copying and Seal-ing Presses, Book and Paper Presses, Embossing Presses, Broessen for Baling Cotton and Woollen Goods —Cotton, Hay, Tobacco, and Cider Presses; Flax-seed, Lard, and Sperm Oil Presses; Siump Extract-ors, & o. & c. The convenience and celerity with which this machine can be operated, is such that on an average, not more than one-fourth the time will be required to do the samework with the same force required by any other machine. WILLIAM B. LEONARD, Agent, 251f No. 66 Beaver st., New York City.

MACHINES FOR CUTTING SHINGLES. ACHINES FOR CUTTING SHINGLES. The extraordinary success of Wood's Patent Shingle Machine, under every circumstance where it has been tried, fully establishes its superiority over any other machine for the purpose ever yet offered to the public. It received the first premium at the last Fair of the American Institute—where its operation was witnessed by hundreds. A few State rights re-main unsold. Patented January 8th, 1850,-13 years more to run. Terms made essy to the purchaser. Address, (post-paid) JAMES D. JOHNSON, Redding Ridge, Conn., or Wm. WOOD, Westport, Conn.. All letters will be promptly attended to. 37tf

Counsellor at Law, and Solicitor in Equity, Philadelphia, Penn.

To PAINTERS AND OTHERS.—American Anatomic Drier, Electro Chemical graining colors, Electro Negative gold size, and Chemical joi Stove Polish. The Drier, improves in quality, by age—is adapted to all kinds of paints, and also to Printers' inks and colors. The above articles are compounded upon known chemical laws, and are submitted to the public without further comment. Manufactured and sold wholesale and retail at 114 John st., New York, and Flushing, L. I., N. Y., by QUARTERMAN & BON, 23.1

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Painters and Chemists

M ACHINERY.-S. C. HILLS, No. 12 Platt Street, N. Y., desler in Steam Engines, Boil-ers, Iron Planers, Lathes, Universal Chucks, Drills Kase's, Von Schmidt's, and other Pumps, Johnson's Shingle machines, Woodworth's, Daniel's and Law's Planing machines Dick's Presses, Punshes, and Shears; Mortie'r and Tennoning Machines, Belt-ing, machiner' ou!; Beal's patent Cob and Corn Mills; Burr Mill, and Grindstones, Lead and Iron Pipe, &c. Letters to be noticed must be post paid. 35tf

BAILEY'S SELF-CENTERING LATHE, **More and Control of Control of**

FOREIGN PATENTS.—PATENTS procured in GREAT BRITAIN and her colonies, also France Belgium, Holland, & c., & c., with certainty and dis-patch through special and responsible agents ap, joint-ed, by, and connected only with this establishment.— Pamphlets containing a wynapsis of Foreign Patent lawe, and information can be had gratic on application JOSEPH P. PIRSSON, Civil Engineer, 37tf Office 5 Wall street, New York.

RAILROAD CAR MANUFACTOR Y.-TRACY & FALES, Grove Works, Hartford, Conn. Passage, Freight and all other descriptions of Rail-road Care, as well as Locomotive Tenders, made to order promptly. The above is the largest Car Fac-tory in the Union. In quality of material and in workmanship, beauty and goed taste, as well as strength and durability, we are determined our work shall be unsurpassed. JOHN R. TRACY. 3967. THOMAS I. FALLER 39tf. THOMAS J. FALLS.

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1 1-4 to 7 inches in di-ameter. The only Tubes of the same quality and manufacture as thoses so extensively used in Eng-land, Scotland, France and Germany, for Locomo-tive, Marine, and other Steam Engine Boilers. THOS. PROSSER & SON, Patentees, 1610 25 Platt st., New York.

ATHES FOR BROOM HANDLES, Etc. Ve continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pil-lars, Rode and Rounds; Hee Handles, Fork Handles,

and Broom Handles. This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dise and pattern to the size required. It will turn smooth over swells or depressions of 3.4 to the inch, and over swells or depressions of 3-4 to the incn, and work as smoothly as on a straight line, and does ex-cellent work. Sold without frames for the low price of \$25—boxed and shipped, with directions for set-ting up. Address, (post paid) MUNN & CO., At this Office.

 worth your attention. S. T. J., of Mass.—The engravings for your invest toon will cost \$10, and will be of ten times that benefit to you. R. K., of N. Y.—We have no doubt but you have lost a valuable patent, all because you were too slow about applying for it. Your friends gave you bad at vice. S. R. T., of Mass.—We cannot publish any more about the pendulum experiment at present—enoug said. A. J. H., of Pa.—The water-wheel about which you speak is exactly like some rotary engines : it is no by any means, so good as any one we have presente in the articles on Hydraulics. T. J., of Obio.—You need not be afraid of the at makes no matter what peoplemay sayabout gas light carbon is the main constituent. 	 Having Agents located in the chief oities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our businessreceivesthe especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents. In theitem of charges alone, parties having business to transactabroad, will find it for their interest to consult with us, in preference to any other concern. MUNN & CO., Scientific American Office, 128 Fulton street, New York. SCRANTON & PARSHLEY, Tool Builders, with beds d planedand sorew and gearing out, have now made arrangements to accommodate that class of customers; this arrangement will enable small shops, with a little more than half of the smount of teady csch, to get them a new lathe. Cuts of these lathes and other tools can be had by addressing as above (post-paid). 	Inserved and the primery and the primery and secondary currents are united. The curse performed by this instrument now are, in some instances, almost incredible. For proof of this I refer to my new work lately issued from the press, under the title of "The Medical Application of Electro Nagneticsm." Mail edition, 25 cents. Postage, 6 cents. The Torpedo Magnetic Machines are put up in next rosewood cases of a very portable size. Price, \$12. To agents they are put at \$9. Postmasters, druggists, store-keepers, and all who are willing to be instrumental in relieving the sick, are respectfully invited to act as agents. Address Dr. S & SMITH 2971-2 Broadway, N. Y., or MUNN & CO., 128 Fulton st., N. Y. Can be sent by Express to all parts of the Union. 204* MECHANICAL DRAWINGS.—The subscriber, having returned to the city, will resume his business as Mechanical Draughteman and Agent for the sole of Patents. Residence Weet Filteenth st.	Steam Engines, now finishing, from five to four- teen horse-power; also one of 15 and one of 25. Hav- ing just enlarged my manufactory, I am now prepa- red to make all sorts, from 2 to 56 horse-power, of the best materials in all their parts. One second-hand en- gine of 8 horse-power, two ylinders, in good order, for sale, with new boiler, \$575. Also Galvanized Chain for chain-pumps. AARON KILBORN. No. 4 Howard st., New Haven, Conn. 32 1/* RON FOUNDERS MATERIALS—viz., fine ground and Bolted Black Lead, Soapstone, Le- high, Charcoal, and Sea Coal Facing Dusts. Iron and brass moulders Sand, Fire Clay, Fire Sand, and Kaolin In barrels; also best Sootch Fire Bricks, plain, cupola, and side arch shaped, for sale by G. O, ROBERTSON, Liberty Place, (between 57 and 59 Liberty st., N.Y. 366* WAATTS & BELCHER, Manufacturers of TTT
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Scientific American.

Scientific Museum.

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For the Scientific American. Solar Influence.

"The sun's rays," says Herschel, " are the ultimate source of almost every motion which takes place on the surface of the earth. To the varying influence of this grand magazine of heat and light, our globe, in its revolutions and circumvolutions, is ever exposed; and herein have arisen innumerable agents which have continued through all time to modify the face of nature. These modifying causes may be divided into atmospheric, aqueous, igneous, and organic. The former two classes exert a degrading, the latter an elevating influence. The former, were they not counterbalanced by the latter, would eventually wear down the land to a level with the ocean. Atmospheric forces act mechanically and chemically of The degradation of solid constituents is greatly indebted to the abrasion of aerial currents. Frost, also, exercises a powerful influence in modifying the surface configuration of the earth-crumbling down the flinty cliff and giving rise to the ice berg and avalanche, while the receptive and emissive powers of rocks in respect to radiant caloric, lend a powerful aid to the work of decay, called weathering By heat, moreover, are produced those disturbances in the electric equilibrium of the atmosphere, which produce the phenomena of terrestrial magnetism. Aqueous agents exert a more obvious influence in changing this terrene crust. Their mode of action is mechanical and chemical; and their results are distinguished as meteoric, fluviatile, lacustrine, or oceanic. Water, acting through the atmosphere, or by running streams, first circulates in vapors through the air by the efficacy of heat. Igneous agency may exert itself chemically, as in the productions of new compounds, gaseous admixtures, etc., or mechanically, as when it elevates and fractures the superficial substance of the earth. The elastic power of subterraneous fires, relieved by degradation, breaks forth in points where resistance is feeble; and thus, indirectly, the phenomena of volcanic activity is brought under the general law of solar influence. Organic agency presents itself under two heads-vegetable and animal. From unorganized matter plants are elaborated by the vivifying action of solar rays, and become, in turn, the support of animale and the source of those great deposits of dynamical efficiency-coal strata. Animal accumulations are chiefly discernible in the exuvial of shell-fish and coral zeophytes. The construction of reefs is still owing, in a great measure, to the promiscuous aggregation of marine debris, conveyed by tidal currents. J. W. O.

To Preserve Vegetable Matters for Exportation, &c.

Take potatoes, pare them, and cut them in slices, and immerse them in boiling water for ten minutes. After this, dry them in an oven at about 100 or 120 degs. ; they are then submitted to the powerful pressure of a press, when they should be wrapped in tin foil and kept in air-tight vessels until required for use. Peas, beans, &c., may be treated in the same manner. Any vegetable may be dried in an oven at about 125 deg., then ground in a coffee mill, after which they should be pressed and kept in air-tight tin boxes; pumpkins, &c., may be treated in this manner. By these simple directions our farmers may wisely pro-

us with a simple explanation of the formation of mineral combustibles. Red charcoal is produced when the wood is heated in a close vessel at 356° Fahr. This charcoal makes the best sporting powder.

For the Scientific Americ n. Hydraulics. (Continued from page 312.)

THOMSON'S RE-ACTION WHEEL .- The accompanying engraving, fig. 54, is a vertical section of a re-action water wheel, for which patent was enrolled on the 3rd of last July (1851) in the London Patent Office. The buckets are curved. A is the wheel; B is a fixed case with joints. The wheel runs watertight in this case; v v are vanes in the wheel, placed between the top and bottom plates forming radiating passages. The water enters at the periphery, and the wheel is what is known here at a "centre discharge." The whole, along with the shaft, may be cast at once. The inner ends of the vanes are turned





backwards, as represented, so that when the proper average quantity of water is flowing through the orifices, oo, it may be sent backwards from these orifices with nearly the same velocity as that with which they are moving forwards, so that the water, on leaving the vanes, may have little or no velocity of rotation, but only a motion towards the axis of the wheel. Some of the vanes, it will be observed, stop short and do not run to the centre; "this," the patent says, "is to prevent them from occupying too much space, and impeding the flow of water." [A very erroneous idea; why not have less of them? The point of water discharge should be that of the greatest contraction in a re-action wheell. The water coming to the wheel flows through one or more of the entrance orifices, FF. ZZ are nozzles, terminating at one end in the entrance orifice, and at the other in the supply pipe. After flowing into the case, the water passes along the inside of its circumference, which is of a spiral form, so that the water is made to enter the wheel with a whirling motion. The water has nearly the same motion in direction and velocity as the circumference of the wheel. The patentee is Mr. John Thomson, engineer, Glasgow, Scotland. It

will be observed that the spiral to give the water a whirling motion was employed by Parker, in 1829, in the American patent of that date, only this wheel is a centre discharge, the old American patent was an outward discharge. The form of the buckets of this wheel, has also long been known and used in America. In fact the whole of its features are old in America, but it appears to be a good wheel, and without a knowledge of our American ones, it does the inventor a great deal of credit. He employs a regulator, a a, but this is also known here and we have seen wheels with one, two, three, and four water trunks. The sluices are connected to the ring, e, which can be raisedor lowered by vertical rods attach-

Cotton Factories South and West.

fifteen thousand bales per annum. He estimates the capital invested in these establishments at about one million of dollars, and the number of operatives they give employment to at one thousand six hundred. There are in Alabama twelve factories, with a capital of five hundred thousand dollars, centaining fifteen thousand five hundred and eighty spindies and about three hundred looms, and consuming about five thousand bales of cotton annually. It is said that machinery for others has been contracted for, sufficient to make the number of spindles twenty thousand and the looms five hundred and fifty. In these three States there are ninety-eight factories and one hundred and forty thousand spindles.

The Screw for Steamers.

In his examination before Lord Jocelyn's steam navigation committee, England, Captain Claxton, whose connection with the construction and sailing performances of the Great Western and Great Britain screw-steamer has gained for him a deservedly-earned reputation, gave evidence in favor of iron steamers and of the screw, which he avers, must, ere many years elapse, be applied universally as the motive power of sea-going vessels. To iron built vessels Cantain Claxton gives a decided preference, the advantages which he ascribes to them being durability, inexpensiveness in repairs, greater capacity, in proportion to tonnage, than wooden vessels, for cargo, healthiness, and in swift sailing. As regards durability, he described the state of the Great Britain, when lying for many months exposed to a series of heavy gales in Dundrum Bay. It was also mentioned that, although the quantity of cockles accumulated on the bottom of the Great Britain since lying in still water at Liverpool was so large as to sell for \$27 in the market, no ill effects were apparent when they were scraped off.

Immense Coal Bed.

Mr. J. Dill has communicated to the Fami ly Visitor a brief account of a wonderful deposit of mineral coal at Straitsville, Perry county, Ohio.

"Reports of an immense structure of coal in the vicinity of this place, have long been circulated in Central Ohio. I first heard of it in the winter of 1848-9; it was then reported to be about ninety feet thick. Further examinations ascertained the thickness of the uncovered part, in the face of a deep ravine, at 112 feet. A few days since a gentleman of high standing informed me that an acquaintance of his, with some others, had stripped the upper surface of the bed, and bored through the coal stratum to ascertain its thickness, and found it to be one hundred and thirty-eight feet.

About ten miles south of that mine, I found vein of carbonate of iron, implanted similar to a slate structure, with an easy cleavage, which is full of well preserved leaves of the coal formation. Some of them on breaking open, exhibit the green of the leaf. The ore. by analysis of Prof. Rodgers, contains 44 per cent. of iron."

Ingenious Invention.

M. Faas, an ingenious German of Philadelphia, has commenced the exhibition of an automaton Tyrolean band of instrumental performers. They are as large as life, and the inventor has succeeded in rendering their movements perfectly natural, while the music performed is admirable. They can be arranged to perform any piece of music in a shorter time than a living band can be drilled [ERRATUM.-In No. 37, page, 304, at the into a new overture or march. The figures are nine in number, two being flute players, one clarionette, three bass horns, two trumpets, and one tap drummer. It has cost the inventor ten years of study and labor. We hope It has been estimated that there are now in when he has them completed, we shall have operation in Georgia forty cotton mills, emthe pleasure of hearing the dumb whistle once more. We have seen three automatons as large as life discourse sweet music, but ten

spindles and seven hundred looms, consuming Stream. At about thirty miles southwest from Key West, bottom was obtained at 730 fathoms; but at another point, the sounding line, at the depth of 3,000 fathoms, was cut off, as was supposed, by a sword fish. The sounding was continued, unsuccessfully, with a line of twine. The Hetzell returned to Key West, on the 8th inst, after a short visit to Havana.

Area of the English Coal Mines.

The coal area of the British islands amounts to 12,000 square miles, being about 1-10th of the entire area of the country ; the annual production being 32,000,000 tons.

LITERARY NOTICES.

ICONOGRAPHIC ENCYCLOPEDIA.—Part 20 of this use-ful and beautiful work is now published and ready for sale by Mr. Rudolph Garrigue, No. 2 Barclay st., this city : it contains 20 plates of various celebrated architectural structures, both exterior, interior. and plan views ; they are beautiful. As we have said be-fore, so we say again, the plates alone of this work render it one of the cheapest and best books ever pub-lished.

BOOKS FOR RAILEOAD ENGINEERS. &c.-We have received from Mr. John Wiley, publisher and book-seller, No. 8 Park Place, this city, "Salt's British Railway and Commercial Information;" * Salt's Sta-tistics and Calculations necessary to Persons connect-ed with Railroads and Canals," and "Bradshaw's Map of the Railways in France, Belgium and Swit-zerland." These works are valuable and interesting to those engaged on our Railroads and Canals.

Hydropartic Encyclopedia. We have received the first number of this work, edited hy Dr. Trailand published by Messrs. Fowlers & Wells, this city. It is to be issued in 3 numbers of more than 100 pages each : the entire work will only be \$2. The object of the work is to bring together in a condensed form, the facts and principles in medicine and its collateral sciences pertaining to the philosophy of life and health. From the number before us, we believe this work to be of a most excellent character.

DICTIONARY OF MECHANICS AND ENGINE WORK. No. 31 of this work, by D. Appleton & Co., N. Y., contains articles on the Printing Press, Pumps, Steam and Rotary Punching Machiner, Railroads, &c.

HUNT'S MERCHANT'S MAGAZINE, for June.—This Magazine has a world-wide reputation, and justly is it deserved. The articles in this number are excel-lent in every respect.

J. D. Norris, of the "Yankee Blade," will accept our thanks for his kind remembrance. The Blade is to all our friends. Mathews, Stevens & Norris, publishers, Boston, Mass., \$2 per annum.

"Graefenberg Manual of Health."—By reference to an advertisement in another column, it will be per-ceived that the price of this valuable work is reduced from 50 to 25 cents. We have spoken in high terms of itseveral times, and we presume its sale will be very much augmented. We can send them by mail to any of our subscribers who may be desirous of ob-taining a copy.



INVENTORS AND MANUFACTURERS. The Best Mechanical Paper I THE WORLD!

SIX TH VOLUME OF THE SCIENTIFIC AMERICAN.

The Publishers of the SCIENTIFIC AMERICAN

The Publishers of the SCIENTIFIC AMERICAN respectfully give notice that the SixTE Voluma of this valuable journal, commenced on the 21st of September last. The character of the Sci-ENTIFIC AMERICAN is too well known throughout the country to require a detailed account of the va-rious subjects discussed through its columns. It enjoys a more extensive and influential diroula-tion than any other journal of its class in America. It is published weekly, as heretofore, in Quar-to Form, on fine paper, affording, at the waw of the year, an ILL USTRATED ENCYCLOPEDIA, of over FOUR HUNDRED PAGES, with an Index, and from FIVE to SIX HUNDRED ORIGI-NAL ENGRAVINGS, described by letters of ro-ference; besides a vast amount of practical informa-tion concerning the progress of SCIENTIFIC and MECHANICAL IMPROVEMENTS, CHEMISTRY, CIVIL ENGINEERING, MANCFACTURING in its various branches, ARCHITECTURE, MASONRY, BOTANY,-in short, it embraces the entire range of the Aris and Sciences. It also possesses an original feature not found in any other weekly journal in the country, viz., an

It also possesses an original feature not found in any other weekly journal in the country, viz, an Official List of PATENT CLAIMS, prepared ex-pressly for its columns at the Patent Office, --thus constituting it the "AMERICAN REPERTORY OF INVENTIONS." TERMS-S2 avear: \$1 for siz -----

fit. The vegetables may be put into a cotton ed to it at the ears, f f. cloth bag and immersed in the hot water, and a screw or hydraulic press will answer the 38th line from the bottom for four times, read purpose for pressing. No family in the countwice the velocity.] try need be without a variety of all kinds of vegetables throughout the entire year.

Charcoal.

G.

Wood contained in a vessel entirely closed ploying near sixty thousand spindles and conand exposed to a heat of 752° Fah., undersuming forty-five thousand bales annually. In this estimate which seems to be below the goes a real fusion; it rune, agglutinates, and adheres to the vessels. After cooling it is true mark, no calculation is made of the pafound to have lost all its organic texture, preper mills, bucket factories, iron establishments, senting only a black shining mass, resembling flouring mills, etc. In Tennessee, it has been bituminous coal which has undergone the first reported to the Secretary of the Treasury, that stage of fusion. This experiment furnishes there are thirty factories, containing 30,500

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will beat all predecessors. Sounding the Guif Stream. The United States Sounding steamer Hetzell, Lieut. John Rodgers commanding, has been engaged in efforts to sound the Guif PREMIUM.