

## NEW INVENTIONS.

A machine for giving to railway and other spikes a uniform twist from the head to the point has been patented by Silas H. Wilson, of Auburn, N. Y. The invention comprehends an improved combination of rotary jaws, reciprocating die wheels, and feeding mechanism. It consists also of grooved rollers journaled in a carriage which is adapted to move toward and from the rotary jaws, which receive the spike, carry it to the jaws, and hold it against rotating while the jaws are twisting it, the lower grooved roll having also a vertical movement to allow the spike to pass between it and the upper roll, and to enable it to release the spike after the twist is put in it.

Mr. George W. Dudley, of Waynesborough, Va., has patented a novel saw filing and setting machine designed especially for saws having a straight row of teeth, and it comprises features of improvement as follows: A peculiar construction and arrangement of devices for imparting an elastic cutting stroke to the file; means for raising the file on the back stroke; a peculiar construction of guide for holding outer end of file frame against lateral displacement and determining the depth of cut; means for shifting angular position of saw to give alternate incline to the edge of teeth; clamping and holding devices for the saw; means for adjusting the saw to an angular or straight position; means for locking and holding the saw in position; a peculiar construction and arrangement of the saw-set; also a double adjustment of the wrist pin connecting with the file-driving pitman to adapt the device to longer or shorter files.

Mr. Charles H. Horton, of Brighton, O., has patented an improved apparatus for automatically weighing or measuring grain and registering the operation. The grain is received in a rocking box or receiver having two compartments that are alternately filled and emptied, the weight of the grain acting to shift the box as required. The box is hung on a scale beam having an adjustable weight, whereby the quantity discharged at each alternation is regulated, and the movement of the receiver gives motion to registering mechanism, so that the oscillations are recorded.

Mr. Stephen S. Wood, of New York city, has patented improvements in sand distributors for horse-cars to apply sand to the rails to prevent the wheels from sliding when the brakes are applied. The invention consists in the combination, with the frame-work of a car and with hoppers attached to the frame-work, of a mechanism by which sand may be discharged upon the rails.

Mr. Andrew T. Jackson, of Cotton's Store, Ala., has patented an improved chimney flue and shield, designed to prevent leakage around stove-pipes when they pass directly through the roof of a building and to avoid the use of horizontal lengths in such pipes. The invention consists in a conical shield and pipe secured upon a plate that is fixed to the roof, and combined with a weather cap and the stove pipe in a manner to exclude rain from the inner side of the roof, and to obtain other advantages.

An adjustable pattern for cutting out boot and shoe soles of any dimensions has been patented by Messrs. John P. Simon and Jacob Lex, of Hartford, Wis. It consists of a metal plate of the general shape of the sole and provided on its upper face with short studs, upon which studs are fitted slotted metal plates shaped to conform, respectively, with the outlines of the sides, heel, and toe of the sole, the adjustable plates being also held together by slots and studs, so that they may be moved in or out to contract or expand said pattern in proper proportion in every direction.

Mr. Mark A. Dees, of Scranton, Miss., has patented an adjustable frame adapted to support a lamp and brush in combination with the treadle, rods, and operating levers.

Mr. John J. Gordon, of Flint, Mich., has patented an improvement in butt-hinges, designed to facilitate the fitting of the hinge in place; and it consists in constructing the hinge with leaves of different widths and forming on the narrower leaf a flange, by which construction the shape and depth of the mortise into which the hinge is fitted may be laid off and the use of the square dispensed with.

A series of mirrors have been supported upon one or more standards and grouped or arranged in such a manner that a figure seen in one of them would be seen in all the others. Mr. Joseph P. Short, of Dodgeville, Wis., has patented an invention which is an improvement in this line. It consists in the combination and arrangement of four mirrors, suitably secured in a frame, so that front and back views of the same figure will appear in opposite mirrors.

An improved railway car for transporting live stock, more especially horned cattle, has been patented by Mr. William Martin, of San Francisco, Cal. The improvement relates to swinging stanchions or guards for securing the cattle.

An improvement in hydraulic ram motors has been patented by Mr. James Thomas, of Catasauqua, Pa. The object of this invention is to furnish hydraulic rams so constructed that they may be used to deliver power. The invention consists in the combination of a secondary piston and cylinder with the water chamber of the ram.

Mr. Anton Zimmerer, of Nebraska City, Neb., has patented an improvement in that class of knives that are designed for cutting hay, straw, fodder, etc., in bundles or stacks. The invention consists of a series of revolving or stationary circular cutters inserted along the cutting edge of a suitable blade, bar, or frame.

A novel steam generator for heating and dampening wheat in flour mills, for steaming feed for farm purposes, etc., has been patented by Mr. Oscar Van Tassell, of Parkersburg, Iowa.

Mr. Henry Hickman, of Omaha, Neb., has patented a collar button that will hold the necktie and prevent it from slipping. The invention consists of a collar button provided with one or more points at the end of the shank, which pass into the necktie and hold it in place. It also consists in providing the shank with an adjustable screw head, which can be set to cover the points so that they do not catch in the clothing.

An improved hat press has been patented by Mr. M. A. Cuming, of New York city. The object of this invention is to improve the construction of the hat presses for which letters patent Nos. 167,506, and 178,740 were granted to the same inventor September 7, 1875, and June 13, 1876, respectively, the object being to make them more satisfactory in use and more effective in operation.

Mr. Tristram W. Blades, of Point Pleasant, W. Va., has patented an improvement in guide boards or indicators, which consist in a certain construction and arrangement of parts, which cannot be clearly described without an engraving.

Mr. Jacob Huy, of Whistler, Ala., has patented an improvement in the class of cars for transporting live stock which have a second floor or deck, that is vertically adjustable, and racks and troughs suitably arranged for supplying food and water to the animals on one or both floors. Four different kinds of animals can be loaded in this car, and each kind or lot may be kept separate from the rest, and each can be fed separately and conveniently with the food suitable to its taste and requirements. After the animals have been unloaded the car can be quickly made ready to be loaded for a return trip. To do this the deck or false floor is raised and secured beneath the roof of the car.

Mr. Charles E. Glazier, of Hornellsville, N. Y., has patented an improved spray nozzle for hose and other water pipes, which consists in a certain novel construction and arrangement of devices for breaking up the stream of water and converting it to spray without back pressure on the column.

An improvement in India-rubber and other gum compounds for surfacing cloth and for other purposes has been patented by Mr. Charles Y. Beach, of Fairfield, Conn. This invention has for its object to overcome the objectionable odor commonly present in goods that are made wholly or partly of rubber or other gum compounds. The invention relates to the preparation of the gum compounds for general use in the arts; but the principal application of the discovery is in surfacing cloth and other fabrics with rubber or other gum compounds.

An improved tether has been patented by Mr. Eugene H. Angell, of Mooers, N. Y. The object of this invention is to furnish combined tethers and tackles, so constructed that when arranged as a tether the slack of the rope will be taken up to prevent the animal from becoming entangled in it, which will prevent the tethered animals from being injured by a sudden pull or jerk upon the rope, and which will allow the tackle to be detached from the tether and used as an ordinary tackle.

Mr. Fortunato C. Zanetti, of Bryan, Texas, has patented an improved game apparatus. The invention consists in a series of tilting levers arranged at the end of an alley and hinged to a rod resting on two standards connected by check-ropes, against which the ends of the tilting levers rest in their several positions. The tilting levers are provided with numbered plates and with bells, which ring when a lever has been struck by a ball and tilts.

Mr. Henry Lefort, of Newark, N. J., has patented a new and improved watch crown, which can be easily held and adjusted in the pendant and is simple in construction. It consists in a spring bushing loosely mounted on a flanged sleeve adjustable on the pin of a watch crown, whereby the crown is held in the pendant by the pressure of the spring bushing against the sides of the pendant.

Mr. Gustav F. Sievern, of Brooklyn, N. Y., has patented an improvement in holders for window clothes-lines so constructed that the clothes may be placed upon and removed from the lines without its being necessary for the operators to lean out of the window.

Mr. William C. Culbertson, of Girard, Pa., has patented an improved iron fence post, so constructed that it may be easily set up, taken down, and removed from place to place. It is strong, firm, and durable.

Mr. Laning L. Ferris, of New York city, has patented an improved bill and letter file which will permit inspection or removal of the papers upon it and may be used for binding the papers together. The invention consists of a plate secured by a set screw to a suitable base and carrying two fixed and two removable arms or wires which curve inward, the point of the fixed wires overlapping the points of the removable wires, so that the bills may be inserted between the points and pressed upon either pair of wires. The removable wires are eye-pointed to receive a cord, and may be drawn down through the plate when the latter is removed from its support.

Mr. John Copcutt, of Yonkers, N. Y., has patented an improvement in the construction of the floors, doors, and shutters of buildings. The object of the invention is to prevent the rapid spreading of fire from one part of a burning building to another by burning through those parts.

A felting machine with an adjustable and self-adjusting apron surrounding the felting roll, whereby the machine may readily adapt itself to the bat and the more delicate operations of felting may be performed, has been patented by Mr. John G. Meeker, of Danbury, Conn.

Mr. Norman Allen, of Rockaway Beach, N. Y., has patented a fan containing a number of leaves or sheets adapted to receive advertisements. It is composed of a middle thick sheet of paper, to give stiffness to the fan, and several thinner sheets joined together and provided with a suitable handle.

## The Eruption of Colima.

The volcano of Colima, near the Pacific coast, directly west of the City of Mexico, was in active eruption in the forepart of May. The first symptoms of activity were manifested on the first. A dispatch from Mexico, dated May 5, says: The eruption at night is full of splendor and grandeur. Last night lurid flames shot up from the crater of the volcano, illuminating the darkness for miles around. Incandescent stones are also thrown up, together with showers of ashes, which darken the atmosphere in daytime. The fire, smoke, ashes, and stones are accompanied with dreadful subterranean thunders and frightful and unearthly noises under the volcano, together with quakings of the earth. Inhabitants of villages and towns in the vicinity of the mountain are in a state of panic and wild terror. They are, indeed, in danger in case of a flow of lava.

Colima is 12,000 feet high, and forms the southwestern extremity of a mountain chain traversing Mexico from east to west. Previous to 1869 it was supposed to be extinct.

## Studying Puzzles a Waste of Time.

The *Educational Monthly* reflects the sentiments of most thoughtful persons in the following paragraph:

There seems to be, says the writer, a fascination about arithmetical puzzles that leads many persons to waste their time and tire their brains in efforts to solve them. The "13 15 14" puzzle that is now going the rounds is a type of the entire class of puzzles, for it has the following characteristics: 1. The solution can only be found by a tentative process of trial and experiment, and the only tincture of mathematical science which it has is its value as an example in the mathematical doctrine of probabilities. 2. The solution, when it is obtained, does no good, and is utterly devoid of value. It is said that some one gave this puzzle to the great engineer De Lesseps while he was examining the Brooklyn bridge. Great engineers, however, are as likely to fail as other people, and great mathematicians like Isaac Newton and Sir William Rowan Hamilton have no advantage over school boys. If the time spent in deciphering such puzzles were devoted to the study of useful problems, there would be a surprising increase in the sum total of arithmetical knowledge.

## Commemorative Medals for Paris Exhibitors.

A dispatch from Paris, dated May 7, announces that the Commission of the Universal Exhibition of 1878 has ordered the striking of 6,800 commemorative medals to be distributed among the members of the foreign commissions, juries, and exhibitors who did not compete for prizes. The medals will be of bronze and will involve an outlay of 300,000 francs. A similar medal will be struck for distribution among the foreign as well as the French journalists who were provided with season tickets to the Exhibition. There still remain 7 gold, 101 silver, and 526-bronze medals, and 2,510 honorable mentions, to be distributed among exhibitors who have not yet asked for them.

## To Keep Grain Cargoes from Shifting.

Considerable interest has been manifested in New Orleans with regard to a device patented by a firm in that city to prevent the shifting of grain or any other treacherous cargo. It consists in dividing the ship into longitudinal compartments, secured by rods from side to side of the vessel. These compartments are to be divided longitudinally by sections into any required space that may be desired, in order to effectually separate different kinds of grain, etc., without the use of bagging. The plan is thought to be cheap, simple, and effective.

## The Telephone in Paris.

The Edison telephone is in full operation in Paris, the exchange there numbering over 350 subscribers. The carbon transmitter and Phelps receiver are employed. The lines are under the management of the state, and a closed circuit is employed in order to avoid induction currents. Experiments up to distances of 140 miles have been made with success. Trial of the telephone is also being made at the Carberry Mine, near Inveresk, in Scotland.

## Prizes for Boys.

The Maine experiment of offering rewards to boys for successful farm work is to be imitated in Vermont. Two of the trustees of the State University have offered \$150 in prizes to boys not over seventeen years of age for the best crops of potatoes and corn on one eighth of an acre. The practice is a good one, and might be wisely adopted with benefit to our agricultural interests as well as to boys.

THE PENNSYLVANIA RAILWAY CO.'S ELEVATOR.—The new grain elevator of the Pennsylvania Railroad at Jersey City is rapidly nearing completion. It is 200 feet long, 145 feet wide, and will have a capacity of 1,500,000 bushels. Four "conveyors" will run from the building to the wharf for unloading canal boats and loading ships; and the building will have twenty-four sets of elevating apparatus for taking grain from cars.