

## ENGINEERING INVENTIONS.

An invention has recently been made which provides an escape door to be located at the side of railroad passenger cars, to be used in case of accident when the doors at the ends of the car have been closed by the telescoping of the car, or by the abnormal abutment of the timbers from any cause. This door is hinged at the bottom, and the fastening appliances are so simple that any one without previous instruction can open it in case of accident. The patentee is Mr. Joseph Parkinson, of Danville, Va.

A very simple car coupling has been patented by Mr. O. P. Mossgrove, of Steubenville, O. The drawhead of the car is provided with two hooked members, between which is pivoted a tumbling lever having an arm at right angles to it, which arm projects upwardly. The drawhead is further provided with a connecting clevis which, when the cars are to be coupled, is inclined against the projecting arm of the tumbling lever, so as to be thrown forward over the books of the other drawhead when the cars come together.

## MECHANICAL INVENTIONS.

A very simple machine for splitting shingle is the subject of a patent granted to Mr. J. R. M. Crawford, of Booneville, Miss. The invention is designed to facilitate the manufacture of shingles, and the machine may also be used for making staves and laths, and notwithstanding the several uses to which it may be put, the machine can be made very cheaply.

Mr. James Menzies, of Fernandina, Fla., has recently patented some improvements in sea locks which are so much in use now on railroads, by express companies, and others. The present invention is intended to be applied to padlocks now in use, to effectually guard against the insertion of the key into the key-hole after the guard is applied without leaving evidence of the fact.

A simple and inexpensive leveling instrument for the use of farmers and others—not intended for professional surveyors—has been patented by Mr. Ernst A. Bostrom, of Newnan, Ga. A gravity plumb rod and level are combined and floated by a bearing point resting on a pointed staff which is adapted to be forced into the ground when the observation is to be made.

An improved lock to be opened by a sheet metal key, by its insertion in a projecting key barrel, has been patented by Mr. James Roche, of Terryville, Conn. This lock has the advantage over some others of its class in taking up every little space in the door, of being capable of countless variations and changes, for suiting other kinds of keys without changing any of the principles involved in the present lock.

Mr. Gilman Jaquith, of Maysville, Ky., has patented an improved spinning ring which is simple, cheap, and automatically effects its own lubrication without the necessity of frequently doing this by hand. The upper flange of the spinning ring is provided with an oil reservoir with inlet orifices for introducing the oil, and the oil is distributed through the natural pores of the thin metal.

A new bolting reel has been patented by Mr. J. M. Van Slyke, of Ottawa, Kas. This reel consists in a central prism-shaped chamber of woven wire into which the grain is deposited. As the wire in this chamber is rather coarse, only the larger kernels will be retained there, the finer material passing through into a section which is cylindrical in shape, and rotates concentrically within an outer cylinder which is covered with bolt cloth. This separates the flour from the fluff and other waste particles.

An improved saw tooth swage has recently been patented by Mr. Nathan L. Gazo, of Fernandina, Fla. This invention consists of dies contrived to swage the points of saw teeth from the inside outward, to widen and sharpen them. By swaging the teeth outward, their length is increased, thus the saw will last longer besides giving a good clearance to the back of the teeth. The inventor claims to be able to gauge the points of the teeth of a circular saw to a true circle by his swage.

Mr. Rasmus F. Rasmussen, of New Albuquerque, New Mexico, has obtained a patent for an improved horse power. The machine is made in sections, and is so constructed that it can readily be separated into small light parts which may be handled by one person and can readily be set up again by one man. By this "knock down" system of construction, a large machine can be transported long distances over rough roads and put together again without the aid of a skilled workman.

An improved machine for winding secondary wires about the main or central wires of piano strings, which machine greatly facilitates the process and recommends itself on account of its simplicity, has been patented by Mr. Francis Ramacciotti, of New York city. The machine consists in a spinning lathe provided with a rotary spindle having graduated perforations with a longitudinal sliding center and a tension spring, all of which serves to rotate the central wire and carry it forward with the object of winding the secondary wire about the former.

Some improvements have recently been made in machines for measuring bagging, carpets, and other fabrics, and a patent has been obtained for the same by Mr. J. C. Williams, of Scotland Neck, N. C. The fabric to be measured is passed through the machine and is brought thereby in contact with a drum, which is of an accurately measured circumference, and is rotated by the action of the fabric. A dial which indicates exactly each revolution of the drum is connected with the latter, whereby the number of yards of the fabric passed through the machine is automatically recorded.

One of the most novel among the recent patents which have been granted for fire escapes is the invention of Mr. M. S. Washburn, of Billings, N. Y. This device is designed to serve under ordinary circumstances as a piece of furniture in the room, and is in the form of an easy chair. It is, however, connected with the ceiling by a rope which passes over a drum underneath the seat of the chair, so that in case of fire

the chair may be thrown out of the window and held by an automatic brake. The person desiring to descend places himself in the chair outside the window, when he begins to descend. The speed is regulated by a friction brake attached to the chair.

## AGRICULTURAL INVENTIONS.

Mr. George Simpson, of Bryan, Texas, has obtained a patent for an improved plow, the peculiarity of the invention consisting in giving the share and mould board such a form that they shall scour and clean readily in sticky soil. The form of mould board renders the plow quite light of draught.

An improvement in that class of gang plows in which a number are hauled by a single power, has been patented by Mr. William Kimmel, of Milton, Ind. The machine is so constructed that each plow will adapt itself to the lay of the land, and all of the gang will plow the furrow to the same depth. Means are employed for supporting the plows off from the ground while being transferred from one lot to another.

A very handy and efficient garden implement for cutting and removing briars, rank weeds, and wild shrubbery has recently been patented by Messrs. Frank P. Pool and E. S. P. Pool, of Edwards, Miss. This invention consists in a handle which may be provided in turn with a knife for cutting down the briars, and with a hook or fork for facilitating the handling of the briars and the bringing of them to a clearing after they have been cut.

An improved attachment for plows and cultivators for thoroughly upturning the ground, and at the same time leaving it level behind the machine, has been patented by Mr. Jonathan Harman, of Solomon City, Kas. This machine is designed more especially for plowing corn fields, and plows which are arranged in series behind the machine are so placed as to throw the soil around or away from the plants, and to work deeper or shallower in the ground as may be required. The plows are firmly pivoted to the lower ends of the plow beams, and are held rigid to their work by wooden pins of such strength as will resist the strain under ordinary circumstances, but which will break should any immovable obstruction be encountered, thus avoiding the breaking of the plow.

## MISCELLANEOUS INVENTIONS.

Mr. George Smart, of St. Louis, Mo., has recently obtained a patent on an improved ventilator for rooms, which may be set up or removed without much trouble, and it is claimed to fulfill all the requirements of more expensive and complicated apparatus.

Mr. John McAnespey, of Philadelphia, Pa., is the patentee of a simple contrivance for holding the soap on wash tubs. The holder is attached to the handles of the wash tub convenient to the person washing, and may be removed when not required.

Mr. Peter M. Carpenter, of Buffalo Gap, Texas, has patented a composition of broom weed, sulphur, and water to be mixed together in certain proportions, and applied to sheep and other animals for the prevention and cure of scab.

Mr. Nelson Edwards, of Jericho, Vt., has patented a frictional connection for the bars and slats of window blinds. This improvement provides for keeping the slats of window blinds open at any desired degree, the means employed for accomplishing it being both simple and efficient.

An improved measure for grain spouts has been patented by Mr. Walter J. Bell, of New Rochelle, N. Y. A grain measure is attached to grain spouts in barns and stables, whereby the feed coming from a bin above may be measured and the exact quantity registered.

Mr. James H. Russ, of Providence, R. I., is the patentee of a combined weight and pull for window shades which is ornamental in appearance and very convenient in its application and operation. This invention belongs to that class of small patented wares from which a great deal of money is sometimes made.

An adjustable double telephone receiver is the subject of letters patent recently issued to Mr. D. G. Barnard, of Winslow, N. J. This receiver is made to be applied to both ears simultaneously, the diaphragm cups fitting closely to both ears, enabling a person to hear the sounds transmitted much more distinctly than when a single receiver is used.

Messrs. Robert S. McCall and Joseph W. McCall, of Kansas City, Mo., are the patentees of an improved bicycle, which is so constructed that the center of gravity is very low, and the vehicle not apt to tilt. By the improvements in the new bicycle, it is mounted easily, and the rider is not liable to be thrown over the front wheel when the same strikes against obstacles.

A simple, cheap, and convenient ticket holder and press has recently been patented by Mr. John London, of Big Rapids, Mich. It is a simple screw press in which railway or other tickets are placed and held while being counted, or they can be filed away in the holder in a much more compact form than by tying with a cord, as is now the general practice.

An improved rib for cotton gins has recently been patented, the object of which is to make the wearing plate used upon cotton gin ribs adjustable, and this is accomplished by slotting the rib, forming a lug upon the wearing plate, and employing a screw for securing the plate upon the rib. Mr. Wiley Merritt, of Covington, Ga., is the patentee.

An easy back for carriage seats has recently been patented by Mr. E. W. Pendergast, of Rochester, Vt. This back is movable and is pivoted at its lower end in the arms of the seat, while at its upper end it is firmly supported and held in position by spring arms, which give the back of the rider a firm yet partially yielding support.

Mr. S. D. Muse, of Monticello, Miss., is the patentee of an improvement in that class of carriage way gates which is operated from the carriage, without obliging the person driving to alight. The opening and closing of gates after this plan is accomplished with accuracy and reliability, and will be appreciated by any one requiring a gate of this kind.

An improvement in springs for side bar vehicles has recently been patented by Mr. Jacob Hanser, of Oxford, O. Two or more flat leaf springs are connected to spring bars; levers are also pivoted to the said bars, which also connect with the side bars of the vehicle. By this arrangement of springs, levers, and bars, the vehicle is rendered very easy to the rider.

A patent thill for gigs and other two wheel vehicles has been patented by Mr. Anders Rasmussen, of Oshkosh, Wis. The thill is made in two parts combined with an adjustable device, for keeping the vehicle level regardless of the height of the horse. The invention is specially adapted for the two wheel village carts which are in such general use at the present time.

An improved device for slicing potatoes and other vegetables has been patented by Mr. Ferdinand Espel, of San Francisco, Cal. A knife is pivoted in the usual manner to a frame, so as to slice the vegetable with a downward slanting cut, having a cushioned cutting plate to relieve the cutter from the strain which would result from a rigid cutting plate. A gauge is provided for regulating the thickness of the slice.

A patent on an endless cable carrier for transferring buckets of water from wells, reservoirs, etc., to remote places has been granted to Mr. Carrell W. Crismon and the estate of Mr. A. F. Whitaker, deceased, of Vienna, Mo. While the invention is specially described for carrying water from wells to houses and stables, it is equally useful for transferring solid materials, dirt, ore, coal, etc.

A very simple device for securing firmly the spokes of wheels has recently been patented by Mr. Patrick Moran, of Grafton, W. Va. The hub is so constructed that in case the spokes of the wheel have shrunken, or become shorter from any cause, they may be thrust outward and thus be prevented from rattling by turning certain screws located within the hub of the vehicle.

A feather duster, in which the feathers are applied to coiled steel wire springs instead of directly to the handles of the duster, has recently been patented. The steel springs are connected with the handle, thus rendering the duster exceedingly flexible and enabling very short feathers to be used in their manufacture. Messrs. Henry Taylor and J. F. C. Elfers, of Brooklyn, N. Y., are the patentees.

An improvement in sounding boards for pianos has been patented by Mr. Justus Diehl, of New York city. The invention consists in forming a sound chest with a single opening extending across the main sound board from side to side, and in providing the sound boards with a number of sound posts which are so arranged as to vibrate in perfect unison with each other.

Letters patent have been granted to Mr. Samuel T. Richardson, of Baltimore, Md., for an improved hoisting gin, which is adapted for raising heavy weights. Three pieces of timber are joined together at the top, from which is slung the tackle to which the weight to be raised is attached; and although this apparatus is simple and easily transferable from place to place, it is capable of raising objects of some weight.

Mr. Thomas U. Mekeel, of Cold Spring, N. Y., has obtained a patent for an improved hand saw, whereby the blade may be set at any desired angle to the handle. A self-adjusting square and bevel attachment are provided, and these are set at any degree of angle to the saw blade desired, and a semi-quadrant scale is affixed to the blade, which facilitates the adjustment of the angle pieces to the exact degree required.

An improved vehicle spring has been patented by Mr. William D. Bartlett, of Amesbury, Mass. The invention consists in the mode of banging carriage bodies by connecting cross rods attached to the carriage body with side bars attached to the suspending springs by links, whereby great freedom of movement will be given to the body of the carriage. The forward and rear parts of the carriage body are connected with the axle by straps, so as to limit its movement upon the springs.

Mr. David Lowers, of Spring Valley, N. Y., has patented a stone cutter's mallet with an attached bellows or air blowing device, so constructed and arranged that by the act of using the mallet upon a chisel in the ordinary manner a jet of air by each stroke of the tool will be directed toward the point of the chisel, so as to blow away the dust, thereby protecting the eyes of the workman and at the same time clearing the stone of dust.

A novel and useful percentage calculator has been patented by Messrs. Sylvester J. Tucker and Edmund F. Kelly, of Richmond, Va. The invention consists of a graduated base having several series of numerals arranged thereon in horizontal, transverse, and quadrantal orders, respectively, and in such relation to each other that an arm pivoted to the base shall indicate the percentage a given number bears to a greater number.

An improved insect trap for catching and destroying ants and similar insects has recently been patented by Mr. James F. Bunnell, of Cisco, Tex. The invention consists in a trough quadrangular in form and V-shaped in cross section. This is forced into the mound of the ants' home, and is so placed that the insects cannot escape from the hill without passing into the troughs, from which they are unable to extricate themselves.

Messrs. P. H. Stein, of Austin, Tex., and James Tams, of Trenton, N. J., are the patentees of an improved fruit squeezer. This device consists in a pair of ordinary wooden pressing jaws hinged together at one end and provided with handles at the other. Each of these jaws is provided with a depression into which are firmly screwed fluted porcelain plates which serve to keep the fruit from slipping while being pressed, and which may always be kept clean on account of the non-absorbent nature of the porcelain.

Mr. Zachariah Hendrickson, of Syracuse, Ind., has obtained a patent for a velocipede, which unlike the general run of velocipedes and bicycles is designed to be steered by the feet and operated by the hands. This machine is provided with three wheels, the front wheel being the driving wheel, while the two rear wheels are pivoted with the frame and connected with the foot

rests in such a way as to be readily turned, for guiding the machine around corners, etc.

An improved candle mould, in which the candle can be more readily removed from the die than is the case with the ordinary mould, has been patented by Mr. Joseph Breiviet, of Enosburg Falls, Vt. The mould is formed of two blocks which are provided with recesses for receiving the molten material, and with spools for holding the wicks, and eyes or loops for guiding the wicks directly through the middle of the candle apertures in the blocks.

An ingenious contrivance for holding balls of twine used by merchants in tying up packages has been patented by Mr. Reuben Melvin, of Cincinnati, O. The ball of twine is placed in a cup on the short end of a lever, the twine extending around the long portion. When the twine is being used the long arm of the lever is brought down near the counter, and when released the weight of the ball of twine on the short arm raises the long arm, carrying the free end of the twine up and out of the way.

Mr. T. A. Dennis, of Newark, N. J., has recently patented a fastener for boxes, trunks, etc. A latch with a hasp provided with ridges having notches in the lower ends constitutes the principal novelty of the fastener. The hasp fits into a casing provided at the lower end with a pivoted catch having a tongue and two inwardly projecting prongs, which pass into the notches in the ridges and hold the hasp in the casing. A spring attached to the casing acts on the catch and presses it against the hasp, thus securely fastening the box or trunk.

Mr. Joseph W. White, of Brighton, Iowa, is the patentee of an improved cork extracting implement. An upright support for a lever, rests in a socket which embraces the neck of the bottle and rests on its shoulder. After the insertion of the corkscrew into the cork it is attached to the short end of the lever, when the operator presses down the long arm of the lever, and the cork is extracted with ease. A cutting blade is formed on the end of the long arm, for severing the wire that holds the cork to the bottle.

Mr. David Berry, of Gualala, Cal., has obtained a patent for a one wheeled trotting sulky which is adapted for use especially in countries where the roads are rough, and through woods or over land which is ordinarily impassable to wagons. The shafts of this vehicle are so constructed and braced that it is next to impossible for the vehicle to overturn. The seat is mounted upon a long spring attached to the rear part of the frame of the vehicle, and the weight of the driver comes directly over the wheel.

An improved draught equalizer is the subject of a patent recently granted to Mr. Earl H. Cooper, of Winters, Cal. This equalizer is adapted for use where the single horse is attached to the short arm of the main tree, and to the other end of the tree it is designed that two horses shall be hitched. This draught equalizer is designed especially for use with harvesting machines, and it is claimed that by its use the draught of the three horses is exactly equal irrespective of the fact that it is desirable that the off horse should travel near the tongue.

Letters patent have been granted to Messrs. W. C. McDonnell and Axel L. Anderson, of Montello, Wis., for certain improvements in millstone picks. In that class of mill picks in which the pick head is formed of two plates clamped together by a screw for holding a blade, which can be adjusted in different positions, it is necessary to have at hand a screw driver or wrench for unscrewing the plates in the head. The invention now patented consists in fixing permanently in the head of the pick a wrench or screw driver, so as to have it at hand always when wanted to screw up the plates.

Mr. Delbert K. Woodward, of Lordstown, O., has patented within a few weeks two improvements in artists' easels. One invention consists among other novel arrangements in an adjustable extension shelf for supporting a picture while being copied, so that the artist may arrange the distance and position of the picture to meet his requirements without leaving his seat. The other invention consists of a series of corrugated shelves and a rack, all attached to the frame of the easel, for holding the artist's brushes and pencils convenient to his work.

Mr. John J. Callow, of Cleveland, O., has added another improvement to his previously patented process of wood graining by the use of stencil plates. The last patent is dated July 8, 1883. The several parts of the figure or pattern are made of thin sheet material, such as sheet brass or tin. These parts are made in separate pieces, cut out with shears; and what is cut away from one pattern may serve as a pattern in another plate. Thus every part of the material may be used. The several parts are then joined firmly together by wires and by suitable braces, the whole forming a stencil which is admirably adapted for graining wood.

Mr. Eugene F. Chapman, of Wilson, Neb., is the patentee of a wagon stake which is an improvement upon a patent granted to same inventor in October, 1881. The present wagon stake is so constructed as to receive internally an extension bar which is removable, and may be set up on the stake and bolted thereto, so that the carrying capacity of the wagon may be largely increased when desired. A coiled spring may be used in the chamber of the stake in place of the extension bar for supporting the wagon on springs. Devices are likewise provided for supporting temporary covering boards over the wagon box to protect the contents from the sun and rain.

An improved wagon brake which is automatic in its action, dependent upon the steepness of the hill and weight of the load, has been patented by Mr. Abraham W. Shue, of Fishersville, W. Va. The bolster of the front axle is provided with rollers upon which rests the body of the wagon, so that it may slide backward and forward, while the bolster of the rear axle is firmly attached to the box of the wagon. The brake is connected by suitable connections with the front axle, and when the wagon is going down hill and the horses are bearing upon the pole, the front axle will be slid back in its bearings, and the brakes brought to act upon the hind wheels with a pressure proportionate to the gravity and the weight of the load.