

RECENT INVENTIONS.

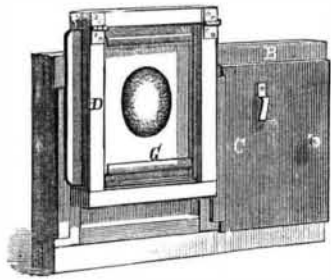
Handle Attachment for Tilting Chairs.

Mr. Charles F. Valiant, of State Centre, Ia., has recently patented a handle to attach to tilting chairs for use in raising or lowering them, as shown in the annexed engraving. The hand grasp, B, has at its ends journals that bear in sockets formed in plates, C, that are secured to the back of the chair by screws. A horn that projects from the upper end of the grasp serves as a stop for the hand of the user, and a ring at the lower end of the grasp serves as a towel holder. The handle may be attached to the back of the chair in any position to suit the convenience of the user, and by it the chair may be easily raised or lowered to its different positions by one hand only, leaving the other hand free for use for any other purpose.



Vignetting Attachments for Photographic Frames.

An attachment for photographic printing frames, by which the printing of "vignettes" is facilitated, has been patented by Mr. William L. Champlin, of Whitestown, N. Y., and is shown in the accompanying engraving. Two grooved tracks, B, are attached to the printing frame, and in these tracks a slide moves, one half of which is open, and over this open part a sliding box frame, D, is held by guide strips in such a manner that the box frame may move transversely over the slide. The inner surfaces of the frame, D, are grooved to receive the edges of the frame which carries the frame, G, of the vignetting card. By these devices the card-holding frame can be adjusted a greater or less distance from the negative, and the sliding frame, D, may be shifted to any desired position.



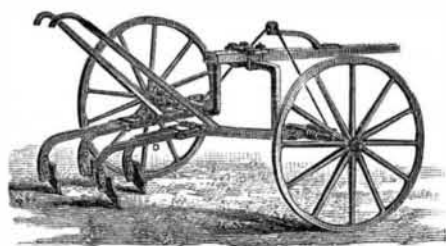
Leveling Instrument.

Mr. Frank Partee, of Defiance, O., has recently patented an accurate and simple device for determining grades. A bar is centrally pivoted on the upper end of a pointed stake, as shown in the annexed engraving, and a spirit level is fastened in the middle of the upper edge of the bar, and at its ends sight vanes are attached. A small roller is journaled in a bracket arm secured to the stake, and a pointer attached to the inner end of the roller passes over a graduated dial plate secured on the stake. A quadrant arm secured to the lower edge of the bar passes under and rests against the roller. In use the stake is driven into the ground, and the bar is leveled and then tilted to be parallel with the grade. In tilting the bar the quadrant arm rotates the roller, and moves the pointer over the face of the dial and indicates the grade per rod.



An Improved Cultivator.

An improvement in cultivators, by which a plowman is enabled to so adjust his cultivator that the shovels, when brought close together, will not be turned away from the plants, is shown in the annexed engraving. The wheels, the arched axle, tongue, plowbeams, and the shovels are of the ordinary construction. Couplings, which are made in the form of wide hooks and with flanges at the upper side of the openings, are placed upon the axle at the outer sides of its

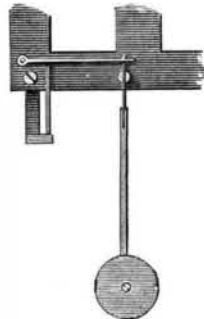


arch. Upon these couplings are flanges, to which are secured a crossbar, I, which crosses the lower part of the arch of the axle at its rear side, and to the crossbar are secured couplings attached to the forward ends of the plowbeams. The couplings are so secured to the crossbar that they may be adjusted to any desired width. With this improvement the shovels can be brought close together for cultivating small

plants, and will be in proper position for throwing the soil around the plants. This useful invention has been patented by Mr. John W. Bunch, of Commercial Point, Pickaway county, O.

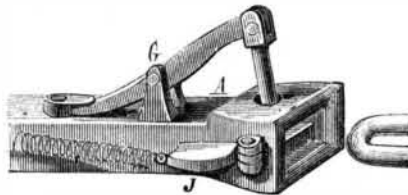
Compensating Pendulum.

Mr. James Asher, of Fort Erie, of the Province of Ontario, Canada, has recently patented a compensating device for the expansion and contraction of clock pendulums and their supporting parts, and thereby preventing irregularities in the clock movement from the expansion of the pendulum. On the front plate of a clock frame, made of brass or other metal, a pendulum is suspended by its spring from one end of a lever, pivoted at its other end to the front plate, as shown in the engraving. The spring passes through the usual split stud on the plate, the stud being the center on which the pendulum swings. A support projecting downward from the frame sustains a rod, the upper end of which touches the pendulum supporting lever at a point near its pivot. The lever is of the same metal as the frame, and the rod is of zinc, or other metal whose coefficient of expansion is greater than the metal used in its support. When the temperature falls below the normal, the pendulum rod and the plate contract, and with the ordinary construction would shorten the pendulum, but in this case the zinc rod also contracts and allows the lever to drop, and the movement being multiplied on the outer end of the lever, the shortening by contraction is thus compensated, and it will be seen that a reverse effect will take place when the pendulum and plate expand.



Car Coupling.

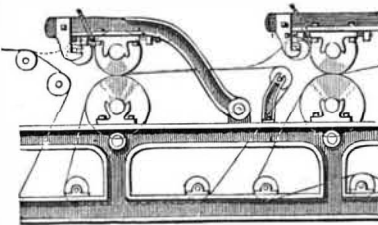
The engraving shows an improved car coupling lately patented by Mr. Thomas C. Ryan, of Fort Collins, Laramie county, Col. The bumper heads, A, are made with flaring mouths to guide the coupling link to its place. The coupling pin which passes down through a hole in the bumper head is hinged at its upper end to a lever pivoted to the upper end of a stud, G, attached to a bumper head. The lever can be readily operated to raise and lower the pin,



and levers and rods may be connected with it and extended to the tops or sides of the cars if desired. On one side of each bumper head is an aperture, within which is placed a triangular plate, J, that is pivoted at its angle to the bumper head at the forward end of the aperture, so that its inner angle can be turned into the bumper head to support the coupling pin when it is raised and the link is withdrawn. To the outer angle of the plate is attached a spring, the tension of which tends to turn the inner angle of the plate to the center of the bumper head, when the pin is raised and the link withdrawn; but when the cars are run together the end of the coupling link strikes against the edge of the plate and pushes it back from beneath the pin and allows it to drop through the link, coupling the cars.

Paper Machine.

The accompanying engraving shows an improvement in paper machines recently patented by Mr. William O. Jacobi, of Butler, N. J. It is designed to dispense with the use of roll covers in straw wrapping and board mills, and to avoid the necessity of using so much skilled labor to attend the machines. The web of the paper coming from the vat upon the felt, passes beneath the press rolls of the first press, and the paper adhering to the upper roll is carried between it and a small auxiliary roll, until it comes in contact with the edge of a doctor plate which separates the paper web from the press roll, when it passes over a cushion roll to the felt of the second press. The operation is repeated at the second press, and the paper passes to the drier felt. The web of paper being taken from the upper roll by the doctor plate, is prevented from adhering to the press rolls, and the labor and attention heretofore required to insure the passage of the web is saved. The upper rollers are journaled in a swinging frame, and to remove them it is only necessary to raise the frame, and in returning them they come accurately to their place. This construction also facilitates the renewal of the endless belts upon which the web is carried.



Book-Holder.

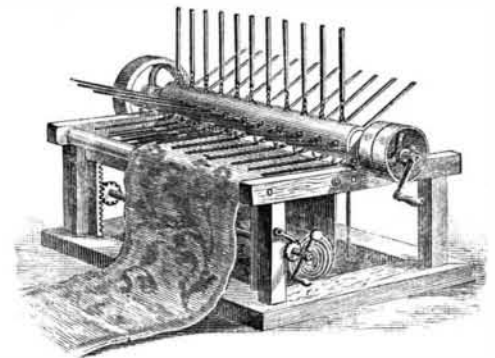
A new device for supporting and holding books for copying has recently been patented by Mr. William W. Brown, of West Union, O. Upon a suitable base plate, A, is placed another plate that is fitted so as to swing on the plate, A, around a post, C, fitted on the base plate, and supporting a horizontal bar, D, pivoted in a socket in the top of the post, as shown in the engraving. The book to be copied from



rests at its bottom near the front edge of the swinging plate, and bears across the pivoted bar, D, near its top. Clips are provided for holding the book to the bar, D, and a knob secured to the front edge of the swinging plate, at the foot of the book, prevents it from slipping from the bar when not held by the clips. When the swinging plate is turned with the book upon it the bar, D, will also turn with the book. This holder will prove a great convenience for copyists and others who are obliged to handle large books.

Carpet Beating Machine.

An improvement in machines for beating carpets has recently been patented by Messrs. Titus S. Church, of Boston, and John E. Dow, of Cambridge, Mass. In bearings on a suitable frame a revolving cylinder is journaled, having longitudinal rows of eyes placed on its outer surface. Beaters made of strips of flexible material are provided with snap hooks at one end, by which they are attached to the eyes on the cylinder. An adjustable vibrating table upon which the



carpet to be whipped is placed, is composed of a series of rods placed in a rectangular frame, this frame being pivoted to the main frame. The outer edge of the table is supported upon a board that is adapted to be moved rapidly up and down by a rack and pinion. The rapid vertical vibration of the carpet, with the beating, causes the dirt to be rapidly and thoroughly removed from the carpet.

Valuable Natural History Collections.

Arrangements have been completed for furnishing the American Museum of Natural History in Central Park with a complete collection of the mammals and birds of North America, and of the quadrupeds of the world. The mammals and birds will be the gift of Mr. Morris K. Jesup, and the specimens of the monkey kingdom that of Mr. Robert Colgate, both well known as public-spirited residents of this city. Prof. Henry A. Ward, of Rochester, has taken the contract to secure the specimens and ship them, mounted in the best manner, to the museum.

The Jesup collection will include seven or eight hundred specimens, to cost in all \$10,000. The Colgate collection will include about three hundred monkeys, apes, baboons, and lemurs, to cost \$7,000. Prof. Ward thinks that the collections can be completed in three years.

Poisonous Red in Stockings.

An English chemist, who had been called upon to analyze several socks and stockings of a red color, which had been found to cause great irritation to the skin of the wearers, discovered the cause of the trouble in the tin salt used as a mordant in fixing the dye. He succeeded in obtaining over twenty-two grains of tin in the form of the dioxide. When acted upon by acid perspiration the tin oxide forms an exceedingly irritating compound.

The Superiority of Earthworks.

The judgment of American engineers with respect to the superiority of earthworks over masonry for defense, as demonstrated during our late war, has been confirmed by the bombardment of Alexandria. A council composed of Admiral Seymour and the leading English military authorities at Alexandria, after a careful investigation of the effects of the bombardment, decided that masonry is useless against modern guns, while earthworks turn every shot.