

ENGINEERING INVENTIONS.

A simple duplex rotary steam engine is the subject of a patent recently issued to Mr. L. D. Hooper, of Coffeyville, Kas. The improvements relate to the construction of the different parts of the engine, and the inventor claims that its effective working is greatly enhanced thereby.

A traction engine guide mechanism has been patented by Mr. Gustav A. Thode, of Holstein, Iowa. It consists of a pivoted axle carrying the steering wheels, provided with a tongue connected with an endless chain passing over sprocket wheels, so that the axle may be turned to one side of the engine or the other.

An improved automatic car coupling device has been patented by Mr. E. H. Cady Tompkins, of Glen's Falls, N. Y. It provides for holding the link in position by springs, arranged in slots in the walls of the drawheads, so that sufficient allowance will be made for the swaying of the cars, but the link will always be properly presented. The coupling pins have offsets, by which they may be held in suspension. The device is simple, readily applied, and easily operated.

Mr. C. J. Fortson, of Washington, Ga., has recently patented a pin and link car coupling in which the pin is supported for automatic coupling with a link by a gravity catch. A shoulder which supports the pin is located between the pivot and the long end of the catch, and is adapted to support the pin regardless of the weight of the catch. A comparatively light or small catch can be used, which dispenses with the necessity of a large chamber in the drawhead, therefore making it easier to support the link in a horizontal position.

Messrs. William V. Brown and Thomas S. Poole, of Arcadia, N. S., Canada, have patented an improved car coupling, to be used on cars of varying height, and also in connection with couplers at present in use, being especially adapted for going around curves or on up and down gradients. A joint is made in the drawbar, so that the outward end may swing up and down, but is arranged to be held in place by a spring. The link socket is widened at the rear, so that a block and screw hold up the pin for self coupling, or when the pin is down, and the link coupled, the spring presses it forward in position for tripping the pin in the other drawbar.

MECHANICAL INVENTIONS.

Mr. John R. Connor, of Franklin, Pa., has patented an improvement in sheet metal riveting machines. The invention is for heading rivets in sheet metal by a continuous and partially automatic operation, and the patent contemplates the running of the machine by motor power as well as by foot power.

A damper for stove pipes and drums has been patented by Mr. Fredric C. Davis, of Auburn, Ind., which, by arranging and connecting sectional damper plates, causes, when desired, a deflected or retarded current within the pipe or drum, and against its surface, thus effecting considerable economy in heat.

Mr. John Z. Gifford, of New York city, has patented an improved hoop flaring machine to facilitate the working of metal hoops. It consists of properly arranged rolls and gearing, so that the rolls adjust themselves to varying thicknesses of hoop iron, and exert a pressure increasing automatically with the thickness of the iron. The rolls have a screw adjustment at one end, and different bearings, spring and screw, at the other.

A printer's galley for providing a simple means for locking up matter, in either newspaper or job offices, has been patented by Mr. Nicholas Roemer, of Quincy, Ill. It provides for a longitudinal side bar, set by a thumb nut at the head of the galley, and engaging in a cross stick at the foot, so that the locking bar can be readily adjusted for any breadth of column. For locking a partly filled column, a clamp is applied to the locking bar.

A link bending machine has been patented by Mr. Charles O. Sobinski, of St. Louis, Mo., designed to cut from a rod of metal a section with tapered ends and bend it around in oval form, to constitute a complete link, with the exception of uniting the two tapered ends, which are subsequently welded together. The machine has a shear to cut off a section of rod, then a rising and falling former gives it the shape of the link, after which a pair of advancing and receding jaws bend the link section around the former, and a pair of nipping jaws and swaging block bend the ends inwardly and swage them together ready for welding.

An improved dry ore concentrator has been patented by Mr. J. G. Volner, of Austin, Tex. This machine is fitted out with a screw for separating the pulverized ore and sand from rocks and other worthless matter. The sand and pulverized ore is conducted to the proper place to be dried by the heat from fire in a box below, or by the steam or hot air introduced through pipes from a distance. The sand and ore is then conducted on to suitable screens, ore beds, etc., during which it is subjected to a strong current of air which serves still further to effect the thorough separation. With this machine a large quantity of ore can be concentrated in a short time and with little cost. There is no expense for a motor, as the ore to be concentrated works the machine itself.

AGRICULTURAL INVENTIONS.

A stump pulling machine has been patented by Mr. Orren A. Anthony, of Mayfield, N. Y. It is so constructed that in operation it tips the stump out of the ground sidewise, thus carrying less soil; it is comparatively cheap, easily handled, and strong and durable.

A grain thrasher and separator has been patented by Mr. Ole O. Graves, of Highland, Dakota Ter. It has removable tooth bars and plate, and removable rack below, and with the winged beaters is a vibrating rack having inclined cross slats with fingers, whereby the straw is carried back and the loose grain is shaken from it.

An improved cribbing plate, a practical device to be placed on horses' teeth, has been patented by Mr. August Quinke, of Harleysville, Pa. It consists of two slightly curved steel plates, with loops adapted to hook over the teeth, and lugs through which screws pass for drawing the plates together and causing the hooks to grasp the teeth of the horse.

Feeders for grinding rolls are the subject of a patented improvement by Mr. Gardner B. Root, of Amherst, Wis. The object is to secure even feed of material to grinders, the feeder having shell attached to hopper, with cross slots in the bottom, and an interior shaker, worked by the movement of one of the rolls, so as to evenly distribute the material to be ground.

Mr. Robert Griswold, of Woodey, La., has patented an improved apparatus for unloading hay and grain. It consists of a portable platform, with ropes attached at one end to the upper edge, and with snap hooks to engage with rings on inner edge of a netting on the wagon rack beneath the load. The draw rope also has snap hooks, and is constructed with branches of graded length.

Draught attachments for plows form the subject of a patent issued to Mr. Heinrich Raaths, of Appleton, Wis. By this invention the tracerods may, by a simple arrangement, be so changed as to narrow or widen the furrow cut, and the contrivance of the frame is such that, should the plow strike an obstruction, the evener is moved to the right or left, so as to change the position of the line of draught and carry the plow around the obstruction.

Mr. Chapman E. Gage, of Whitehall, Wis., has patented an improved grain screen, by which wheat may be separated from oats. Through a sheet metal plate perforations are made by punching down tongues, while in advance of the perforations depressions are made in the surface of the plate, forming grooves; the tongues punched down are drawn out and so shaped that the wheat grains coming through the perforations are projected forward, while the oats, being longer, are thrust up the inclines at the back of the perforations.

A patent has recently been granted for an improved seed planter and fertilizer distributor. In this machine the peculiarity consists in the wheels being constructed out of metal and without tires, and with spokes having enlarged ends to prevent them from sinking deep into the ground. The machine is further provided with a revolving hopper having a series of circumferential holes through which the grain or fertilizer passes when the machine is in operation, and by means of which the amount of grain to be deposited in the ground is regulated. The inventor of this improved planter is Mr. Cornelius Young, of Selma, Ala.

A very efficient machine for scouring, brushing, and separating wheat and other grain preparatory to the grinding, has been patented by Mr. John T. Ewan, of Bethalto, Ill. The two brushes or scouring cylinders are journaled one above the other in perforated casings, into which the grain is discharged from above, the grain being compelled to traverse the whole length of both cylinders in its passage through the machine. Before entering the casing and all the while during its passage through the machine, the grain is subjected to the action of a strong draught or current of air, which is maintained by the exhaust fan, and which separates and carries off the dust and other impurities mingled with and detached from the grain.

Letters patent have been issued to Mr. Heber Parish, of Burlington, Iowa, for an improved grain separator and cleaner. In this machine the separator and cleaner is made in two parts, each part consisting of a set of parallel serrated bars, and each being connected with a crank shaft in such a way that they will exactly balance one another and the two sets will successively move upward, backward, downward, and forward, the bars of each set raising the straw and carrying it forward and lowering it to the other set, separating the grain and carrying the straw toward the rear of the machine, while the grain falls through on to a sieve below, where it is acted upon by a blast from the fan blower. Devices are further provided for adjusting the sieve.

MISCELLANEOUS INVENTIONS.

A fireproof partition block, with depressions in the surface, so that mortar or plastering will adhere firmly, with the manner of forming same, and the mould therefor, in which wire or cord netting is employed, has been patented by Mr. Martial Laperonnerie, of New York city.

A sheet metal roof valley, made in sections, forms the subject of a patent granted to Mr. Charles B. Cooper, of Nashville, Tenn. The sections have lugs at their upper corners, preventing the overflow of water, upwardly projecting beads on sides and upper ends, and downward at lower edge, the whole to be readily attached and prevent water overflowing and getting to roof boards.

Mr. A. Floyd Delafield, of Noroton, Conn., has patented an improved electric battery, in which the box for receiving the cells is provided at the ends with pintles or trunnions resting on a frame; this permits the cell box to be tilted or inclined, so that the superfluous liquid can run from all the cells at the same time, and the level will be the same in all. The invention also covers a cell with a boss on each side and on the bottom, to prevent surfaces from coming in contact with each other or sides of the box.

Mr. Orlando B. Jennings, of Honey Creek, Wis., has patented some improvements in the manufacture of sugar from sugar cane, sorghum, maize, etc. For cane sugar the invention contemplates reducing the cane to a dust-like fineness, whereby the juice cells are thoroughly crushed and ruptured, and for this he provides for a combination of circular saws, and sprinkles or mixes with the finely divided cane, before defecation, dry lime or lime whitewash in powder. After subjecting it to a temperature of not less than 212° F., although it will average from 228° to 267° F., according to ripeness of the material, the juice is removed from the woody or precipitated matter by washing with water, for which a specially contrived vessel and appliances are used.

Insurance.

SOMETHING NEW IN LIFE INSURANCE.

The Aetna Life Insurance Company, of Hartford, Conn., has introduced and copyrighted a New Plan of Insurance, which gives more privileges to the insured and promises to yield a larger return (considering the benefits conferred and the premiums paid) than any other plan or Company can give. The premium charged is very low—it approximates near the common life rate. It is an Endowment Policy payable at the end of the specified time, or it can be converted into cash at stated periods. At the time cash values are payable, the Company pays to the insured the Accumulated Surplus. With its method of dividing profits the Accumulations are likely to be large. Send for a circular describing the plan. Agents wanted at all points where the Company is not at present represented. Address the Aetna Life Insurance Company, Hartford, Conn.

In Illinois, during the year 1882, 8,730 life insurance policies were issued, covering \$22,566,715 of insurance. During the same period the citizens of that State paid \$3,461,361.35 of premiums on policies, and received \$1,414,152.18 in payment of losses and claims. A comparison of the business transacted in the State during 1882 with that of 1881, shows an increase in the number of policies issued of 855; an increase in amount of insurance effected of \$2,082,420; an increase of amount of premiums received of \$300,681.59; and a decrease of losses and claims paid of \$303,201.46.

The earthquake at Ischia has involved French and Italian life insurance companies to the tune of \$100,000 or more.

The Travelers' Insurance Company, of Hartford, have assets amounting to nearly \$7,000,000, and a surplus of over \$1,700,000. This is the oldest and strongest accident insurance company in this country.

The Mutual Life Insurance Company, of New York, still leads all the other companies, having nearly \$100,000,000 of assets.

Financial.

The Treasury Department is receiving daily called bonds bearing assignments witnessed by cashiers or presidents of national banks, but not verified by the bank's seal. Heretofore the signatures of bank officers have been certified by Treasury officials after comparison with the signatures on file in the office of the Comptroller of the Currency and known to be genuine. It has been decided, however, that this practice involves too much risk, and hereafter when the seal of the bank is missing the bonds will be returned to the senders.

Judge Bond, of the U. S. Circuit Court of Virginia, has decided that State coupons are legal tender for taxes. The case will be carried to the U. S. Supreme Court.

The Director of the Mint, in his report just published, states that \$3,800,000 had been credited to the silver profit fund during the year ending June 30, 1883.

Post, Wales & Co., 72 Broadway, New York, make a specialty of investment securities.

Manufacturing Notes.

The Pope Manufacturing Company, of Boston, have had to enlarge their factory at Hartford, Conn., as during the last summer they were unable to supply the demand for their bicycles and tricycles.

The Jarvis Furnace, Boston, has been extensively used in South America and the West Indies. It utilizes all kinds of waste fuel like wet peat, wet sawdust, wet tan, etc., and is used with great advantage on sugar plantations.

The American Bell Telephone Company is overrun with orders, and is licensing new companies daily. There is hardly a town in the Far West, of over 3,000, but has the system, and it is in much greater use than here, as many of the business men have it in their houses in addition to their offices.

The Fossil Meal Company, of New York, make a composition that is very durable, fireproof, and easily applied. The sales are rapidly increasing.

The new road cart made by Bradley & Co., of Syracuse, has proved a decided success, and large orders are being received daily.

Business and Personal.

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 usually as Thursday morning to appear in next issue.

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Soapstone Packing, Empire Gum Core, and all Engine Packing. Greene, Tweed & Co., 118 Chambers St., N. Y. Steam Pipe and Boiler Covering, Roofing Paints, Prepared Roofing, and general line of Asbestos materials. Phil Carey & Co., 127 Central Avenue, Cincinnati, O.

Ajax Metal Company, Phila. Clamer's Ajax Metals for railroad, rolling mill, engine bearings, cocks, and valves, etc.

Amateur Photographers can have their negatives printed or enlarged by Rockwood, No. 17 Union Square. Perpetual Calendar to let on royalty. Will take partner or sell. J. Bath, 79 Washington Avenue, Brooklyn, N. Y.

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If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN Patent Agency, 361 Broadway, New York.

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