RECENTLY PATENTED INVENTIONS.

Electrical Devices.

ELECTRIC SYSTEM.—A. L. SJOBERG, Union Hill, N. J. Novel means are comprised in this invention whereby any one of a series of stations may be selected from a central station and a local circuit closed or mechanism moved for the purpose of transmitting power or energy, or instead of closing the local circuit the current from the main line can be diverted to the local circuit selected. These local circuits may be used for ringing bells or giving any kind of signal, operating motors or electric lights, telegraphing, telephoning, etc.

Of Interest to Farmers.

BEET WEIGHING AND DELIVERING APPARATUS.—J. S. EASH, Niwot, Col. The more especial design of this apparatus is for its use along railroad-tracks in the country or in towns and cities and arrangement to permit convenient driving of a loaded vehicle onto a weighing platform, to then dump the contents of the vehicle, and finally elevate the contents into a car on the railroad-track.

SHOCK OR GRAIN LOADER.—W. B. PENROSE, Anthony, Kan. This apparatus gathers shocks or sheaves of grain in the field and transfers them to a wagon or other vehicle moving alongside of the loader. The inventor's principal object is to provide a light and easily-operated loader which may be driven and controlled by one man and which will effectively gather sheaves or shocks of grain from the ground, elevate them to the necessary height, and deposit them in a wagon or other vehicle moving at one side of the loader.

WEEDER.—N. MCEACHERN, Walla Walla, Wash. This invention is an improvement in weeders, and the inventor employs cutters or blades arranged in form of a V, and diverging rearwardly. The uprights or standards of the knives are adjusted by special arrangement of bolts engaging a frame, and the said uprights rise at the front of the knives so as to pass through the bushy tops of the weeds before the latter are cut off under the surface of the ground by the blades, this arrangement having the object to prevent clogging of the weeds around the uprights.

SICKLE-BAR.—W. H. BRUSMAN and O. F. BRUSMAN, Elkhart, Ind. This invention refers to sickle or cutter bars for mowing-machines; and its object is to provide a bar which is simple and durable in construction and arranged to detachably hold the individual knives in place thereon without fastening them with screws, bolts, or rivets, as is ordinarily the case, and at the same time to allow for expansion and contraction.

Of General Interest.

COLLAR-SUPPORTER.—J. W. TROXELL, Breckenridge, Ill. The invention relates to supports for collars, and one of the principal objects is the provision of a convenient and effective device of this character. In use the collar being turned up, means are provided by which the eyes, nose, and mouth are left free, while the neck, ears, and the greater part of the face are effectively protected. The supporting device may be readily withdrawn and the collar turned down into its normal position.

LUBRICATOR.—F. G. SWIFT, Elmira, N. Y. This improvement refers particularly to a novel means for straining oil as it enters the reservoir of the lubricator, this means being readily removable to permit cleansing the parts. A closure having an exteriorly-threaded flange may be removed at will, carrying with it a ring and strainer, thus greatly simplifying the construction of the device and increasing the ease with which it may be handled.

SIPHON.—P. MCGRATH, Hibbing, Minn. This invention is designed as an improvement on a former patent granted to Mr. McGrath, and has for its object to provide an efficient device for withdrawing liquids from a vessel having no faucet nor other outlet. All parts may be easily detached and cleaned, and by means of a grooved screw-plug in the upper end of the plunger-head the discharge-nozzle can be readily put on and taken off.

RULE.—J. E. WILSON, Lancaster, Pa. In the present instance the improvement has reference to a rule; and the objects of the invention are the provision of means for calculating distances and angles. The rule is capable of general use; but it is especially applicable for building purposes.

BOOK-FINISHER'S STAND.—V. KLING, Council Bluffs, Iowa. The inventor provides a stand of novel construction on which a large book may be placed for finishing the sides and turned as desired, making it unnecessary for the workman to handle the book excepting to turn it over to finish the opposite sides, thus relieving the finisher of considerable hard work and consequent loss of time.

TOY.—F. GARRECHT, Idaho City, Idaho. In this class of toy an object is loosely held on a support and receives a rocking movement on said support from the joint action of gravity and the peculiar form of the support, and the inventor has for his object to provide a toy having novel details of construction which are quite amusing, two grotesque figures receiving twirling and rocking movements as they descend from an elevation.

GLOVE.—A. H. FISHER, Hardy, Neb. The present invention has reference to gloves and glove making, the object being to produce a glove of an improved pattern, especially adapted for use as a workman's glove. One of the objects has been to produce a glove which is reversible, so that it may be worn by either hand, and the pattern is designed with a view to produce a substantial fit though the glove be applied to either hand.

WINDING-HANDLE FOR TAPE-MEASURES.—J. G. EDDY, New York, N. Y. In the present patent the invention has reference to tape-measures and admits of general use, but it is of peculiar value in connection with tape-measures of the kind rolled into a coil and adapted to be wound and unwound at will.

UMBRELLA.—G. ERICSON, New York, N. Y. The device forms a strong light umbrella which may be extended and used in the usual manner. When the parts are folded, they are contracted in length approximately one-fifth of the normal length of the umbrella, so that the umbrella may be conveniently packed in a satchel or carried or stored in any other desired manner. It is capable of being manipulated quickly and easily.

HARNESS-SUPPORT. — R. L. NEWELL, Keithsburg, Ill. The support is especially useful in its connection where the pulling force is exerted intermittently, such as in the raising of ice, stacking of hay, scraping, plowing, etc. The object here is to provide an arrangement for supporting the rear portion of the harness, especially the swingletree and traces, when the pulling force is not being exerted in order to prevent the swingletree and its contiguous parts from striking against the horses' rear limbs or the ground.

INSTRUMENT FOR WATCHMAKERS' USE.—C. M. THOMSEN, Minneapolis, Minn. In this case the object is to provide a novel simple instrument in the form of specially-constructed tweezers, which may be very conveniently and effectively used for holding firmly the collet of a hair-spring, so that a reamer or broach may be inserted through the hole in the collet and rotated for an enlargement of the hole to a proper size for an exact engagement with the staff whereon the hair-spring is to be mounted.

AMMONIA-STILL.—H. A. ABENDROTH, Berlin, Germany. This still comprises superimposed cells having inlets and outlets for ammonia-water, the bottoms of the cells being constructed to form declining sections, and each section being constructed of terraces declining from the point of inflow to the point of outflow of the water, said terraces, with the exception of the highest and lowest of them, being provided with steam-inlet pipes having hoods.

MEASURING VESSEL.—F. ALBO, Pueblo, Col. In the present patent the improvement has reference to a device for measuring and delivering liquids, and the principal object of the invention is the provision of a vessel which may be filled or partially filled with a liquid and from which a known quantity or a succession of known quantities may be delivered.

RAZOR.—W. R. CHRISTIE, New York, N. Y. The purpose of the improvement is to provide a razor of the ordinary type which is furnished with an exceedingly thin removable blade and to so construct the razor that the blade can be quickly and conveniently introduced in its holder and securely fastened to place, the blade when not needed being inclosed in the handle in the customary manner.

PANORAMIC ATTACHMENT FOR PHOTOGRAPHIC CAMERAS.—H. R. KIESSIG, Sacramento, Cal. The object of this inventor is to provide a device that may be readily attached to the ordinary forms of detachable-back cameras and with which the scope or composition of the picture may be predetermined, the device being so arranged as to permit exposures for ordinary pictures when desired.

APPARATUS FOR PRODUCING PURIFIED WATER.—G. KNODLER, New York, N. Y. The object in this instance is to provide an apparatus for producing purified water for drinking and other purposes and arranged to sterilize, evaporate, and condense the water and to sterilize and wash the air used for aerating the sterilized condensed water to insure a product of an exceedingly wholesome nature.

WATER-FORCING APPARATUS.—M. A. LIBBEY, South Berwick, Maine. The device is intended particularly for use as a fire-extinguishing apparatus or for irrigating gardens, and the like. The invention involves certain novel features of construction and arrangement of parts which enable the apparatus to be operated readily and quickly to throw a considerable stream of water in any direction desired, and in the form of a solid jet or open spray.

CONNECTING DEVICE.—A. B. MANCHESTER, Findlay, Ohio. Mr. Manchester's invention has reference to devices for connecting various elements, being particularly adapted for use in connection with the pumping powers of oil-wells and the like. His principal objects are the provision of a simple and strong device of this class which may be readily disconnected.

LADDER.—E. A. MEACHAM, Riverside, Cal. The invention relates particularly to improvements in means for securing steps to the side rails of ladders, cellar-stairs, or the like, an object being to provide a simple means for securing the steps without mortising the steps into the rails, so as to weaken the rails, a further object being to so construct the fastenings that they will not only add to the strength of the steps and rails, but will stiffen the whole structure.

TIMBER PRESERVATIVE.—R. P. REYNOLDS, Walla Walla, Wash. The object in this case is to provide a coating for rendering timber proof against decay when used above or under ground. The ingredients are thoroughly boiled in a cauldron or vat for about ten minutes after boiling-point is reached, and then the timber is immersed for, say, about five minutes in the boiling mass to form a coating. The coated timber is then removed and the coating allowed to dry and harden before using the timber.

THEATER-CHAIR.—E. H. WIERSCHING and C. J. BERGSTROM, Binghamton, N. Y. The purpose of the invention is to provide a special construction of theater and similar chairs wherein the seats will be normally held close to the backs of the chairs by means of suitable tension devices, the seats being held in a horizontal position only when occupied, the controlling factors of the seats being such that they will automatically raise the seats when the latter are vacated. This application is a division of the application made by the inventors for an improvement in theater-chairs formerly filed and allowed.

TURPENTINE-BOX.—A. C. MCLEOD, Quitman, Ga. By this invention a considerable range of adjustment is provided, so that the box can be applied to trees of different diameters, and when the tree has been hacked and the box applied and all of the sap has been withdrawn from the particular hacks the box can be moved upwardly as the hacking of the tree proceeds, so as to secure practically the entire output. The box may be used for gathering the sap of maple trees or other analogous use.

BURIAL-VAULT.—R. F. FOLK, Montpelier, Ohio. In form the vault partakes generally of the shape of a burial-casket, being designed in practice to receive a casket. The main section and cover of the vault in this improvement may be of sheet-steel or other suitable material, and in forming the same the parts may be riveted, welded or otherwise secured together, and the inventor may in practice finish the sections by enameling or coating with aluminium or other metals or otherwise. The cover has no lateral projections at its sides to serve as handles, so that it is practically impossible to remove the cover when once applied without great trouble, so that the vault is in a large measure burglar-proof. Other means are provided to prevent the removal of the cover.

ROPE-SOCKET.—T. CANFIELD, Pottsville, Pa. The invention is an improvement in that class of rope-sockets which are provided with jaws adapted to embrace and hold the end of a rope. The object is to provide a socket which shall be distinguished by lightness, strength, and security of hold upon a rope, and which may be easily applied to and detached from a rope end and any suspending device.

PIANO.—H. J. WEILER, Indianapolis, Ind. This piano is of that class in which the frame is composed of an iron back and an iron front plate, between which the sounding-board is secured. The maintaining of the proper tension and pitch of the strings after the piano has once been tuned depends largely on the stability of the pin-block, and in the present case the pin-block is supported on a horizontal flange on the front plate which prevents it from having the slightest movement under the tensile strain. While this result is attained, a full, rich and prolonged tone is secured.

AERONAUTIC APPARATUS.—G. MCMULLEN, 77 Barrack street, Perth, Western Australia, Australia. This invention essentially consists in the peculiar mechanical movement employed for the operation of the wings and which movement is of a combined oscillatory and rotary nature. This movement consists in the wing being fulcrumed upon a fixed pivot, while by means of a slot formed in the side frame of the wing the latter is allowed to move or slide on and along such pivot. The wing also rotates on such fixed pivot, with the result that the wing during rotation is in everchanging position to and in respect of such pivot, and consequently the wing performs a variable stroke and moves at altered velocities of beat during its rotation.

BEVEL-RULE.—H. W. YOUNG, Columbia, Canada. Mr. Young's invention relates to bevel-rules, and can be applied to various uses besides measurements and determinations necessary for mechanics to make which may be readily and conveniently secured without special computation. One form of the improvement is more particularly adapted for the use of draftsmen and engineers. If the rule is to be used for the metric system throughout or for any other standard of measure, it is only necessary to provide the proper scales upon the stock and blade and divide the indicating member in accordance with these.

ICE-CREEPER.—P. WENZ, New York, N. Y. The creeper may be quickly and conveniently applied to a shoe at the welt. The construction is such that various spurs extend downward and outward from the outer lower portion of the body of the creeper, enabling the wearer to walk over a carpeted or polished surface without interfering with such surface, and when traveling over an icy surface by simply canting the foot outward the spurs will penetrate sufficiently to prevent the wearer from slipping.

MUSIC-LEAF TURNER. — F. J. WARD, Fitchburg, Mass. By this device leaves of sheet music may be successively turned, and it comprises peculiar levers having fingers adapted to engage the music-leaves and coacting with dogs of a special construction, these dogs restraining the levers when the device is set, and by operating the dogs the levers may be released and under the action of springs provided for this purpose caused to move in such a manner as to turn the leaves.

DISPLAY-TRAY.—J. H. SMITH, New York, N. Y. The object of the inventor is to provide a tray for containing and neatly displaying underwear, hosiery, and like articles, and also supporting tickets indicating the names, prices and other legends pertaining to the goods, the tickets being removably held on the tray to allow of replacing the tickets by others when changing the articles to be displayed.

ALBUM.—J. B. KING, Salt Lake City, Utah. One of the several purposes of the invention is to provide a novel construction of album for use as a stamp, photographic, or scenic album—a calendar or an album wherein anything in the nature of a picture, character, or figure may be placed by printing or mounting upon a tape material to be displayed.

Heating and Lighting.

WATER-HEATER.—G. R. BURT, Perry, N. Y. The present invention has for its object the provision of a new and improved heater for heating water on a gas, gasolene, or oil stove which is simple and durable in construction, easily attached to the stove, and arranged to insure a quick and safe heating of the water. It can be cheaply manufactured and readily applied to stoves now in use.

Household Utilities.

SHADE AND CURTAIN FIXTURE.—J. M. OLIVER, Frankfort, Ind. Mr. Oliver's invention pertains to an improvement in that class of shade and curtain fixtures in which a hanger is used to readily place the ordinary window-shades and lace curtains or drapery to a window-casing of any width and one whereby the same articles may be readily removed and replaced without recourse to the ordinary brackets permanently secured to window-frames.

DOMESTIC UTENSIL FOR COOLING LIQUIDS.—J. H. DOYLE, New Orleans, La. In the present patent the improvement has reference to domestic utensils for cooling liquids. It has for its object to provide a cover for domestic utensils having a hollow cooling attachment projecting therefrom into the utensil and adapted to have water forced therethrough for the purpose of cooling the contents of the utensil.

Machines and Mechanical Devices.

COMPUTING-MACHINE.—G. O. GILBERT, Montrose, Col. In this case the invention has reference to computing-machines, an object being to provide a machine of this character that will be simple in construction and inexpensive and by means of which long columns of figures may be quickly and accurately added, the machine being also adapted for subtracting.

TRANSMISSION-GEAR.—E. J. SWEDLUND, Atwater, Minn. The invention relates to transmission-gears suitable for general use and particularly in connection with automobiles and other vehicles and with machinery in which power is to be transmitted from one shaft to another. All the movements are relative and the invention may be employed in a diversity of relations wherein motions are to be translated from one point to another.

GIN-FEEDER.—E. R. BARBER, Valdosta, Ga. The apparatus involves a hopper the bottom of which is formed of a traveling carrier which moves the cotton continuously at one end. At said end is a peculiarly-constructed gripping and conveying device which takes the cotton from the hopper and carries it to the gin, the superfluous cotton being removed from the gripping and conveying device by a rocker which works above the same. It is adapted for use in connection with any gin—for example, those shown in three former patents granted to Mr. Barber.

GRINDING AND SCOURING MACHINE.—L. SCHULTE, New York, N. Y. In this instance the object is to provide a new and improved machine for grinding, scouring, scratch-brushing, buffing, and sand-buffing sheet metal, band-iron, wire, and like metal articles and arranged to simultaneously treat both faces of the article in a comparatively short time without requiring skilled labor.

TABLET OR PILL COUNTING MACHINE.—C. A. OHLENDORF and W. BROUGH, Baltimore, Md. The leading feature of the machine is a hollow rotatable cylinder having one or more peripheral openings from which the pills or tablets are discharged as the cylinder rotates and provided with a corresponding number of interior grooves forming guideways by which the pills or tablets are assembled in rows and directed to the discharge openings with due regularity.

CUTTING APPARATUS.—A. J. CONNELL, New York, N. Y. In this patent the invention has reference to cutting apparatus and more especially to that adapted for wood-working. Its principal objects are to furnish convenient power-driven mechanism of a portable character in which the relation of the cutters to the work may be readily adjusted.

The apparatus will be useful in many connections where work has been erected and it is desired to further operate upon it.

Medical Appliances.

STERILIZER.—H. W. C. THOMAS, Valatie, N. Y. This inventor's improvement relates to apparatus for sterilizing various articles, and more particularly such instruments or tools as are used by surgeons, dentists, and barbers. The principal objects are to provide a convenient apparatus in which a circulation of the sterilizing fluid may be secured by the introduction and the withdrawal of the instruments.

HYPODERMIC SYRINGE.—J. DE LISLE, New York, N. Y. This syringe is more especially designed for making hypodermic injections of antitoxic serum and arranged to maintain its parts during the time the implement is stored or in transit in an absolutely aseptic condition, to prevent contamination of the serum, and to insure free unobstructed flow of the serum through the needle when the syringe is used.

DENTAL SEPARATOR AND TOOTH-HOLDER.—E. D. BARNES, Enfield, N. C. This instrument invented by Dr. Barnes is to be used by dentists for getting space between the natural teeth for facilitating access to cavities between the teeth when filling the same and to give access for polishing or making examinations and which device is also designed to be so held upon the teeth as to prevent the separator-claws from pressing on the gums and which device also serves as a prop between the upper and lower teeth to hold the mouth open.

TRUSS.—F. KING, New York, N. Y. One purpose of this invention is to provide a device that effectually prevents the scrotum escaping backward when the attitude of the wearer is changed, as in athletic exercises, the mounting of a horse, etc. Another is to provide a waist-belt and straps to prevent the apron from slipping upward or downward, and the waistband is provided with an attached broad stiffened pad at the rear, which engages with the small of the back, renders the waistband comfortable in use, and sustains the muscles at such point.

Prime Movers and Their Accessories.

ROTARY VALVE.—T. G. VAN SANT, Paragould, Ark. This invention relates to a valve mechanism for steam and other elastic-fluid engines; and resides particularly in an improved rotary valve, by means of which steam may be admitted to and exhausted from the engine-cylinder. It is especially intended for use with the rotary cut-off forming the subject of Mr. Van Sant's former patent, of the application on which said patent issued his present application is a division.

CARBURETER FOR HYDROCARBON-ENGINES.—N. LEINAU, Ashbourne, Pa. The most prominent feature in this case resides in a peculiarly-arranged mobile member driven by the air-current through the carbureter and connected with a means for forcing the liquid fuel into the air-passage of the carbureter, where by aid of the mobile member it is thoroughly commingled with the air on its way to the engine or other apparatus in connection with which the carbureter may be used. This member is in form of a fan rotated by the air currents and having connection with a pump placed in the fuel passage and acting to force the liquid fuel through the discharge-nozzle into the air-passage in close association with the fan.

VALVE-GEAR FOR ENGINES.—J. L. WHEELER, San Francisco, Cal. Mr. Wheeler's invention relates to improvements in devices for automatically cutting off the steam supplied to engines, particularly engines employed for heavy work, such as in sawmills. In sawmill work fuel is not a consideration, and in such cases the slide valve of the engine should be set to cut off at the lowest part of the stroke, which will enable it to run all machinery except "circulars" and "band saws," and the cut-off attachment may be adjusted so as to give the valve full travel when the log comes to the saw.

Pertaining to Vehicles.

UNICYCLE.—C. G. CROSSE, Sun Prairie, Wis. In this device the pedal is pressed by the foot, which depresses one side of a bar and pulls down the cranks. This gives corresponding oscillatory motion to two rods which in turn operate two others, one of the latter operating a member which represents the human foot. This simulates the motion of the human leg and foot and exerts a pushing force in a forward direction, thus urging the wheel forward. When one pedal is depressed the other is elevated, thus giving the reverse movements to the parts, and by operating the opposite pedal the same action takes place with respect to the leg on the opposite side.

OIL OR GASOLENE ATTACHMENT FOR GAS-ENGINES.—J. E. GREEN, Belmont, W. Va. One aim of the inventor is to provide an attachment for a gas-engine to allow of running the engine with gas from an oil-well or with gasolene in case the gas-supply gives out, or in case the supply is low and not sufficient to run the engine then oil or gasolene-vapor is supplied through the attachment in any degree to form an explosive mixture with the gas, the arrangement being such that the necessary changes can be made while the engine is running.

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 the 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.**

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Marine Iron Works. Chicago. Catalogue free.

Inquiry No. 7003.—For manufacturers of furnishing fixtures for a toy shop.

For logging engines. J. S. Mundy, Newark, N. J.

Inquiry No. 7004.—For manufacturers of peroxide of iron, venetian red, corcus mortis, powdered pipe clay, chalk, oxalic acid.

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

Inquiry No. 7005.—Wanted, address of firms who underwrite stocks and bonds.

2d-hand machinery. Walsh's Sons & Co., Newark, N.J.

Inquiry No. 7006.—For the names of firms that make perfectly puncture-proof bicycle tires.

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

Inquiry No. 7007.—For manufacturers of machinery used in making bricks.

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

Inquiry No. 7008.—For manufacturers of plants for distilling turpentine, wood alcohol, creosote, etc., from rich pine stumps.

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

Inquiry No. 7009.—For manufacturers of the "Peerless Combination Sharpener."

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

Inquiry No. 7010.—For manufacturer of an article called "Flat Lap."

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. 7011.—For machinery for making drop chalk and precipitated chalk.

Gut strings for Lawn Tennis, Musical Instruments, and other purposes made by P. F. Turner, 46th Street and Packers Avenue, Chicago, Ill.

Inquiry No. 7012.—For manufacturers of perforated patterns for stamping linen, leather, wood and plush.

For sale or exchange for well-boring outfits patent No. 583,760. Riveting mandrel for riveting well casing and other work. For more information or particulars address J. F. Mantey, Patterson, Texas.

Inquiry No. 7013.—For manufacturers of china and glassware.

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. 7014.—For manufacturers machinery for making soft drinks.

Space with power, heat, light and machinery, if desired, in a large New England manufacturing concern, having more room than is necessary for their business. Address Box No. 407, Providence, R. I.

Inquiry No. 7015.—Wanted, party to make woven wire rat traps.

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. 7016.—For inventors and manufacturers of safety explosives.

Advertiser, having ample facilities for manufacturing, desires to meet party who thoroughly understands the manufacture of small dynamos, motors and electric fans, who is already engaged in or desires to enter into manufacturing. Address Dynamos, 794 Broad Street, Newark, N. J.

Inquiry No. 7017.—For manufacturers of cement poles.

WANTED.—Formula of a composition with which to cover the caulked decks of pontoons. It must set hard and tough, so that handling a cargo will not break, crack or indent it, adhesive and elastic so as to stick to wood and yet give to heat and cold, and homogeneous and waterproof so as to keep all liquids out all over.

Shanghai & Hongkew Wharf Company, Limited, Shanghai, China.

Inquiry No. 7018.—For manufacturers of the latest, up-to-date smoking tobacco machinery.

A GOOD LOVE STORY.

"A Paper Proposal" is the title of a clever piece of fiction contained in "Mountain and Lake Resorts," a book just issued by the LACKAWANNA RAILROAD, in which some of the most delightful summer resorts in the east are illustrated and described. The story is well worth reading, and the other information may help you in selecting your vacation place.

The book will be mailed on receipt of ten cents in stamps addressed to T. W. LEE, General Passenger Agent, New York City.

Inquiry No. 7019.—For manufacturers of Sparklet bottles and capsules for making soda water.

Sheet metal, any kind, cut, formed any shape. Die-making, wire forming, embossing, lettering, stamping, punching. Metal Stamping Co., Niagara Falls, N. Y.

Inquiry No. 7020.—For manufacturers of machinery for making kerosene lamp burners.

Inquiry No. 7021.—For manufacturers of milling machines.

Inquiry No. 7022.—For manufacturers of luminous paint.

Inquiry No. 7023.—For manufacturers of refrigerating machinery.

Inquiry No. 7024.—For manufacturers of machinery to bend steel plates of ¾ inch thickness, and also to cut such plates.

Inquiry No. 7025.—For manufacturers of apparatus for drying blood and egg albumen.

Notes and Queries.

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.

(9671) E. L. M. asks: 1. Does hammering of iron increase or decrease its strength? For example: Suppose a rod of round iron ⅝ inch in diameter were swelled by hammering to ¾ inch in diameter; would it be as strong as originally? Suppose this rod is then turned on a lathe back to the original ⅝ inch in diameter; would it be as strong as the original rod? A. As a general rule, hammering iron in the right way and at the right temperature, improves its quality and increases its strength. But upsetting a ⅝-inch rod until it was ¾ of an inch in diameter in the way an ordinary blacksmith would be likely to do it would probably injure the material, and it would be weaker after than it was before the operation was performed. It, however, would be perfectly possible to conduct this operation in such a way that it would be stronger, but it would have to be very carefully and skillfully done. Metal cannot be abused without injury to it. 2. Has there been invented a process for treating tool steel so that if worked at the right temperature it will temper itself on cooling? A. Some of the so-called hardening steels will do what you suggest. Mild steel may be case-hardened in the same way that you would case-harden wrought iron. You may also weld a thin piece of high-carbon steel to the end of your rods.

(9672) E. Z. says: Kindly let me know what the water pressure in an ordinary household faucet is, if you possibly can tell. A. The water pressure at the faucet in an ordinary house varies with the location of the house. A house on a hill or at a distance from the standpipe or pumping station will have less water pressure than one situated lower down or near the standpipe or pumping station. A general average might be taken as somewhere between 25 and 70 pounds per square inch, depending on the city and the location as above noted; but in some instances it will be outside of the limits above mentioned.

(9673) F. H. writes: For a red varnish to be used on electrical articles, allow me to submit the following recipe: Melt together 2 parts of Venetian turpentine (Terebinth Venet.) and 1 part pale shellac (orange shellac will do as well); when temperature reaches 60 deg. C. add 10 parts alcohol. Rub up 3 parts pulverized cinnabar (vermilion) with sufficient alcohol to form a paste, and add to the melted mixture. The operations should be carried on in a water bath, to avoid undue heating. Stir until a smooth liquid is obtained. This should be allowed to cool, continually stirring, and when required should be heated over water bath until it can be applied with a brush. Articles to be coated should be warmed. This paint dries somewhat slowly, but gives beautiful rich permanent color. Needless to say, the necessary precautions as regards fire have to be taken when preparing the paint, as same is inflammable.

(9674) E. R. says: In that sort of mirage termed looming, does not one see the object by direct ray, and not by reflection? Do you not really see an object (ordinarily obstructed from view) just as much as though there was no obstruction intervening? A. The looming of an object is supposed to be produced when the upper air is warmer than the lower air, so that the rays are totally reflected above the eye and come down to the eye. Thus the object is seen above its own real position. Since the light has been reflected, the thing seen is an image as really as in any other case of reflection by a mirror.

(9675) F. M. asks: Please explain to me the method of lining up a simple engine and oblige a reader of your paper. A. The best way to line up a simple engine is to stretch very tight a fine piano wire through the exact center of the cylinder of the engine, and make all measurements from this. Another wire may be stretched at right angles to it, parallel with the shaft. This right angle can be determined by a large machinist's square or by an engineer's transit. The cylinder and guides can be lined up directly from the first wire, and the bearings for the main shaft can be adjusted until they are parallel with the second wire.

(9676) W. K. asks: 1. What action (chemical) does zinc chloride furnish in a dry cell? Sal-ammoniac? Does manganese furnish any action besides its depolarizing effect? A. The zinc chloride does not exert any chemical action in a dry cell directly; that is, the action of the zinc and ammoniac chloride (sal-ammoniac) is to form zinc chloride. The zinc salts put into a dry cell serve principally to keep the paste porous and moist, since these have a strong affinity for water. Manganese dioxide serves simply as a depolarizer in a dry cell, as it does in a wet cell. 2. Does high initial amperage increase life of a battery, or does it mean that it will be short-lived? A. The amperes of a cell depend upon the external resistance, and there is no propriety in giving amperes, unless it is stated also against what resistance the amperes are flowing. If a large number of amperes are drawn from a cell at first, the cell will be shorter lived than if a low amperage is drawn. A cell will have a certain number of ampere-hours of life. If 100 ampere-hours, the cell will last approximately 100 hours if 1 ampere is the rate of current, but only 10 hours if 10 amperes be drawn. This law is as true of dry as of wet cells. 3. What do you consider best type of wet and dry cells on market to-day for telephone service? A. We have no judgment to give as to the best dry or wet cell. We presume there is no cell which deserves such a distinction. There are many reliable houses offering cells. We presume your local dealers are reliable, and that you are safe in taking their advice. We do not advertise in Notes and Queries. Our advertising columns may be consulted, and we think our advertisers are unusually reliable. We doubt if there is any such thing as a superlatively best thing of any kind. We are not willing to say that there is. 4 In gas and gasoline engines, what affects the life or service of the batteries? A. There is nothing very peculiar in the service a battery performs on a gas engine, except the regularity of its action. It wears out as any other battery does by the work it does, and rather sooner because of the constancy with which it is called upon for current. It is a popular impression that a battery should last indefinitely, but really it is like any other source of power. It can only give back the power which is given to it, and when that is done the battery stops work. No one is ever ready to have the battery stop. Few understand that a battery uses up materials as an engine uses up coal. So much zinc and chemicals, so much electricity. It is a simple matter.

(9677) G. F. says: 1. Is there any sound when there is no ear to hear it? For instance, if a tree were to fall and there were no living thing within hearing, would there be any sound? Please explain fully. A. There may be *sound* when there is no ear to hear it, and the fall of a tree would produce exactly the same noise, whether or not there be any one near at hand. What we call "sound" consists in reality of pulsations or wave vibrations in the air or whatever medium the sound traverses. If a stone fell into a smooth body of water, it would produce waves on the surface of the water, whether or not there be any person present to see them. In the same way, it would produce waves or pulsations of sound in the air. 2. Give a rule for figuring the drawbar pull of a traction engine. As an example, figure the pull of the following engine: Cylinder, 10 x 10½; 225 revolutions, cutting off at two-thirds stroke; pressure, 120 pounds; traction wheels, 64 inches diameter, geared 1 to 17. A. The engine which you describe ought to be able to produce a drawbar pull of from ten to fifteen thousand pounds for each cylinder, provided the driving wheels do not slip. If this force is more than eight or ten per cent of the weight on the driving wheels, they are likely to slip.

(9678) G. L. P. writes: In the June 10 issue of the SCIENTIFIC AMERICAN, in Notes and Queries, No. 9656, H. J. F. asks if a piece of paper 8 by 8 inches square can be cut so as to make 65 square inches. You say: "No, by no conceivable means." Now you will find inclosed a piece of paper 8 by 8 inches, which you are to cut on the lines and put together as lines shown on the smaller piece, and then measure. I think you will find it to be 5 by 13 inches, which equals 65 square inches. I am unable to explain where the square inch comes from, but it is there. A. No, friend, it is not there. We exceedingly regret that any of our correspondents should think us capable of believing that a square of eight inches on a side can be cut into pieces and put together in another way so that its area shall be increased 1 square inch. We are having a deluge of letters on this point, of which we print one, many criticising us more or less severely for saying that this cannot be done. But of course it cannot be done. We repeat it—No, by no conceivable means. It transcends common sense to ask it. Try it with pennies, or kernels of corn, or any convenient similar pieces. Lay out 64 in a square of eight on a side. Then change them to a figure of 5 rows of 13 on a side. There will be a missing kernel or coin. You cannot complete the second figure. It is the same if you cut a piece of paper of the same dimensions; 8 x 8 cannot be anything but 64, and can never be 65. Why not settle one's self first upon simple foundations? Then one will not say, as our confident correspondent does, "But it is there." That begs the question. It is not there, and cannot be there. There is evidently a fallacy here somewhere. Now, this is no new trick.