

ENGINEERING INVENTIONS.

A furnace front for boilers has been patented by Mr. James C. Shuler, of St. Joseph, Mich. The invention consists of a hollow furnace front supporting the front end of the boiler, and connected with its interior by pipes or other suitable means, to prevent waste of heat and serve as a feed water heater.

A car coupling has been patented by Mr. William H. Tibbits, of Crab Orchard, Neb. One end of the coupling link is made thicker than the other, in step shape, with a lateral as well as vertical opening, and in the rear of the main coupling devices are other coupling devices which may be brought into play on a fracture or other mutilation of the main coupling devices.

A method of blasting earth has been patented by Mr. Henry H. Bourne, of Manhattan, Kansas. This invention covers an improvement on a former patented invention of the same inventor, the hole being first bored and a small cartridge exploded therein, when a tube is inserted with a waterproof pouch, which can be filled with a larger amount of explosive in the pocket before formed to make the blasting more effective.

AGRICULTURAL INVENTIONS.

A planter has been patented by Mr. Theodore W. Hill, of Smithland, La. Combined with the seed drum or receptacle is a curved cut-off connected to a shaft upon the carrying frame, to prevent the accumulation of the seed at the depositing chutes, with other novel features, the device being especially adapted for depositing in the ground cottonseed, corn and peas.

A transplanter for tobacco and other plants has been patented by Mr. Daniel Clow, of Janesville, Wis. It consists of a wheel with radial pockets to receive the plants, with clamp devices to hold them while moving down to the ground, and other novel features, whereby the plant is placed, earth packed around it, and a quantity of water delivered upon it, in a single operation.

A hay cocking machine has been patented by Messrs. Thomas and Henry Hale and Sylvanus D. Harvey, of Wales, N. Y. It is a simple and comparatively inexpensive machine, to be operated by a single attendant driving the horses, for quickly gathering and cocking hay or other fodder and discharging it on the ground in compact piles for protection against storms.

A combined plow, harrow, and cultivator has been patented by Mr. Franklin P. Sanborn, of Standish, Me. The invention covers novel features of construction and the combination of parts, whereby with one machine, and the attachments forming parts of it, the soil may be broken and harrowed, and also cultivated, at various stages of growth of a large variety of crops, with thoroughness and economy of time and labor.

MISCELLANEOUS INVENTIONS.

A textile eyelet for corsets has been patented by Mr. Edward K. Warren, of Three Oaks, Mich. The eyelets are made of tape, doubled or bent to form eyes for the passage of the lacing cord or string through them, with novel means for supporting and securing the eyelets to the garment, making a firm and substantial eyelet.

A barrel stand has been patented by Mr. Stewart R. Mace, of Moulton, Iowa. This invention provides a swinging or hanging support for barrels, with means for retaining barrels or kegs in position, and for elevating and handling them, whereby liquids may be drawn from them with dispatch and convenience.

A horseshoe has been patented by Mr. Samuel B. Jerome, of New York City. It has several calks struck out of the web of the shoe within the area of its width, forming corresponding pockets in the upper surface of the shoe to receive ointment for medicating the hoof, and also making a shoe which is light and cheap.

A paper ruler has been patented by Mr. George M. Rees, of Brooklyn, N. Y. It consists of two ruling bars running parallel and secured together at their ends, to facilitate the ruling of the bottom edges of pages of a book without turning the book upside down, and prevent blotting of ink on the page when ruling.

A motor for pumps has been patented by Mr. William W. Ward, of Eaton, Ohio. This invention covers a simple description of clockwork gearing whereby a pump rod is operated by the falling of a weight by gravity, thus unwinding the rope on a drum to which is attached a prime motor gear wheel, the machine being quite inexpensive to make or set up.

A salve has been patented by Mr. Philip L. J. Schaefer, of Kansas City, Mo. It is composed of ingredients which undergo a chemical process in compounding to evaporate injurious properties and make a salve which will not heal a sore until all poisonous matter has been discharged, and also efficacious as a plaster, and in all forms of inflammation, burns, etc.

A jug handle has been patented by Messrs. Charles H. Wooldridge and James M. Hendron, of Shipman, Ill. It consists of a wire frame to attach to pottery jugs and similar articles, the wire surrounding the body of the vessel in such manner as to give support to a ball or handle, and permit of readily carrying the jug in a vertical position.

A shoe upper blank has been patented by Mr. John L. Skinner, of Waxahachie, Texas. It is for making an entire upper of a "plow" shoe or similar style of a single piece, having the fly folded over the instep and secured upon the side of the shoe by means of a tongue and buckle, the pattern requiring but little stitching.

A soldering iron heater has been patented by Mr. William Mellor, of New York City. It is an improved furnace, easily adaptable for melting solder

or for heating soldering irons, being free from danger and simple and convenient, the invention covering various novel details in the construction, combination, and arrangement of parts.

A furnace for hothouses, etc., has been patented by Mr. William A. White, of Staatsburg, N. Y. It has a fireplace of sufficient capacity to heat a series of separate compartments for separately or collectively conveying the heat as required to different elevations, the compartments having independent draught flues, but so they can be used with the same fire.

An inking apparatus for printing machines has been patented by Mr. James J. Hughes, of New York City. By this invention one or more reciprocating transfer rollers are employed, to transfer continuously the oversupply of ink from the first set of distributing form rollers to the second or third set, whereby each set of rollers is made to give off an equal and uniform supply of ink to the form.

A seine hauling apparatus has been patented by Mr. William H. Gordon, of Brambleton, Va. The seine is connected at one end with a shore anchor, a cable being also connected with the seine, and there being an offshore guide for supporting or guiding the cable, whereby the seine may be both cast and hauled from the shore, and its management in stormy weather is facilitated.

A pedal zither has been patented by Mr. Ferdinand Wigand, of Brooklyn, N. Y. It has an additional key board with four or more frets for the pedal strings, with buttons covered with felt, one button above each pedal string near each fret, and attached to a rod connected with the pedals, whereby a performer is enabled to produce harmonious sounds in chords of all characters.

A reel holder for fishing rods has been patented by Mr. Joseph Brower, of Lexington, Ky. It consists in a novel seat for the reel, in connection with certain sliding bands for securing and liberating the reel when required, being more particularly designed for use on Japanese or bamboo rods, in which there are knots or protuberances that restrict the sliding of a circular reel-holding thimble over them.

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(1) J. H. M. asks for some standard work or works treating of the methods of artificially coloring metals, bronzes, etc., and of alloying metals to give different colors. A Galvanoplastic Manipulations, by W. H. Wahl, is an excellent illustrated book, of 650 pages, which we send for \$7.50.

(2) S. W. asks how to make a gold varnish that will be bright after it is used and will stay so without getting tarnished. A gold varnish to be used for iron is made as follows: Boil in an earthenware pot 90 parts or more of linseed oil, 60 parts of tartar, 60 parts of hard boiled yolk of egg, 15 parts of aloes, 1/4 part of saffron, and one-tenth part of turmeric,

and apply the fluid to the iron. Or else cover the gold leaf with a colorless lacquer, such as may be made by taking 1 gallon of methylic alcohol, 10 ounces of seed lac bruised, and 1/2 ounce of red sanders; dissolve and strain.

(3) R. B. O. asks: 1. What is good to clean a saddle made of the best light-colored hogskin so it will look like new or nearly so, without injury to the skin? A. It is not possible to restore the leather unless the discoloration is of a character that can be removed by carefully rubbing with bread crumbs or some similar treatment. 2. How may brass (such as the wheels in the works of a watch) be tempered? A. Only by mechanical compression, which is impracticable without distorting its shape.

(4) C. McC.—A round pipe has less friction in proportion to its area. The air current in a tube is rolling from the center toward the surface, caused by the friction of the tube. The air moves fastest at the center.

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AND EACH BEARING THAT DATE.

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