RECENT INVENTIONS.

Mr. Jeppe Jeppesen, of Provo City, Utah Ter., has patented an improved machine for dressing both sides of boards at once for dressing the edges at any angle desired, for tonguing and grooving, cutting mouldings, and other varieties of work in wood. The inventor makes use of two endless chains of links, fitted with cutters, combined with an adjustable bed, above and below which the chains are fitted to move in adjustable guides. A feed bed and feeding device are combined with circular saws, for carrying the material to the cutters and squaring the ends at the same time. The links of the chains are of peculiar construction, each being a plane having cutters adapted for doing the work required.

Mr. Bernard H. Hilmes, of Altamont, Ill., has patented a screw-cutting machine or implement, the dies of which are reversible and so held and operated that after the formation of the thread the bolt may be removed from between the dies without the necessity of unscrewing the bolt or turning the machine back.

An improvement in biscuit machines has been patented by Mr. Daniel M. Holmes, of Cincinnati, O. The object of this invention is to crimp the sheets of dough upon the under side or upon both sides before the sheets are cut into cakes. The invention consists in a biscuit machine with two crimping rollers placed at different levels, and in such positions that their faces can be brought into contact with each other, or nearly so, and a smooth roller placed above the upper crimping roller, so that a sheet of dough will be crimped upon both sides or upon the lower side, according as it is passed between the two crimping rollers or between the upper crimping roller and the smooth roller.

An improvement in thrashing machines has been patented by Mr. James C. Keith, of Battle Creek, Mich. The object of this invention is to prevent winding of the straw upon the thrashing cylinder when the machine is being used where the straw is long and flexible. It consists in a novel construction and arrangement of a revolving comb and stationary but adjustable comb shield combined with the thrashing cylinder, so that any straw which may be disposed to wind upon the cylinder is arrested and combed out and thrown into the separator.

In making coffeepots the lip or spout has usually been constructed separately from the body aud attached thereto by means of solder. This method involves skilled labor, and is also expensive, and the attachment is in a measure insecure, besides detracting from the appearance of the vessel. Messrs. Gibson T. Ayer and Benjamin W. Taylor, of Delaware, Ky., have patented an improved coffeepot, in which the body and spout of a coffeepot are made from one piece of sheet metal without stretching, spinning, or swaging the metal for that purpose.

Messrs. S. M. Wilkes and W. H. Hyer, of Staunton, Va., have patented a bed lounge having a seat or bottom which is adapted for reversal, so that it may be conveniently and quickly adjusted with the mattress side uppermost, thus temporarily converting the lounge into a bed. The head of the bed or bottom is swiveled to a bifurcated support formed of a metal rod whose ends are pivoted in the sides of the frame of the lounge, so that by drawing the seat back from the head of the lounge it will be raised on the support, and may then be reversed.

An improved anti-chafing gear for horses and mules has been patented by Mr. Wheelock Winspear, of Mount Pisgah, Ohio. The invention consists of an endless band, of leather or other suitable substance, shaped to fit upon the shoulders and neck of the animal, beneath the collar, and held in place by attached straps that buckle to the surcingle.

An improved instrument for taking observations at sea, either at day or night, to determine the ship's position, has been patented by Mr. Charles M. Hellberg, of Jersey City, N. J. The invention consists of a frame having an arc of 180°, suitably and adjustably mounted, in combination with a day and night binocular telescope and reflecting glasses, the instrument being designed as a substitute for the ordinary sextant or quadrant.

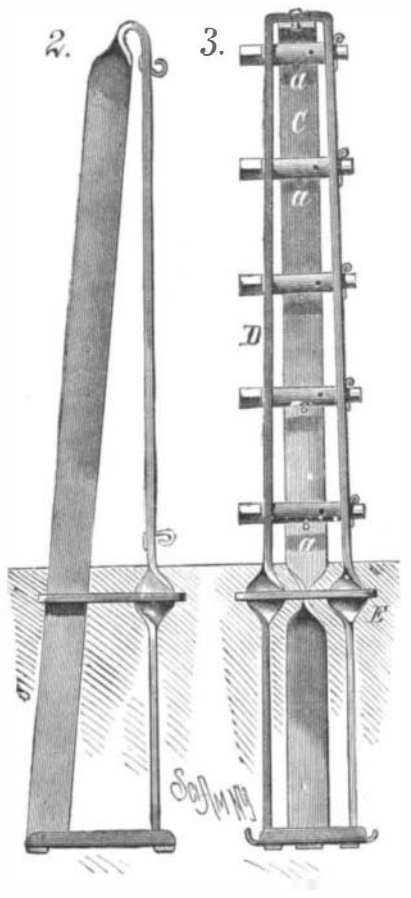
Mr. Charles J. Gustaveson, of Salt Lake City, Utah, has patented an improved spur having simple strap connection, so that a heavy strap may be employed that may be readily connected or disconnected from the foot. The improvement consists in securing a pointed hook or horn upon the end of the rim in a peculiar manner, that may be readily inserted into unslit perforations through the heavy leather.

Mr. Joseph P. Smithers, of Brooklyn, N. Y., has patented an improved electric lamp. This invention relates mainly to carbon-point lamps, but a portion of it is also applicable to incandescent lamps. The invention aims chiefly to provide an electric lamp of the former class with such regulating mechanism as will be sensitive to slight changes in the carbon points, and cause them to approach or separate, as their condition may require, by frequent but infinitesimal motions, so as to maintain the relative positions of the points uniform, and consequently render the light absolutely steady.

NEW IRON FENCE.

The fence shown in the annexed engraving is light, strong, and equally well adapted to the requirements of town or country. When used on farms the panels will generally be composed of long stretches of wire, but for gardens and city places the panels are shorter, and diagonal wires are stretched across them to render them more showy and ornamental. In a farm fence the posts may be set and then horizontal wires may be run to inclose a given area, and if after a time it is found desirable, two more horizontal wires may be added, and the fence may finally receive diagonal wires if it is found necessary or desirable. It will thus be seen that the fence may be completed by degrees, and by the extension of the system of diagonal wires the fence may be made as close as necessary for the confinement of the smaller animals.

The principal feature of the fence is the post, which is made in two forms, one for the ends or corners, another for the panel. In both of these forms the post is made with the smallest quantity of material consistent with the requirements, and the metal is so disposed as to insure great strength and rigidity



PANEL AND TERMINAL POSTS.

A glance at the engravings will give an idea of the construction of the post and the manner of setting it.

The corner post consists of two metal bars, each bent midway of their length to form the two sides of a rectangular shaft. These bars thus bent are placed together, the top of one coming beneath the top of the other, and the sides of the one partially closing the sides of the other, so that when secured together at their tops the two united form a rectangular post having corner openings through most of their height. The portion C of the post (Fig. 3) is perforated at *a* for the reception of the wires, and the part D is provided with transverse-rotating tighteners having their bearings in the side bars as shown. The bars forming the posts are provided with half-twists just below the ground line of the posts, and at this point is placed a knee plate, E, which is slotted for each arm of the post. Each arm of the post is first given a quarter twist to the right, and then, by slightly compressing the lower ends of the four arms, the slotted plate may be slipped upon them and pushed up until the twists in the arms have been reached. When releasing the arms will expand and bind the knee plate, G, in place. Each arm of the post is then given another quarter turn to the right below the knee plate, which brings their faces back in line with the upper portions of the arms and securely locks the knee plate in place, thus dispensing entirely with the use of bolts or screws to secure them.

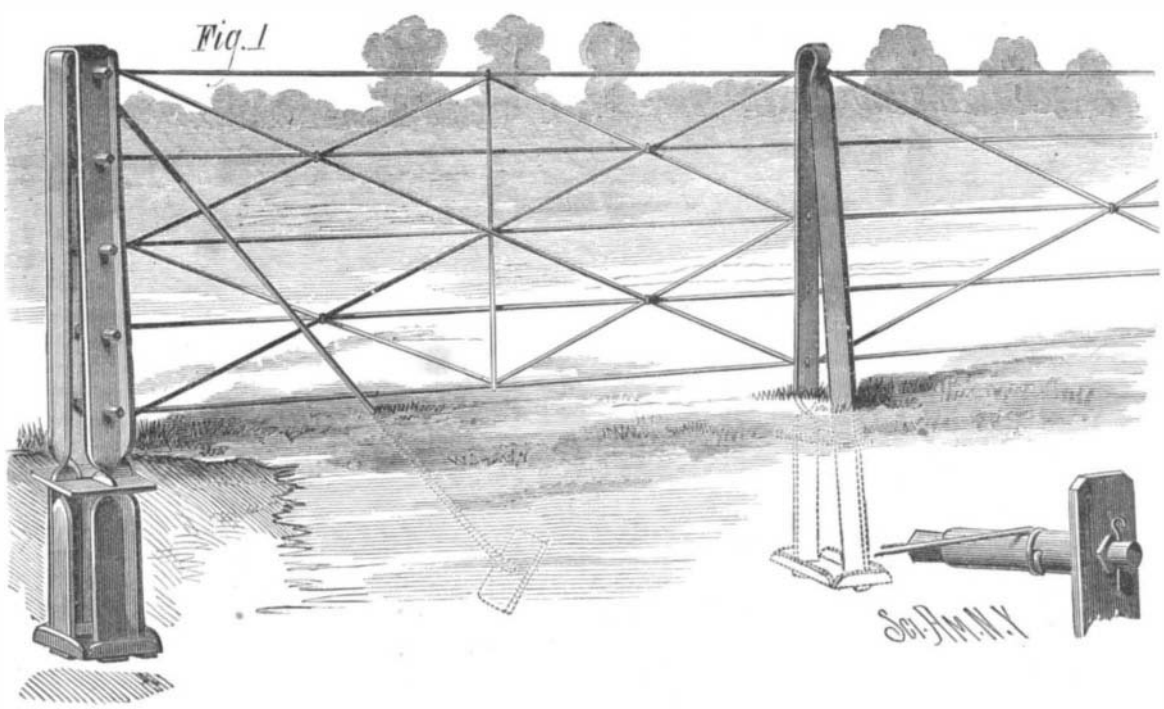
The lower ends of the arms of the post are provided with nibs, and a slotted foot plate is secured to the foot of the post by passing the nibs through the slots and clinching them on the under side.

The tighteners (shown in detail in Fig. 1) are provided at one end with a post for the wrench or key by which they are wound to tighten the wires. Near the other end of the tightener a square portion is formed, which enters a square opening in that side of the bar; and at the extreme end of each tightener is a cylindrical portion having a perforation through which a key is passed to lock the square portion in its rectangular opening in the arm of the post. When it becomes necessary to tighten the wire the key must be withdrawn and the tightener pushed inwardly from that end until the square portion leaves the rectangular opening in the post, when the tightener may be turned until the wire is sufficiently taut, when the tightener is pushed back to its normal position.

After what has been said in regard to the corner post, the construction of the panel post, shown in Fig. 2, will be readily understood.

Of course either plain or barbed wire may be stretched on the posts, and the metal ribbons, either plain or twisted, may be applied with equal facility.

This improved fence was recently patented by Mr. William C. Reicheneker, of Denver, Col. Further information may be obtained by addressing the inventor, at present at Kansas City, Mo.



REICHENEKER'S METALLIC FENCE.

Capacity of Cathedrals and Churches.

In Forbes' "Tourists" the capacity of the larger European churches and cathedrals is given as below: St. Peter's Church, Rome, holds 54,000 people; St. Paul's, London, 35,000; St. Sophia's, Constantinople, 33,000; the Florence Cathedral, 24,300; St. Petronius, Bologna, 24,000; St. Paul's, Rome, 32,000; St. John Lateran, 22,900; Notre Dame, Paris, 20,000; the Pisa Cathedral, 13,000; St. Stephen's, Vienna, 12,400; St. Dominico's, Bologna, 12,000; St. Peter's, Bologna, 11,500; the Cathedral of Vienna; 11,000; St. Mark, Venice, 7,000; the Milan Cathedral, 7,000. These figures, it will be remembered, do not refer to seating capacity.

The "Cry of Tin."

If a piece of tin be bent, it emits a sound; this, being regarded as a property peculiar to tin, has been termed the "cry of tin." This phenomenon is explained by the peculiar crystalline structure of the metal. Reasoning that if this explanation be the true one, then other metals, obviously crystalline in structure, should also exhibit the phenomenon, Mr. J. C. Douglas, who records his observations in the *Chemical News*, heated a piece of rolled zinc for a few minutes to a temperature somewhat below its melting point, when the metal became much less tough, and its fracture decidedly crystalline. On bending a piece so treated, it emitted a sound weaker than that emitted by tin, but of the same nature. Cast zinc cannot be bent readily; but if pinched between the teeth or with pliers, it emits the sound distinctly. The conclusion, therefore, is that the cry of tin is due to crystalline structure, and may be emitted by zinc and probably by other metals when crystalline in structure. The practical application is, that by the sound a metal emits "we may draw conclusions as to its texture, and hence its fitness for certain purposes, or, by the sound emitted by a beam when bent, we may draw conclusions as to its safety, the microphone or other appliance being called in to aid us where the sounds are exceedingly weak."

The Floods of the Missouri.

The spring floods of the Missouri River were severer than usual, owing to the vast amount of snow to be melted, and the high water was made more than ordinarily disastrous by the frequent ice jams. For some weeks the local papers were filled with more or less exaggerated reports of destruction and loss of life. The hazards of life were undoubtedly many, but fortunately very few people were actually drowned. The commander of the military department embracing that region, General Terry, promptly sent Captain Claque, Commissary of Subsistence, to investigate the losses and provide for the relief of sufferers. In his report Captain Claque says that from the mouth of the Big Sioux River to Yankton, the bottom land on both sides of the river was covered with water its entire width, and looked like an inland sea, with occasional huge drifts of black ice somewhat resembling lava beds. Such sudden and merciless destruction is seldom witnessed in a lifetime. On the Dakota side alone it is estimated that about 225,000 acres of fertile land were submerged. Some idea of the destruction may be conceived when it is known that here was one of the oldest and most prosperous settlements in Dakota, said to average a family to about every 20 acres, and having a railroad transverse its length for about 50 miles, passing through six thrifty villages, now all submerged with water or entirely washed away, Elk Point Station suffering the least on account of its elevation. It may safely be said that no one living on this bottom was left free from serious loss, many having their all swept away—lands, houses, grain, and stock. On the Nebraska side the destruction was much less, as the bottom was not so thickly settled, and did not contain so much land. The most wonderful thing in this whole catastrophe is the small loss of human life.

Wool Sorters' Disease.

For some time past considerable discussion has arisen in the manufacturing districts of England over a malady called wool sorters' disease. Mr. Roberts, the medical officer of health for the district of the Keighley Local Board, treats at considerable length in his annual report for 1880 of the nature and preventives of this disease. In summing up from the report it is recommended that the following precautions be taken without fail by wool sorters: "(1) Wool sorters not to sort dangerous wools when they have any sore places or cracks on their hands or fingers; (2) to be careful not to wipe or rub their faces with their hands while sorting, especially if they have any cracks or pimples on the face or lips; (3) to wash their hands before eating, and to take neither food nor drink into the room where the wool is being sorted." The sorting room, he adds, ought to be well ventilated, to be swept regularly, and to have the walls and ceilings whitewashed twice a year.

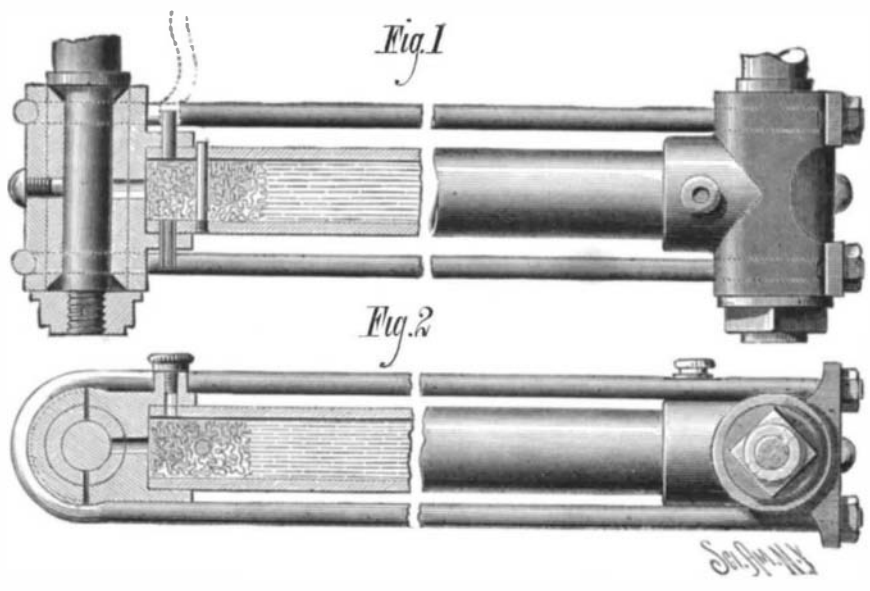
Seats for Shop Women.

The Legislature of New York has passed a bill requiring employers to provide seats for women in their employ. The absence of any seating contrivance likely to prove convenient and usable in the narrow spaces between shelves and counters is more likely to make the new law practically inoperative than any indisposition on the part of employers to deny rest to the saleswomen, for whose relief the law is chiefly intended. Why cannot some bright shop girl utilize the experience she has painfully acquired behind the counter and contrive a seat that will meet the requirements of the case? The market is ready, and the profit might be considerable.

IMPROVED CONNECTING ROD.

The engraving represents an improved connecting rod lately patented by Mr. Jacob J. Anthony, of Sharon Springs, N. Y., and designed for all varieties of machinery in which connecting rods are used. It consists of a straight tube forming an oil chamber, and having on each end a journal box communicating with the interior of the tube. The caps of the journal boxes are held in position by straps extending parallel with the tube on opposite sides of it. In each end of the tube is placed a quantity of fibrous material which acts as a strainer and prevents any impurities that may be suspended in the oil from entering the journals. The fibrous packing is held in place by a pin passing transversely through the connecting rod, and oil is introduced through a hole closed by a screw plug.

When this connecting rod is used vertically an oil cup is placed in the cap of the upper box. This rod has the advantage of being very light and yet strong and free from vibrations, while it is at the same time self-lubricating.



LUBRICATING CONNECTING ROD.

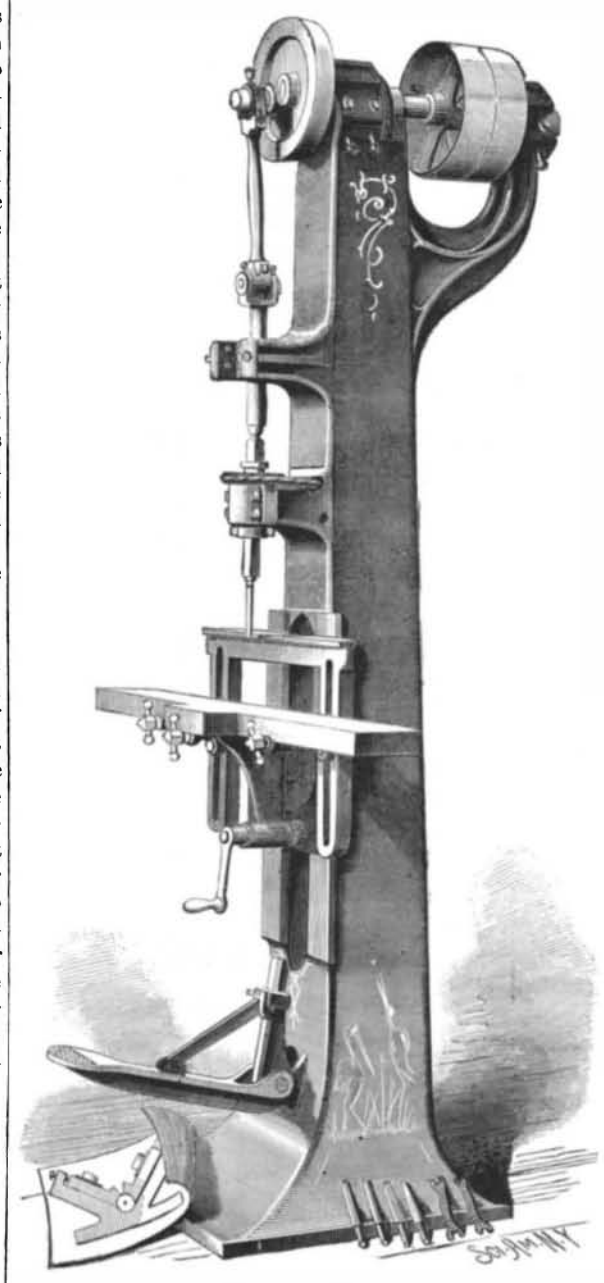
Lead Pipes Corroded by Lime.

It is a common practice with plumbers and house builders to embed lead pipes in lime mortars and cements. A writer in the London *Globe* says that when in contact with lime, lead pipes are rapidly corroded, in some cases so as to become porous and brittle within a space of fifteen or sixteen months. Obviously the careful testing of pipes in such position is in order; and if the facts are as stated, the exposure of lead pipes to lime should be carefully avoided.

NEW STYLE POWER MORTISER.

The annexed engraving shows a power mortiser for mortising doors, sash blinds, furniture, etc. The frame is cast in one solid piece, and the machine is built in the most substantial manner, and can be run at a higher rate of speed than other machines for doing the same work.

In all other mortising machines the cap of the box on crank shaft has to withstand the full effects of the blow of the chisel, thus bringing all the strain upon the caps of the box, causing a great deal of wear and lost motion. In the machine illustrated the solid iron frame is extended over the crank shaft, and the patent sliding caps—shown separately in the small detail view—are placed beneath, and the wear can be taken up by simply setting up the caps. This is an important improvement and will be readily understood. The machine also has the patent three-part box on the vertical spindle.



NEW POWER MORTISER.

The bed can be used for straight mortising in the usual manner, and is capable of being tilted to any angle for radial mortising. It is provided with the belt friction reverse known as the "Smith reverse," which reverses the chisel instantaneously, whether working or at rest. This reverse motion is acknowledged to be the best in use.

The shafts are all of the best cast steel, and the bearings are made very long. The high rate of speed at which this machine is run permits of doing a large amount of work in a given time.

The several improvements on this mortiser make it very valuable and desirable. The manufacturers of this machine call especial attention to their patent three-part sliding cap box, as shown in the detail cut. This box requires no liners, and the side as well as top wear can be taken up by setting down the governing screw.

Rowley & Hermance, the well known manufacturers of woodworking machinery, Williamsport, Pa., are makers of this machine.

Henry Chisholm.

In the death of Henry Chisholm, May 10, Cleveland, Ohio, lost a useful citizen and the iron trade one of its most deserving and capable pioneers. Mr. Chisholm was born in Scotland in 1822, and at the age of twenty emigrated to Montreal, Canada. In 1850 he removed to Cleveland to build a breakwater for the late terminus of the Cleveland and Pittsburg Railroad Company. For several years he was engaged upon the improvement of the Cleveland docks and piers. In 1857 he turned his attention to the manufacture of iron, forming the company of Chisholm, Jones & Co, setting up a rolling mill. Two years later the company which he founded set up the first blast furnace in that part of Ohio, and in the years immediately following several other furnaces and mills were established by this firm at Chicago and in Indiana.

In 1864 the firm of Stone, Chisholm & Jones organized the Cleveland Rolling Mill Company, and the year after they constructed the second Bessemer steel works in the United States. In 1871 Mr. Chisholm organized the Union Rolling Mill Company, of Chicago, and in connection with his Chicago partners erected another rolling mill at Decatur, Ill. These enterprises, the outgrowth of the original establishment in Cleveland in 1857, gave employment directly to 2,500 men. Mr. Chisholm was much esteemed by his neighbors and employes.

Arsenic Sulphide as a Poison, and its Import in Judicial Investigations.

The question was raised whether in a certain dish of cabbage containing arsenic sulphide, there was poison enough to prove fatal to a man. From a number of experiments the author concludes that arsenic sulphide, whether prepared in the moist way, or the orpiment of commerce used by painters, forms, in contact with putrescent organic matter, arsenious and small quantities of arsenic acid. In cases of poisoning with arsenic sulphide these oxidation products appear sooner or later according to circumstances. Hence, if articles of food, vomited matter, etc., are only sent for chemical examination after the interval of weeks, or perhaps months, the expert cannot give a definite answer to the question whether the poison was sufficient in quantity to prove fatal to a man.—*J. Ossikovsky.*

ENGINEERING INVENTIONS.

An improvement in that class of devices which are designed to be applied to boilers for automatic extinguishment of the boiler fires when the water in the boiler evaporates to a point below the low water line, has been patented by Antonio A. Amuedo, of Algiers, La.

Mr. Reuben Jones, of Mountville, Ga., has patented an improvement in horse powers which consists in the peculiar construction of the driving wheel, carrying an endless rope, whereby the latter is prevented from slipping on the driving wheel.

Mr. Thomas Trimble, of Albia, Iowa, has patented a removable platform and arm loop, to be used on freight cars to prevent accident to life while coupling the cars together. The invention consists in a light narrow platform removably attached to the outer end of a freight car, and a suitable loop for the brakeman's arm secured to the platform.

An improvement in dumping cars, patented by Mr. David E. Small, of York, Pa., consists in the peculiar construction of the plate for connecting the tilting body of the car to the truck, the plate being made with elevated side supports, which raise the pivotal point of the car body sufficiently high to enable it to be tilted without striking the truck too soon, and the supports have an offset at one side of its fulcrum, which catches and sustains the car body when in a horizontal position.

An improved automatic valve operator for tanks has been patented by Messrs. Alexander Jones, Charles Collins, and Hartwig A. Cohen, of New York city. The object of this invention is to provide a device for preventing the waste of liquids caused by the overflowing of tanks on account of the carelessness of the attendants or the inefficiency of the devices for indicating the exact quantity of liquid in the tank.

Mr. John F. Smith, of Erie, Pa., has patented an improved nut lock particularly adapted to bolts for connecting the ends of railroad rails, but capable of being applied to bolts