

**ENGINEERING INVENTIONS.**

A car brake has been patented by Mr. Charles E. Candee, of New York city. This invention covers a brake mechanism comprising friction drums on the truck axles and metallic elastic bands provided with compression bars and fitted to be clasped upon the drums by a tightener.

A journal bearing for car axles has been patented by Mr. Charles E. Candee, of New York city. The bearings consist of a friction ring and rollers, combined with a box having a central abutment, with other novel features, the object being to distribute the friction and strains over a large extent of surface, so as to save wear, and also to support the journal against side strains.

A railway frog has been patented by Mr. Nathaniel W. Boyd, of Steelton, Pa. This invention consists principally of a frog made up of T-rails, and in the application of key bolts and throat castings for holding the parts of the frog together and in proper position, making an elastic switch frog, which can be placed anywhere upon the cross ties or upon planks, and one which will be cheap and easily adjusted.

A propeller has been patented by Mr. John J. Williams, of Point Pleasant, Mo. This invention is designed as an improvement on endless chain propellers, metal bands being substituted for the chains, with buckets rigidly attached thereto, thus doing away with all working joints, and adding to the durability and efficiency of the propeller, peculiarly constructed braces being combined with the bands to support the buckets in action.

A cylinder lubricator has been patented by Mr. Samuel Townsend, of Detroit, Mich. This invention covers improvements in the oil cup, sight feed tube, and condenser, providing an automatic drop sight feed in which the oil drops through an empty glass tube, making a simple and cheap arrangement, with glass oil cup protected from breakage, and requiring but one valve for its regulation. The same inventor has received another patent for an improvement on lubricators for engine cylinders, the invention consisting in a construction which gives a downward drop sight feed, and in connection therewith a circulation of steam which prevents accumulation of oil in the feed tube, and insures a continuous and uniform flow of oil.

**MECHANICAL INVENTIONS.**

A reamer has been patented by Mr. George R. Stetson, of New Bedford, Mass. This invention relates to adjustable or expanding reamers for smoothing, straightening, dressing, or enlarging holes in various kinds of work, and its various parts are so made and combined as to make a reamer of superior form and build, whereby increased facilities are afforded for regulating the adjustment of the cutters.

**AGRICULTURAL INVENTIONS.**

A plow has been patented by Mr. Simeon H. Clauton, of Quitman, Ga. This invention relates to that class of plows wherein the beam and standard are made of iron, and usually in one piece, and covers novel details of construction and arrangement of parts in plows of this description.

A check rowing attachment for corn planters has been patented by Mr. Joseph A. Withrow, of Scranton, Iowa. This invention covers a special construction and arrangement of parts in a mechanism for operating the seed dropping slides of corn planters, so as to operate the slides with certainty at regular intervals, in order that the planting may be done in accurate check row.

A reversible plow has been patented by Mr. Jesse L. Delano, of Northampton, Mass. The essential features of the invention consist in the point made separately from the mould board and hung to swing on a horizontal axis, and a double sided mould board swinging on a vertical axis, so the mould board can be reversed with greater ease than with plows of ordinary construction.

A drill tooth regulator and compressor for seeders has been patented by Mr. Romulus P. Ludwig, of Staunton, Va. This invention relates to devices used to plow shallow furrows in which to drop seed and to cover and press the earth thereon, and its object is to raise the drill or plow point at will, and mechanically hold it raised while traveling and not in use, and to set it to plow deep or shallow as may be required, for which purposes a special construction and combination of parts is provided.

**MISCELLANEOUS INVENTIONS.**

A gate has been patented by Mr. Har-vey H. Clement, of Hazel Dell, Miss. It is a movable gate with an opening through it, a horizontally-sliding gate mounted on the first gate, and a vertically-sliding gate on the horizontal gate, so that by its passage ways of various sizes can be formed in fences, barns, etc.

A process of extracting gold, silver, and lead from ores has been patented by Mr. William E. Harris, of New York city. This invention consists in mixing finely pulverized ore with the oxides of iron or copper, and then smelting the mixture on a bath of lead.

A surgical needle has been patented by Mr. George Wackerhagen, of Brooklyn, N. Y. This invention covers an improved form of needle for sutures, either interrupted or continuous, which can be used without removal from its holder during an operation, and which covers the thread, so as to carry it through the tissues easily.

A saloon hopper tube for keeping clear saloon hoppers in railroad cars has been patented by Mr. James Martin, of Louisville, Ky. This invention provides a movable tube or lining, made of felt, paper, wood, or other flexible material, and of various forms, but so that it can be removed and replaced at any time with but little trouble and expense.

A printer's quoin has been patented by Mr. William Hendrickson, of Brooklyn, N. Y. It is made with side pieces having inclined dove-tailed side

grooves, a wedge having inclined angular end grooves, and a swiveled screw whereby the quoin can be readily expanded and contracted, the side pieces being connected and kept in place upon the wedge by guard screws.

A shutter for photographic cameras has been patented by Mr. Cyrus Prosch, of New York city. This invention consists in a novel manner of applying the spring used to throw the shutter, so the shutter has a gradual action at starting, avoiding jar and preventing damage to the picture; there is also an adjustable spring friction device for varying the working speed of the shutter, to give a shorter or longer exposure of the sensitive plate, means for insuring the perfect exclusion of light when the shutter is closed, and other novel features.

**NEW BOOKS AND PUBLICATIONS.**

**STEAM MAKING, OR BOILER PRACTICE.** By Charles A. Smith. *The American Engineer*, Chicago.

This work aims to present in condensed form the best experience in modern boiler practice. Its treatment of the subjects of combustion, firing, design, and construction of boilers, and the table of experiments with boilers, show good judgment and a broad comprehension of this field of investigation.

**DIE MEHRFACH-TELEGRAPHIE AUF EINEM DRAHTE. (MULTIPLE TELEGRAPHY ON A SINGLE WIRE.)** By A. E. Granfeld. A. Hartleben, Vienna, Pesth, Leipzig.

This work, which is the twenty-fifth volume of Hartleben's Electro Technical Library, is devoted entirely to multiple telegraphy on one wire. The author fully explains the necessity of multiple telegraphy, and describes the different systems. He has made a very careful study of the electric and magnetic functions in electro magnets. In the remaining chapters he has described the different methods and apparatus, which are too numerous to be mentioned here. The author has evidently studied the subject matter of his work with the greatest care, and has taken great pains to avoid all ambiguity, thereby rendering his work of value not only to the professional student, but also to the amateur. The work is provided with eighteen cuts and five tables.

**THE CONSTRUCTION AND USE OF GRINDING MACHINES** is the title of a well illustrated and plainly written little book just issued by the Brown & Sharpe Manufacturing Company, of Providence, R. I. The firm are well known manufacturers of fine machinery and machine tools; they very naturally consider that it is necessary to understand a machine, and know how to use and take care of it, to obtain the best work therefrom; and in order thus to educate mechanics in regard to their universal grinding machine, they have brought out this book. The firm first designed and constructed grinding machines several years ago to supply a want in their own business, and now consider them almost indispensable in the production of first class work. For the manufacture of standard machinery and tools, the duplicating of parts of small machinery, and for operating on hardened surfaces to insure great accuracy, these machines are not only economical, but by their use a higher average grade of work is performed.

**Special.**

**WHO WAS BRIGHT?**

The name of Bright is frequently on the tongues of people who know nothing, or little, of who "Bright" was, or the nature of the peculiar derangement of vital functions with which his name has long been linked. Dr. Bright was a famous British surgeon and anatomist. He made the kidneys and their disorders his special study. He first pointed out the nature of the granular degeneration of the tissues of the kidneys, and showed the demoralization of these organs when in such a condition that their secreting powers are so impaired that the urea is not sufficiently separated from the blood. In the unpleasant condition of the internal economy which is known as "Bright's disease," albumen is carried off with the watery excretions from the bladder. This impoverishes the system almost as greatly as would copious and systematic bleeding, for the albumen is needed in the body, being, in fact, one of the great agents in nutrition. Those who labor under the disadvantage of "Bright's disease" are liable to grievous congestion and inflammation, not only of the kidneys, but of other important organs. Coma, convulsions, and apoplexy may occur as part of the progress of the disease. Thus it will be seen that the malady is not a mere kidney ailment, but one involving the decay of the vital forces of the body.

"Bright's disease" is proverbially hard to cure. Nay, more than that, it is generally pronounced incurable. As soon as the patient begins to show clear evidences of being afflicted with this malady, the doctors give him up and tell him to prepare for death. They can alleviate his sufferings, and do something to temporarily arrest his inevitable decay, but beyond this they give him no hope. An eminent physician in a recent address before the New Jersey Medical Society said: "The modern physician, in his multitudinous drugs, finds few remedies. . . . Medicine finds its highest triumphs in the prevention, not in the cure, of disease. . . . Who cures rheumatism, or typhoid fever, or chronic Bright's disease? . . . and yet, who refrains from prescribing?"

Now we will all agree that prevention is a great deal better than cure. But when we find some fellow-mortal actually in the power of a terrible disease, "Bright's" for instance, it is too late to talk of preventive measures. Something must be done toward cure, if cure be possible. To thousands of anxious men and women the vital question to-day is, "Can Bright's disease be cured?" To others, means of prevention may have interest, but to those on whom the disease has its grip the question of cure is a personal matter of life or death. All who are thus concerned will be greatly interested in the experience of a gentleman well known in Philadelphia, who was so severely afflicted with "Bright's disease" that the physicians gave him up. His present condition of heartiness is such as naturally to awaken curiosity as to how his recovery was effected.

Mr. George W. Edwards is a well known Philadelphian, now in middle life. His father was one of the most public-spirited citizens of the Quaker City, who did much to improve the place by the erection of a number of hotels

and other edifices of public value and permanent adornment. Mr. Edwards, Sr., died about twenty years ago, of Bright's disease, and so did his wife. The present Mr. Edwards thus inherited the disease from both father and mother, and at an early period of his life was under its power to such an extent that he became a confirmed invalid, with but little hope of recovery.

One of our editorial staff who had himself been threatened with Bright's disease, and was anxious to see a man who had been brought out of it, recently satisfied his curiosity by a visit to Mr. Edwards. On being introduced to that gentleman at his place of business, he thought there must be some mistake in the person, so hearty and robust did Mr. Edwards appear. But Mr. Edwards assured him that he was indeed the man, and gave the account of his experience much as follows:

"Yes, I had Bright's disease. My father and mother died of it; so did two of my brothers. It came on me slowly and gradually. I passed much albumen, and many epithelial casts, which are the surest indications of the ravages of the disease. For three years I was so prostrated as to be unable to attend to business. I was utterly exhausted. Not only was I unable to walk with comfort, but I could scarcely walk at all. I averaged hardly an hour's sleep in twenty-four, and even that little was broken and unsatisfactory. Nearly all the time I suffered with severe neuralgic pain in my head and rheumatic pain in my joints. My digestion was miserable. I was nervous and continually disturbed. At the St. George's Hotel, where I lived, I found it impossible to take my meals at the table, for my nerves were in such a state that the rattling of the knives and forks distressed me and compelled me to leave the dining room. The little I was able to eat was brought to my room. I could take a little meat, but no vegetables; and I can assure you that eating was not a pleasure to me.

"Did I take much medical treatment? Oh, yes, but I cannot say that it did me any apparent good, unless, perhaps, in case of the last physician who attended me. He brought me up to a condition in which there was something in me for the Compound Oxygen to take hold of."

"Compound Oxygen? Did you try that; and what did it do for you?"

"Yes, that was what brought me to where you see me now. It was this way: I was in a very exhausted condition, and my friend, Mr. Hagan, of Front Street, who had been made a new man by it, told me that he thought there would be some chance for me if I would try Compound Oxygen. The prospect did not at first seem very encouraging, yet I thought I would make the trial. So prostrated was I that walking from the St. George Hotel to Starkey & Palen's office, which is not over half a mile, completely used me up, and I had to rest for two hours after making the effort. This was my first attempt at going out. After this, when I went to the office for treatment I took a cab, for the first few visits. But the necessity for the cab did not last a great while. The Compound Oxygen did not begin to do its work suddenly, but what it did it did well. In about ten days the severe pains in my head were greatly relieved, and before many more days they were gone. Then I began to gain in strength. Gradually the rheumatic pains went away, my digestion improved, so that eating was not the torment it had been. I soon became able to enjoy refreshing sleep, and this added to my comfort and gave me new strength.

"For two months I took the Oxygen Treatment at Starkey & Palen's office, daily gaining. When I first began to take it I was so weak that I could not inhale for more than ten or fifteen seconds. By steady practice and with increasing strength I found myself able to inhale for nearly minute at a time. I began in March, 1882, and I finished in May. By this time I was so well that I needed no more treatment."

"Have you ever had occasion to resort to the treatment again?"

"Never but once. Then I thought I felt some indications of a return of my old trouble. The use of the Compound Oxygen for a very short time set me to rights. Now I am able to attend to business regularly and cheerfully. I live in the country and come to town every day. I sleep soundly, take a good deal of active exercise, eat pretty much everything I want, and my digestion is good. What more can I ask for?"

"You are a firm believer in Compound Oxygen, then, Mr. Edwards?"

"Most certainly and thoroughly. After what it has done for me I am free to speak well of it, and to recommend it to others as a great vitalizer and restorer."

"Such a case as this one is surely calculated to make people think. Thinking is good; acting is better. In such diseases as "Bright's" there is no time to be lost. If you have even the slightest indication of an attack, send to Drs. Starkey & Palen, 1109 Girard Street, Philadelphia, for their treatise on Compound Oxygen, and inform yourself thoroughly as to its nature and action. It will be mailed free.

**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.*

Cardigan Jackets.—Only one machine to make all sizes. Lamb Knitting Machine Co., Chicopee Falls, Mass.

Plain Milling Machine.—Length of table, 28 inches. Accompanying machine are wrenches, adjustable hangers, etc. Brown & Sharpe Mfg. Co., Box 463, Providence, R. I.

Suspension Drill.—Balanced spindle, quick return. New design. Pond Machine Tool Co., Worcester, Mass.

The Household Sewing Machine Co. use our Friction Pulleys for driving electric light machines. Volney W. Mason & Co., Providence, R. I.

Linen Hose, Plain and Rubber Lined, for warehouses, mills, and public buildings. Greene, Tweed & Co., New York.

Pneumatic Door Checks; four patents; adapted to heavy office doors and lighter doors. In use for two years. The patents for sale. G. S. Perkins, Hartford, Conn.

Five patents for sale; rare chances. The Patent "Herald" sent free. J. O. Lingenfeiter, Manager, Amsterdam, N. Y.

Mechanical Engineer, Designer, and Draughtsman of experience wish engagements. Address M. E., P. O. Box 773, N. Y.

Engine Castings, Vertical and Horizontal. W. M. Boyd, 90 and 92 Forbes St., Pittsburg, Pa.

Patent Envelopes.—Partner wanted. J. M. Crull, 304 North St., Harrisburg, Pa.

To Manufacturers of Small Specialties.—\$1,200 buys United States patent of small article, good as safety pins. J. Badger, Rockville Center, Long Island, N. Y.

Walrus and Sea Lion Leather, Emery, Composition, and Polishing Supplies of all kinds. Greene, Tweed & Co., N. Y.

Experienced designer and builder—18 years on watches and watch machinery—desires situation after March first. References or samples. Address G. S. Heath, Lock Box 64, Thomaston, Conn.

Patent for sale cheap. Described on p. 83. F. Bone, Lebanon, O.

Air Compressors, Rock Drills. Jas. Clayton, B'klyn, N. Y.

A lot of new Chucks of all sizes, slightly damaged, at half price. A. F. Cushman, Hartford, Ct.

The Best Upright Hammers run by belt are made by W. P. Duncan & Co., Bellefonte, Penna.

Iron Planer, Lathe, Drill, and other machine tools of modern design. New Haven Mfg. Co., New Haven, Conn.

The leading Non-conducting Covering for Boilers, Pipes, etc., is Wm. Berkefeld's Fossil Meal Composition;  $\frac{1}{4}$  inch thickness radiates less heat than any other covering does with two inches. Sold in dry state by the pound. Fossil Meal Co., 48 Cedar St., N. Y.

Machinists.—Spring Calipers and Dividers, with patent washers, made by J. Stevens & Co., Box 28, Chicopee Falls, Mass.

Try our Corundum and Emery Wheels for rapid cutting. Vitrified Wheel Co., 38 Elm St., Westfield, Mass.

The Providence Steam Engine Co., of Providence, R. I., are the sole builders of "The Improved Greene Engine."

Every variety of Rubber Belting, Hose, Packing, Gaskets, Springs, Tubing, Rubber Covered Rollers, Deckle Straps, Printers' Blankets, manufactured by Boston Belting Co., 238 Devonshire St., Boston, and 70 Beade St., New York.

Experimental Machinery Perfected, Machinery Patterns, Light Forgings, etc. Tolhurst Machine Works, Troy, N. Y.

Whistles, Injectors, Damper Regulators; guaranteed. Special C. O. D. prices. A. G. Brooks, 261 N. 8d St., Phila.

Brush Electric Arc Lights and Storage Batteries. Twenty thousand Arc Lights already sold. Our largest machine gives 65 Arc Lights with 45 horse power. Our Storage Battery is the only practical one in the market. Brush Electric Co., Cleveland, O.

The Cyclone Steam Flue Cleaner on 30 days' trial to reliable parties. Crescent Mfg. Co. Cleveland, O.

For Steam and Power Pumping Machinery of Single and Duplex Pattern, embracing boiler feed, fire and low pressure pumps, independent condensing outfits, vacuum, hydraulic, artesian, and deep well pumps, air compressors, address Geo. F. Blake Mfg. Co., 44 Washington St., Boston; 97 Liberty St., N. Y. Send for catalogue.

Stationary, Marine, Portable, and Locomotive Boilers a specialty. Lake Erie Boiler Works, Buffalo, N. Y.

Wanted.—Patented articles or machinery to manufacture and introduce. Lexington Mfg. Co., Lexington, Ky.

"How to Keep Boilers Clean." Book sent free by James F. Hotchkiss, 86 John St., New York.

Mills, Engines, and Boilers for all purposes and of every description. Send for circulars. Newell Universal Mill Co., 10 Barclay Street, N. Y.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

For Power & Economy, Alcott's Turbine, Mt. Holly, N. J.

Steam Boilers, Rotary Bleachers, Wrought Iron Turn Tables, Plate Iron Work. Tippet & Wood, Easton, Pa.

Send for Monthly Machinery List to the George Place Machinery Company, 121 Chambers and 103 Beade Streets, New York.

If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN patent agency, 361 Broadway, New York.

Guild & Garrison's Steam Pump Works, Brooklyn, N. Y. Steam Pumping Machinery of every description. Send for catalogue.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc. Complete outfit for plating, etc. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

Supplement Catalogue.—Persons in pursuit of information of any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co., Publishers, New York.

Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 62.

Catalogue of Books, 128 pages, for Engineers and Electricians, sent free. E. & F. N. Spon, 35 Murray Street, N. Y.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 78.

Stephens' Pat. Bench Vises and Planer Chucks. See adv., p. 76.

Anti-Friction Bearings for Shafting, Cars, Wagons, etc. Price list free. John G. Avery, Spencer, Mass.

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 20,000 Crank Shafts and 5,000 Gear Wheels now in use, the superiority of their Castings over all others. Circular and price list free.

Curtis Pressure Regulator and Steam Trap. See p. 93.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Hoisting Engines. D. Frisbie & Co., Philadelphia, Pa.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv., p. 93.

Experimental Tools and Machinery Perfected; all kinds. Interchangeable Tool Co., 313 North 2d St., Brooklyn, N. Y.

Lane's Patent Self-measuring Faucets for molasses, oil, varnish, etc. Lane Bros., Box 276, Poughkeepsie, N. Y.

Renshaw's Ratchet Drills. No. 1, \$10; No. 3, \$15. Cash with order. Pratt & Whitney Co., Hartford, Conn.

Woodwork'g Mach'y, Rollstone Mach. Co. Adv., p. 94.

Shipman Steam Engine.—Small power practical engines burning kerosene. Shipman Engine Co., Boston. See page 157.

The best Steam Pumps for Boiler Feeding. Valley Machine Works, Easthampton, Mass.