

NEW BOOKS AND PUBLICATIONS.

**THE INVENTION OF PRINTING.** By T. L. De Vinne. Part I. To be Published in Five Parts, price \$1 each. New York city: Francis Hart & Co., 14 College Place.

Here is a book which even the most advanced bibliomaniac can certainly find no fault with. It is really a curious and beautiful imitation of old style typography in every detail, this being the author's peculiar fancy, in order that the appearance of the book might be in harmony with its title and the quaint lore of its contents. We have a faint suspicion, too, that the volume has no typographical errors in it. The author by no means asserts that fact; but we have met with no printer's mistakes in the part of the work now before us. We have not the slightest doubt, however, but that some errors have escaped us, and would in fact baffle the scrutiny of the keenest eyes, for the reason that every known attempt which has hitherto been made to produce a perfect book has signally failed. Not that almost perfect books do not exist; in fact, we presume that some editions of the Bible, printed by the Universities or by the Queen's printers in England, are as near perfection as human work can arrive; but these have been corrected and re-corrected, in edition after edition, for decades. We know of two instances where attempts were made to produce perfect specimens of book typography. The first was that of Dom. Jo. de Souza, a Portuguese nobleman, who literally lavished money in order to print an absolutely perfect edition of *Os Lusitadas*, by Camoens. Assisted by Didot, and by a large gathering of skilled talent, Souza had the pages read and re-read by different scholastic persons until he was assured beyond all doubt that everything was absolutely correct. But when the copies came from the press, after all an error was found—the letters in the word *Lustano* had become misplaced. The type had, as is very commonly the case, been drawn out in the passage through the machine, and the pressman, with that sublime indifference to sense which is peculiar to his race, and which revels in returning dropped type upside down (as we know, to our weedy exasperation), had mixed the characters around to please his somewhat erratic fancy. The second case, and it was one in which even greater care was taken, was that of an edition of the classics published by the celebrated Foulises of Glasgow. Six experienced proof readers were employed, who devoted hours to the reading of each page. After each leaf was thought to be perfect, it was posted in the hall of the University, with a notification that a reward of fifty pounds would be paid to any person who could discover an error. Each page was suffered to remain two weeks in the place where it had been posted before the work was printed, and the printers thought that they had attained the object for which they had been striving. When the work was issued, it was discovered that several errors had been committed, one of which was in the first line of the first page. There are other instances, which a little research will quickly reveal, all showing that the "best laid plans of mice and men," as Burns sings, "gang aft agley." We remember now that Sir Sterndale Bennett, the celebrated English composer, not long since deceased, worked for years at the editing of Bach's *Rassion Music*, and supposed his work perfect when it was published; and then he discovered, to his dismay, an error in the second chord of the very first bar of the immortal composition. The title of the volume is the "Invention of Printing;" and it is a complete storehouse of curious lore regarding the rise of the "art preservative." The illustrations are copious and fine; and the author, Mr. T. L. De Vinne, of the firm of Francis Hart & Co., to whom the credit of the excellence of the typography is due, writes in a pleasant, readable way, sure to enlist popular interest.

**MAGNETISM AND ELECTRICITY.** By Frederick Guthrie, Professor of Physics at the Royal School of Mines, London, England. Price \$1.50. New York city: G. P. Putnam's Sons, Fourth Avenue and 23d street.

The literature of electrical science certainly keeps pace with the discoveries; and as the practical applications of electricity become more and more numerous, the demand for books on the subject spreads with rapidity. Mr. Guthrie's claims to labor in this wide field are based upon experimental knowledge and aptitude for teaching; and he has now given the world a *resumé* of some courses of lectures delivered by him at the institution of which he is a professor. The book gives a proper and, we may add, an unusual amount of attention to frictional electricity, a branch of the science which is not yet fully explored, having been eclipsed by the brilliancy of recent discoveries in the field of galvanism. We are able to award Mr. Guthrie the highest commendation for the clearness, accuracy, and practical value of his treatise, which is published in Messrs. Putnam's Advanced Science Series.

**THE AMERICAN ARCHITECT AND BUILDING NEWS,** a Weekly Journal of Constructive and Decorative Art. Subscription price, \$5 a year, in advance. Boston, Mass.: James R. Osgood & Co., 131 Franklin street.

We are glad to see that a new architectural journal, edited and printed in a manner worthy of the subject, commenced on January 1 of this year. We abrogate nothing of its excellence in saying that it has much resemblance to the *Building News*, of London; and we are able to pay it the compliment of saying that, like that very successful journal, it is edited by men of thorough practical knowledge and high artistic tastes, united with a proper sense of the dignity and importance of their profession. It also has its illustrations, which are admirably executed, printed on separate sheets of paper, by the photo-lithographic process. We wish Messrs Osgood & Co. a continued success in their new enterprise.

**THE AMERICAN STATE AND AMERICAN STATESMEN.** By William Giles Dix. Price \$1.50. Boston, Mass.: Estes & Lauriat, 301 Washington street.

This book is a valuable contribution to our political literature, which needs at once pruning and purifying. Although our pages are filled with matters which we and our readers consider more important than the intrigues and chicanery which make up the greater part of contemporary politics, we are glad to be able to commend a sincere, vigorous, and able champion of truth and justice, two abstract qualities which are perhaps in danger of becoming merely abstractions. A wide diffusion of the author's spirit and enthusiasm would do much to remedy many evils in our body politic, which are in danger of becoming insupportable.

**THE PRINCIPLES OF COAL MINING.** By J. H. Collins, F.G.S., Author of "Handbook to the Mineralogy of Cornwall and Devon," etc., and Honorary Secretary to the Miners' Association of Cornwall and Devon. With 139 Illustrations. Price 75 cents. New York city: G. P. Putnam's Sons, Fourth Avenue and 23d street.

This little book is an excellent treatise on a subject of which little is known except by those immediately connected with coal mines. The writing is at once concise and explanatory, and it is the work of an unquestionable authority. It forms one number of Messrs. Putnam's Elementary Science Series.

**HOW TO BUILD SHIPS: an Essay upon the Weakness of Large Iron Steamships, with Recommendations for Making them Strong.** By a Seaman. Price \$75 cents. New York city: D. Van Nostrand, 23 Murray and 27 Warren streets.

This treatise is a collection of ideas as to the weak points of iron ships, many of which are new and original. It is free from technicality, and contains some interesting information. It is the work of Mr. S. P. Griffin.

**THE METHODIST ALMANAC.** Cincinnati, Ohio: Hitchcock & Walden, 190 West Fourth street.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.] From December 31 to January 6, 1876, inclusive.

- AXLE BOX, ETC.—J. N. Smith, Jersey City, N. J.
- CAR WHEEL.—R. N. Allen et al., Hudson, N. Y.
- CIGAR-MAKING MACHINE.—C. M. Mann, Chicago, Ill.
- EYE-CUP.—P. J. Stephens, New York city.
- FLOCKING CLOTH.—H. N. Slater, Massachusetts.

- HANGING DOORS, ETC.—T. Morton, New York city.
- MIXING SOAP, ETC.—F. M. Weiler, New York city.
- SCOURING HIDES, ETC.—C. Rose, New York city.
- SEWING MACHINE.—S. W. Wardwell, Jr., St. Louis, Mo.
- SEWING MACHINE.—J. Folk, Brooklyn, N. Y.
- SEWING MACHINE.—J. Keith, Rhode Island.

Recent American and Foreign Patents.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED MITERING MACHINE.

Robert A. Williams, Gallon, O.—In this device there is a square frame having guide flanges for supporting the moldings, said flanges being so located as to allow of placing the moldings on the frame for mitering. A diagonal piece connects the angles of the frame, and has a guide recess for the introduction of the mitering frame and frame-setting device, both of which last are adjustable so as to admit of the accurate mitering and setting of the moldings.

IMPROVED ROTARY ENGINE.

Thomas Swinburn, Charleston, W. Va.—In this rotary engine, the cylinder is provided with a concentric groove arranged obliquely in its end, and the piston works from a fixed center concentric with said groove. Drawings are necessary to convey a clear idea of the working parts; but the general arrangement is both novel and apparently practical.

IMPROVED CAR AXLE.

George W. Miltimore, Jamesville, Wis.—This invention consists of a steel ring, which is placed on the stationary axle in front of the journal box of the revolving outer axle, and retained thereon by a stationary sleeve of the pedestal box. A double clamping ring, with spring-acted interior ring, revolves with the sleeve, by a connecting diaphragm secured on the sleeve. The diaphragm creates an oil chamber around the end of the journal box, and excludes impurities. The oil is supplied by grooves of the stationary sleeve and the steel ring from an annular oil reservoir of the pedestal box, which is again connected by an inclined channel with a cavity, into which the oil is filled through a top hole, closed by a conical spring plug, sliding on the vertical pin connecting the axle and pedestal box.

IMPROVED SEWING MACHINE.

Josiah Glines and Noel W. Stiles, Postville, Iowa.—This invention consists in devices for giving circular motion to the shuttle without twisting the thread. The face plate, against which the shuttle runs, is connected to the vertically-moving race, so as to move up to the position for guiding the shuttle properly, when the nose is to enter the loop, and it has a notch to mesh with a stationary needle-backing plate. The shuttle carrier has a point guard, projecting forward of the point of the shuttle, to prevent the thread from throwing over the latter when it reverses at the back part of its course, and the shuttle is contrived for the thread to pass out at the rear end for the same purpose.

IMPROVED CLOTH SHEARING MACHINE.

Isaac L. Holmes, Saoo, Me.—This inventor now improves certain parts of a cloth-shearing machine for which a patent was granted to him March 16, 1875. An automatic contrivance is added whereby the revolving cutters are stopped by a seam when it approaches the cutters, and are again automatically set in motion after the seam has passed the cutters, to prevent the seam from being unduly cut. An elastic disk is also provided in the friction clutch, by which the rotary cutters are started and stopped.

IMPROVED HORSE POWER OR DERRICK FOR DRILLING WELLS.

George A. Newman, Crowder, Neb., assignor to himself and James L. Newman, Chicago, Ill.—This is an improved hollow revolving horse power or derrick for sinking wells. It combines four novel mechanical devices, so constructed as to operate the auger and raise it without stopping the horse or changing his direction, to operate and rotate a drill, and to guide the tube and hammer when sinking a drive well.

IMPROVED MACHINE FOR SHEARING BOILER PLATES.

Ebenezer Fisher, Kincardine, Canada.—This device consists of a stationary and a movable shear for clipping boiler plates. The stationary shear is arranged in a plane so inclined to the movable shear that the edge of the plate, being cut, is beveled suitably for caulking, and at the same time the machine is so inclined that the plate lies flat or horizontally on the stationary cutter. The cam which works the lever of the movable cutter is contrived to allow the cutter to remain as long as possible when raised, to facilitate the adjusting of the plate.

IMPROVED TREADLE.

Carl Brandtner, Reading, Pa.—This is a centrally pivoted and laterally swinging treadle, that is connected by a rigidly attached rod and crank rod with the crank shaft of the fly wheel, the crank shaft imparting, by friction wheels, motion to the driving shaft. The inventor claims that rocking of the treadle on its pivots may be readily kept up without fatigue for any length of time, as it requires hardly any effort.

IMPROVED CAR REPLACER.

Jesse F. Bridge, Warwick, Mass., and Arthur R. Blakeslee, Birmingham, Conn.—This improved switch is so constructed as to enable a train, a part of a train, or a single car to be shunted, whenever desired, upon a temporary or permanent section of track, and again replaced upon the main track. It may be easily and quickly put down and taken up without disturbing the rails or interfering with the traffic of the road. It is an arrangement of forked and grooved blocks attached to the rails in connection with a bridge, the mode of adjustment depending upon the circumstances under which it is used.

NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.

IMPROVED FISHING TACKLE.

Julio T. Buel, Whitehall, N. Y.—All fishermen are already under so large a debt of gratitude to Mr. Buel, that we hardly see how the same can be increased, even by such ingenious devices as those which form the subjects of the two new patents below described. Mr. Buel, than whom, we believe, no more ardent disciple of old Isaac Walton exists, is the original inventor of the trolling spoon—that ingenious substitute for bait which neither pickerel nor blue fish, nor any other water cannibal, is able to distinguish from the small fry which form its food. How many million fish have fallen victims to its glittering allurements, or how many unfortunate minnows have been spared the torture of impaling, it is impossible to estimate; but Mr. Buel is determined to show that he has not by any means exhausted all the capabilities of his invention, and therefore he now produces some new and ingenious applications of it, which will doubtless meet with general welcome. The first is a new device whereby two fish may be caught on the same line, and the hooks be so connected after fishing that the entangling is avoided and a smaller space taken up by the same. A V-shaped wire spring frame has snap hooks at the ends, to which separate hooks with spoons are applied. The latter act as separate baits when the legs of the spring frame are spread out, and the legs of the frame are

locked by the snap hooks after fishing to take up less space. In the second patent we find a reliable adjustable device for attaching minnows or other bait of different size, and also for applying as many additional hooks as may be required for the size of the bait without the use of thread, gimp, or gut strings. It consists of a spring hook that is attached to a sliding wire ferrule, and adjusted along the connecting shank of the tackle to set bait thereon. A gang of two or more hooks, according to the size of the bait, is employed and connected by means of a central wire extension with snap hook engaging an eye at the shank of the next adjoining hook.

IMPROVED WATER TRAP SUPPLY AND VENTILATION.

John H. Morrell, New York city.—Mr. Morrell has recently patented a large number of useful inventions of the same general nature as the present one, with several of which our readers are familiar through the illustrated descriptions published in back issues of this journal. The object of the device now patented is to improve on one heretofore patented by Mr. Morrell (October 5, 1875), and to provide for ventilation during the downflow of water through the pipes; also, to provide for the water supply, and also the ventilation of the traps and their adjuncts when the orifice of the supply pipe mentioned in said patent is obstructed by ice, or even when water cannot be obtained from the roof or eaves of the building, or when from any cause it is desirable not to use such water. It consists in the combination, with the reservoir B (see engraving on page 335, volume XXXII), of an additional water supply pipe; also, of a ventilating pipe within some portion of the water pipe, or extending through the interior of the whole length of the same, applied to said pipe.

NEW AGRICULTURAL INVENTIONS.

IMPROVED HAY LOADER.

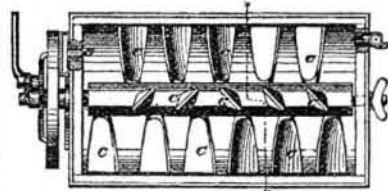
John A. Bower, Eureka, Kas.—This is an improved machine for collecting hay as it is spread upon the ground, and loading it upon a hay wagon. The wheels, turned by the advance of the machine, actuate an endless belt, teeth on which take the hay from the gathering rake. By means of the belt the hay is raised up and discharged in the wagon. Suitable devices are added to hold the teeth of the gathering rake out of action when required.

IMPROVED HAND CORN PLANTER.

Milton Pollock Noel, St. Cloud, Minn.—This improved corn planter is so constructed that the operator can operate it and plant the corn as rapidly as he can walk over the ground with a cane. The new feature consists in applying a loop to serve in conjunction with the handle to facilitate manipulation, and in a side handle that is used in connection with the jointed handle. An illustrated description of this device was published on page 86 of our current volume.

IMPROVED CHURN.

James L. Sprague, Hermon, N. Y.—This invention consists of spiral or propeller shaped paddles on a horizontal shaft, pitched so as to draw the cream from each end toward the center, in combination with an air inlet at each end and an outlet at the middle: whereby the paddles draw air in at each end and eject it at the center after acting on the cream, thus increasing the efficiency of the air, which is an element of considerable importance in the churning process. The operation is further facilitated by the insertion, in the churn box, of concave corner pieces, which are placed in the angles formed by the flat top and vertical sides; and these corner pieces prevent the clogging of the cream in those angles, a difficulty which is common in churns of this form. In the engraving, A is the horizontal cream box, having a round bottom and flat top. B is the paddle shaft, C C are the paddles, D D the air inlets, and E the outlet, F F being the corner pieces in the angles. The illustration clearly shows the construction and action of the apparatus, which seems to be thoroughly efficient for all the purposes above described. For further particulars, address the inventor as above.



IMPROVED COLTER.

Andrew Muir, Sparta, Ill.—The invention is an improvement in that class of rotary colters which are attached to plow beams by such devices as enable them to be adjusted and secured in any adjustment higher or lower, or at different points along the beam. The colter has its bearings in a plate which is provided with parallel vertical slots, whose opposite edges are notched to engage with the edges of bolts, which secure the said plate to the plow beam.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED BOLT FOR WINDOW FASTENING, ETC.

Herbert Seymour, Brooklyn, N. Y.—This is a simple bolt having a pin at right angles to its end. A slot in the keeper permits of the passage through of the pin, and when the bolt is turned, the pin, taking against the solid part of the keeper, prevents its slipping out.

IMPROVED SASH HOLDER AND FASTENER.

Joseph R. Payson, Chicago, Ill.—The object of the first of these two inventions is to improve the construction of the sash supporter, patented to the same inventor November 5, 1867. The invention consists in forming upon the back of the friction plate a thin projection, inclined at an angle of 40° or thereabout, which enters an elongated slot in the box, where it bears upon and traverses a roller pivoted in the box, its single point of bearing upon the face of the roller being below the center of axis of the roller, by which means the movements of the sash are made smoother. The invention further consists in a bed box, having formed in its upper end an elongated slot, in which the roller is pivoted, the sides of which serve as a guide to the thin edge of inclined projection; and at its lower end a bed for the spring, with sides cut away, to decrease its width and weight. A thumb screw is inserted in the upper end of the box, with the point of the screw working upon the inclined surface of a recess formed in the friction plate, in order to force the friction plate against the window casing in an upward direction, and to force the edge of the inclined projection upward and outward upon the face of the roller, thus wedging the friction plate tightly. The same inventor has also patented a new fastener for the meeting rails of sashes, in which the operation of turning the arm in fastening the window will draw the lower sash up or the upper sash down, should they not be fully closed, without its being necessary to fully close said sashes with the hand before operating the lock.

IMPROVED MODE OF DRESSING ENAMELED MOLDINGS.

Albert C. White, Brooklyn, N. Y.—For the purpose of cutting off the moldings from their connecting wood base or backing in a rapid, accurate, and very reliable manner by the use of a power planer, and for dispensing with the hand planing and sandpapering, this invention passes the moldings through the planer by placing them in a bed piece with corresponding grooves and of equal length and width, and feeding them to the cutter set to the exact thickness of wood required to be cut.