

## ENGINEERING INVENTIONS.

A car seat has been patented by Mr. Uriah Smith, of Battle Creek, Mich. It has a reversible back pivoted to the arms, and a head rest connected pivotally to the ends of the seat back, so that when a passenger leans against the seat back the pressure has the effect to lock the head rest securely in place.

A furnace for steam boilers has been patented by Mr. Zachary T. Reno, of New Orleans, La. It is so built that a fan forces a mixture of air and gas from the smoke stack through a tube into hollow perforated grate bars, discharging the same directly into the fire, thus facilitating complete combustion and utilizing the smoke and gases.

An electric railway signal has been patented by Mr. Charles D. Tisdale, of Boston, Mass. It is an improved arrangement of circuits, relays, and signal magnets, for displaying a signal when a train enters a section and withdrawing it when the train leaves the section, there being for each section two or more semaphores, two relays, two batteries, and a line wire with the track rails.

A rail joint has been patented by Mr. Edwin M. Cooke, of Hot Springs, Ark. Combined with two adjacent sleepers and two rails having their ends united midway between the sleepers is a jacket fitting the rails at their juncture and extended down between and snugly against the sides of the sleepers, the ends of the rails being so united as to form practically a single rail, and be also firmly and solidly supported.

A car starter has been patented by Mr. Joseph M. Erts, of Poughkeepsie, N. Y. The axle of the car has sliding clutches and loose gear wheels, each having a clutch to receive the teeth of the sliding clutches, in combination with auxiliary shafts and a coiled spring, with other novel features, whereby the stopping of the car will store up power to assist in its starting.

## AGRICULTURAL INVENTION.

A seed planter has been patented by Mr. Jacob W. Van Order, of Arlington, Oregon. This invention covers a novel construction and combination of parts in a machine where the seeds are dropped close after an opening plow, and the soil pressed into the furrows upon the seeds by runners, it being capable of ready adjustment to plant sugar cane, corn, potatoes, etc.

## MISCELLANEOUS INVENTIONS.

A fire escape has been patented by Mr. Henry S. Holland, of Wilmington, Va. It consists of a device of a frame and drum with radial projections and a lever, the apparatus being one which can be quickly adjusted and easily used by an unskilled person, in order to regulate the descent of a rope which is calculated to carry a person escaping.

A clothes washer has been patented by Mr. James T. Campbell, of Sugar Grove, Pa. The invention covers a combination of upper and lower cylinders, in which pistons are operated by a crank to force hot air and water through the clothes, by which they may be thoroughly washed with economy of time and labor without injury to the garments.

A letter box has been patented by Mr. Carl F. Teller, of Offenbach-on-the-Main, Germany. This invention covers a letter box and a bag or pouch, which are dependent upon one another, so that one cannot be opened or closed without the other, and the box can be emptied of its contents without the letters being handled by the operator.

A lamp attachment for sad irons has been patented by Mr. Henry C. Fox, of Evansville, Ind. It is adapted for heating a hollow reversible sad iron, and is calculated to heat the iron more uniformly and perfectly, the construction being such that the flame may be intensified and regulated at pleasure, with other novel features.

A tricycle has been patented by Mr. Charles C. Anderson, of Morgan City, La. The invention consists in attaching to each end of a treadle crank shaft a grooved wheel, whereby motion is communicated to the main crank by means of pitmen, in connection with novel details in the construction of the frame and steering bar.

A pencil sharpener has been patented by Mr. Archibald C. McKinnon, of San Francisco, Cal. It consists of a block with two conical cavities, one lined with metallic plates carrying knives or cutters and the other lined with sandpaper, the cutters for removing most of the lead and wood as required, and the sandpaper for finishing.

A longne has been patented by Mr. Henry Burgess, of Chicago, Ill. It is a piece of furniture jointed together in such manner as to form a box, with a hinged seat, which is the cover of the box, making a receptacle for dresses and other articles, while it can be taken apart for convenient transportation and storage.

A heat regulator has been patented by Mr. Mifflin W. Baily, of Pottstown, Pa. It is a register with two openings controlled by a valve and adapted for connection by pipes with the smoke pipe and ash pit of a furnace, so that the draught of the furnace may be regulated from the apartment within which the heat is delivered.

A journal for milk separators has been patented by Mr. Peter Peterson, of Reinbeck, Iowa. It consists of an axle fitted in a bearing and supported by a steel disk, resting on a ball supported by a second disk, and fitted in a recess in the bearing, the ball having so little frictional contact that it is not liable to get hot, and always centrally supporting the axle.

A cash carrier has been patented by Mr. Joseph Starr, of New London, Conn. It has a buffer bar loosely held and provided with springs, so that the car can receive no injury from coming in contact with the stop blocks, a slight forward movement of the hand upon the lever causing the car to traverse the wire, and the device being cheap of construction.

A wash bench has been patented by Mr. Otis Shephardson, of Sturgis, Mich. It has two standards to receive the mechanism of a wringer, with other short standards on either side pivoted to longitudinal bars, so that they can be folded up, and when opened out will constitute a bench for a wash tub on each side of the main standards.

A mould for casting printers' leads and small furniture has been patented by Mr. Gustavus F. Kimball, of Topeka, Kansas. It is a mould wherein the side bars or formers are reversible and detachable, and united to clamps on either side by tongues and grooves, so that any form of leads, slugs, or small furniture can be cast expeditiously.

A foot rest for stoves has been patented by Gertrude H. Woodworth, of Algona, Iowa. It consists of a frame to receive the upholstered upper surface of a foot rest, the under side of the frame having clamping arms adapted to attach to the foot rail of a stove, and the portion of the footstool adjacent to the stove being protected by a zinc strip.

A combined deck and dumping scow has been patented by Mr. Franklin P. Eastman, of New York City. It has sliding hinged doors, inclined floors leading to the sides of the doors, which form either a part of the deck on each side or a peaked section in the center of the scow, with devices for sliding, opening, and closing the doors, and other novel features.

A tap valve and tapper for casks has been patented by Mr. Richard Teichmann, of Brooklyn, N. Y. A spring valve is arranged in the tap hole of each barrel or cask as a permanent fixture, and there is furnished therewith a special opening or tapping device fitting over the valve seat and drawing the spring valve open by means of a hook and a latch or lever.

A device for winding up counterweights has been patented by Mr. Victor Popp, of Paris, France. The invention consists of a system of automatically winding up counterweights for transmitting or accumulating power by the employment of a fluid, liquid, vapor, or gas, under a constant or variable pressure, the apparatus embracing a variety of novel features.

A crown piece for bridles or halters has been patented by Mr. Daniel T. Chambers, of Mansfield, Ohio. All the parts of the crown piece are stamped by a die out of a single piece of leather, which is made in such shape that it can, on dampening, be readily moulded into the best natural form, while avoiding the expense of stitching and the discomforts to the horse of lapping joints.

A wagon brake has been patented by Mr. Noble E. Thompson, Jr., of Clark's Mills, Pa. The invention covers a novel construction and combination of parts for a brake designed to automatically lock the wagon when stationary, applied draught automatically removing the brake, and when descending a hill the action of the horses in holding back tending to apply the brake with increased force.

A snow plow has been patented by Mr. Almeran Roberts, of Hanover, Me. It consists of a strong timber frame, the forward portion carrying adjustable cutters, and the rear portion carrying scrapers, the design being to break up and distribute the snow over the roadbed, and press it down to form a compact and even road, displacing the greater portion and leaving only enough for use in the road.

A shoal water alarm has been patented by Mr. Louis Frik, of Philadelphia, Pa. The invention covers the combination of an electric circuit and signaling devices with conducting lines, in connection with a small anchor which is suspended at any desired depth, but on striking the bottom establishes an electric circuit and causes a bell to ring which indicates that the vessel is in shoal water.

A flaxseed separator has been patented by Messrs. Lorenzo S. Welker and Harry Kiffe, of Beaver Creek, Minn. The construction is such that an air blast strikes the sheet of flaxseed as it falls from the hopper, and carries away straws, stems, etc., while the screen upon which the seed falls has apertures to allow the flaxseed to pass through, but will not pass kernels of grain, large seed, etc.

A clamp for holding plowshares has been patented by Mr. George W. Thorp, of Conway Springs, Kansas. It is a clamp that allows a pivotal as well as a sliding movement, for holding the two wings of a plowshare together during welding or sharpening, so that when the wings are placed in proper relative position for welding, the clamp will prevent any slipping.

A hay press has been patented by Mr. William A. Laidlaw, of Cherokee, Kansas. This invention covers an improvement in that class of presses known as perpetual or continuous, with followers operated by a reversible sweep, allowing them to be thrown back by the elastic rebound of the hay or other material to be pressed, and embraces a novel construction and combination of parts.

A seam dampener has been patented by Mr. Frank Baldwin, of New York City. It is a device so made as to form a miniature hand fountain, having at its lower end a valve and spindle, the latter arranged to operate the valve and run in contact with the garment, so that slight pressure will open the valve and permit a flow of water, for convenient use in laundries, etc.

Wall paper forms the subject of a patent issued to Mr. William Campbell, of New York City. This invention covers the ornamenting of the paper with dry pulverized coloring material, coating the surface first with glue or other adhesive, and then sprinkling the colors while the paper is at the same time beaten from the under surface and made to travel continuously, giving solid colors in part and variegated ones in part, of a rich and handsome appearance.

A puzzle has been patented by Mr. Henry Oelrich, of Detroit, Mich. It consists of two leaves of pasteboard so connected by straps that when the leaves are opened the straps act as hinges, one pair

being near opposite ends of the leaves, the other pair near the center, and having two similar folding packages, one on one side of the inner straps and the other on the opposite side, so that either package may be exposed by the holder without detection by the casual onlooker of any deception.

A billiard ball has been patented by Mr. George E. Phelan, of New York City. It is a combined ivory and composition ball, the ivory core having a protective covering or layer, of celluloid, zylonite, or other fibrous material, the core being of such size as to perfectly maintain the shape of the ball, using but little composition, but making the balls cheaper, as old balls can be returned and thus used as well as smaller pieces of new ivory.

A billiard table cushion has also been patented by the above inventor. It is an India rubber cushion, having a tube placed in a longitudinal perforation near the operative edge, the tube being made of band rubber, gutta percha, celluloid, metal, or other suitable material, and operating to distribute the force of the impact of the ball, and supplement the elastic spring of the rubber cushion.

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SANITARY EXAMINATIONS OF WATER, AIR, AND FOOD. By Cornelius B. Fox, M.D., F.R.C.P. Lond. Philadelphia: P. Blakiston, Son & Co. 1887. 110 illustrations. Pp. 563.

The title of this work expresses pretty accurately its contents. It is stated to be designed for the use of medical health officers. The different methods for determining organic matter in water, such as Frankland's, Wanklyn & Chapman's, and the permanganate test, are treated of. Koch's determination of bacteria is briefly described, but is considered rather outside of the scope of the work. Solid residue, chlorine, hardness, and all the prominent factors in water analysis find a place

in the work. Practical points as to the time required in performing analyses, keeping records, form of report, etc., are spoken of at length. The analysis of air for carbon oxides, for sewage emanations, etc., forms an interesting part of the book. Food analysis is the concluding subject. About an equal number of pages are devoted to water and to air analysis respectively, and about half this space to food analysis. The appendix contains lists of apparatus, chemicals, useful tables, etc. An index closes the book. The illustrations are chosen with judgment, and form a thoroughly useful part of the work.

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