

RECENTLY PATENTED INVENTIONS.

Electrical Devices.

POCKET ELECTRIC BURGLAR-ALARM.—H. A. KREH, New Orleans, La. This invention relates to electric alarm mechanisms and admits of general use, but is of peculiar value in preventing burglaries and theft. It may be used to advantage by travelers, theatrical performers, and persons whose jewels, goods, and chattels are peculiarly liable to be stolen. Also in all instances where it is desired to apprise a person of the opening of a door, window, or other closure member of any kind.

Of Interest to Farmers.

GATE.—T. J. VAN PELT, State Center, Iowa. This improvement is in farm-gates of the vertically-swinging type adapted to be opened or closed from either side of the gateway by a person in a vehicle, the object being to provide a gate of this character that will be practically automatic in operation, simple in construction, and having no parts liable to get out of order, broken, or interfered with by snow or ice.

Of General Interest.

APPARATUS FOR HAND-WEAVING.—MARY E. BARTLETT, Baltimore, Md. This is an apparatus to be employed by children in kindergarten and primary schools for weaving diminutive tubular garments, particularly caps, dresses, and stockings for dolls. The invention is embodied in construction and form of the pattern-card or handloom proper upon which the weaving is done and by which the definite and required shape of the article of apparel is imparted, and also in the manner in which the weaving and detachment and subsequent tying-in of the garment are effected.

ANIMAL-BLANKET.—C. H. CARLI, Stillwater, Minn. This improvement is particularly in blankets for horses, the object being to provide a simple means for preventing the blanket from slipping around on the animal when used as either a night or street covering. Simple devices secure the front of the blanket over a horse's chest and obviate the employment of the usual straps or buckles.

ATTACHMENT FOR PHONOGRAPHS.—L. T. PRUDON, North Bergen, N. J. In this case the invention relates to an attachment for phonographs and similar instruments, the attachment being in the nature of a gage for stopping the carriage of a phonograph at any desired point in order to make repetitions of a record without repeating portions of the record which precede the part that it is desired to repeat.

Heating and Lighting.

SMOKE-CONSUMER.—A. GRÖNBERG, Wasa, Finland, Russia. This improvement relates to an arrangement to effect the burning of smoke and saving of fuel and can be applied to boilers of any construction. Applied to furnaces for steamers of modern construction with retreating tubes, the idea does not in this case necessitate alteration, the heated air being introduced through the fire-bridge, where the smoke is ignited and smokeless gases pass through the tubes. When boilers with exterior surfaces or tube-boilers are employed, a special stove must be erected before the boilers into which grates, tubes, etc., have to be placed and the firing is done, the heated air being introduced at a place that allows the smoke to be ignited before the gases touch the fire-surface of the boiler.

ACETYLENE-GAS GENERATOR.—E. M. MCGEE, Yankton, S. D. In this patent the invention relates to certain improvements in acetylene-gas generators providing for a reliable automatic carbide-supply and insuring automatically closing the various valves in communication when the carbide-chamber is open to replenish the charge.

AIR-HEATING DRUM.—G. E. LEONARD, Sheridan, Wis. The object of the present invention is to provide a new and improved air-heating drum for stoves arranged to support the tubular heating-drum on a comparatively cool surface by causing a rapid circulation of air through the heating-drum and providing the top thereof with an asbestos filling. It relates to heating-stoves having a tubular heating-drum, such, for instance, as shown and described in a former patent granted to Mr. Leonard.

Household Utilities.

SHADE-FIXTURE.—F. G. ROHNER, Dubuque, Iowa. In rented houses every tenant ordinarily secures new sets of shade and curtain fixtures, and after a few changes the window-casings become greatly disfigured. The chief object of the invention is to provide permanent fixtures which can be adjusted to support any shade likely to be used. To accomplish this result, the inventor provides a plate to be adjustably secured to the casing or the like and a bracket adapted to be supported by the plate and in turn adapted to support the shade.

Machines and Mechanical Devices.

PARALLEL MOTION.—F. M. MYERS, Carthage, Mo. The object of this invention is to provide means for sustaining a moving member so that the member will be given an extensive movement laterally simultaneously with and in addition to its movement longitudinally. The invention may be employed in numerous connections, an obvious application being to stone-

forming machines, where saws may be engaged with the stones four times for each revolution of the crank-shaft.

OIL-FLOWING DEVICE.—J. KAMBISH, JR., Piney, W. Va. In this patent the invention relates to apparatus for raising oil, water, or other liquids in wells by the use of a gaseous fluid under pressure. The object is to provide a new and improved oil-flowing device arranged to utilize the gas frequently found above the oil strata for flowing the oil to the surface and for collecting and saving the said gas.

APPARATUS FOR PURIFYING WATER.—H. F. HODGES, Philadelphia, Pa. The invention has reference to an improved apparatus for the purification of water, and has for its primary object to provide means for removing from water any bacteria, gases, or other impurities which it may contain, whether of a solid or liquid nature, by the agency of heat.

METHOD OF PURIFYING WATER.—H. F. HODGES and J. KUEN, Philadelphia, Pa. In this case the invention has relation to an improved method of purifying water, primarily by distillation, whereby the water is entirely relieved of all impurities, whether of a solid, liquid, or gaseous nature. The process gives to water its natural sweet taste, and renders it more palatable for table use.

WATER-STILL.—H. F. HODGES and J. KUEN, Philadelphia, Pa. The principal object of the invention, which relates to an improved construction of apparatus for the distillation and purification of water, is to provide an apparatus so constructed as to enable the inventor to utilize a primary body of heat to evaporate and purify successive bodies of water in such a manner that the consumption of fuel for this purpose is greatly decreased and the cost of production consequently minimized. The distillate is improved in taste by the process, and its effect upon the human system is rendered as beneficial as is possible by the use of the purest spring-water.

APPARATUS FOR PURIFYING WATER BY DISTILLATION.—H. F. HODGES and J. KUEN, Philadelphia, Pa. Among the objects of this invention the principal one is the provision of means for distilling and purifying water whereby it is entirely relieved from all impurities either of a solid, liquid, or gaseous nature, and at the same time relieved of that flat or bitter taste ordinarily found in distilled waters, and becomes possessed of properties and qualities rendering it sweet and palatable. The means provided materially increase the number of working cells in the apparatus without proportionately increasing the amount of fuel used.

CEMENT-BLOCK PRESS.—E. H. HARRY and I. L. SHAW, Gibson City, Ill. The employment of cement blocks as a foundation material for construction of foundations and walls of buildings has greatly increased of late and their superiority for this purpose has led to many inventions in means for producing them. The present invention has for its object to provide an improved press which shall be distinguished by lightness, strength, rigidity, ease of operation, and economy of construction.

Prime Movers and Their Accessories.

ROTARY ENGINE.—I. F. PARMENTER, Berlin, Mass. This invention is designed more particularly as an improvement on an engine previously patented by Mr. Parmenter. The present improvements are designed to provide for a better control of the steam or other motive agent by providing improved means for governing the distribution of the steam so that the operation of the engine may be regulated with greater decision.

ENGINE.—R. P. MOODIE, Renfrew, Ontario, Canada. According to the embodiment of the invention the engine is arranged to have the motive force act against one face of the piston in the usual manner. At the opposite end of cylinder, however, the rod is passed through a stuffing-box or its equivalent, and this end is employed at times as a compressor, at other times as a power-cylinder to start the engine, these operations being controlled by a valve. In this manner the engine when running may be made to compress air or other elastic fluid, which may be stored and employed to start the engine upon a further operation.

WIND-WHEEL.—O. ULRICH, Gross Lichterfelde, near Berlin, Germany. The object in this invention is to provide a new and improved wind-wheel in which the wings adjust themselves automatically, according to the wind-pressure, to insure a steady uniform running of the wind-wheel both in light and strong winds and requiring no mechanical regulating devices for setting the wings to the proper angle.

Railways and Their Accessories.

RAIL-FASTENER.—H. M. MACE, Catskill, N. Y. The object of this inventor is to provide a fastening device to be used in connection with railway-rails for the purpose of holding them firmly to their ties, which device will prevent the rails from spreading and tilting and will also reduce to a minimum their tendency to creep.

Pertaining to Vehicles.

ATTACHMENT FOR VEHICLE-SHAFTS.—D. J. QUIGLEY, Litchfield, Minn. This invention refers to means for connecting thills or shafts of vehicles with their running-gears so that the shafts may be shifted laterally to permit the animal drawing the vehicle to travel

at one side of the center of a country road out of the rut and on firm ground, while the wheels run on the beaten track. The object is to afford means for adjustably counteracting side draft and permitting the shafts to be shifted toward or from the center of the axle without the use of tools.

Designs.

DESIGN FOR LACE TRIMMING.—C. G. NEUBARTH, New York, N. Y. Mr. Neubarth has invented a new, original and ornamental design for a lace trimming, in which the elongated scalloped ornamentation runs from edge to edge of the band of linen, silk, or the like, over bars crossing each other at right angles.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry. MUNN & CO.

Marine Iron Works. Chicago. Catalogue free.

Inquiry No. 7265.—For manufacturers of chimney tile of different kinds.

"U. S." Metal Polish. Indianapolis. Samples free.

Inquiry No. 7266.—For makers of electric lamps or bulbs.

Drying Machinery and Presses. Biles, Louisville, Ky.

Inquiry No. 7267.—For makers of fine steel castings.

Perforated Metals, Harrington & King Perforating Co., Chicago.

Inquiry No. 7268.—Wanted, a small hand vacuum pump for experimental purposes.

Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

Inquiry No. 7269.—Wanted, a machine for mashing flower pomades.

Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.

Inquiry No. 7270.—For makers of household goods, also for large manufacturing or supply house in general.

WANTED.—To manufacture Park Amusement Devices. Royalty. Box 773, New York.

Inquiry No. 7271.—For manufacturers of briquettes.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

Inquiry No. 7272.—For makers of composition pipe, made of papier maché, wood or asphalt.

I sell patents. To buy, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.

Inquiry No. 7273.—For makers of attachments for bicycles whereby to travel on railroads.

WANTED.—Patented specialties of merit, to manufacture and market. Power Specialty Co., Detroit, Mich.

Inquiry No. 7274.—For makers of metal tanks, aluminum preferred, for use in connection with compressed air apparatus.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company, Foot of East 138th Street, New York.

Inquiry No. 7275.—For makers of heavy block crayon for making heavy block line.

Mechanical devices of brass, aluminum, and kindred metals manufactured for inventors and patentees, and marketed on royalty, when desired. Imperial Brass Mfg. Co., 241 So. Jefferson St., Chicago, Ill.

Inquiry No. 7276.—For manufacturers of baby carriage wheels and velocipede wheels for cushion tires.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, wood fiber machinery and tools. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 7277.—For parties to make tanks used for hand fire extinguishers.

Absolute privacy for inventors and experimenting. A well-equipped private laboratory can be rented on moderate terms from the Electrical Testing Laboratories, 548 East 80th St., New York. Write to-day.

Inquiry No. 7278.—Wanted, elevator buckets with sprockets and chain for attaching bucket.

WANTED.—By Big Iowa Wash Machine Company to manufacture on royalty Rotary Washer, preferably one made by some Eastern concern who do not cover Western territory. Address Rotary, Box 773, N. Y.

Inquiry No. 7279.—For makers of solid back horse brushes, with a "Turtle" as a trade mark.

Manufacturers of all kinds sheet metal goods. Vending, gum and chocolate, matches, cigars and cigarettes, amusement machines, made of pressed steel. Send samples. N. Y. Die and Model Works, 508 Pearl St., N. Y.

Inquiry No. 7280.—For makers of carpet-cleaning machines.

Have you much figuring to do, chiefly multiplication and division? The "Brunsviga" will save you 90 per cent of time and all mental effort. 13 and 13 figures products. Automatic devices make error impossible. Simple. Lasts lifetime. FELIX HAMBURGER, 90 William Street, New York.

Inquiry No. 7281.—For machinery for making chewing gum.

Inquiry No. 7282.—For the makers of an extract having taste and flavor extracted from muskmelon.

Inquiry No. 7283.—For makers of baby carriage and go-cart wheels.

Inquiry No. 7284.—For makers of watchmakers' materials.

Inquiry No. 7285.—For makers of prepared solder, as can be used for household use without an iron.

Inquiry No. 7286.—For the manufacturers of alcohol gas stoves, K. X. coffee pots and Patent Hydronette and Water Bringers.

Inquiry No. 7287.—For the makers of the "In and Out" registers for hospitals.

Inquiry No. 7288.—For manufacturers of laundry supplies and washing machines.

Inquiry No. 7289.—For manufacturers of elastic rubber, double-valved exhaust, ellipsoid shape, for creating a vacuum in a bottle or other vessel.



HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(9776) W. B. asks: Would like to know the materials needed, and how to develop blue prints. Or is there a book published that would teach me same, without going to any school? A. Very little skill is required to make blue prints. Take citrate of iron and ammonia 80 grains and water 1 ounce, for one solution. Take ferricyanide of potassium 60 grains and water 1 ounce for a second solution. Mix the two in equal parts when you wish to make the paper. With a swab of absorbent cotton cover the paper evenly and dry in the dark. Keep in a dry and dark place. Print as for any photograph, but stronger, till the shadows are bronzed, and place the print in a pan of water to develop. Wash in changes of water till all the color is out of the white parts of the print.

(9777) C. P. L. asks: Would two bodies exactly the same shape and size but differing greatly in their respective weights (say for instance, one was composed of iron and the other of wood) reach the ground at the same time, if dropped simultaneously from a great height? A. The heavier of two bodies of the same size falls faster, since it has more momentum with which to overcome the resistance of the air when dropped from a height.

(9778) F. W. B. asks: 1. Please give (in substance) an explanation of the phenomena of rotating storms, such as whirlwinds, cyclones, etc. Do they always rotate in one direction, and why? A. The rotation of storms is caused by the rotation of the earth on its axis. In the northern hemisphere these storms rotate in a direction opposite to the motion of the hands of a clock; in the southern hemisphere they turn with the hands of a clock. All cyclones, hurricanes, tornadoes, etc., follow the same law. 2. Is it possible for a whirlwind to rotate for a time in one direction, and then reverse and whirl in the opposite? I ask this last especially for the reason that two reputable persons of my acquaintance claim to have seen this phenomenon. A. Small whirlwinds, such as form in a field or at a street corner, probably turn in either direction; but if one was seen to rotate one way, and in a brief time another was seen in the same place turning in the opposite direction, we should consider that these were two different whirlwinds, and not a whirlwind which had reversed itself.

(9779) L. A. H. asks: Is there such a thing in the realm of science as flame or combustion without emitting light? A. Combustion is usually the combination of a substance with oxygen. This may take place with rapidity, so that much heat is produced, and also light; but often it takes place so slowly that no light is seen, and the temperature may not rise very much above that of the air. The rusting of iron or steel is an example of this.

(9780) J. M. asks: 1. If all so-called empty space is absolutely cold and dark, and light and heat on the earth are only the result of the sun's rays agitating the particles of matter contained in the earth's atmosphere, how then can the sun illuminate the moon to such an extent that the reflected light reaches the earth?—bearing in mind that the moon has no atmosphere. And by what explanation can Prof. Newcomb's views be understood? It would seem to my lay mind that the moon is always cold and dark, it having no atmosphere to cause the sun's rays to heat or light it; but how does its light reach the earth? A. The present accepted theory is that light is not light on its way through space, but radiant energy, which becomes light or heat upon striking some material object which can transform it into light or heat. There is then no light in the space between the sun and the earth, but if an eye were to be placed there, it would receive the energy of the sun's rays and see that energy as light. If a hand or a thermometer were placed there, the radiant energy would be transformed into heat, and would affect the hand or thermometer. This radiant energy strikes the surface of the moon, and is reflected to the earth. Here we receive it, and see it or feel it as light or heat. The space is dark and cold. The material is warmed by the sun's radiation. Space contains little which can be warmed. The moon will be warmed when the sun's rays strike it, and will become cold again when the sun sets as the earth does. The changes will be more rapid and extreme be-

cause of the absence of a dense atmosphere such as the earth has, but not less real for that reason. 2. Is space limitless? It cannot be conceived it has limits, as the mind would inquire what is beyond. Yet every object occupies a fraction of space, and as a fraction is only conceivable in reference to a whole, it would seem that there is a limit; what is the philosophical explanation? A. As to space we know little, and speculation can teach nothing. To a scientific mind it seems fruitless to discuss what can never be settled by discussion. Astronomers now believe there is an end to the worlds in space; but belief is not knowledge. We may know some time, but not till we go beyond the flesh and sense.

(9781) M. O. C. asks: Please give me the difference between a whip-poor-will and the bull-bat; the zoological and common name of each bird, and to what genus each belongs? And if the bull-bat is the same bird as the nighthawk? Also give the distinction between a catamount and a wild-cat. Which, if either, has the long tail? A. The bull-bat and the nighthawk are different common names for the same bird. The scientific name of the bird is *Chordeiles Virginianae*. The scientific name of the whip-poor-will is *Antrostomus vociferus*. The genus of anything is indicated by the first word of its scientific name; the species, by the second word of its name. A catamount is another name for the cougar or mountain lion. A wild-cat is a lynx. It has a short tail, and most of the species have a tuft of hair on the tip of the ear.

(9782) M. F. S. says: 1. Would you kindly explain the real meaning of the word "watt"? One says that a 16-candle-power lamp takes 56 watts, say 60 watts for convenience, per hour. If it takes 60 watts per hour, it should take 1 watt to light it for 1 minute. Yet we all know that it takes the full 60 watts to light it even for one second. A 300-watt dynamo does not give 300 watts per hour, it gives them all the time; if such a dynamo were connected with a watt-meter, would the watt-meter register 300 watts after an hour? A. A watt has no reference to time. It is the unit of electric power. And just as a horse-power works right along, a second, an hour, or any other time and is the same horse-power, so the watt is the same for any time. If a lamp requires 60 watts to light it, it will require the 60 watts for a second just as really as for a whole day. What is paid for on the watt-meter is the watt-hours. If 1,000 watts are used for one hour, that is a kilowatt-hour; and if for ten hours, the consumer must pay for ten kilowatt-hours. This too is just the same as the horse doing work. If one hires a horse which might do a horse-power of work, he will pay for the same horse working for the entire time which he does work. The idea seems simple. 2. Does the sun have any direct influence upon the weight of objects on the earth? Example: Will an object be theoretically heavier at midnight than at midday? A. The weight of objects does not vary from noon to midnight because of the position with reference to the sun. The change of distance from the sun in that time is so small as compared with the immense distance of the sun as to be of no value at all.

(9783) J. S. asks: 1. How does the last part of our names originate? A. The surname, or family name as it is at present, is a name added to and above (sur) the individual name. These often denoted the occupation of the man at the time the name was taken. An example is John Smith, or John the "smith." When the peasantry had but a single name, it was well nigh impossible for the officers of the law, or the crown, to locate the man wanted, as one can easily see by considering the case at present. It is far easier to locate a particular John Smith even than a particular John. There are many more Johns than there are John Smiths. Under these circumstances the authorities compelled the adoption of a second name, which was often arbitrarily given, and so we have names of birds, places, colors, and many others as family names. 2. Is it air buoyancy that causes the stocks of wheat to be stronger against the wind than if the stocks were solid? A. There is a very common misapprehension regarding a hollow shaft, such as a grain stalk, or a bone, quill, or other tube. A stalk of wheat or a bone is not as strong as if it were of the same size and solid. It is stronger than if it were of the same weight and solid. In other words, a given amount of material can be made into a stronger shaft by giving it the form of a hollow cylinder than to make it a solid rod of any shape. It is the stiffness and elasticity of a grain stalk which enable it to stand up against the wind. 3. Can a body be charged purely positively or negatively? Must there not be a little negative electricity in a body that is supposed to be charged positively, and vice versa? A. A body is charged positively by giving it an excess of positive electricity. Only as much negative electricity is removed as there is positive electricity communicated to the body. If more positive electricity should be given to the body, more negative electricity would be removed. 4. Why is the negative pole of a medical battery stronger than the positive? That is, stronger to the feelings. A. We were not aware that the negative pole is stronger than the positive pole, to the feelings even, and can give no reason for it. 5. I notice water is a better conductor when hot than it is when cold. Can you give a reason? A. We have never measured the resistance of water at various temperatures, and cannot give any reason why

hot water should have less resistance than cold water. 6. Can you give a scientific explanation of the famous painting entitled "In the Shadow of the Cross," painted by Henry Hammond Ahl, which was exhibited at the world's fair, St. Louis? This religious painting is of the Master, and when the room is darkened, the painting appears luminous, which makes the appearance of a pale moonlight. A cross can be seen lying over his shoulders, which is not observable when the room is lighted. A. The painting to which you refer was painted with a phosphorescent paint which glowed in the dark, but did not appear in the light. 7. In going up in an elevator do we not weigh heavier and in coming down weigh lighter? A. A person is no heavier while going up in an elevator than while coming down. If the elevator starts up suddenly, the inertia of the man would cause him to exert a greater pressure on the floor than his weight; and if it was jerked down quick enough it might even leave the man in the air, not pressing at all on the floor of the car. You can hold an apple on your hand, and drop your hand away from it so quickly as to leave the apple in the air above the hand.

NEW BOOKS, ETC.

ORDINARY FOUNDATIONS, INCLUDING THE COPPERDAM PROCESS FOR PIERS. By Charles Evan Fowler, C.E. New York: John Wiley & Sons, 1905. 8vo.; pp. 214. Price, \$3.50.

This book, which has reached its second edition, has received numerous valuable additions. The subject of ordinary foundations is more comprehensively covered than heretofore and several new chapters have been added, one of the most important of which discusses the construction of piers by the use of metal cylinders; with timber caissons by open dredging; and the construction of ordinary-sized foundations by the use of pneumatic caissons. Another new chapter is that on cement and concrete, which contains many valuable tables giving the amount of material required for concrete of different proportions. Other chapters which were not in the first edition are one on the subject of foundations, in which the bearing capacity of soil is discussed, and another on building stone, masonry, and the design of piers. The building of piers of timber and pile bents, together with the subject of timber preservation, has been discussed in the final chapters as fully as a general knowledge requires. The book is illustrated with some 150 cuts, many of which are fine half-tone plates.

THE COMPOUND ENGINE. By W. J. Tennant, A.M.I.Mech.E. London: Percival Marshall & Co., 1905. 8vo.; pp. 200. Price, \$1.

This is a popular treatise intended as an introductory manual to the study of the compound engine. The first seven chapters give a great deal of information such as is desired by the ordinary person who has very little knowledge of the subject. The eighth chapter deals with the graphic method of indicator diagrams for a two- or three-stage compound of the ordinary, or receiver, type. In succeeding chapters the indicator diagram cylinder ratios and the action of the receiver are dealt with more minutely than in the opening chapters, and the subjects of jacketing, the condenser, and the air-pump are touched upon. The book has three appendices, consisting of Prof. Unwin's paper on "The Construction of Theoretical Indicator Diagrams for Compound Engines," part of a paper on "Expansion Curves," by the author, and tables giving the dimensions of typical compound engines, of the marine, stationary, and locomotive types.

MECHANICAL DRAWING: TECHNIQUE AND WORKING METHODS FOR TECHNICAL STUDENTS. By Charles L. Adams. Boston: George H. Ellis & Co., 1905. 4to.; pp. 204.

The training of the senses so as to give facility and precision in the technique of drawing, and the acquirement of technical methods of execution, are necessary preparatory requirements for a course in engineering or architecture. These are what the author of the present work had in mind when preparing it. The book has a collection of material sufficient to enable the teacher, by judicious selection, to lay out the work of the course, and it is further specialized to meet the needs of individual students. The subject of projection has been omitted, as the author believes that when a course includes descriptive geometry, it is unnecessary to give a portion of this subject under a different name. The book not only goes thoroughly into the technique of drawing and the instruments required, but it also describes pseudo-pictorial representation, wash drawing, and mechanical copying, such as the blue-print process, process drawing, and Patent Office drawing. It is abundantly illustrated with over 160 drawings and plates.

PROCEEDINGS OF THE SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION. New York: Engineering News Publishing Company, 1905. 8vo.; pp. 253. Price, \$2.50.

This book is the twelfth volume of the "Proceedings of the Society for the Promotion of Engineering Education." It contains some fifteen addresses on engineering education by well-known engineers in its various phases, and also memoirs of the following deceased

members of the fraternity: Benjamin Franklin LaLue, Thomas Messenger Brown, Robert Henry Thurston, and Burton S. Lanphier. A suitable index is added to the book, which also contains the names and addresses of all of the members.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

September 12, 1905

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Table listing inventions and their patent numbers. Includes items like Abrasive compound, Air brake system, Animal shears, Animal trap, Animals from burning buildings, Automatic switch, Axle box, Babbitting device, Balance springs, Baling machine, Baling press, Bank coin separator, Barber chairs, Barrel heading and hooping device, Basket construction, Bath tub or other seat, Bean sorting machine, Bearing for upright crank shafts, Bearing, roller, Bearing, roller, sleeve for roller, Belt, chair, H. Arneson, Berry box, collapsible, Binder, temporary, Binder, temporary, Bit, W. C. Johnson, Blind or shutter, collapsible, Block, See Printer's block, Blower, R. W. Hamann, Boat, life, H. J. Heckerwick, Boiler furnace, steam, J. F. Van Tuyl, Boilers and other furnaces, heater for, H. A. Bracy, Boilers, foot cleaner for steam, E. C. Fisher, Bolster, E. H. Benners, Bolt holder, F. B. Curry, Bookcase, H. E. Hubbell, Bottle capping machine, R. L. Shriner, Bottle casing, A. B. Meyer, Box, D. Gray, Bracelet, H. R. Baker, Brake staff, J. T. Clark, Brewing, J. Schmelbe, Brick kiln, J. W. Reagan, Brooder heater, O. P. Shoemaker, Buggy top, C. Bevil, Building block mold, artificial, H. E. Maynard, Building frame, C. A. Dennis, Building structure, sheet metal, T. Lee, Bulkhead doors, hydraulic mechanism for operating, G. C. Balston, Bundling machine, Lowry & Reynolds, Butter molding device, E. J. Baril, Button attaching machine, W. E. Elliott, Button setting machine, W. E. Elliott, Button web, M. A. Kuykendall, Calculating machine, C. Campbell, Jr., Calendar, date, J. R. Haggerty, Can, J. B. Conover, Can, W. A. Sexton, Can opener, T. A. Watrous, Cane and steel, combined, P. Linder, Cane mill, J. P. Golden, Cane mill, two roll, J. P. Golden, Cap, bathing, W. F. Pfeiffer, Car bolster, J. Green, Car brake, W. S. Washburn, Car construction, G. Gibbs, Car coupling, O. P. Callahan, Car coupling centering device, J. F. O'Connor, Car door and fastener, C. S. Bennett, Car door fastener, E. R. Green, Car draft rigging, railway, J. R. Mitchell, Car fender, A. Jobin, Car loader for grain cars, etc., A. A. Yakee, Car mining, R. R. Hopkins, Car safety device, railway, R. L. Ettenger, Car step extension, G. G. Comer, Carbruretor, A. Gosse, Carpenter's tool, Larson & Brage, Carpet cleaner, pneumatic, E. E. Overholt, Carts, flap for closing the lateral openings of dust, H. Freise, Cement tile mold, J. Grosop, Chain, drive, F. L. Morse, Chain, power, F. L. Morse, Chair, See Rail chair, Chalk holder, W. H. Welland, Check delivery apparatus, V. Pouschka, Churn, McGregor & Williams, Churn and ice cream freezer, combined, L. Franke, Cigar perforator, W. White, Cigarette tubes, mechanism for forming and inserting mouthpieces, W. M. Grunzner, Circuit breaker, vapor, P. C. Hewitt, Circuit changing apparatus, M. S. Conner, Circuit controller, F. C. Hewitt, Circuits, controlling electric, P. C. Hewitt, Cistern, mold or former, H. R. Kuhn, Clay treating furnace, M. B. Williams, Clinometrical gage, A. M. Johnson, Clutch, hydraulic, G. Sparks, Cock, drain, R. B. Swinny, Cock, gage, R. B. Swinny, Coin delivering device for cash indicators, E. Janik, Coin holding and delivering machine, J. W. Meaker, Coin tray, J. W. Meaker, Collar, horse, G. E. Du Bois, Column, girder, and beam, metal, O. G. Franks, Combination wrench, H. A. Corwin, Commode, A. Turner, Concrete building blocks, machine for manufacturing hollow, J. W. Miller, Concrete fence post, L. H. Benedict, Concrete fence post mold, J. Bolton, Concrete reinforcing means, W. Gabriel, Confectionery mixing machine, G. Pratts, Conveying and holding various materials, device for, N. H. Nelson, Cooker, steam, W. E. Herdrich, Cork extractor, S. Davis, Corkscrew, H. Sturm, Corner shield and retaining means therefor, C. H. Anderson, Cotton gin, R. E. Wilson, Crank, J. G. Heaslet, Crushing mill, L. B. Lehmann, Cultivator, J. C. Johnston, Cultivator, W. O. Walton, Cultivator bars, adjustable device for, W. L. Gouldin, Cultivator or sulky plow, wheel, S. F. Vance, Cuspidor, R. F. Regan,

Table listing inventions and their patent numbers. Includes items like Cuspidor carrier, Tscharnner & Looney, Cutting die, T. Clemons, Dam, back board, J. E. Jenkin, Dashboard holder, J. W. Yechem, Derrick, portable, Booz & Kribus, Die stock, J. J. Dechant, Disk drill, double, H. J. Case, Display package, A. R. L. Dohme, Distilling apparatus, wood, H. B. Williams, Door, grain, A. B. Dickie, Door step, A. T. Learned, Doubletree, W. A. Tinsley, Doubletree carrier, Folkner & Gray, Draft apparatus, induced, R. W. Hamann, Draft gear, H. C. Priebe, Drawing board, adjustable, W. Green, Dredge suction, L. S. Parker, Drier, B. E. Bechtel, Dye lake and making same, azo, C. Immerheiser, Ear ring, M. & C. Huber, Electric furnace, revolving, E. Stassano, Electric heaters, cut out for, J. Harden, Electric motors, motor suspension for, E. D. Priest, Electric power, pneumatic or hydraulic transmission of, H. Kowsky, Electrical attachment plug, B. E. Salisbury, Electrically controlled motor, H. Bezer, Electrolytic apparatus and electrodes therefor, C. Kellner, Electroplating apparatus, L. Potthoff, Elevator, See Hay elevator, Elevator, C. W. Levalley, Elevator brake, A. W. Krusee, Elevator bucket or tank, water, D. J. O'Donnell, Engine attachment, explosive, W. B. Hayden, Engine gage, steam, J. I. Bryant, Engine speed regulator, explosion, G. Duffing, Engine starting means, explosive, A. P. Brush, Engines and starting switches therefor, electrical sparking ignition system for gas, V. G. Apple, Engines, circuit breaker for explosive, R. M. Freley, Engine, gas generator for explosive, W. Jones, Envelop and letter sheet, combined, C. T. Paden, Eraser cleaner, Histrup & Hedlund, Eraser holder, J. C. St. John, Exerciser, E. Roland, Explosive engine, W. E. Collier, Extractor, W. T. Teas, Eyeglass and eyeglass holder, H. F. Brown, Eyeglass holder, A. E. Robbins, Eyeglass with flexible material, metal, and apparatus for covering, P. R. Glass, Faucet, oil can, S. J. Gardner, Feeding device, A. J. Gardner, Fence, J. H. Pisor, Fence post, C. A. Spencer, Fence post and securing device, G. W. Brewke, Fence stapling machine, wire, H. Ragsdale, Fence wire clamp, Heke & Younce, Fertilizer distributor, W. A. Mitchell, Filter drum, E. Fullner, Filter, press, C. C. Thompson, Filter scraper, water, M. N. Lynn, Filtering apparatus, J. N. McClintock, Fire resisting curtains, roller for, E. H. McClintock, Firearm cleaning rod, Marble & Garrison, Fishing reel spool, W. Shakespeare, Jr., Flange for rods, J. S. Goldberg, Flax, retting, Vansteenkiste & Legrand, Floor, W. N. Wight, Floor construction, G. Gibbs, Flower stand, S. Sprague, Fluid motion indicator, A. W. King, Fluid pressure apparatus, J. P. Coleman, Folding box, A. L. Brady, Fruit clipper, E. P. Steffa, Fuel balls, briquets, etc., press for the manufacture of, H. J. Debauche, Furnace and heater, W. H. Drake, Furnaces, coking attachment for steam boiler, T. J. Tiller, Furniture, corner piece, J. Nichols, Furniture support, B. M. Wonders, Game indicator, C. McNabb, Garmat form, L. C. Schmitt, Gas burner, W. M. Welch, Gas cut off for Bunsen tubes, W. S. Stapley, Gas generators, carbide holder for acetylene, O. Parker, Gas, producing, B. E. Elared, Gas purifying apparatus, H. Boyd, Gaseous mixture for extinguishing fire, killing insects, etc., apparatus for the production and distribution of, R. Marot, Gear transmission, D. W. Davis, Gear, variable speed and reversing, W. S. Austin, Gearing for portable tools, W. N. Woodruff, Gearing, variable speed, J. & A. W. Prentice, Gilders' tools, pressure pad for, W. H. Coe, Glass grinding apparatus, A. J. Sanford, Glass grinding machine, A. J. Sanford, Glass pressing machine, N. W. Hartman, Gloves and mittens, t. G. Davy, Glue case, E. S. Govers, Gold from its ores, extracting, F. W. Dupre, Gold saving machine, J. B. Holmes, Grain conveyer, J. F. White, Grain elevating device, N. H. Nelson, Grainmaking machine, friction, H. G. Krasky, Gramophone, C. Hillenburgh, Gun barrels, means for cooling, H. Lehmann, Gun sighting apparatus, C. P. E. Schneider, Guns, recoil pad for, A. T. Duncan, Hame fastener, H. Wilson, Hammer, drop, M. Merrill, Hammer, foot power, G. E. & A. M. Williams, Hammer, power, H. Vignault, Harness, single trace, G. V. Beckman, Harrow, O. D. Lent, Harrow, combined spike and spring tooth, J. R. Naylor, Harrow, disk, A. Lindgren, Harvester, E. A. Maingnet, Harvester bunching device, bean, W. H. W. Hiler, Hat holder, C. Davis, Hat fastener, J. J. Smith, Hay elevator, N. H. Nelson, Hay fork, S. W. Gates, Hay rack fixture, W. F. Jacobs, Heater, See Brooder heater, Heater, C. E. McPherson, Heating or cooling apparatus, surface, A. W. Brewtnall, Hinge, C. S. Stevens, Hinge, S. Tripp, Hinge, door check and closer, combined floor, P. H. Moran, Hitch, rope, M. E. Boddy, Holding device, M. T. La Valle, Hook and eye, L. F. Gosnell, Horseshoe, J. T. Huff, Horseshoe calk, J. S. Magoon, Jr., Horseshoes, overshoe for, A. Smith, Hose coupling, train, I. I. Caskey, Hose supporter, F. W. Lowe, Hydraulic pressure machine, R. D. Fildes, Illusion apparatus, R. B. Smith, Incubator, C. F. Bauer, Incubator nest, J. L. Moore, Iron or steel, cementing, C. C. Davis, Iron sponge, producing wrought, D. Reynolds, Ironwork structure, W. E. Williams, Jar closure clamp, W. H. Richards, Jar closure tool, F. R. Nice, Journal box lid, G. A. Woodman, Junction box, L. H. Nielsen, Kilns, car pushing mechanism for tunnel, A. A. Gery, Knitting machine take up, Oebenhoff & Broecker, Lacing book, sh. H. J. Griswold, Ladder, A. A. Smith, Ladder, double jointed extension, F. B. Hubbard, Ladder, store service, S. B. Martin,