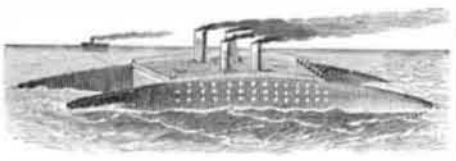
MECHANICAL INVENTIONS.

Construction of Vessels.

An improvement relating to the construction of vessels, by which the inventor claims to attain greater speed, stability, and safety than is obtained in vessels of ordinary construction, is patented by Mr. William Coppin, of London, England. The invention is shown in the annexed cut, and consists of a compound ship, composed of three ship-hulls united as one vessel, the two outer hulls being longer than the central, and the whole being decked over. The outer hulls are of narrow beam and equal length. The three hulls are rigidly connected in such a way as to form complete decks, and so as to leave considerable extra spaces between the hulls. The center hull is to carry the engines, and is provided with a propeller at each end. This arrangement brings the screws well toward the longitudinal center of the outside hulls, and prevents the pitching motion of the vessel from lifting the propeller out of the water. All of the hulls are tapered vertically and longitudinally, and come to a rounded point at both ends, so as to enter the waves and reduce the pitching motion, the rolling motion being done away with by the extent of the water spaces between the hulls. These improvements are especially applicable to war ships, as their stability enables them to carry a large amount of armor-plating, and their breadth gives an extended battery platform and complete protection is given to the engines, propeller, and steering apparatus, and the construction is such that one of the vessels might be completely riddled by shot and yet be supported by the other two. The light draught gives greater facilities for maneuvering and for entering harbors.

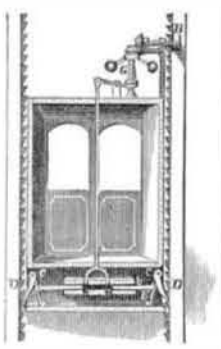


Waste Valve for Pumps.

The invention shown in the annexed engraving, and patented by Mr. Jerome Giles, of South Bend, Ind., is an improved waste valve for pumps, that is simple, inexpensive in construction, and efficient in use, and can be applied to all kinds of pump-tubing. In the engraving, A is the valve-plate, to which a packing of sole leather or other suitable material is secured by a bolt upon which the valve is pivoted and secured to the pump tube, over a small orifice for the escape of the waste water. The plate, A, is struck up from metal not subject to oxidation in water, and has flanges to form a recess for the packing to rest in, and a lug to come against the pump-tube to limit the movement of the valve on its pivot, B. The valve is cut away so as to form a passage, C, for the waste water from the pump, that permits the water to escape when the valve is turned so that its passage registers with the orifice of the pump-tube. The parts of the packing on either side of the passage serve to close the orifice when the valve is moved up or down from the position that opens the orifice.

Safety Attachment for Elevators.

Among the many inventions for the prevention of accidents in elevators by the breaking of the lifting rope, or other causes, is the device illustrated by the annexed engraving. The inventor combines with the car of an elevator a centrifugal governor, G, to which motion is imparted by a driving wheel, B, which may be either geared to a rack extending the length of the shaft in which the cage moves, or by friction contact with a plain surface in the shaft. The cage is provided with two or more pawls, C, on opposite sides of it, and which ordinarily hang clear of corresponding notches in the upright shafts, D, but when used are operated by springs, as hereinafter shown. When the cage moves too rapidly down the action of the governor is quickened by the accelerated motion of the driving wheel, and the rod, *a*, is raised, liberating the rods, *b b*, and the springs, E E, which are attached to them, which then act upon the pawls, C, and hold them in locking contact with the uprights, D. To avoid undue wear on the governor it only has motion imparted to it during the descending motion of the cage, and is at rest when the cage is ascending. The above device is patented by Mr. Adam Hafner, of Eatonton, Georgia.

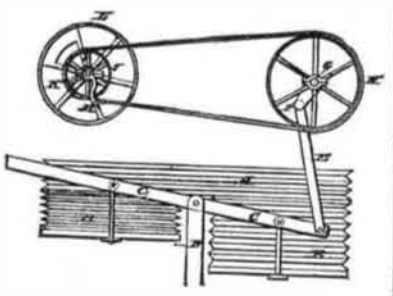


Car Coupling.

A simple and effective car coupling has been recently patented by Messrs. Jean Billon, James Billon, and Henry L. Berger, of St. James, La., and is shown in the accompanying drawing. A car is provided at each end with a projecting draw-head that has at its outer end a vertical transverse block or head projecting upward and downward from the end of the draw-head. A U-shaped shackle, made of metal rod or flat bar, is pivoted at its middle to the middle of the draw-head, in such manner that the rounded end of the shackle can swing outside of the vertical block on the end of the draw-head. Weights of any suitable kind are attached to the open ends of the shackles which tend to hold the shackle in a vertical position, and chains are also attached to the ends of the shanks that unite to form a single chain that is secured to a pivoted lever on the top of the car, the inner end of which can be held to the roof by a hook or other suitable device. If the lever is raised the weights draw the inner ends of the shackles down so that the closed end will project upward from the draw-heads. When the ends of the draw-head come in contact, the end of the lever on the top of the car is depressed, and the shackle is swung over the cross heads until it rests on the upper side of the draw-head, when the lever on top of the car is secured by the hook and the shackle locked in position on the draw-head. To uncouple the car the lever is released from its hook, and the weights carry the forward end of the shackle upward and the cross-head is released, uncoupling the cars.

Mechanism for Working Organ Bellows.

A device, by which a steady and uniform motion may be given to organ bellows, and that can be worked with a much less expenditure of power than when the bellows are worked by means of a hand lever, as is usual, is illustrated by the accompanying engraving. The wind chest and bellows of the organ are of ordinary construction. A lever, C, that is pivoted to a post, D, or other suitable support, is connected with the bellows, B, upon the opposite sides, and at equal distances from its fulcrum. To the lever is also pivoted the lower end of a connecting bar, E, the upper end of which is attached to a crank, F, upon a shaft, G, that is secured to suitable supports, and has attached to it a large pulley, H, around which passes a belt. This belt passes around a smaller pulley, J, attached to a shaft, to which is also secured a flywheel, L, that is driven by a crank, M, attached to its shaft, the shaft working in bearings attached to suitable supports. The machinery is simple, and has the following advantages: its action is regular, and does not subject the bellows to the same wear and tear as the lever, and enables organ turners to turn with more facility; it is so cheap that all churches can afford to introduce it; it occupies only a small space, and can be attached to any bellows; organists can play more delicate pieces and produce finer harmony, and the man who works the bellows will not have his Sunday turned into a week-day of hard labor. We understand this device has been introduced in a number of churches, and is giving good satisfaction. The mechanism has been recently patented by Mr. Julius Wagner, of Reading, Pa.



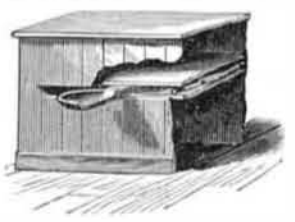
MISCELLANEOUS INVENTIONS.

Feed Bag for Horses.

Mr. Frank Wheaton, of Brooklyn, E. D., N. Y., has patented an improvement in feed bags for horses, the object of which is to provide a device for suspending a feed bag from the head stall of a horse's harness, so made that the horse can reach the bottom of the bag without being chafed by the straps supporting the bag. The device is shown in the annexed drawing. The head-stall, provided with a nose band, has a ring attached to each end, and a leather disk is also attached at the same place on the inner surface, the rings resting on the disk and the disks resting against the sides of the horse's head. A ring is fastened to each side of the feed bag, and to these rings the ends of a strap or rope are attached, that passes from the outside to the inside through slots in the bag above the loop, and then passes through one of the rings on the end of the head stall, around the upper ends of the hames, through the loop of the other end of the head stall, and to the ring on the other side of the feed bag. The feed bag is thus suspended from the hames by the strap, and if the horse moves his head downward the bag will be drawn upward, and the horse can get to the bottom of the bag, and as soon as the horse raises its head the bag will descend, and the horse can take its nose out of the bag, as horses like to do when feeding. In this device the strap is not bent at acute angles, but at every point at an obtuse angle, whereby the friction is materially diminished and the strap is not apt to crack or break. The disks also prevent chafing the sides of the horse's head.

Store Counter Seat.

A useful and humanitarian invention, which consists of a store counter seat that is adapted to be applied to the front of the counter for the use of customers, or the rear side for the attendants, is shown in the annexed cut, and has been recently patented by Mr. Andrew J. Culbertson, of San Andreas, Cal. The store counter is provided with a horizontal recess formed by horizontal partitions, placed at a suitable distance below the counter top. A seat made of any suitable form has formed with it an arm extending from it in a radial direction. At or near the junction of the seat and arm is attached a box, that carries a coiled spring, one end of which is attached to the box, and the other to a shaft or arbor, which forms the pivot of the seat. In a groove in the bottom of the recess is a spring lever, the outer end of which extends beyond the recess, to be reached by the hand, and the inner end is secured at the inner end of the groove.



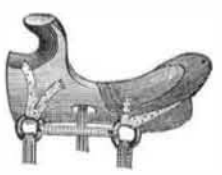
Between the fixed and free ends of the bar is a depression between two shoulders, the distance between the shoulders corresponding with the width of the arm of the seat. When the seat is not in use it lies in the recess where it is held in place and prevented from turning by the engagement of the shoulders of the elastic lever referred to above. When the seat is needed the elastic lever is depressed, when the arm is released, and the coil spring in the case in its effort to uncoil causes the seat to swing outward against a stop or abutment which prevents further rotation.

Improved Fish Hook.

The accompanying engraving shows a novel combination of fishing hooks and a baiting pin, which will strike lovers of the piscatorial art favorably. The object of the inventor is to provide a fish hook or cluster of hooks, on which a live bait may be securely and easily fixed by means of a baiting needle, the construction and arrangement being such that a trolling spoon may be easily adjusted when desired instead of the living bait. In the engraving is shown a duplex barbed fish hook, A, having secured to it, and between its shanks, one part of a bent baiting needle, one end of which terminates in a hook serving to hold and clasp the lower end of the needle, when it is pressed into the hook and prevents the escape of the bait. A trolling spoon, having suitable hooks or staples, may, if desired, be quickly adjusted and securely held on the baiting needle in the place of the living bait. This device is patented by William E. Hemming, of Redditch, England.

New Saddle Tree.

Mr. William Madison Mann, of Helena, Montana Territory, has made a useful improvement in that class of girth attachments to saddle trees in which two leather straps, provided with girth rings at their ends, are wrapped one around the horn and the other around the cantle of the tree. The objection to this, which is the ordinary saddle used by the herders on the Western plains, is that the cumbrous leather straps and rings by which they are connected to the two girths passing under the belly of the horse are in the way of the rider, and the one wrapped around the horn of the saddle becomes quickly worn through by the lasso wrapped around it and the horn. These defects are ingeniously remedied by the inventor by dispensing with the leather straps wrapped around the horn and cantle of the saddle, and substituting therefor, on each side of the tree, two bifurcated metallic strips, riveted or otherwise secured to the tree and not extending over the horn or cantle. This construction is cheaper and more durable than the old one, the forked straps acting as braces, and the horn is left entirely free for wrapping the lasso around it. The invention is clearly shown in the annexed engraving.



Folding Cotton Basket.

George W. Starr, of Vicksburg, Miss., has patented an improved cotton basket. The annexed engraving is a perspective view, giving a clear idea of the invention. A tube, A, made of pliable material, is attached to a top hoop, B, and to a bottom hoop, C. The bottom hoop is bent at opposite sides and U-shaped plates are fastened to it by rivets. The round end of the bails of the basket correspond with the U-shaped plates on the bottom. The bottom of the basket may be made of wood, metal, or canvas. When the basket is used the round end of the bails are passed into the U-shaped sockets, holding the basket in a raised position, as shown in the engraving. The cotton is filled into and pressed down in the basket, and as it gradually becomes filled the bails are drawn out of the sockets. They may be now thrown up and used to pass over the scale hook for weighing instead of hooking into the sack as is usually done. These baskets may be folded very compactly and a large number of them may be stored conveniently.