

NEW BOOKS AND PUBLICATIONS.

PROBLEMS IN STONE-CUTTING, for Students of Engineering and Architecture. By S. E. Warren, C.E., Professor in the Massachusetts Normal Art School, etc. Illustrated with Ten Plates. Price \$2.50. New York city: John Wiley & Son, 15 Astor Place.

Professor Warren has elaborated the science of stone-cutting into a branch of the higher mathematics, and his volume now before us contains some of the most instructive and interesting problems in the geometry of solids that we have ever seen. The numerous examples are taken from cases which actually occur in erecting buildings, and are therefore of the greatest practical value. The illustrations are very explicit, and the book altogether is an exhaustive treatise on a difficult and important industrial science.

THE AMERICAN STAIR-BUILDER'S GUIDE. By Lucius D. Gould. Illustrated with Thirty-two Plates. Price \$4.00, post-paid. New York city: A. J. Bicknell & Co., 27 Warren street.

This is an excellent treatise on the most puzzling question which the ordinary house carpenter encounters; and it is judiciously treated in a clear and elementary manner, presenting no difficulties to the reader of average education. It describes the subject thoroughly, giving instructions for solving all the problems that may arise in practice, and this without departing from the simple and perspicuous plan which characterizes the whole book.

THE MECHANIC'S FRIEND; a Collection of Receipts and Practical Suggestions. Illustrated. By William E. A. Axon. New York city: D. Van Nostrand, 22 Murray and 27 Warren streets.

This book is a compilation from the pages of the *English Mechanic*, and consists chiefly of descriptions of mechanical devices and tools, more or less known to practical workers in the various trades.

ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION, FOR THE YEAR 1874. Washington, D. C.: Government Printing Office.

This annual is too well known to need description here. It is a compendium of scientific progress during the year, and worthily represents the labors of our national scientific institution.

A GRAPHIC METHOD FOR SOLVING CERTAIN ALGEBRAIC PROBLEMS. By George L. Vose, Professor of Civil Engineering in Bowdoin College, etc. Price 50 cents.

WATER AND WATER SUPPLY. By W. H. Corfield, M.A., M.D., Professor of Hygiene at University College, London. Price 50 cents. New York city: D. Van Nostrand, 23 Murray and 27 Warren streets.

These handy and useful volumes are Nos. 16 and 17 of Mr. Van Nostrand's compendious "Science Series."

BROWNE'S PHONOGRAPHIC MONTHLY, a Journal devoted to the Interests of Phonography and Phonographers. \$2 a year. New York city: D. D. Scott-Browne, 737 Broadway.

This periodical contains much useful information as to the science of phonography, and some interesting news relating to the profession.

Inventions Patented in England by Americans.

(Compiled from the Commissioners of Patents' Journal.)

From October 2 to October 7, 1875, inclusive

AIR GUN DART, ETC.—H. M. Quackenbush, Herkimer, N. Y.
BATTERY GUN.—J. P. Taylor, Elizabethton, Tenn.
FIREPROOF SAFE, ETC.—W. A. Shepard, New York city.
GELATIN PRINTING, ETC.—E. Edwards, Boston, Mass.
LUBRICATING OIL, ETC.—C. H. Green, New York city.
NAIL MACHINE.—W. Wickersham, Boston, Mass.
PRESERVING FRUIT, ETC.—A. J. Reynolds, Chicago, Ill.
RAISING WRECKS, ETC.—J. T. Parlour (of Brooklyn, N. Y.), London, Eng.
STOPPING BOTTLES.—E. A. O'Brien, New York city.
VALVE.—T. Shaw, Philadelphia, Pa.

Recent American and Foreign Patents.

NEW WOODWORK AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED CROSSCUT SAW HANDLE.

Lewis Shepard, Mace, Ind., assignor to himself and D. W. Kennedy, of same place.—A stiffening back piece is attached at the end of the saw, it being grooved to fit on the back of the same, and retained by two rods, that are arranged at opposite sides of the saw blade, so as to lock with the hook ends into the recesses of the saw teeth. The main handle is made of curved shape, and fastened to the blade in the usual manner. When the saw is worked by two men, a second curved handle is applied to the opposite end of the saw blade. The stiffening back piece carries on an extension of the foremost rod a second handle, which enables the operator to steady the saw, put his full strength on the same, and work the same in a quick and effective manner.

IMPROVED DRAFT EQUALIZER.

James M. Buckner, Salem, Neb.—This is an improved three-horse evener, consisting of a long lever on the side for the two horses, and a short lever on the side for the one horse, all pivoted to the tongue, and coupled together by connecting the short arm of the short lever to the long arm of the long one in such manner that the one horse has the necessary leverage to counterbalance the two horses. This is a compact arrangement, well adapted for use on harvesters, for which it is more especially designed.

IMPROVED ROOFING COMPOUND.

James A. Craig, Philadelphia, Pa.—This inventor calls attention to the resistance to atmospheric influence peculiar to soapstone, which substance, after reducing it to a granulated form, he mixes with hot pitch, to form a durable and tight roofing compound.

NEW AGRICULTURAL INVENTIONS.

IMPROVED CORN PLANTER.

Albert Hodgson, Humboldt, Kan.—The seed slides are the novel portions of this device. Between said slides are formed two dropping holes, which are adjustable as to size. Near these are projections, which, as either hole passes beneath seed, guides the latter into the aperture, so that the latter are always filled. There is a cut-off in the lower portion of the seed hopper, suitably constructed with reference to the slides.

IMPROVED BUTTER WORKER.

Patrick Rooney, Fairfield, Vt.—This consists of a tray suitably supported on legs. There is a frame, the lower bar of which travels in guide bars, under the central part of the table, and the upper cross pieces of which carry a smaller frame, which enters the tray. With the main frame is connected a spring treadle, so that the former, while being oscillated, may be moved up and down, thus causing the small auxiliary frame to act upon the butter.

IMPROVED FLOUR SACK PACKER.

Charles M. Fuller and Robert M. Parkerson, Batavia, N. Y.—This invention consists of a tube having movable plates on which the flour rests. When these plates are raised, the flour flows into the sack until arrested by the replacing of the plates when the sack is full. Devices suitably arranged then press and pack down the flour, and the platform on which the filled sack stands is lowered so that a new bag can be set in position. The apparatus is of novel and ingenious construction, and doubtless will prove of much utility to millers.

NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.

IMPROVED EYEGLASS.

James T. L. Anderson, Brooklyn, E. D., N. Y.—The novel feature in these eyeglasses is a movable nose clamp which is pivoted to each frame. Instead of resting against the sides of the nose transversely, it may be turned to fit into the angle between nose and brow, thus accommodating itself to the form of the nose.

IMPROVED AUTOMATIC TELEGRAPH KEYS.

Lucien S. Crandall, New York city.—Two new and ingenious telegraphic improvements of the above description have been devised by Mr. Crandall. The first consists of a series of pivoted spring keys or finger levers, marked with the different letters of the alphabet. These levers come, by cams of varying shapes, in contact with projecting arms of a shaft, that operates, by a spring pawl, a ratchet wheel. The latter closes the circuit by the contact of the teeth with a metal tongue connected to one pole, while the key shaft and ratchets are connected to the other pole. As every cam is shaped in suitable manner by steps and extensions, so that the Morse character of the letter of its key is produced, words may be telegraphed mechanically by simply depressing the required keys. By some practice a very rapid and reliable mode of transmitting messages is produced, as each key, when depressed, produces the exact corresponding Morse character on the sounder, one shaft, ratchet wheel, and tongue serving for all the keys jointly.

The second invention also consists of a series of spring keys or finger levers, representing the letters of the alphabet, which move on being depressed. A series of wheels are divided along their circumference into insulated and non-insulated portions, so as to close or break the circuit by the contact with spring tongues or riders connected to one pole, while the wheels are connected to the other pole of the battery. The insulated and non-insulated portions of each wheel are so proportioned that the Morse character of the letter of its key is produced at each depression of the same, and the subdivision of the circumference and of the ratchet wheel is accurately constructed, so as to repeat the same letter regularly and uniformly by the exact contact of the tongue or rider. Thus the mechanical transmission of words and messages can be accomplished in rapid and reliable manner.

IMPROVED BALE TIE.

William H. Walker, Charleston, S. C.—One end of the hoop is first permanently secured in a slot in a plate. Then the other end is brought around the bale and is turned under and over two bent arms of said plate. The hoop can thus be easily detached or fastened, admitting of the device being repeatedly used.

IMPROVED REGISTER.

Frederic J. Hoyt and William H. Hoyt, Batavia, N. Y.—This is a seal for the protection of freight cars on railroads, to prevent them from being tampered with; and it consists of a combination of numbers (or letters), which numbers may be changed without destroying the seal. It also consists in bolts, dog, ratchet wheel and shaft, with the necessary changeable ring disks and apparatus. A movement of the ring takes place at each opening of the car door, which changes the number of the seal. From this it will be seen that a simple means is offered of determining when and where the door was opened, and further, that the seal is not broken or otherwise injured, as is the case with several other devices for a like purpose.

UNITING THE SOLES AND UPPERS OF BOOTS AND SHOES.

George V. Sheffield, New York, assignor to himself and Martin Bennett, Brooklyn, N. Y.—This inventor has devised a new way of uniting the soles and uppers of boots and shoes. A doubled wire is passed through both parts to be joined. Then a thread is passed through the loop of the wire on the under side of the sole, and drawn through the leather by means of said wire. This quadruples the thread in the hole, making a very strong fastening.

IMPROVED CIRCUIT CLOSERS FOR RAILROAD SIGNALS.

Lloyd B. Dennis, Sandusky, Ohio.—This is an improved circuit-breaking device that produces, by the passage of the train, the registering of the position of the same at any desired station, so that the track is within full control, and the danger of railway accidents reduced. A rod which rises beside the track is pressed down by the wheels of the train. This moves a lever, which enters between and separates two pivoted wire-carrying spring clamps. The electric current through the latter is thus interrupted, and the sounders at the stations worked.

IMPROVED COMBINED TRAVELING BAG AND CHAIR.

Celine Laumonier, New York city.—This is a folding chair with which several bags are conveniently combined. When the chair is closed up, a satchel, which is locked by suitable devices, encloses it. The whole forms a simple and convenient means for carrying a chair, well adapted for travelers.

IMPROVED HAIR-CRIMPING PIN.

Maria Gardner, New York city.—The number of hair pins which are destroyed by being used for hair-crimping purposes, though probably never computed, must be something enormous, since the majority of ladies who wear their hair in that becoming fashion usually bend and break several each time that the hair is twisted. Mrs. Gardner's invention will doubtless prove economical, therefore, as well as convenient. It is a pin of the usual U shape, having several holes in its arms through which, after the hair is wound around them, a small straight pin is inserted and fastened in place by a key.

IMPROVED SKID FOR OIL BARRELS.

David M. Haight, Oswego, Ill.—The object of this invention is to enable carbon oil, naphtha, benzine, and other oils to be retailed directly from the cask in which they are received without waste from the drip or leakage. The oil-cask skid is provided with a sheet metal lining or pan, and a sheet metal facing upon the concave and inclined upper edges of its end pieces.

IMPROVED SAFETY POCKET.

Joseph Colton, New Orleans, La.—This pocket is made of stout cloth or leather, into which small chains are mingled in a kind of network. The mouth is protected by semicircular bars, to which the fabric is riveted, said bars being fastened, when required, by a novel catch. The pocket may be conveniently attached to the garment, and probably would baffle the skill of the pickpocket.

IMPROVED POCKET BOOK FASTENER.

Louis Prahar, New York city.—This is a simple and yet secure form of spring latch which may be easily attached to the pocket book. The latter has a ball-shaped end, which enters a socket in the fastening plate.

IMPROVED METHOD OF MAKING MAIL BAGS.

Henry Stephens, Brooklyn, E. D., N. Y.—This is an improved method of attaching a shield to the lower portion of the bag, to protect the stitches of the seam by which the bottom is sewed on from wear. The invention will doubtless add considerably to the lasting qualities of the bags.

IMPROVED DEAD CART.

Thomas F. White, New York city.—In order to cart dead animals through the streets without exposing people to offensive odors, this inventor proposes a box provided with doors at each end, said doors being arranged with packing, so that when they are shut the box is hermetically sealed.

IMPROVED PROCESS OF TREATING OLEAGINOUS SEEDS.

Alfred B. Lawther, Chicago, Ill.—The object of the invention is to improve the process of working flaxseed, linseed, and other oil seeds in such a manner that a greater yield of oil is obtained at a considerable saving of time and power in the running of the crushing, mixing, and pressing machines, while also a cake of superior texture is produced. The process consists mainly in conveying the oil seeds through a vertical supply tube and feeding roller to powerful revolving rollers, at such degree of pressure that each seed is individually acted upon, and the oil cells fully crushed and disintegrated. They are then passed directly, without the use of muller stones, to the mixing machine, to be stirred, moistened, and heated by the admission of small jets of water or steam to the mass, and then transferred to the presses.

NEW HOUSEHOLD ARTICLES.

IMPROVED SMOKED BEEF SHAVER.

Caleb R. Turner, Brooklyn, N. Y.—This invention consists of a slicing knife, swinging forward and backward at the end of a trough holding the beef, so as to make a shear cut. The knife is suspended from a pivot above the trough, on which it can be swung up out of the way of the trough, to be sharpened without being detached. The knife frame carries a cam, which feeds the meat up to the knife. A pawl mechanism is contrived to vary the feed, making thick or thin slices, and a pusher is so engaged with the feed screw that it can be shifted along the screw quickly to adjust it to the meat.

IMPROVED KEY HOLE GUARD FOR LOCKS.

Henry Cochems, Easton, Pa.—This is a door lock that may be securely locked from the inside or outside, so as not to be opened by the introduction of skeleton keys or other instruments. The invention consists, mainly, of a sliding guard block that is thrown into position to close the key holes by a fulcrumed elbow lever, and a sliding and spring-acted knob spindle and plate. The spindle is prevented from releasing the guard block by a safety locking plate set by a small key from the outside. The knob, latch, bolt, and guard block are separately locked by additional safety stops to secure them. Some such device as this is now needed on the doors of hotel rooms, and of state rooms on steamers.

IMPROVED WINDOW SCAFFOLD.

Heinrich Kruger, Jr., New York city.—This is an improved folding window scaffold that may be readily secured outside of the window. It is available for use as a step ladder, and capable of folding up into narrow compass for storage after use. The idea is to give the servant, who cleans the exterior of the panes, a safer and better seat than the window ledge. The principal point of novelty is the insertion in the bracket which secures the supporting pieces in the window.

IMPROVED BASE FOR REVOLVING CHAIRS.

William T. Doremus, New York city.—This inventor has already patented a large number of new and ingenious devices relative to the improved construction of furniture. In the present arrangement, we have still another, which consists of a strong and simple chair base, which can be easily taken apart or put together. The legs radiate about a central pivot or screw socket, to the flanges of which they are connected by suitable ring plates and bolts.

IMPROVED COMBINED KNOB LATCH AND LOCK.

James F. Cooper, Syracuse, Ohio.—In this lock the key bolt is fastened by the latch bolt and tumbler, while the entire withdrawal of the latch bolt is prevented by the said tumbler. The door, or article to which the lock is applied, is thus doubly secured.

NEW MECHANICAL AND ENGINEERING INVENTIONS

IMPROVED HYDRANT.

Christian F. Rapp, Cincinnati, Ohio.—This invention consists of a hydrant connected, by three-way cocks, with the supply pipe and two separate exit pipes, of which one is provided with a pump to force out the water remaining in the supply and other pipes. In the warm season the pump-connecting pipe may be closed by the governing rod, so that it is thrown out of operation. The hydrant is, by this anti-freezing arrangement, protected against any interruption of its operation, and the frequent digging and repairing of damage. If the predictions of those who foretell a coming winter as severely cold as the winter of last year are verified, there will be a great necessity for inventions of this kind.

IMPROVED DIKING ATTACHMENT FOR DREDGERS.

George Washington Parsons, Salisbury, Md.—This invention consists of an inclined hopper and chute, supported on vibrating cross pieces placed on suitable framework of lighters. Vertically adjustable screw bolts allow the raising or lowering of the chute, while water supply pipes and spurt holes of the hopper produce the flow of the dredged mass, in connection with a proper inclination of the chute. The new features are the devices which allow of the oscillation of the chute on the settling of the lighter when the material is dumped from the dipper, and also the arrangement of water pipes in the hopper.

IMPROVED MACHINE FOR ROUNDING LEATHER.

James Lewis, Prattville, N. Y.—The object of this invention is to round leather for making traces, round belting, etc. The material is inserted in a proper groove, a frame is turned down upon it and closed and locked. A crank is then operated, carrying the leather through between the rollers, and bringing it to an exact and uniform round, leaving its surface smooth and unscrubbed.

IMPROVED ICE-BREAKING VESSEL.

Erich Jacob Weederemann, Copenhagen, Denmark.—This inventor proposes to build steamboats provided at each end with sharp, strong, and powerful prows. The prow is not placed immediately under and in line with the stern post, but at some distance back of the same, leaving a bow portion with sharp inclined keel in front. This produces the same inclined position of the vessel when propelled against the ice as if weighted by a water reservoir, being raised above the same, so that the ice is cut and broken by the weight of the vessel.

IMPROVED MILLSTONE STAFF.

James See, St. Louis, Mo.—This is simply an iron hoop provided with four adjustable surfacing points, arranged to support the traversing level when marking high places on the surface of the burr. The device enables the bed stone and runner to be readily staffed for being dressed.

IMPROVED CRANE.

Jesse M. Caswell and Addison R. Worth, De Soto, Wis.—This is an ingenious and strong form of crane, easily constructed and having all its parts arranged in the same vertical plane, so that when not in use it can be turned against the side of the building near which it may stand, so as to be out of the way.

IMPROVED EXTENSION LADDER.

William T. Core, Norfolk, Va.—In this ladder, the pulleys around which the cords for raising the sections pass are mounted on the rounds, and are kept in position and strengthened by parallel bars, the ends of which are connected with the rounds above and below the said pulley rounds, thus distributing the strain, and preventing the pulley rounds from being broken.