

## ENGINEERING INVENTIONS.

A machine for unloading cars has been patented by Mr. John Scully, of South Amboy, N. J. It is a construction made to operate horizontally movable blades or shovels arranged to be carried back and forth from the ends to the center of the car, for shifting coal or other material to the discharge opening there provided in many cars.

An air regulator for furnaces has been patented by Mr. Frank C. Smith, of Delaware, Ohio. It is an automatic device, operated whenever the fire door is opened, and effecting the closing within a prescribed time from the opening of the damper, in order to admit cold air on the top of the fire for a limited period after the fuel is supplied.

A car coupling has been patented by Mr. Thomas Maroney, of Weedsport, N. Y. By this invention the coupling pin is automatically set and held for coupling with an entering link, and the coupler has a link-adjusting attachment by which the projecting end of the link may be raised or lowered to a proper position to couple with cars of different standard heights.

A draught attachment for furnaces has been patented by Mr. George W. Wheeler, of Ogdensburg, N. Y. It is designed especially for locomotive furnaces with fresh air, for which a draught flue, extending from the roof or side of the cab, enters the front end of the ash pit, the opening of the flue mouth being controlled by a lever on the outside, and graduated deflectors attached to the grate bars directing the air thus admitted to most efficiently promote combustion.

## MECHANICAL INVENTION.

An improvement in gearing has been patented by Mr. Coles D. Hardcastle, of New York City. The invention covers a novel construction and combination of parts in a system of gearing intended to cause but little friction, and so devised that there will be no cessation or irregularity of motion during its operation.

## AGRICULTURAL INVENTIONS.

A hay elevator has been patented by Messrs. Ellis O., Willard O., and Herbert S. Long, of Hayesville, Ohio. This invention covers novel features of construction and combination of parts of an apparatus adapted to raise loads of hay or grain in a store house or barn and dump them into a mow at one side of the driveway.

A plow has been patented by Mr. William J. Locke, of San Antonio, Texas. It is hung upon an axle, is readily adjustable to plow at any desired depth, has a landside wheel and an inclined furrow wheel, the plow having no landside, but only a point and mouldboard, and may be readily changed to take more or less land as desired.

A hay rake and stacker has been patented by Mr. Buck Mason, of Trenton, Mo. This invention covers a novel construction, combination, and arrangement of parts in a horse rake, whereby the hay may be gathered in the field and transported to the wagon or stack, and there elevated and deposited upon the wagon or stack.

## MISCELLANEOUS INVENTIONS.

A nut lock has been patented by Messrs. Stephen H. French and William J. Maltby, of Baird, Texas. It is formed with a wedge or body and a head having extensions or flanges, the locking being effected by turning to desired position on a slitted bolt, and driving a key into the slit, when its extensions rest against the flanges.

A hasp lock has been patented by Mr. Brunswick W. Leonard, of Old Saybrook, Conn. The bolt is pivotally connected with and also movable longitudinally with reference to the hasp, by which means, in connection with other novel features, the lock may be used to form a "latch" fastening or a lock fastening as desired.

A reversible folding slate has been patented by Mr. Louis Steinberger, of New York City. It consists of two reversible hinged slate or tablet panels having an adjustable spacing attachment, whereby the two tablets may be held extended at any desired angle, either face of each tablet being arranged so that it may be brought into use.

A knife has been patented by Mr. Isaac E. Schollars, of Bellamy, Mo. It has a pair of blades peculiarly beveled, with equidistant holes for receiving fastening or pivotal screws, with other novel features, it being designed for use as a plain knife, a drawshave, a spokeshave, pruning hook, pruning shears, a chisel, and a vegetable cutter.

A rowing attachment for boats has been patented by Mr. Selden B. Lard, of Waterville, Kansas. This invention covers a novel construction for propelling boats by means of valvular oars, which open when forced through the water in one direction and close in returning, the mechanism to be operated either by hand or by steam.

A nut lock has been patented by Mr. J. Frank Dill, of Ridgway, Pa. It is especially adapted for use with bolts and nuts employed to secure fish plates upon rails of railway tracks, two metal plates being used, one plate passing through the other, so that each holds the other in place, even when the bolts have become worn and loose.

A flower pot and flower pot holder has been patented by Mr. Gayger D. Tolman, of Shawano, Wis. The flower pot is made of a sheet metal blank cut to form a strip for the sides, a disk for the bottom, and a tongue to cover the joining of the sides, the holder being formed of bent wire or a metal bar, adapted to be easily secured to any woodwork.

A rice machine has been patented by Mr. Frederick J. Syme, of New Orleans, La. It consists of a cylinder, bowl, and plug with spiral ribs, with

mechanism for revolving the bowl and plug in opposite directions, for removing from rice that covering immediately within the hull without to any considerable extent crushing or breaking the grains.

A bottle stopper has been patented by Mr. Frederick Thorn, of Wilkesbarre, Pa. The bottle is made with a lug or projection slightly below its neck, and a neck band held on the bottle carries swiveled side bars, one end of which carries a stopper frame and an elastic stopper, the other end being adapted for engagement with the lug or projection formed on the bottle.

An indicator for exhibiting advertisements by day and night has been patented by Mr. Jose E. Mercadante, of Rio Janeiro, Brazil. A hollow column has a double arm carrying in vertical bearings a horizontally revolving casing, in which are transparent sign plates, a gas pipe through the column and one arm supplying a burner within the casing.

A fence has been patented by Messrs. John A. Williams, of Orange, and Edwin H. Thomas, of Hornby, N. Y. It is made without driving posts into the ground, having cross base pieces, to which are attached side braces for the uprights, and a bottom rail or board, inserted in mortises in the uprights, and notched over the base piece.

An apparatus for the manufacture of salt has been patented by Mr. Richard G. Peters, of Manistee, Mich. It has an elevator carrying buckets which have little holes or perforations, together with a peculiar construction of storage and other troughs, and various other novel features of construction and arrangement of parts.

An extension fire ladder has been patented by Mr. Frederick A. Warner, of Halifax, Nova Scotia, Canada. This invention covers a novel construction, combination and arrangement of parts and details, making a ladder capable of being quickly moved about, raised and set to any angle in a narrow or wide street, and having means for leveling the front truck carrying the ladder.

An evaporator has been patented by Mr. Seth W. Lowell, of Belfast, N. Y. It is designed more especially for use as a fruit drier, and has a case, open at one side, provided with sections of steam pipe, and having inclined deflecting plates removably connected to the under side of each section, the fruit to be dried being set in trays upon the upper faces of the pipes.

A process of producing designs on glass plates has been patented by Mr. Ludwig Lendry, of New York City. A specially prepared coating is put upon the glass plate, and then the pattern is placed on the coating and the plate exposed to light, after which the pattern is removed and the glass plate washed with oil, whereby the design of the pattern appears upon the plate.

A dry goods exhibitor has been patented by Mr. John W. Leass, of West Manchester, Ohio. It consists in a support of suitable form and convenient height, provided with a wedge-shaped standard, having a rounded end adapted to enter into the end of a cloth bolt and support it in vertical position, to economize time and labor in showing and handling goods.

An ink eraser has been patented by Mr. Richard M. Swinburne, of La Crosse, Wis. It consists of a fibrous holding body charged with citric acid, rolled to pencil form, and having a cover, the moistened end of the eraser being rubbed on the ink to be erased, followed by a drop of water charged with chloride of lime, and excess of moisture absorbed by blotting paper.

A gin saw sharpening machine has been patented by Messrs. William Behan and Paul Frienschner, of Texarkana, Texas. It consists of a shaft with bearings for the gin saw shaft, a horizontal shaft in bearings adjustable vertically and horizontally to suit the saws, a filing machine being made adjustable thereon, and means for operating it, with other novel features.

A book binding band has been patented by Mr. George Huether, of New York City. It is formed of heavy twisted warp cords bound or woven close together by fine filling threads, making a band of sufficient strength, thickness, and uniformity to take the place of the parchment or raw hide now in common use, which frequently loses strength with age and is irregular in quality.

An evaporator has been patented by Mr. Rufus Goodson, of Barnesville, Mo. It is for defecating or purifying saccharine juices, and has a furnace body with a circuitous combustion chamber, tracks held to the body, and a rotatable carriage mounted on the tracks, the carriage carrying pans which close the top of the furnace, these pans holding the saccharine juices in different stages of evaporation.

A temperature alarm has been patented by Mr. Donald McDonald, of Louisville, Ky. The invention covers an apparatus of peculiar construction by which a connection is formed between an alarm or cock, put into operation by an open column of mercury and alcohol contained in a space communicating with the mercury, and may be used with or without electrical devices.

A gas burner has been patented by Mr. David R. Kline, of Ridgway, Pa. The inlet pipe has a nipple screw-threaded on its inner and outer sides, a tube screwed into the inner thread of the nipple and a disk upon the outer thread, with a detachable cap and pendant flange supported upon the disk, to heat the gas more highly and give more perfect combustion when it issues through the jet holes.

Bird food forms the subject of a patent issued to Mr. John D. Heins, of New York City. A new article of manufacture is described, consisting of the whites and yolks of boiled eggs, mixed with pulverized farinaceous substance, prepared after a specified manner, making an article that will keep and can be put up in small boxes or packages and sold upon the market.

A bottle stopper has been patented by Mr. William Beardsley, of Beacon, Iowa. This invention covers an improvement on a formerly patented invention of the same inventor, of stoppers for bottles designed to hold aerated liquids, in which the pressure of the gas forces a ball held within the bottle into a packing ring in the neck of the bottle, provision being made for the expansion of the packing ring.

A bottle casing has been patented by Mr. Wilson Godfrey, of New York City. Its outside portion is formed of three ply veneer, inside of which, against the bottle, is a thick packing of felt or other suitable material, the top being also of veneer, of conical shape, fitting around the neck of the bottle, an inside and an outside hoop fitting around where the bottle bends to form the neck, and there being a hoop around the bottom.

A lumber cart has been patented by Mr. Thomas B. McFaul, of Phillips, Wis. Across opposite ends of the frame are journaled rollers, and there is an intermediate roller armed with short spikes adapted to take hold of the lumber, this roller being adapted to be conveniently locked, while under one end of the frame there is a trailing wheel, the cart being durably built and designed to easily discharge its load without breaking the ends of the lumber.

A beer cooler has been patented by Messrs. Edward J. Liddicoat and Albert W. Utzinger, of Astoria, Oregon. It consists of a specially devised box, readily attachable to the chimes of the beer keg at the end carrying the tap, the box carrying a spiral pipe which may be surrounded with ice, said spiral pipe connected at its inner end with the inner tap, and terminating outside the box in an outer tap, so that the beer will rest in and be drawn through the ice-covered spiral pipe.

A baling press has been patented by Mr. William A. Laidlaw, of Cherokee, Kansas. The frame has a feed opening to the baling chamber, a follower and sweep, a compressor within the chamber, and a sliding frame connected thereto, with other novel features, the invention being an improvement on a former patented invention of the same inventor, and designed to compress hay to one half its bulk before delivering it to the bale chamber, thereby dispensing with the usual door and catches.

## SCIENTIFIC AMERICAN BUILDING EDITION.

JULY NUMBER.

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3. Page drawing in perspective of an Elegant Stone Residence, corner 119th Street and Sixth Avenue, New York City.
4. An Attractive Residence at Providence, Rhode Island, with perspective and plans. Cost, Five Thousand Five Hundred Dollars.
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13. The Manchester Royal Jubilee Exhibition, with fine large engravings, covering four pages, including specimens of "Old Manchester and Salford."
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The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

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FIFTH ANNUAL REPORT OF THE OHIO AGRICULTURAL EXPERIMENT STATION FOR 1886. Columbus, O. 1887. Pp. 317.

In this admirable manual is a review of the extensive work of the State Experiment Station under the direction of N. S. Townshend, Esq., assisted by his staff. The experiments for the past year included field tests of a great variety of wheat, potatoes, strawberries, and other crops. The opinions formed by the station authorities as the result of these trials are given succinctly for each kind or variety of plant. As an indication of the laborious nature of this investigation, it may be mentioned that of wheat alone some hundreds of named kinds are elaborately reported on. Thick and thin seedling was tried, different fertilizers were used, and the results are tabulated. Pigs were examined, to ascertain the relative merits of different breeds and of different systems of feeding, and are reported on. Insects, weeds, vitality of seeds, botanical notes, and veterinary observations also form subjects of parts of the book. It is sent free to all inhabitants of Ohio, to others on remittance of 10 cents. It is a volume that no farmer of the State or its vicinity should be without, and to all intelligent agriculturists it is a work of the highest interest.