

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**TRACTION ENGINE.**—Edward Ingleton, Pottstown, Pa. This improvement provides an endless tread for the traction wheels, of such a character that the tread of a wheel will be much enlarged over its circumference, the tread being adapted to be raised in such a manner that the traction wheel will turn practically on its own center when the engine is being steered. The elevation and depression of the tread is accomplished automatically with the operation of the steering apparatus.

**FURNACE GRATE.**—Edward P. Eastwick, Jr., New Orleans, La. This improvement relates to traveling grates or stokers which automatically receive their fuel and discharge their refuse, and provides means for separating the unburned fuel from the ashes. At the discharge side or end of the grate is a hopper to receive and retain ashes or refuse, and at its bottom is a valved opening and traveling conveyor, the opening being kept sufficiently closed to prevent a too free admission of air to the furnace.

**WATER ELEVATOR.**—John M. Trevett, Casper, Wyoming. This invention comprises a water wheel with elongated peripheral buckets having side and end openings, the latter closed by a spring-pressed valve actuated by automatic mechanism. The wheel is designed to be mounted on floats to raise water from streams for irrigating and other purposes, the construction of the apparatus being simple throughout, and it being adapted to run continuously without needing attention.

**DEVICE FOR RAISING SHIPS.**—John D. Cooper, Cheboygan, Mich. Submersible pontoons are, according to this invention, lowered for attachment to a vessel and emptied of their contents, the mechanism for filling, lowering, and emptying the pontoon being electrically controlled from a neighboring vessel. Floats on the surface are also connected with the pontoon, and all the floats may be connected with and controlled by the current from a dynamo on the vessel.

## Railway Appliances.

**CAR SEAT.**—James M. Osgood, Boston, Mass. This is a chair with reversible and reclining backs, to serve as backs and leg rests, while the backs are so divided that each chair may be formed into a tete-a-tete, with a half back facing in one direction and the other back in the opposite direction, both backs being simultaneously moved to a safety position. The backs and rests are also so arranged as to be readily adjustable and convertible into a couch or berth, the alternate chairs being raised to form upper berths, forming practically a series of staterooms with a seat in the lower part, thus giving to each berth a separate dressing compartment.

## Electrical.

**TELEPHONE TRANSMITTER.**—Ignatius Lucas, Passaic, N. J. Two patents have been granted this inventor, according to one of which the contact disks are embedded in a filling of loose material, preferably sliver or wool as it leaves the carding machine and previous to being felted, the filling being also in contact with the diaphragm and greatly softening the sounds for transmission. According to the other improvement, a material composed of a base having granulated carbon thereon is used between the opposing faces of the buttons of telephones and similar instruments, with the carbon in contact with the buttons, to insure a uniform and perfect transmission of sound, even if the transmitter be in a building subjected to unusual noise and jar.

## Mining, Etc.

**SEPARATOR AND AMALGAMATOR.**—Frank L. Fisher, Granger, Oregon. Upon a screw-threaded standard, according to this invention, is a series of wheels with threaded hubs carrying troughs of progressively increasing diameters adapted to deliver from one to the other from the top to the bottom, a spreader plate on the top of the standard delivering into the upper trough. The troughs are filled with mercury, and the tailings flow over the edges of the upper troughs into the lower ones, the sand being easily washed and the gold amalgamated.

**SUBAQUEOUS MINING MACHINE.**—Henry W. and William W. Smith, Portland, Oregon. According to this improvement fluke wheels are arranged upon a vertical shaft within a tubular body, the power to operate the shaft being supplied by any suitable motor, and the machine acting on the suction principle to carry upward by a strong current of water gold and other valuable minerals found in the beds of streams. The tubular body may be swung freely to place it in position for effective operation in the bed of a stream, and it and the wheel shaft may be lengthened as desired.

## Agricultural.

**THRASHING MACHINE.**—Franklin P. Mercer, Conway Springs, Kansas. In this machine the grain is delivered to an elevator which conveys it to a riddle, through which it is passed while being subjected to an air blast to an exit at either side of the machine, as desired, the straw being passed out at one end of the machine, without possible interference with the riddle or exit for the grain. The machine has virtually two thrashing cylinders, a lower one breaking the bundles and scattering the straw, while an upper cylinder acts in conjunction therewith to thoroughly thrash out the grain.

**BOLTER.**—Niels Nielsen, Copenhagen, Denmark. This invention relates to bolters having a gyratory motion in a horizontal frame, and is designed to reduce or prevent irregular and injurious vibrations of the bolter frame. Automatic compensation is provided for variations in the weight of material fed to the bolter, to maintain the bolter frame in equilibrium, and upward

and downward vibrations are provided against by adjusting the center of gravity in a vertical direction.

## Miscellaneous.

**WAGON ROAD SNOW PLOW.**—Albert C. Plumley, Sherburne, Vt. A sled with long runners has at its front end a V-shaped plow, and near the rear ends of the runners, on each side, are pivoted rearwardly sloped cutter blades and wings, which may be readily raised and lowered, to cause them to engage with snow at different heights from the ground, so that the removal of a great depth of snow may be effected by degrees. Where the road is narrow, the wing and cutter blade on one side may be removed.

**HOSE CLAMP AND PATCH.**—Aaron H. Forst, Louisville, Ky. For temporarily repairing burst or otherwise ruptured hose, this inventor has devised a clamp and patch consisting of two narrow semicircular cast metal parts, connected by a hinge, each of the parts lined with rubber, the parts being adapted to be brought together around a hose by a cam-locking device and lever. The device is very simple and readily applied, and for use on steam or hot water pipes the packing or lining is preferably made of material other than rubber—preferably asbestos.

**METAL SASH RAIL PROTECTOR.**—Thomas B. Fultz and Rufus Huff, Sullivan, Ill. This is an improvement more particularly applicable to shop or show windows having large and heavy plate glass panes, the protector being designed to cover the lower rail and furnish a seat for the pane. It is provided with a gutter for receiving the water or drip from condensing vapor on the inner surface of the pane, the water being prevented from contact with the sash rail proper and conducted off outside the building.

**TABLE AND RACK.**—J. Emil Dryfoos, New York City. This is a combination device adapted for arrangement as an ordinary table, or which may be conveniently converted into a display rack on which goods may be advantageously displayed. The rack is raised and lowered by hand pulls, and the top of the rack may be adjusted to different inclinations.

**LINE OR HAMMOCK HOLDER.**—John Bohlen, Big Rapids, Mich. To effectively support and clamp clothes lines in a taut position and for holding hammocks, etc., this inventor has devised a very simple line holder, consisting of but three pieces, very inexpensively made and put together. The holder consists of a bracket plate, swivel block and clamping lever, and the device has a free lateral movement, accommodating itself to a line stretched diagonally.

**RAIN WATER CONDUIT.**—Walter Van Benthuyzen, New Orleans, La. This is an automatically operating device which conducts the first wash of water from a roof into a vessel other than the tank or cistern, but when the roof has been thus washed off, as at the commencement of a rain, a portion of the conductor, which is pivoted, is moved to a position to deliver the remaining portion of the rainfall into the tank or cistern.

**BLACKBOARD AND DESK.**—Louis Doll, Danbury, Conn. This invention consists of a blackboard supporting on its under side a game apparatus, affording an educational appliance for children designed to combine study with pleasure. The board is pivotally connected at its sides with braces pivoted on a fixed support, either face of the board being readily brought into uppermost position.

**MUSIC LEAF TURNER.**—Frederick Leeds, New York City. This is a simple and inexpensive construction for use with a piano, organ or other instrument, or on a music stand, and in which sheet or bound music may be placed, the performer being then able to readily turn the leaves without interfering with his or her playing. Any desired number of leaf-turning arms may be employed, the arms being so placed in engagement with the leaves that different leaves cannot follow each other from suction when one of them is rapidly turned.

**OFFICE DIRECTORY.**—Daniel Waide, San Francisco, Cal. This is a mechanical directory for business buildings, comprising a casing with hinged glazed cover, there being hinged in the case a carrier frame which may be drawn out and supported at an angle. A head block is designed to receive the words, "floor," "room," etc., and the case is adapted to receive indicator strips of wood to receive the names, one strip being readily substituted for another as desired.

**PRISM POINTER FOR TYPEWRITERS.**—Walter B. Dyer, Pottsville, Pa. This device has a body section adapted for connection with the rear portion of the typewriter basket and terminates at its forward end in a yoke, from the center of which an indicator leads to the forward portion of the typewriter basket. With this improvement no disagreeable clinking sound is given out with each stroke of the type keys, and the pointer adjusts itself automatically. The device also serves as a rest or support for and assists in preventing the curling of the ribbon at the printing point.

**PRINTING PHOTOGRAPHS IN COLORS.**—Edward R. Hewitt, New York City. This inventor has devised a method of forming many-colored photographic prints by applying to a suitable backing a series of superposed films bearing different colors, corresponding approximately with the colors of the object photographed, sensitizing the composite film formed of the films of different colors, rendering portions of the film insoluble by exposure to light through a negative, and finally developing the picture by washing with an appropriate solvent.

**DENTAL PLUGGER.**—Joseph R. Jones, Ontonagon, Mich. The holder frame of this plugger is especially adapted to receive and grasp any of the usual forms of plugging instruments, and improved mechanism is provided for supporting and manipulating the mallet, so that its operation may be more readily effected and controlled by the operator. The blow given by the

mallet is a sharp welding blow, differing from a spring blow, the spring being used simply to retract the mallet. The plugger may be used as a hand pressure instrument without changes or adjustments.

**BLOUSE OR JACKET.**—Henry Shrier, New York City. This is a garment more especially designed for boys' wear, and is arranged to permit of reversing the parts, to turn the soiled portions under and bring into view a fresh, clean surface, also changing the appearance of the garment by different trimmings and colors. The neck opening is cut low and has a detachable reversible collar, there being a reversible and detachable front piece.

**CHECKREIN SWIVEL.**—Julius C. Clausen, Hensall, Canada. This is a simple device readily attachable to the bridle or other strap, and which is free to turn in any direction, there being no danger of the strap separating from the swivel.

**HORSESHOE PAD.**—Michael Hallanan, New York City. This pad has a yielding block at the heel provided with side extensions which terminate rearwardly of the nail holes, the extensions and the shoe having squared meeting ends that are each rabbeted and lap each other. The pads are designed for use with shoes of different sizes and shapes, to prevent balling of snow, picking up nails or pebbles, etc.

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.

## NEW BOOKS AND PUBLICATIONS.

**MODERN EXAMINATIONS OF STEAM ENGINES; OR, PRACTICAL THEORY EXPLAINED AND ILLUSTRATED.** By W. H. Wakeman. Bridgeport, Conn.: American Industrial Publishing Company. 1895. Pp. 272. 12mo. Diagrams. Price \$2.

This work comprises full and complete answers to 300 questions for the use of engineers and firemen, when preparing to make application for examination for United States government and State license and for the information of engine builders, boiler makers, etc. Although there are already books on the same subject, a work of this kind, when it is as practical as the present one, cannot fail to have a large number of readers. The rules and formulas are simple and are accompanied with examples. The value of the work would have been enhanced by the insertion of illustrations. The author, being a practical steam engineer himself, well knows the wants of the working engineer, and has put into this work such knowledge and information as is best adapted to their use, making it altogether one of the most complete and comprehensive guides for the busy workers in the engine room, boiler works, and machine shops that has been published.

**ELEMENTS OF THE MATHEMATICAL THEORY OF ELECTRICITY AND MAGNETISM.** By J. J. Thomson, M.A., F.R.S., Cambridge. New York: Macmillan & Company. 1895. Pp. 504. 12mo. 133 figures. Price \$2.60.

The author is Cavendish professor of experimental physics in the University of Cambridge, the stronghold of the mathematical sciences in England. With the exception of a few paragraphs, no more advanced mathematical knowledge is required from the reader than an acquaintance with the elementary principles of the differential calculus. It is not necessary to make use of advanced analysis to establish the existence of some of the most important electromagnetic phenomena. The study of these simple cases will in the estimation of the author be of advantage even to students whose mathematical attainments are sufficient to enable them to follow the solution of the more general cases. The work will undoubtedly fulfill a useful purpose in our more advanced institutions of learning.

**NOTES ON DESCRIPTIVE GEOMETRY, WITH EXERCISES.** By W. L. Ames. Terre Haute, Ind. 1895. Pp. 88. 18mo. 86 figures. Price 50 cents.

It is evident to all who have taken note of the trend of the practice of mechanical drawing in the best draughting offices that the use of the third quadrant in projecting will become universal. In the study of descriptive geometry, however, with few exceptions, the first angle projection is taught. The writer, realizing that the methods taught should harmonize with the practical application in mechanical drawing as practiced, has for some time used the third angle in teaching descriptive geometry. There being no text books so arranged, notes were prepared for the student's use. These notes revised are now published.

**THE ART ORNAMENTER AND MODERN SIGN WRITER.** New York: Excelsior Publishing House. Small 4to. Price \$2.50.

This work comprises over thirty good sized plates, giving alphabets, raised scrolls and other ornaments which are useful to the sign writer. The scrolls are particularly fine. The alphabets include block, old English, Egyptian, Roman script, German text, antique, etc.

**THE PRACTICAL APPLICATION OF THE SLIDE VALVE AND LINK MOTION TO STATIONARY, PORTABLE, LOCOMOTIVE AND MARINE ENGINES, WITH NEW AND SIMPLE METHODS OF PROPORTIONING THE PARTS.** By W. S. Auchinloss, C.E. New York: D. Van Nostrand Company. 1895. Pp. 138. 8vo. 52 illustrations and plates. Price \$2.

In the past twenty-five years this book has had a phenomenal sale, the present being the thirteenth (revised) edition. It has proved itself both a standard authority with mechanical engineers and draughtsmen and a valued text book with colleges and technical schools. In the

presentation the author has carefully eliminated all abstruse formulae, as he does not consider it advisable to use the higher mathematics for the solution of everyday problems in link and valve motion. The component parts of such motions are always compact and the distances small, consequently they do not involve such delicate angles, etc., as in astronomy and should not be so treated, but all dimensions should be computed either arithmetically or graphically by the most simple and direct processes. The fundamental principles are dealt with to the exclusion of patented devices.

**ORGANIC CHEMISTRY. The Fatty Compounds.** By R. Lloyd Whiteley. London and New York: Longmans, Green & Company. 1895. Pp. 291. 12mo. Illustrated. Price \$1.

An excellent work on this branch of organic chemistry. It has been the aim of the author not only to give students an intelligible and connected account of the theory of the subject, but also to provide them with such information as shall enable them to gain a practical acquaintance with it. The work has a good index—a point on which English scientific books are so often at fault. The very sensible plan is adopted of printing the figures which indicate the principal reference in heavy-faced type.

**YELLOW BEAUTY.** By Marion Martin. Chicago: Laird & Lee. 1895. Price 50 cents.

A book for children, with six full page half tones, reproduced from paintings by Mme. Henriette Renner, the famous painter of cats.

The 1895-96 catalogue of the Parsons Horological Institute, or School for Watchmakers, at Peoria, Ill., is a most interesting addition to the series of annual catalogues issued by colleges and technical schools. The SCIENTIFIC AMERICAN has heretofore fully illustrated and described this unique school, and the just issued catalogue affords new evidences of the wisdom of its management and the thoroughness of its course of instruction.

## SCIENTIFIC AMERICAN

## BUILDING EDITION.

NOVEMBER, 1895.—(No. 121.)

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1. An elegant residence at Wakefield, N. Y. Two perspective elevations, also an interior view and floor plans. Mr. Ralph N. Cranford, architect, Wakefield, N. Y. An excellent design.
2. Plate in colors of a cottage in the Colonial style recently erected at Mount Vernon, N. Y. at a cost of \$4,750. Two perspective elevations and floor plans. A picturesque design. Mr. H. J. Robmson, architect, Mount Vernon, N. Y.
3. A double house at Marietta, Ohio, recently erected at a cost of \$2,163. Three perspective elevations and floor plans. William Foreman, architect, Marietta, Ohio.
4. A residence at Germantown, Philadelphia, recently erected at a cost of \$25,000 complete, including stable. Perspective elevation and floor plans. Architects, Messrs. Hazlehurst & Huckel, Philadelphia, Pa. An ornate residence in the Spanish Renaissance style.
5. A residence at Lake Waccabuc, N. Y. Two perspective elevations and floor plans. An attractive design.
6. A Reformed Dutch Church at Warwick, N. Y. Three perspective elevations and floor plans. Cost \$30,000. Architect, Mr. E. G. W. Dietrich, New York. A design successfully treated in the Byzantine style.
7. A cottage at Mount Vernon, N. Y., recently erected at a cost of \$2,500. Two perspective elevations and floor plans. Architect, Mr. A. M. Jenks, Mount Vernon, N. Y.
8. Perspective elevations of two low cost houses located at Hasbrouck Heights, N. J. Perspective elevations and floor plans. Cost, \$1,850. Mr. S. A. Dennis, architect, Arlington, N. J.
9. Views and floor plans of two windmills, at Mount Vernon and Wakefield, N. Y. Cost complete, \$1,800. Architect, Mr. Frank M. Wright, Mount Vernon, N. Y.
10. A stable at Wakefield, N. Y. Perspective elevation and floor plans. Architect, Mr. Ralph N. Cranford, Wakefield, N. Y. An original design.
11. Miscellaneous Contents: Hints to readers.—The education of customers.—The echo organ at Westminster Abbey.—The Mascot heater, illustrated.—Carlisle's burglar proof window sash lock, illustrated.—Steam pipe and boiler covering, illustrated.—A large shipment of roofing slate.—Moving a masonry house.—The "Royal" door check and spring, illustrated.—An improved window screen and awning, illustrated.—An improved steam heating boiler, illustrated.—Improved wood-working machinery, illustrated.—Painting iron work.—A new and powerful elevator, illustrated.—Cheap flour or millings in paint.

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