RECENTLY PATENTED INVENTIONS.

Pertaining to Apparel.

SEPARABLE FASTENER.—G. E. WRIGHT, New York, N. Y. The principal object of the improvement is to provide a substitute for the various forms of hooks and eyes now employed on garments and the like and so construct it as to provide for a more easy hooking and unhooking of the device; and also to simplify the construction and prevent the displacement of the two parts of the fastener accidentally.

Electrical Devices.

ELECTRIC-LIGHT-BATH CABINET.—H. H. ROBERTS, Lexington, Ky. In this case the invention is in the nature of a novel cabinet, designed to treat the body with the radiant heat and light of electric lamps under variations of different colors of light and the special application of high-frequency currents.

Of Interest to Farmers.

HAY-STACKER.—J. C. HARRIS, Greeley, Neb. In the operation of this stacker the fork-frame being in position such that the horizontal teeth are on the ground a shock of hay is drawn thereon. Power is then applied to the ends of the hoisting-ropes which elevates the frame, and hay. At first the frame travels half as fast as the ends of the rope. When the frame contracts with the sheave-arms, the pull is direct, this giving a quick jerk of the frame, whereby to throw the load upon the stack.

Of General Interest.

TELESCOPE-MOUNTING FOR GUNS.—J. WILKINSON, Bridgeport, Conn. In the present patent the invention is a telescopic mounting for guns, the telescope being pivotally attached to a gun by links, and thus adapted to be temporarily elevated to obtain a clear view of the open sights below it when the telescope is not used.

DRUM.—P. BERLINGHOFF, New York, N. Y. The drum is of the kind used in bands, orchestras, or the like, the inventor's object being to provide a drum so constructed that it may be compactly folded or reduced in length for convenience in transportation or storage and that when extended will be held rigidly in normal or playing position.

TRY-SQUARE.—J. COLLIE and C. BEAUCHENE, Lake Linden, Mich. The invention relates to try-squares such as used by mechanics and particularly by carpenters in laying out work. The object is to produce a square which will be provided with means enabling two faces of the work to be marked simultaneously. It enables a timber to be marked for a square or plumb cut and also a beveled cut.

TRUSS.—F. CRATER, Parsons, Kan. The principal object of the truss is to provide means for equalizing the strain. In this invention a person on assuming a stooping position automatically increases the pad-pressure by the shortening of the belt, thus guarding against displacement. The self-adjustment of the elements of the improvement greatly adds to the comfort of the user. The necessity of an elastic belt is obviated.

TRACE-BUCKLE.—H. JOHNSON, Edgerton, Mo. The object of the invention is the production of an attachment for a trace-buckle which shall permit the ready fastening, release, or adjustment of straps and bands, and particularly of heavy articles of this nature, such as traces or tugs of harness and one which shall form an additional fastening to the single-tongued buckle in common use.

FOUNTAIN-PEN.—J. J. MEAD, New York, N. Y. Mr. Mead's purpose is to provide a pen of that type which contains a sack as a receiver and container of the writing fluid, so constructed that it will be simple and economic and so that the parts will be few in number and may be assembled and secured in position in a rapid, convenient, and durable manner.

COLORING-MATTER FOR PRODUCING SILK-LIKE OR PEARL-LUSTER EFFECTS.—L. LILIENFELD, Vienna, Austria. The object in this instance is to provide a new and improved coloring-matter for printing, painting, coating, or otherwise treating articles made of wood, metal, paper, leather, textile fabrics, etc., to produce a silky or pearl-luster effect.

SMELTING-FURNACE.—F. L. MCGAHAN, St. Louis, Mo. One purpose of the inventor is to provide a furnace in which the heated products of combustion and unconsumed gases are withdrawn from the furnace and after being passed through a carbureter to enrich them are again returned to the furnace, so that not only is the heat utilized, but also any unconsumed gases are consumed in their second passage through the furnace.

POLLEN-COLLECTING DEVICE.—E. MOULIE, Jacksonville, Fla. By means of this device pollen is collected for use in the manufacture of medicines and the like, and is particularly useful in connection with devices of this character in which severed twigs or branches bearing blossoms from which the pollen is to be collected are held with their stems immersed in water or other liquid contained in a vessel.

FOLDING CARPENTER'S SQUARE.—J. TREGELLAS, Goldfield, Nev. The invention is a carpenter's square whose members, arranged in use at right angles to each other, are pivoted together, and thus adapted to be folded one alongside the other, whereby it occupies small space and is adapted to be more conveniently carried, stored, or packed.

Heating and Lighting.

CIRCULATION DEVICE FOR HOT-WATER HEATING PLANTS.—H. V. JÖRGENSEN and C. H. SÖRENSEN, Arrhus, Lille Tory 2, Denmark. Hot water heating plants in which air is blown into a main rising-pipe in order to increase the circulation of water in the pipe system are well known. The object of the existing patents in this line is to produce a circulation as powerful as possible in proportion to energy expanded and in such manner that the system does not lose heat and so that the use of air does not cause special difficulty.

BOILER.—F. S. GULICK, Pittsburg, Pa. The improvement pertains to boilers, and more particularly to those adapted for domestic use and in which the source of heat consists of burners to which a combustible fluid is supplied. Water is quickly heated with comparatively little fuel. The thick heavy bottom of the boiler not only serves to assist in heating the water but also in keeping it hot.

GRATE.—R. V. BRAWLEY, Statesville, N. C. This invention is an improvement especially in grates designed for use in open fireplaces. When desired the entire grate may be readily lifted from the front frame of the fireplace so that in summer or other times when a fire is not desired in the grate the entire fireplace may be open and unobstructed.

LANTERN.—A. ROSENBERG, 259 High Holborn, London, England. This invention refers to improvements in optical signaling and searchlight operations, and is especially designed for use in connection with the signaling apparatus for which application for Letters Patent, of which this is a division, was formerly made by Mr. Rosenberg. Besides oil or gas, other sources of illumination may be used with the lantern—as, for example, the so-called "oxyhydrogen" combustion of lime-light apparatus or electric light apparatus.

Household Utilities.

HANGER FOR SHADES.—J. K. PUTNAM, Montpelier, Ind. The object of the invention is to provide a hanger which may be readily attached in position and which will operate as an efficient guide for the supporting-cord passing therethrough and afford means at the same time for locking the cord quickly, so as to support the shade at any desired height.

DUST-PAN.—W. N. STEELE, New York, N. Y. The aim of the inventor is to provide a pan arranged to permit convenient sweeping of the dust, crumbs, and the like into the pan, to securely retain the sweepings, and to allow ready dumping of the accumulated sweepings whenever it is desired to do so and without danger of spilling any of the sweepings while carrying the pan and contents from the room to a place of discharge.

Machines and Mechanical Devices.

VALVE.—J. J. WILBER, Perth Amboy, N. J. In this case the invention relates particularly to combined gate and check valves, the object being to provide a valve mechanism that may be readily reversed, depending upon the direction of the flow of liquid through the pipes and also constructed so that it may be easily repaired.

WIRE-STRETCHER.—W. ELLIS, Penfield, Ill. The stretcher is particularly designed and adapted for stretching woven-wire fence fabric, and there are novel means for supporting the device in convenient and effective position for applying the power necessary to operate the same and for clamping and straining all of the line-wires of the fence simultaneously.

HYDRAULIC ELEVATOR.—W. L. LELAND, San Francisco, Cal. Water passing up through the nozzle creates a suction in the annular chamber, drawing air therethrough and carrying it upward with it. The cylindrical ring opening is greater than that of the nozzle, the force of water tending to form around itself a coating of air drawn in from the chamber. In placing the elevator in the pit the casting may be placed for receiving the supply-pipe, and the elbow may be turned with reference to casting to bring it into better position for connection with the pipe. If the jacket opening be not properly placed with respect to material to be excavated and removed it may be rotated with respect to the casting to bring the opening into proper position.

Railways and Their Accessories.

RAIL-JOINT.—E. A. GILLCHRIST, McKeesport, Pa. One purpose of the invention is to provide a special rail-joint, primarily intended for use upon steam and electric railways, but which can be used in structural work when conditions will permit, and to so construct the joint that it can be used in connection with any form of rail and in any form of fish-plates adapted to the rail.

CAR-STAKE.—A. W. BAGLEY, Tacoma, Wash. The invention is particularly useful in connection with cars adapted for the transportation of logs, lumber, and the like. The objects are to provide a stake which rigidly holds in position the load upon a flat or other car; and a stake which may be released from an upright position by means of a catch operated from a side of the car opposite to that upon which the stake is pivoted.

Railways and Their Accessories.

CAR-COUPLING.—W. KELSO, Pittsburg, Pa. This coupling enables the trainman, without exposing himself to danger, to control easily the connecting and disconnecting of cars. It has a swinging knuckle which is released by merely lifting a sliding member, and when this member is lowered the coupling is left in such condition that the knuckle becomes locked as soon as the cars bump together.

AIR-BRAKE APPLIANCE.—H. C. LUCK, Telluride, Col. The object of the present invention is to provide a brake appliance designed to automatically set the brakes in the train in case any one of the cars in the train moves out of normal position either by derailment or on account of a broken axle, broken arch-bars, or other causes. It relates to such as shown and described in Letters Patent of the United States formerly granted to Mr. Luck.

AUTOMATIC SAFETY RAILWAY-SWITCH.—J. W. HUBBARD, Eau Claire, Wis. The object of the inventor is to produce simple mechanism for operating a switch automatically and to provide such arrangement as will enable the same switch to be operated manually, if desired. The invention includes also means for locking the switch in its open or closed position and provides a releasing device enabling the switch to be operated either manually or automatically.

Pertaining to Recreation.

TOY MARINE VESSEL.—B. C. DEAN, Keene, N. H. The object of the invention is to provide a toy made in sections adapted to be readily assembled and secured in place by children, thereby serving instruction for children, at the same time producing a vessel, such as a toy or miniature yacht, capable of sailing on the water.

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. 8460.—Wanted, electric motors and cars of the gage of steam railroads, to serve as freight and passenger cars; motors to be of high gage and good pullers.

Pattern Letters. Knight & Son, Seneca Falls, N. Y.

Inquiry No. 8461.—Wanted, iron sheets for covering trunks.

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

Inquiry No. 8462.—Wanted, candle-making machinery.

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

Inquiry No. 8463.—Wanted, manufacturers of motors and parts of automobiles.

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

Inquiry No. 8464.—Wanted, a Baden Powell walking stick telescope.

Make Alcohol from Farm Products.—New book, $1.00. Spon & Chamberlain, 123 S. A. Liberty Street, N. Y.

Inquiry No. 8465.—Wanted, wholesale dealers in brass gas tubes, to manufacture into air gas barrels, having following requirements: free from kinks, cut 20 inches length, small enough to dress smooth when bored to 14-100 of an inch.

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

Inquiry No. 8466.—Wanted parties to equip a wood alcohol plant.

Headquarters for new and slightly used machinery. Liberty Machinery Mart, 138 Liberty Street, New York.

Inquiry No. 8467.—Wanted, apparatus for reducing the volume of liquids by evaporation under vacuum, also for sealing jars by atmospheric pressure.

The celebrated "Hornsby-Akroyd" safety oil engine. Koerting gas engine and producer. Ice machines. Built by De La Vergne Mch. Co., Ft. E. 138th St. N. Y. C.

Inquiry No. 8468.—Wanted, machinery for making popcorn, bricks, etc., also candy-making machines.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machine work and special size washers. Quadriga Manufacturing Company, 18 South Canal St., Chicago.

Inquiry No. 8469.—Wanted, makers of slot machines for vending drinking water, other than the Automatic Penny-Drink Machine Co., of New York.

Inquiry No. 8470.—Wanted, a second-hand electric motor, alternating single-phase, 4 or 5 h. p.

Inquiry No. 8471.—Wanted, a machine for extracting the fiber from salt codfish.

Inquiry No. 8472.—Wanted, makers of corn pith cellulose.

Inquiry No. 8473.—Wanted, the name and address of the dealers in pumice stone, made in Germany by Schumacher.

Inquiry No. 8474.—Wanted, manufacturers of alcohol distilling machines.

Inquiry No. 8475.—Wanted, a rock crusher, to be operated with a 2 h. p. gasoline engine.

Inquiry No. 8476.—Wanted a practical burner using alcohol as fuel, for use under the boiler of Locomobile steam carriage.

Inquiry No. 8477.—Wanted, the name and address of manufacturers of electric fountains for parks.

Inquiry No. 8478.—Wanted, a plant for making lath for building; also a planing mill for dressing rough lumber; also machinery for making shingles and staves.

Inquiry No. 8479.—Wanted, makers of gasoline motors of 15 to 25 h. p., weight about 3 pounds per h. p

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.

(10203) G. S. M. asks: Will you kindly let me know through the columns of your paper whether it is necessary for the temperature of the air to become 32 deg. F. or lower in order to produce a "white frost"? If not, please give reasons. A. It is necessary for the air to be at 32 deg. at the point where the white frost forms. It is not necessary for it to be at 32 deg. any distance above that point, even one foot above. The air is a non-conductor of heat, and may be several degrees warmer at a very little distance from the place where frost is forming. Vegetation and stones are better conductors of heat than is air, and hence become cooler than the air. Hence the dew is deposited on these, and the dew freezes to ice crystals, which is frost.

(10204) C. E. D. writes: To yours of the 2d it is quite evident you have not tried it. Please keep in mind that the ice is chipped; that the only time when this experiment has been tried is in the hot weather, when chipped ice will not stay dry. Also remember that the fruit juice and sugar mixed with the ice forms a freezing mixture. A hot spoon is, therefore, not needed for the purpose of melting the ice. A cold spoon has plenty of liquid around it. The ice ought to be just as cold and just as liable to attach to the cold spoon as to the hot one, in fact more so, but it does not do it. The question is, "Why?" Your answer is, therefore, incorrect and I am still in the dark. The spoon does freeze to the ice in the liquid. I have never tried it with the ice free from liquid. Kindly try the experiment and then I will be pleased to have your further opinion. I assure you it has been a puzzle to me. A. We have delayed reply to your last letter in order to make some tests regarding the matter of the spoon in sugar and ice. We took your statements in your first letter and gave what seemed a reasonable explanation for them, which you reject with rather more assurance than we think the case required, since you confess you do not understand it. We have made our tests and can now speak with personal knowledge. We used a thermometer as a testing instrument and not a silver spoon, as you appear to have done. We find that the heat necessary to melt sugar in ice will reduce the temperature of the ice to about 9 deg. F. below the freezing point of water. We do not think we are justified for this reason in calling, as you do, a mixture of syrup, sugar, and ice a "freezing mixture." Scientists do not consider this a freezing mixture. The presence of the syrup prevents the temperature from going as low as it will with the sugar alone. This should be so, since the sugar in the syrup is already melted and does not take heat from the ice with which to melt. All solution is accomplished by heat, and heat disappears in dissolving anything in water or melting it with ice when the material melts in ice as sugar will do. When there is no chemical action involved the temperature in the act of solution always falls; when chemical action accompanies solution there may be so much heat evolved by the chemical action as to overbalance the heat absorbed in the act of solution. Now as to the attachment of pieces of ice to the spoon. There is no mystery in this. We, however, dissent from your statement that a hot spoon is necessary, since we froze the ice to the cold spoon without any difficulty. The case is simply that of a slight film of water between the cold spoon and a piece of ice. The silver of the spoon is the very best conductor of heat, and so the spoon can easily melt a film of water if the ice is dry or become cooled to the temperature of the sugar and ice, 23 deg. F. about, and then the freezing of pieces of ice to the spoon is the matter of a few moments. You might hold ice in your fingers and freeze it to a spoon if you will keep the spoon below 32 deg. F. Tyndall froze pieces of ice together under hot water by the same principle, that of regelation. You may have frozen your (hot) fingers to a piece of cold iron on a cold day in winter. The horse's bits will freeze to his mouth in the same way unless they are warmed in winter. The two actions are quite similar. You may accept it for a certainty that ice cannot freeze to a hot spoon until it has first reduced the temperature of the spoon to 32 deg. F. or lower. It is absurd to claim it.