

We are indebted to Mr. John Eaton, Jr., Commissioner of Education, for a copy of his Annual Report for 1870. We have read a great deal of this most admirable public document. It abounds in valuable information and statistics upon the present condition of education in the various States in the Union, together with instructive papers upon several specific subjects.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

APPLICATIONS FOR LETTERS PATENT.

- 11.—CARRIAGE LAMPS, BURNERS, AND BRACKETS.—R. Spaulding Merrill, Boston, Mass. January 3, 1871.
 21.—TOOL MARKER FOR SEWING MACHINES.—J. F. Kellogg, North Bridge-water, Mass., and E. A. Cutler, Providence, R. I. January 5, 1871.
 29.—STEAM BOILERS.—W. B. Mack, Philadelphia, Pa., residing at Glasgow, January 6, 1871.
 32.—REPEATING FIRE-ARMS.—Oliver F. Winchester, New Haven, Conn. January 6, 1871.
 33.—PLUMBAGO PRESSES.—Hubert R. Ives, New Haven, Conn. January 6, 1871.

New Patent Law of 1870.

INSTRUCTIONS

HOW TO OBTAIN

LETTERS-PATENT

FOR

NEW INVENTIONS.

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When the invention consists of a medicine or compound, or a new article of manufacture, or a new composition, samples of the article must be furnished, neatly put up. There should also be forwarded a full statement of its ingredients, proportions, mode of preparation, uses, and merits.

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The American Newspaper Directory, Published by the New York Advertising Agents, Geo. P. Rowell & Co., is the most complete publication of the kind ever issued. Price \$5, bound in cloth.

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Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.

The paper that meets the eye of manufacturers throughout the United States—Boston Bulletin, \$4 00 a year. Advertisements 17c. a line.

"507 Mechanical Movements." This book is a complete illustrated table of Mechanical Movements, embracing all departments of Mechanics, and is an invaluable handbook for Mechanics, Inventors, Engineers, Students, etc. Price \$1. By mail, \$1.12. Address Theo. Tusch, 37 Park Row, New York.

A Book of Simple Rules and Formulæ, for the Solution of all Problems in the Application of Steam. By J. M. Derby, Professor at the Ecole Centrale, Brussels. Bymail, \$1. A. W. Macdonald, 29 Beekman st., New York.

Apply to J. Dane, Jr., Newark, N. J., for the best hand lathes, slide rests, presses, jewelers' rolls, models, dies, and light machinery to order.

Dickinson's Patent Shaped Diamond Carbon Points and Adjustable Holder for dressing emery wheels, grindstones, etc. See Scientific American, July 24 and Nov. 20, 1869. 64 Nassau st., New York.

Imp'd presses and dies for tin work; special drilling machinery for hardware manufacturers. Ferracute Machine Works, Bridgeton, N. J.

Lake Huron Grindstones. J. E. Mitchell, Philadelphia, Pa.

Amherst Grindstones. J. E. Mitchell, Philadelphia, Pa.

Wanted.—Machinery for making Cigar Boxes. Address Alfred Savage & Son, Montreal, Quebec.

Wanted.—One of Brown & Sharpe's Universal Milling Machines, in good order. Address McBeth, Bentel & Margedant, Hamilton, O.

Shive's Pat. Governor, with Automatic Safety Check, which prevents the Engine from running away, received three highest premiums. A. B. Lawrence, General Agent, 38 Cortlandt st., New York.

Valuable property and machinery for manufacturing purposes, in Poughkeepsie, N. Y. Apply to Wm. H. Crosby, 261 Mill st., or on the premises, Bayeaux st.

Peteler Portable R. R. Co. contractors, graders. See adv'tment.

Peck's Patent Drop Press. For circulars address the sole manufacturers, Milo, Peck & Co., New Haven, Ct.

For small, soft, Gray Iron Castings, Japanned, Tinned, or Bronzed, address Enterprise Manufacturing Company, Philadelphia.

The best place to get Working Models and parts is at T. B. Jefferys, 160 South Water st., Chicago.

E. Howard & Co., 15 Maiden Lane, New York, and 114 Tremont st., Boston, make the best Stem-winding Watch in the country. Ask for it at all the dealers.

Improved Foot Lathes. Many a reader of this paper has one of them. Selling in all parts of the country, Canada, Europe, etc. Catalogue free. N. H. Baldwin, Laconia, N. H.

"Edson's Recording Steam Gage and Alarm," 91 Liberty st., New York. Illustrated in SCIENTIFIC AMERICAN, January 14, 1871.

English and American Cotton Machinery and Yarns, Beam Warps and Machine Tools. Thos. Pray, Jr., 57 Weybosset st., Providence, R. I.

Self-testing Steam Gage—Will tell you if it is tampered with, or out of order. The only reliable gage. Send for circular. E. H. Ashcroft, Boston, Mass.

Hand Screw Punches and Lever Punches. American Saw Co., New York.

Patent Elliptic-gear Punches and Shears.—The greatest economy of power, space, and labor. Can be seen in operation at our factory, in Trenton, N. J. Address American Saw Co., 1 Ferry st., New York.

The Merriman Bolt Cutter—the best made. Send for circulars. H. B. Brown & Co., Fair Haven, Conn.

To Cure a Cough, Cold, or Sore Throat, use Brown's Bronchial Troches.

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Glynn's Anti-Incrustator for Steam Boilers—The only reliable preventive. No foaming, and does not attack metals of boilers. Price 25 cents per lb. C. D. Fredricks, 587 Broadway, New York.

Machinery for two 500-ton propellers, 60-Horse Locomotive Boiler, nearly new, for sale by Wm. D. Andrews & Bro., 414 Water st., N. Y.

Cold Rolled-Shafting, piston rods, pump rods, Collins pat. double compression couplings, manufactured by Jones & Laughlins, Pittsburgh, Pa.

Keuffel & Esser 116 Fulton st., N. Y., the best place to get 1st-class Drawing Materials, Swiss instruments, and Rubber Triangles and Curves.

For mining, wrecking, pumping, drainage, and irrigating machinery, see advertisement of Andrews' Patents in another column.

For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

For Fruit-Can Tools, Presses, Dies for all Metals, apply to Bliss & Williams, successor to May & Bliss, 118, 120, and 122 Plymouth st., Brooklyn, N. Y. Send for catalogue.

Belting that is Belting.—Always send for the Best Philadelphia Oak-Tanned, to C. W. Army, Manufacturer, 301 Cherry st., Phil'a.

For the best Self-regulating Windmill in the world, to pump water for residences, farms, city buildings, drainage, and irrigation, address Con. Windmill Co., 5 Colfaxe Place, New York.

Conklin's Detachable Rubber Lip, for bowls, etc., works like a charm. For Rights, address O. P. Conklin, Worcester, Mass., or A. Daul, Philadelphia, Pa.

Japanese Paper-ware Spittoons, Wash Basins, Bowls, Pails, Milk Pans, Slop Jars, Commode Pails, Trays. Perfectly water-proof. Will not break or rust. Send for circulars. Jennings Brothers, 352 Pearl st., N. Y.

House Planning.—Geo. J. Colby, Waterbury, Vt., offers information of value to all in planning a House. Send him your address.

Manufacturers and Patentees.—Agencies for the Pacific Coast wanted by Nathan Joseph & Co., 619 Washington st., San Francisco, who are already acting for several firms in the United States and Europe, to whom they can give references.

See how cheap Thomas sells Lathes and Drills, in another column.

Ashcroft's Low Water Detector. \$15; former price, \$30. Thousands in use. E. H. Ashcroft, sole proprietor of the patent, Boston, Mass. Steel Castings, of the best quality, made from patterns, at Union Steel and Iron Works, Rhinebeck, N. Y.

Capital wanted to manufacture licensed shuttle Sewing Machines. Address "Inventor," care of S. M. Pettengill & Co, 37 Park Row, N. Y. A Chemist, Analytical and Manufacturing, of many years' experience in the largest chemical factories in Germany and in this country, wants an engagement. Best references given. P. O. Box 172, Hoboken, N. J. Wanted.—Partner to take an interest in an established Foundry, Engine and Machine Shop, in the West. Prefer practical mechanic to take charge. Address S. L. McHenry, 335 Liberty st., Pittsburgh, Pa. To Ascertain where there will be a demand for new machinery or manufacturers' supplies read Boston Commercial Bulletin's Manufacturing News of the United States. Terms \$4 00 a year

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address correspondents by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 1 00 a line, under the head of "Business and Personal."

All reference to back numbers must be by volume and page.

GEARING CIRCULAR SAWS.—In answer to E. O. T.'s inquiry in regard to running a saw by gear direct from engine, I would say that there would be no trouble with the gear, but it would be folly to run a large saw in that way, owing to the great liability of the saw to be instantly stopped by the springing of timber, turning of logs, and other causes that practical sawyers know. My opinion is that if E. O. T. try it he will some day find his mill a wreck. I would also state that I have a gear of his description 2-foot diameter, 5-inch face, run by water power, that often makes 800 turns in a minute, used with belt for driving a 48-inch saw.—A. O. B., of Vt.

CEMENT.—F. P. B. can make a cement for fastening leather to iron or glass, as follows: To 1 quart of glue, after it is dissolved in good cider vinegar, add 1 ounce Venice turpentine; let it cook about half a day, when it is fit for use.—O. L. C., of N. H.

TURNING LATHE.—If M. C. R. will take a light cut from the bottom of the tail-stock, his lathe will turn true. The tail stock is evidently a little too high for the cone.—R. A. B., of Pa.

J. M. D.—The object of our query column, and column of answers to correspondents, is to benefit our readers at large, not individual readers. If you will send the recipes of which you speak we will publish them, but do not intend to make our office a medium of intercommunication on private business matters. The action of a steel magnet or any other magnet, will not render the air magnetic. A machine kept in motion by the attractive force of a permanent magnet would be a perpetual motion in the same sense as one kept in constant motion by the action of gravity. A water wheel placed in a never-falling stream is a perpetual motion in this sense. What is sought for is, however, a machine that will move itself independently of static force. Have you got such a machine? If so, we shall be glad to be introduced to it.

B. M. & Co., of Ind.—You are on the right track. By admitting air behind the bridge wall in the manner proposed, you will probably consume your smoke. We believe that heated air, if forced in under pressure, is better than cold air. If, however, it go in only under ordinary pressure, what you gain by increase of temperature will be, in great measure, lost by expansion, less oxygen entering in proportion to volume than when it enters cold.

J. A. H., of Ga.—There is no such substance as that you seek. The experiment you propose indicates that you do not understand the first principles of electrical science. Better get some good treatise, and inform yourself, than waste time and money in trying experiments which can not by any possibility teach you anything.

M. Y., of Ga.—We shall be glad to hear from you on the subject proposed, but cannot, of course, promise publication till we read your manuscript. The proportions for Babbitt metal, and method of making the alloy are as follows: Melt 4 parts of copper, and add by degrees 12 parts of best Banca tin, and 8 parts of regulus of antimony. When the mass is melted add 12 parts more of tin.

B. J. of Pa.—Rosner, a Danish Astronomer, first determined the velocity of light in 1675, by observing the eclipses of Jupiter's moons. It seems to require no time at all to pass over any distance of earth; the flash seems to be instantaneous.

E. M. F., of N. J.—You may use soda ash in your boiler to remove scale without any danger of hurting the boiler. In some cases it will loosen the scale, in others it will not. It will do no harm to try it.

G. F. C., of —.—Plaster of Paris is prepared for taking casts by simply mixing it with water to the consistency of cream. The mixing must be done rapidly, or it will set before it can be poured into the mold.

O. W. Y. of Conn.—You will find the information you seek in an article on "Artificial Stone," page 263, Vol. XXIII. of the SCIENTIFIC AMERICAN.

L. R., of N. H.—The motive powers of streams, flowing equal volumes of water, will be directly as their falls. If a stream through which a given volume, at a given point, falls ten feet, produce at that point one hundred horse power, the same volume falling at another point twenty feet would yield two hundred horse power. The horse power of a body of falling water, is the weight in pounds which falls per minute, multiplied into the distance in feet through which it falls, and the product divided by 33,000.

Queries.

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers, and hope to be able to make this column of inquiries and answers a popular and useful feature of the paper.]

1.—**CEMENT FOR LEATHER THAT WILL RESIST WATER AND HEAT.**—I wish a cement for leather that will resist the action of water and moderate heat.—J. A. K.

2.—**FILTER FOR CISTERNS.**—I see some of your correspondents recommend a wall of soft-burnt bricks for cistern filters. Should the wall be laid up with mortar or cement, or simply with the bricks alone?—J. A. K.

3.—How can I render scrap lead (such as accumulates in a plumber's shop) as soft and tough as pure sheet lead or pig lead? I desire to make castings of a peculiar shape, and can do so with pure sheet or pig lead, but the scrap is too hard and brittle. Cheapness is of course an object.—H. W. J.

4.—**HARDENING CAST IRON.**—How can cast iron be hardened after it is fitted and finished, without injury to the finished surface, and so as to render it more durable under wear?—C. D. S.

5.—DRESSING FURS.—I wish some cheap way of dressing skins with the fur on, and polishing the hair after the skin is dressed?—J. P. H.

6.—DISTILLING TAR.—How can I distil pine tar so as to separate the grosser parts from the finer? What sort of still should I use, etc?—

7.—IMITATION ROSEWOOD MOLDINGS.—How are imitation rosewood moldings made? How is the plaster made to adhere, and how are they finished?—W. S. H.

8.—POTTER'S CLAY.—How is potter's clay mixed and tempered?—G. F. C.

9.—EXPLOSION OF SCRAPPING FURNACE.—An explosion occurred in one of my furnaces recently, which I cannot explain or account for. The furnace is what is known as a cinder bottom scrapping furnace, with water chill inside, built very strongly, in use only two weeks, using mixed hard and soft coal, with blast. It exploded with great violence, just after the heat had been drawn, when the door was open, and when the heater had just taken his rabble out of the water bosh, and thrust it into the furnace, on the cinder bottom. The explosion was similar to the discharge of a cannon, and filled the mill with smoke and steam. The roof of the furnace was lifted, though not blown off, and the nine doors in the boiler wall were all blown open. The heater said no water had been put into the furnace to cool the bottom, as he had been accustomed to do, but explained it as resulting from the contact of a little wet cinder, about the size of a walnut, sticking on to the rabble, and coming in contact with the molten cinder in the furnace. But this explanation did not satisfy me, and as the occurrence was new to me, and very dangerous, and might be very expensive, I desire to ask the cause of the explosion, and the remedy. A similar occurrence happened at one of the large mills here in Reading, on the same day, and a few years since, at Phoenixville, Pa., a furnace was leveled with the ground from the same cause. Water is frequently thrown into the furnace to cool the bottom, without danger, and the heater says an explosion might not happen again in five years with the same treatment. What exploded, and what was the cause?—J. H. S.

10.—SAWING SOFT TIMBER WITH CIRCULAR SAWS.—With what form of teeth—filed square or shearing on top—can the best results be obtained in sawing soft timber with circular saws?—A. O. B.

11.—PRESERVING STARCH AND PASTE.—Is there any substance that, when put into boiled starch and flour paste, will preserve the starch and paste in a perfect state for months? Something that will prevent them from souring or watering?

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

COTTON CHOPPER.—Joseph R. Hood, Wedowee, Ala.—This invention consists in providing the frame of a cotton chopper with a hoe, arranged in such manner as to work from the side of the frame, for the purpose of thinning out the cotton crop.

WOOD-SPLITTING MACHINE.—Frank Ficht, Dyckesville, Wis.—This invention has for its object to furnish an improved machine for splitting cord wood, shingle bolts, and other short wood, and which shall be simple in construction, effective in operation, and conveniently operated.

CARTRIDGE BELT.—William B. Hayden, Columbus, Ohio.—This invention has for its object to so improve cartridge belts that the same may be reloaded, to bring the filled pouches always to the front, and to improve the pouches so that the wads of the several cartridges will be retained in place.

HOLLOW AUGER.—Aaron Bauman and Orin O. Witherell, Toledo, Ohio.—This invention has for its object to furnish an improved hollow auger, which shall be simple and inexpensive in construction, not liable to get out of order, and which shall require less power to operate it than the hollow augers constructed in the ordinary manner.

SPADE.—Harrison Parkman, Philadelphia, Pa.—This invention consists in a spade whose lower end is beveled downward from each outer corner to a central point; which is wider at the lower than at the upper end; which in cross-section is concave on its front and convex on its rear side; and which longitudinally is straight on its rear side, from top to bottom.

WASHING MACHINE.—A. J. Nave, Columbus, Texas.—This invention has for its object to furnish an improved machine for washing wool, clothes, etc., which shall be simple in construction, convenient in use, and effective in operation, being so constructed as to wash the clothes quickly, thoroughly, and with very little wear.

INVALID BEDSTEAD.—Dr. William O. Reid, Vienna, N. C.—This invention relates to improvement on the bedstead patented to applicant March 1, 1870, and consists in mechanism whereby the patient is enabled to raise his body into a partially erect position, and otherwise assist himself in various ways, without the aid of an attendant.

BIN COVER.—Alonzo S. Maxwell, Dixon, Ill.—This invention relates to improvements in the bin covers made in the form of a segment of a circle, and moving of circular lines in opening and closing, and it consists in providing arms for the said covers, which are pivoted at the axis of the curve of the cover, and have curved heads, by which they are attached to the covers; said heads stretching across the ends of the covers at the inner sides in a way to brace and strengthen the covers; and the covers are supported on the pivots of the arms whereon they swing in opening and closing, so that they are held either open or closed, by gravity. The invention also consists in the application to the bins, of casings to prevent the contents of the bins working between the arms and the walls thereof; also a packing to exclude it from the space between the cover and the top of the case.

DRAWER PULL.—Charles H. Pierpont, West Meriden, Conn.—This invention relates to improvements in that class of drawer pulls in which a handle is jointed to a shank projecting from the front of the drawer, to hang in a vertical position when not used for pulling the drawer, and it consists in the application to the said handle, of a cushion of india-rubber or other suitable elastic substance, on the part likely to strike against the said drawer front when let fall, to prevent marring or defacing the front, also to prevent noise.

FILE AND BINDER FOR PAPERS, PAMPHLETS, ETC.—J. G. Floyd, Jr., New York city. This invention has for its object to furnish an improved file and binder for filing and binding, temporarily or permanently, papers, pamphlets, and other periodicals, successively, as they are received, and which shall be simple in construction, easily and conveniently manipulated, and will hold the papers securely and without mutilating them, or interfering with their being subsequently bound.

STAMP HOLDER.—Julius Ropes, Ishpeming, Mich.—This invention has for its object to furnish an improved device for holding postage and internal revenue stamps, designed more especially for use in post offices and other places where stamps are sold at retail, which shall be so constructed that the different denominations will be held distinctly in view, and in such a way that they may be easily and quickly detached when required, and which shall be simple in construction and easily and conveniently operated.

WELL AUGER.—Elijah Altman, Hamilton, Mo.—This invention has for its object to furnish an improved well auger, designed more particularly for boring through veins of quicksand, and which shall be simple in construction and effective in operation, taking out the water and dirt much cleaner than augers constructed in the ordinary manner.

SETTING FOR STONES AND JEWELS.—William Riker, Newark, N. J.—The object of this invention is to prepare a setting for precious stones and their imitations, in such manner that the gold plates supporting said stones can be completely finished and polished before receiving them and the projecting pins that hold the same in place. The invention consists in the application, to a perforated setting plate, of separate headed setting pins for holding the stone, said pins being applied only after the plate has been entirely finished and polished.

STAMP.—A. M. Darrell, Washington, D. C.—This invention relates to the class of stamps which indelibly mark an object by burning an impression into it with a heated die; and the object of the invention is to so improve the stamp that it shall be self-heating, and at the same time be neat, durable, cheap, and convenient, the heating apparatus being as capable of adaptation to small hand stamps as to the larger classes of spring stamps, etc.

ROACH AND BUG TRAP.—Thomas Williams, Tompkinsville, N. Y.—This invention consists in applying to the lower edge and outer side of the suspended funnel an annular flange, which constitutes a trough, in which liquid for preventing the escape of the animals may be contained.

FEED-WATER HEATER.—E. L. Jones, Memphis, Tenn.—This invention relates to improvements in feed-water heaters for steam boilers, and consists in a pipe or pipes arranged to traverse the furnace chamber, through which pipes water is supplied to the boiler by a force pump, and in which a current may be maintained when the pump has ceased its operation.

FOLDING DESK.—John Milwain, Nashville, Tenn.—This invention relates to improvements in folding school desks, and it consists in a combination with the folding table of the desk, of a strip or plate for closing the opening at the point where the table is folded down, and an arrangement of the pivot points, bracing arms, and guide grooves, for the latter, for operating the table, so as to effect the said closing of the joint, so that when the table is folded down, the book case beneath will be closed dust proof.

WASHING MACHINE.—E. P. Brown, Thomasville, Ga.—This invention relates to improvements in washing machines, and consists of two sets of rollers, each mounted in a frame, with spaces between them, one set arranged above the other, both in a rectangular case, and connected to a vibrating working bar, so that they will move simultaneously in opposite directions, the rollers of the upper set rolling up and down over the lower ones, and acting on the clothes placed between the two sets. The invention also comprises the application to the upper set of a spring for increasing the pressure on the clothes.

SPOKE-TENONING MACHINE.—Godfrey E. Culp and Matthew Flaig, Lockhaven, Pa.—This invention consists in an improved machine for tenoning spokes for wagon wheels; and consists in a peculiar construction and arrangement of parts, for effecting the operation in a rapid, neat, and effective manner.

STUFFING BOX FOR ENGINES.—Joel A. H. Ellis, Springfield, Vt.—This invention has for its object to prevent the escape into the atmosphere of vapor around the piston and valve rods, and the escape of the fluid from which the vapor is produced around the plunger of the force pump that supplies vapor generators.

VAPOR GENERATORS FOR VAPOR ENGINES.—Joel A. H. Ellis, Springfield, Vt.—This invention relates to a new means for utilizing the escape heat of a furnace and steam engine, for the purpose of vaporizing gasoline or other volatile substance used in a vapor engine.

MEDICAL COMPOUND.—Rebecca Gilkinson, New York city.—This invention and discovery relates to a new and useful improvement in a liniment for curing rheumatism and similar diseases.

DUST FLYE DAMPER.—James M. Frear, Pittstown, Pa.—The object of this invention is to obtain convenient and easy access to the bottom flues of stoves and ranges for the purpose of cleaning the same, and also to create an under draft for carrying off the ashes and dust which rise when raking or shaking the grate.

COMPOUND FOR VAPOR GENERATORS.—J. A. H. Ellis, Springfield, Vt.—This invention relates to a new compound fluid to be used in the vapor generators of vapor engines.

SALT CELLAR.—John T. Walker, Brooklyn, N. Y.—This invention relates to a new salt cellar, which is provided with a clamping spring to be readily attached to and detached from the edge of a plate.

GRATE FOR FURNACES.—Alfred Dart, Carbondale, Pa.—In this invention, the fuel is fed upon a grate set at an inclination of about 45 degrees, and provided with a corrugated cover, whereby the fuel is kept in a thin stratum, and in a state of thorough and nearly uniform combustion.

SEWING-MACHINE MOTOR.—William C. Thornton and James D. Cooley, Hillsville, Va.—This invention relates to a stop-mechanism for sewing-machine motors, whereby the motion of the motor may be arrested instantly, and at any desired moment.

SOLUTION AND PROCESS FOR EMBALMING.—Dr. Benjamin F. Lyford, San Francisco, Cal.—This invention relates to a new compound for use in embalming, and a peculiar process of preparing and applying the same, whereby animal bodies may be perfectly preserved without appreciable deterioration for an indefinite period.

APPARATUS FOR PRESERVING MEATS, FRUITS, ET AL.—Nicholas H. Shipley, Baltimore, Md.—In this invention an apparatus is provided for simultaneously exhausting the air from any number of vessels, with or without the application of heat thereto, for the purpose of scientific experiments, and for domestic use in preserving meats, fruits, vegetables, etc. The apparatus is also designed for the substitution of gases in place of the air exhausted and for the application of heat or cold to the vessels during the process.

COMBINED TAPE MEASURE AND SCREW DRIVER.—Moses W. Dillingham, Amsterdam, N. Y.—This invention relates to a new and useful improvement in a combination of well-known and useful articles more especially designed for undertaker's use, and it consists in combining with the pocket tape measure a screw driver and an awl, arranged to operate from a tube connected with the case of the tape measure.

DETACHABLE TACKLE BLOCK.—George Stancliff, New York city.—This invention has for its object to so provide tackle blocks that the load suspended from them may be readily detached when desired. The invention is chiefly applicable to davits for suspending boats from the sides of a vessel, and for permitting the rapid detachment of the same, but may also be used for other purposes.

Official List of Patents.

ISSUED BY THE U. S. PATENT OFFICE.

FOR THE WEEK ENDING JAN. 31, 1871.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT FEES

On each Caveat	\$10
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111,296.—ADJUSTABLE REAMER.—Edwin H. Adgate, Mittineague, Mass.
 111,297.—FASTENING FOR DOOR-KNOB ROSES.—James M. Adolphus, Philadelphia, Pa. Antedated Jan. 21, 1871.
 111,298.—STEAM GENERATOR.—Christopher Ahrens and Frank Kamman, Cincinnati, Ohio.
 111,299.—MACHINE FOR WELDING TUBES.—William C. Allison (assignor to W. C. Allison & Sons), Philadelphia, Pa.
 111,300.—WELL AUGER.—Elijah Altman, Hamilton, Mo.
 111,301.—FODDER STAND.—John Antram and Elwood B. Mullin, Franklin, Ohio.

111,302.—MILK CAN.—Thomas M. Bell, New York city.
 111,303.—PNEUMATIC SPRING.—John Bevan, Port Richmond, and Benjamin W. Hitchcock, West Flushing, N. Y.
 111,304.—PRINTING PRESS GUIDE.—Alexander L. Bevans, Flushing, N. Y.
 111,305.—MANUFACTURE OF COPPERAS.—R. DeWitt Birch, Philadelphia, Pa.
 111,306.—APPARATUS FOR OPENING THE EYES OF PICKS.—Robert Blake/Scranton, Pa.
 111,307.—METALLIC ROOFING.—George W. Bliss, Springfield, Mass.
 111,308.—HORSE HAY RAKE.—Olpha Bonney, Jr., San Francisco, Cal.
 111,309.—HAT SUPPORTER AND VENTILATOR COMBINED.—John A. Borthwick (assignor to himself and George W. Hess), Philadelphia, Pa.
 111,310.—BEE HIVE.—Arthur Bradshaw, Rantoul, Ill.
 111,311.—HEAD STOCK FOR MILLING MACHINES.—Amos H. Brainerd, Hyde Park, Mass.
 111,312.—WHEEL FOR VEHICLES.—Alexander D. Brown, Sr., Columbus, Ga.
 111,313.—WASHING MACHINE.—Edmund P. Brown, Thomasville, Ga.
 111,314.—HAY TEDDER.—Ezekiel W. Ballard, Barre, Mass.
 111,315.—CRACKER MACHINE.—William Cairns, Jersey City N. J.
 111,316.—PUMP.—Herman Camp, Rouseville, Pa.
 111,317.—CULINARY VESSEL.—John H. Chappel (assignor to himself and Robert Seaman), New York city.
 111,318.—COMPOUND FOR ENAMELING BRICK.—Decius W. Clark, Chicago, Ill.
 111,319.—CORN POPPER.—William F. Collier, Worcester, Mass.
 111,320.—HORSE HAY RAKE.—Isaac N. Condra, Genoa, Iowa.
 111,321.—BATH AND WASH STAND.—Royal Cooper, Georgetown, D. C.
 111,322.—GATE.—Hosea Ballou Crandall, Brocton, N. Y.
 111,323.—GRAIN, COFFEE, AND RICE CLEANER.—Andrew Crawford, Wilkesbarre, Pa., and Iram D. Crawford, Bloomington, Ill.
 111,324.—HARNESS OPERATING MECHANISM FOR LOOMS.—George Crompton, Worcester, Mass.
 111,325.—CARPET.—George Crompton, Worcester, Mass.
 111,326.—PLATFORM HORSE POWER.—Frank J. Culver, Hartford, Vt.
 111,327.—SCREW DRIVER.—Moses W. Dillingham, Amsterdam, N. Y.
 111,328.—SCROLL SAW.—William H. Dobson (assignor to Henry Lampert), Rochester, N. Y.
 111,329.—COMPOUND LIQUID FOR USE IN VAPOR ENGINES.—J. A. H. Ellis, Springfield, Vt.
 111,330.—STUFFING BOX FOR ENGINES.—J. A. H. Ellis, Springfield, Vt.
 111,331.—VAPOR GENERATOR FOR VAPOR ENGINES.—J. A. H. Ellis, Springfield, Vt.
 111,332.—FLY CATCHER.—Harriet A. Farnam, South Bend, Ind.
 111,333.—MACHINE FOR SPLITTING WOOD.—Frank Ficht, Dyckesville, Wis. Antedated Jan. 29, 1871.
 111,334.—STEM-WINDING WATCH.—Walter H. Fitz Gerald, Carlstadt, N. J., assignor to Spadone & Fitz Gerald, New York city.
 111,335.—PAPER FILE.—John G. Floyd, Jr., New York city.
 111,336.—DAMPER.—James M. Frear, Pittstown, Pa.
 111,337.—CARPET STRETCHER.—Charles E. Gale, Aurelius, N. Y.
 111,338.—ROAD SCRAPER.—George B. Garlinghouse, North Madison, Ind.
 111,339.—SASH HOLDER.—Philetus W. Gates (assignor to himself and D. R. Fraser), Chicago, Ill.
 111,340.—RAILWAY CAR TRUCK.—Charles Graham, Kingston, Pa.
 111,341.—VALVE FOR STEAM PUMPS.—Joseph F. Hamilton, Alliance, Ohio.
 111,342.—DOOR HANGER AND RAIL.—Thomas Foster Hamilton, Geneseo, Ill.
 111,343.—LOOM.—Emory B. Hastings, Palmer, Mass., assignor to himself, Edwin Sawyer, Daniel L. Thompson, and Charles A. Perley.
 111,344.—HARVESTER RAKE.—George W. Hines, Brookfield, Wis. Antedated Jan. 28, 1871.
 111,345.—REGISTERING TICKET PUNCH.—Austin D. Hoffman, Chicago, Ill., assignor to James H. Small, Buffalo, N. Y.
 111,346.—COTTON CHOPPER.—Joseph R. Hood, Weedowee, Ala.
 111,347.—GRAIN SEPARATOR FOR THRASHING MACHINES.—James W. Huntoon, St. Louis, Mo.
 111,348.—ELECTRO-MOTORS FOR CARS.—Solomon Jones, New Orleans, La.
 111,349.—PUMP.—T. O. Jones, Galesburg, Ill.
 111,350.—CORN-SHELLING AND CLEANING MACHINE.—Louis Kamp, Vanderburg county, Ind.
 111,351.—BUNG EXTRACTOR.—Josiah Kirby, Cincinnati, Ohio.
 111,352.—BUNG.—Josiah Kirby, Cincinnati, Ohio.
 111,353.—CAR STARTER.—George Byron Kirkham, New York city.
 111,354.—PUMP.—T. J. Lapsley, Nashville, Tenn.
 111,355.—CARPET CLEANER.—H. H. Lindhorst, St. Louis, Mo.
 111,356.—HOISTING APPARATUS.—Andrew B. Lipsey, New York city.
 111,357.—FERTILIZING COMPOUND.—J. M. Lowenstein, New Orleans, La.
 111,358.—DISINFECTING AND VENTILATING BURIAL VAULTS.—B. F. Lyford, San Francisco, Cal.
 111,359.—SEWING MACHINE.—William A. Mack, Norwalk, Ohio.
 111,360.—LAMP.—C. D. Macqueen, Philadelphia, Pa.
 111,361.—HOISTING FORK.—Elias Magruder, Cap Au Gris, Mo.
 111,362.—SPRING BED BOTTOM.—Erwin Williams Maxson, Scranton, Pa.
 111,363.—COVER FOR BINS.—Alonzo S. Maxwell, Dixon, Ill.
 111,364.—BEDSTEAD AND SPRING BED BOTTOM.—William McArthur, Philadelphia, Pa.
 111,365.—COMBINED ROCKING SOFA AND BEDSTEAD.—Wm McArthur, Philadelphia, Pa.
 111,366.—SULKY PLOW.—Edward Meloy and A. R. Stanley, Shullsburg, Wis.
 111,367.—THRASHING MACHINE.—J. H. Miller, Arcadia, N. C. Antedated January 28, 1871.
 111,368.—LAMP CHIMNEY AND DISH WASHER.—C. S. Moore and Silas A. Moore (assigns his right to Harland Boyd), Worcester Mass.
 111,369.—CULINARY VESSEL.—Francis Morandi, Malden, Mass.
 111,370.—MANUFACTURE OF SUPERPHOSPHATE OF LIME.—Campbell Morfit, Sudbrook Park, England.
 111,371.—FOLDING SETTEE.—Henry T. Morse (assignor to L. Morse & Son, Athol, Mass).
 111,372.—SEEDER AND CULTIVATOR.—James T. Mott, Postville, Iowa.
 111,373.—VALVE.—George Murray, Jr. (assignor to himself, George Murray, Sr., and Henry E. Snow), Cambridgeport, Mass.
 111,374.—WASHING MACHINE.—Andrew Jackson Nave, Columbus, Texas.
 111,375.—FANNING MILL.—Harrison Ogborn, Richmond, Ind. assignor to S. E. Baker, Osceola, Iowa.
 111,376.—PRESERVING COMPOUND FOR THE HANDS, ETC.—J. W. Osborne, Brooklyn, N. Y.
 111,377.—SHOT CARTRIDGE.—S. White Paine, Williamsport, Pa.
 111,378.—LOOM PICKER.—Jerome M. Parker, Leicester Mass.
 111,379.—SHINGLE MACHINE.—Willis Porter, Orono, Me.
 111,380.—INVALID BEDSTEAD.—William O. Reid, Vienna N. C.
 111,381.—WATER WHEEL.—J. B. Reyman (assignor of one half his right to Donald W. Campbell), Springfield, Mo.
 111,382.—BALANCE SLIDE-VALVE FOR STEAM ENGINES.—G. W. Richardson, Troy, N. Y.
 111,383.—MICA FRAME FOR STOVES.—George G. Richmond, Peckskill, N. Y.
 111,384.—PORTABLE SHELF AND SUPPORT.—Parley D. Root Weston N. Y.