RECENTLY PATENTED INVENTIONS.

Pertaining to Apparel.

HEAD FOR HAT-PINS AND THE LIKE.—W. J. Kittel, Jersey City, N. J. The purpose of the inventor is to provide a method of ornamenting and constructing the heads of hat pins and like articles, also decorating and constructing buttons and similar articles, whereby to economize in the manufacture and to render the decorations or coloring sparkling or luminous and at the same time to permit of comparatively severe usage with little liability of damage.

NECKTIE DEVICE.—C. I. Hoople, Anaheim, Cal. One purpose in this case is to provide a device with string ties to be made up in a bow, four-in-hand, or other styles of tying, which will enable a necktie to be easily tied and also enable the expeditious adjustment of the tie relatively to the front collar button, even when the closest type of turn-down collar is worn.

Of Interest to Farmers.

PLOW.—J. Rivara, Natchez, Miss. The object of the improvement is to provide a plow for turning a furrow, breaking up the sod, harrowing and pulverizing it and uprooting and destroying grass and weeds and grinding them into bits and bringing the land into order for planting, with much less labor than is usually employed.

SWEEP-RAKE.—F. Nelson, Driscoll, N. D. Of the intentions of this inventor, one is to provide a construction of rake wherein when the team is backed to discharge a load a sweep bar will be automatically drawn over the teeth to impart the initial movement to the load, and wherein further the moment the team is started forward or commences to pull the sweep bar will be automatically restored to its normal position close to a rake head.

Of General Interest.

KILN.—G. Wiegmann and C. Dörr, Berlin, Germany. The invention relates to the construction of kilns for heating, burning or smelting metals, metal alloys, combustible and non-combustible materials, as also for roasting and reducing ores, and is especially adapted for house-refuse and similar waste-materials. The combustion is complete, no ash is formed, the residues are recovered as molten slags adapted for various uses and only occupy a small percentage of the volume of the refuse.

EMULSIONING AND SOLIDIFICATION OF HYDROCARBONS.—W. Van Der Heyden, 21 Boulevard du Midi, Nanterre, Seine, near Paris, France. The deficiencies in this inventor's former patent are removed by the present improvement by the addition of different substances to the emulsion, that is an addition in order to prevent the loss of weight of which product 3-4 per cent are sufficient. The addition of salts of organic acids (tartaric, oxalic, and citric) effects a smokeless burning of the solidified blocks. The whole process secures a perfect emulsion and no constituent separates from it after the shaking ceases.

SCALE.—M. M. Schwartz, North Bergen, N. J. One object of the inventor is to provide a scale having a plurality of members adapted to be reversed and used interchangeably with each other, and so arranged as to be adapted to be held in complete contact with a drawing and give a proper angle of vision, to protect the divided surfaces of the members from friction with a drawing and the wear consequent thereto, and to avoid the necessity of raising the edges of the scale from a drawing, thereby obviating the unsteadiness due to lack of contact.

Hardware.

SAW-TOOL.—W. Bryson, Fifield, Wis. In the present patent the invention relates to improvements in tools employed in filing, jointing, side filing and setting saw teeth, and the object is to provide a device for this purpose by the aid of which the several operations on a saw may be quickly performed.

LOCK.—C. Calicchio, New York, N. Y. A key engages the sleeve bar and rotates it in the casing, the outer portion of the key ward bearing against a flange edge formed on the tumbler, which raises the latter's free end to release a lug from the back notches and permit the bolt to be shot in the casing by the end of the ward striking against the recess wall of the bolt's shank which projects the latter's arms partially through the casing rim, bringing a lip of the bolt shank close with the key to enable the end of the ward on second rotation of key to bear against the lip and project a bolt through the casing rim. Said bolts are retracted by reverse rotation.

Household Utilities.

IRONING-TABLE.—W. H. Tichborne, New Castle, Pa. In the present patent the invention has for its purpose the provision of an ironing board simple in construction, effective in operation and durable in use, and adapted to be attachable to tables of various heights, to be removed therefrom, and folded conveniently for storing when not in use.

SLEEPING-BAG.—H. W. Wilson, Springfield, S. D. The invention is more especially designed for children, combined with means for retaining the bag in place on the mattress and holding the child in the bag in proper position. Two straps extend downward from a yoke's back and front, meeting at depth of crotch, on the thigh, continuing as a single strap, avoiding entanglement of legs in the strap. The strap from thigh to foot of bed forms a perfect pivot, permitting shifting and turning at will. The strap is detachably connected. Straps holding the bag to the bed are fitted with a safety buckle, to enable them to be taut or loose as needed.

Machines and Mechanical Devices.

STICK-FEEDER.—W. H. Waldron, New Brunswick, N. J. The invention relates to drying machines such as used in the manufacture of wall paper and the like. The object is to provide a feeder, arranged to insure a positive and accurate feeding of the sticks onto an endless carrier which delivers the sticks to the drying machine for receiving and supporting the freshly printed or coated paper or other webbing.

POLE-CLIMBING SHOE.—C. F. Youngquist and C. G. Youngquist, San Francisco, Cal. The object of the invention is the production of a safe device which will require no particular skill to manipulate in the use intended and will positively grip a pole and become engaged at each step, enabling the climber to ascend and descend with greater facility and less exertion than with devices now of this kind in use.

ADJUSTABLE DRILL-SUPPORT. — A. Moirbacher, Cripple Creek, Col. It is sought in this case to provide in connection with an adjustable or extensible crop bar, a support for the stopping bar of an air drill for instance as the Ier, Ingersoll, Jap, Murphy, Hartsock, Shaw Eclipse, and similar machines that are made with self-air feeding stopping bars, the machine being operated by compressed air.

SPEED-REGULATOR FOR PUMPS.—W. W. Satterthwaite, Washington, N. C. In operation, when the pressure in the cylinder or reservoir becomes sufficient to overcome the tension of a spring arranged between two collars at the lower portion of a stem, the latter is elevated and through its connection with a valve stem the valve is partially closed, thus slowing the exhaust, and as a consequence slowing the pump. Further increase in the pressure in the cylinder tends to further close the exhaust, thus nicely regulating the speed of the pump by the pressure in the cylinder.

Prime Movers and Their Accessories.

VALVE.—H. S. Rankin, Cripple Creek, Col. This cock or valve is particularly adapted for use as a throttle valve in a pipe line adjacent or leading to a rock drill or the like, employing fluid pressure such as compressed air or steam. But it is not limited to such use, as it may be employed in various places, in fact, anywhere an angle valve is used, especially on lines transmitting considerable pressure. To its functions as a valve, it combines therewith the function of a lubricator.

CIRCUIT-BREAKER FOR GAS-ENGINES.—F. B. Packwood, Lincoln, Neb. The invention relates to novel and peculiar circuit-breaking means, for use in the ignition circuit of explosive engines, and consists of an automatically operated device, adapted upon reverse motion of the engine, to automatically break the primary or secondary ignition current, thus preventing continued reverse motion of the engine.

INTERNAL-COMBUSTION ENGINE. — W. Morey, Jr., New York, N. Y. The invention pertains to certain improvements in internal combustion engines, and more particularly to a new type of engine having all the advantages of the four-cycle engine, including the complete scavenging, and at the same time having all the advantages of the two-cycle engine, namely, an impulse for every revolution of the drive shaft.

HYDRAULIC MOTOR. — W. R. Tuttle, Asotin, Wash. The reference in this case is more especially to hydraulic motors of the kind actuated by the force of the current of a body or stream of water, upon the surface of which the motor is located, when anchored in position for effective operation. One of the principal objects is to provide a motor, of an embodiment to overcome numerous disadvantages and objections found in the use of many other motors.

Design.

DESIGN FOR A SPOON.—Lulu G. Blasier, Williamsburg, Iowa. This ornamental design for a spoon bears on the inner edges of the bowl the inscription Rebekah Degree I. O. O. F., Bloomfield, Iowa, Dec. 2, 1868. A linked chain, a flower, a dove, a crescent, seven stars, and a beehive are pictured on the handle. In the center of the bowl is delineated the scene of Rebecca at the well. The designer has patented another design for a spoon of somewhat similar form. The bowl of the spoon bears the words Pythian Sisters, and in the narrow part of the handle, Onward and Upward. A maltese cross with flowers, the letters F. C. B., a male head, and an end holding three stars constitute a very exquisite design.

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(10585) E. C. T. says: I want to perform before our Sunday school an experiment to illustrate the effect of sin upon a life, and then the redeeming power. I know of such an experiment having been performed, and would like to know just what solutions to use. I prefer to start with a clear solution, and then by adding another preferably clear solution to get a bright and attractive color, then by adding more of the same or another solution to gradually darken it until it becomes black, then I want to add something that will bring it back to its original clearness. If you can suggest the solutions you will confer a great favor upon me. A. There are many ways of obtaining a dark precipitate from two colorless solutions, but none of these are easily or quickly cleared to a colorless state again. They do not answer your purpose as an illustration of sin and forgiveness. But why use a dark or black color at all? Scarlet or crimson are the colors given in Scripture (Isaiah i: 18). These can be produced and cleared off very easily. Make a strong alcoholic solution of phenolphthalein, and a strong solution of sodic hydrate in water. Add the first solution to the second slowly with shaking. At first as bright and delicate a rosy color as you may wish can be obtained. As the strength increases, the color deepens to any degree of darkness, deep enough for the verse referred to. Then add hydrochloric acid, and the red will immediately disappear. This would seem to meet your wishes. We give you also a process by which you can obtain a dark brown muddy deposit and dissolve it quickly. Take the phenolphthalein and sodium hydrate solutions as above, but more dilute, and proceed as above; then add to the bright red solution a few drops of solution of iron chloride, more or less to produce a thick muddy brown mixture. A solid is precipitated from the solution. It is hydrate of iron. To clear this away, add hydrochloric acid. This leaves a yellow liquid which, in a dim light, will look almost white or clear. Some practice may be needed to obtain the desired strength of solution, but when the solutions are right, the effect is surprising to those inexperienced in chemical manipulation.

(10586) A. C. says: We have a well 184 feet deep that we wish to force water out of to a tank 65 feet above ground. The water stands 16 feet from the top of ground, but we do not know how low it will go when pumping is commenced. The outside casing of well is 8 inches. The suction pipe and discharge pipe is 5 inches. It goes down in the well 163 feet. The air pipe is ¾ inch and goes down 157 feet. The air pressure is 100 pounds. The question is, how far can the water lower and still allow the pumping to go on successfully? In other words, how far must the air pipe be down in proportion to the amount of elevation of water? A. One hundred pounds air pressure will lift a column of water 230 feet high, neglecting friction. The amount of friction will depend on the mechanism used; if the friction is 30 per cent, the 100 pounds air pressure will lift a column of water 161 feet high, or from 96 feet below the ground to a tank 65 feet above it.

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