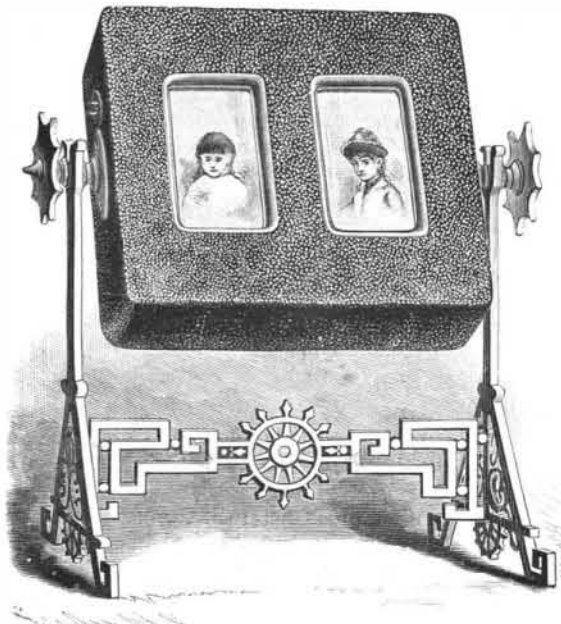


Aderhold, whose address is care of Birmingham Ice Factory, Birmingham, Ala., at which place one of these regulators is now in use. One-half interest in this patent is for sale.

**A NOVEL PICTURE EXHIBITOR.**

The simple and inexpensive device here illustrated is for showing pictures, especially photographs. It is artistic in appearance, and may be easily handled to allow the pictures to be viewed with greater comfort than by means of an ordinary album. The picture-



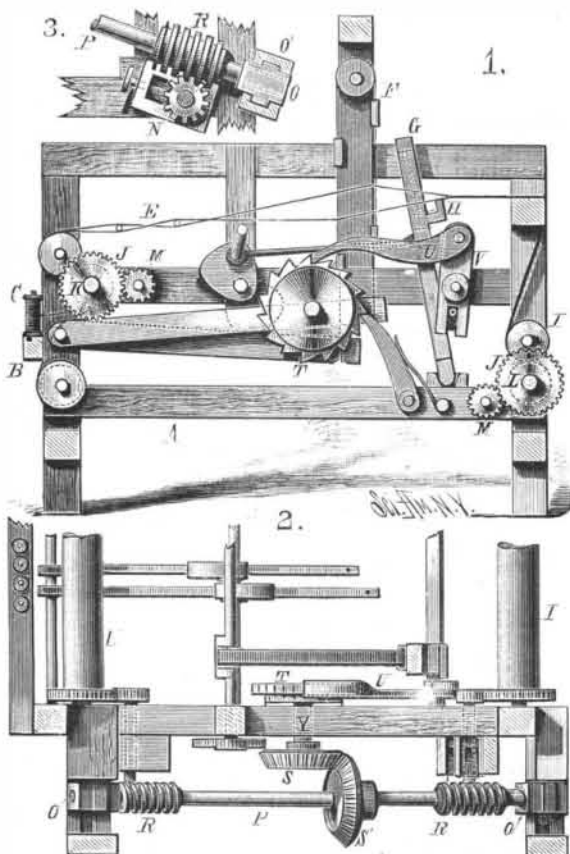
**BOOS' NOVEL PICTURE EXHIBITOR.**

holding case is made with a main body portion to which is hinged a cover or lid, and both the front of the body and the cover are formed with suitable openings, through which the pictures may be viewed. The case is provided with fixed opposite end studs, journaled in the forked upper ends of side posts fixed to an ornamental stand. The studs have neat hands, which may be grasped conveniently to slowly rotate the case on the stand. Within the case are picture slides, so arranged that as the case is revolved the pictures will appear in rotation before the openings. The pictures are so arranged that part may be seen through the openings in the body of the case and the others through the openings in the cover. The capacity of the case, or the number of pictures it will contain, depends upon its depth. There is no complicated mechanism to get out of order, as the parts are all very simple.

This invention has been patented by Mr. Arthur M. Boos, of 570 Main Street, Buffalo, N. Y.

**TAKE-UP AND LET-OFF MECHANISM FOR LOOMS.**

By means of this mechanism a given length of warp is let off intermittently from the warp spools or from



**WILLIAMS' TAKE-UP AND LET-OFF MECHANISM FOR LOOMS.**

the warp beam, as the case may be, in weaving, and the cloth taken up as woven. Fig. 1 is a side elevation of a loom for weaving cloth, with this improved mechanism attached; Fig. 2 is a top view of a part of

a loom, showing the take-up and let-off mechanism; and Fig. 3 is a detail view. In the drawings, A is the frame of a loom of the usual form and construction, upon which are mounted the several operating parts employed in weaving, consisting of the creel, B, with the spools, C, thereon, warp, E, let-off roller, K, heddles and harness, F, lay, G, having race board, H, cloth roller, I, and take-up roller, L. One of the two similar cog wheels, J, is secured to the end of a let-off roller, K, and the other is secured to the take-up roller, I. These wheels are geared into pinions, M, mounted upon shafts, to the opposite ends of which are secured like pinions, N, which mesh with worms, R, on the ends of a shaft journaled in bearings on the outside of the frame. Near the center of the shaft are two bevel wheels, SS', having an equal number of teeth, and one being upon the shaft, P, while the other is upon the shaft, Y, at the other end of which is mounted a ratchet wheel, T.

To operate the ratchet wheel at the proper time to let off, through the mechanism connected therewith, the required length of warp at each beat of the lay, a pawl, U, is pivoted to the upper end of the vibrating lever, V, the lower end of which is slotted to receive a pin extending from the lay, so that at each beat of the lay the pawl will turn the ratchet wheel a given distance, by which the let-off roller, K, is revolved to supply the length of warp required, and the take-up roller, L, revolved to take up the woven cloth on the roller, I. The latter roller is driven by friction by the other, upon which it rests, so that it will take up the same length of cloth as the roll increases in diameter. Above the let-off roller, K, is placed an independent friction roller, the warp, E, from the spools passing between these rollers. To vary the length of the warp to be let off, the pinions, M, are changed to larger or smaller ones, as the case may require. To permit the worms to be disengaged from the pinions for shifting the latter, and also to enable the weaver to draw up the cloth to have access to the interior of the loom for repairs, the bearings, O, of the shaft slide outward on the brackets, O'. A stop pawl prevents the backward movement of the ratchet wheel.

This invention has been patented by Mr. Matthew Chapman Williams, of Wilkinsonville, Mass.

**Passenger Lift for the Eiffel Tower.**

The enormous height of this proposed French Exhibition tower renders a hydraulic lift, in which passengers could perform the whole journey in one operation, quite impossible; and a succession of shorter lifts, requiring frequent changes, would naturally be considered too cumbersome by the public who will use the tower. On the other hand, the employment of a winding engine and a lift similar to those used in mines would not be sufficiently safe, and for these reasons M. Eiffel has devised a new type of lift, in which the whole ascent can be made in one journey, while at the same time it presents absolute safety. The main idea of the lift is that of a huge screw and nut. Below the lift cage is placed a trolley, with three or more wheels running upon an equal number of rails, which ascend spirally, and thus form a screw having so many threads. The trolley will be revolved either by an electric motor or by a water engine; but the cage will be prevented from revolving by guide bars. Thus the passengers will not feel anything of the rotary motion of the trolley underneath; and by selecting the pitch of the screw sufficiently small, any degree of safety against a too rapid descent can be obtained.

**Gluing up Stock.**

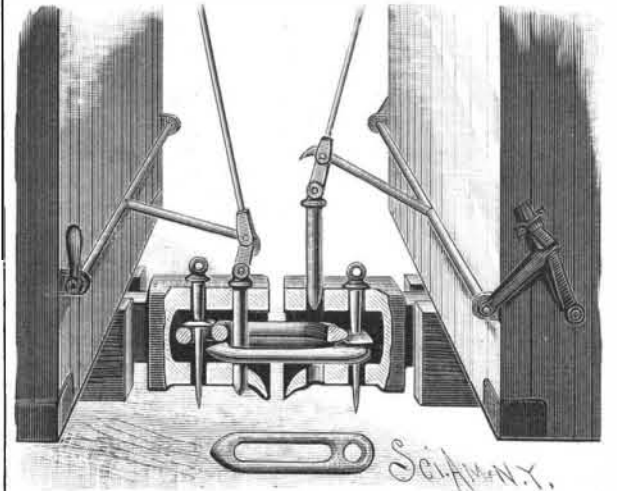
When the pattern maker is at work on a very thin pattern, he is obliged to use his stock made in two parts glued together, so as to bring the grain of the wood across each other, to keep the pattern from splitting; but there is another tendency to be provided for. A very little of the shrinkage in wood comes with the grain; it is nearly all found in its width, and the Boston Journal of Commerce says it makes one of the best hydrometers when glued together crosswise, curling and warping the stock in both ways, a feature that is not desired in pattern making. Besides, the ends are very likely to show by extending beyond the finished work as soon as the least change takes place in the absorbing of moisture; and in many respects it would be much better for the pattern if the right angle grain laying was not resorted to in the make-up of the stock. When two thin parts are to be glued together for the purpose of avoiding the tendency to split, they can be placed at a slight angle with each other, instead of at square across with the grain. This will give them all the cross laying that is required, and avoid much of the tendency to warp or shrink away from the edges.

**IMPROVED CAR COUPLING.**

The drawhead is provided with the usual link recess, and is formed with two sets of coupling pin apertures, one being arranged to receive a retaining pin formed with a tapering point, while the other receives a removable coupling pin. The latter pin is connected to an arm carried by a horizontal cross shaft mounted in brackets on the end of the car. Each

end of the shaft is provided with lever arms, one of which is arranged to engage with a notched spring, so that the coupling may be held in a raised position, as shown at the right in the engraving. The coupling link, shown in the lower part of the cut, is formed with a slot and a circular aperture through which the retaining pin passes, while the slotted end extends outward beyond the drawhead. The outer end of the link is pointed, and the forward edges are rounded off. In order to hold the link in a horizontal position, the retaining pin is provided with a flange which rests upon the link, the weight of the pin thus serving to hold the link in proper position.

By making the pins tapering, they may be firmly seated within or disconnected from the flanges. When the cars are to be coupled, the coupling pins are held in their raised position. As the cars approach, the ex-



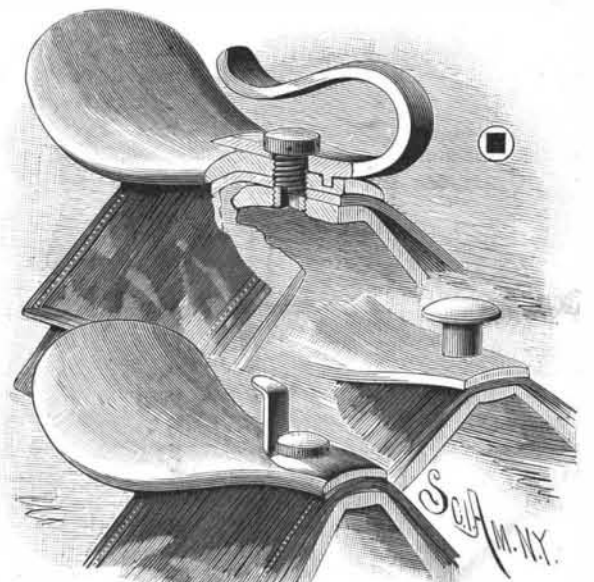
**DIETZE'S SAFETY CAR COUPLING.**

tending ends of the links will enter the recesses of the drawheads, one link riding above the other; and when they have reached the position indicated in the engraving, the levers are released from the springs to permit the coupling pins to fall through the links and couple the cars. In operating this coupling, it is unnecessary to enter between the cars either to couple or uncouple. Suitable rods are provided, in order that the parts may be manipulated from the top of the cars.

This invention has been patented by Mr. August O. Dietze, of Syracuse, Nebraska.

**IMPROVED SADDLETREE AND CHECK-HOOK.**

The saddle is fitted upon the upper side of the saddle tree, and is formed with an aperture coinciding with a screw-threaded aperture in the center of the tree. The lower portion of the check-hook fits upon the saddle, and is formed with an aperture to coincide with the two others, so that the hook and saddle may both be secured to the tree by a single screw inserted from the top. In this arrangement there is no danger of the screw working out, and it is impossible for it to come in contact with the horse's back and do injury. The head of the screw is formed with orifices for turning it beneath the upper part of the hook, and the lower end of the screw is formed with a square socket, as shown in the small cut, extending up into the screw, so that in case of breakage a square instrument may be inserted in the socket from the upper side of the tree for turning out the remaining portion of the screw, so that a new one can be turned in. This permits of having the repairing done without injury to the saddle. The check-hook is prevented from turning upon the screw by a small stud project-



**PALMER'S IMPROVED SADDLETREE AND CHECK-HOOK.**

ing from its under side, and entering a recess formed in the saddle. The two lower views in the engraving illustrate different forms of check rein holders.

This invention has been patented by Mr. D. W. Palmer, of Detroit, Maine.