AN IMPROVED BOOK SUPPORT.

A stand for supporting dictionaries, large works of reference, etc., and holding them in either closed or open position, has been patented by Mr. James W. Coultas, of Clinton, Ill., and is illustrated herewith.

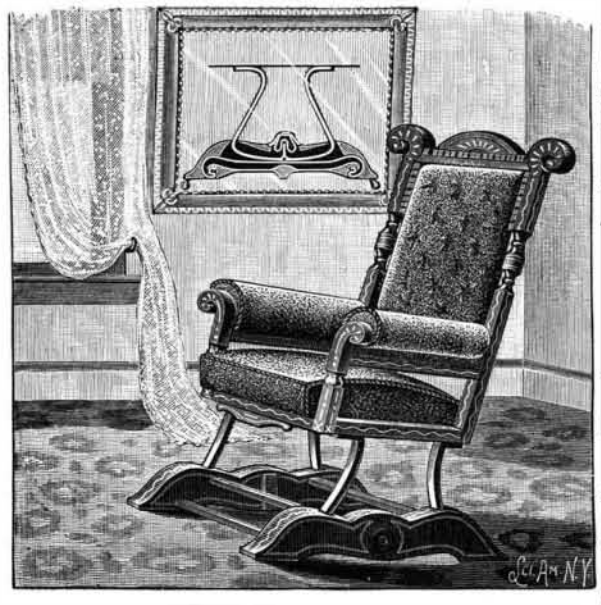
COULTAS' BOOK SUPPORT.

The standard is vertically adjusted, and has at its upper end a serrated disk fitting against and clamped to another disk carrying the book support, in such way that the inclination of the support may be changed to suit the convenience of the user. Between a plate which receives the back of the book and a frame plate are clamped the shank plates of hinges which carry the sides or leaves of the book support, the hinges being adjustable in or out to adapt the book support to receive different thicknesses of books. A spiral spring is arranged parallel and adjacent to the axial line of the two hinged plates, one end of the spring being attached to one plate and the other end of the spring to the other plate, link bars connecting loosely the opposite ends of the spring and the hinged plates, whereby the axis of the spring is thrown away from the axis of the hinge when the latter is opened and the hinge locked in open position. The book, when open, thus rests upon a solid surface, fitted to its back and sides, and is not held open by snaps or hooks.

AN IMPROVED ROCKING CHAIR.

The accompanying illustration represents a rocking chair forming the subject of a patent recently issued to Mr. Lewis C. Gunn, of Seventh and Beach Streets, San Diego, Cal. The base consists of two boxes or casings connected together by cross bars, these casings providing an interior space in which is held the rockers, the several inclosing parts being so finished as to represent a solid piece of wood. The rockers are centrally pivoted on bearings in the sides of the casings, as shown in the sectional view, the shape and size of the interior space being such as to allow free movement of the rockers, the legs of which are so curved as to permit of their free movement in slots extending up through the casing near either end. The rockers are provided with a stop, in the form of a vertical projection extending upward in a central recess of the casing. This projection has a central vertical opening at the top, in which is held a brass wedge, in a groove in the top of which rests a central cushion spring, the spring moving partly through the opening below between the sides of the projections. This spring is a narrow strip of steel, so bent that the sway of the projection backward compresses one side of the spring and opens the other, and *vice versa*, when the projection moves forward.

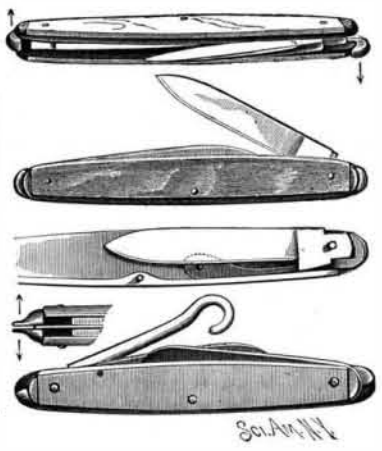
To further aid in giving the rockers an easy and yielding movement, an elastic bearing is located beneath them, consisting of a main spring with a broad fold at each end, there being a fulcrum beneath the fold at each end of the spring, where it is made fast. The length of the spring is thus made to conform to that of the curved rocker by reduction of the fold at each end. There is a strip of rubber or leather underneath the whole length of the rocker, as a sole, preventing sound and wear of the parts in moving over the spring below. It is the design of the inventor to avoid all unnecessary weight in the manufacture of this chair, the rocker being made not to exceed three-fourths of an inch in width, of a malleable casting, with long recesses to be filled by tightly-fitting wooden strips. Each end of the rocker is solid, with a hole drilled from the top to admit of a threaded bolt by which the leg is attached, the latter being of hollow wrought iron pipe.



GUNN'S ROCKING CHAIR.

AN IMPROVED POCKET KNIFE.

A pocket knife so constructed that the blades may be moved into position to be seized by the fingers without the use of the finger nails is illustrated herewith, and forms the subject of two patents issued to Mr. Arthur Wilzin, of No. 207 Center Street, New York City. The knives are not complicated in construction, and their general appearance and the form and action of the spring are very nearly analogous to those of ordinary pocket knives, the illustrations showing both two and four bladed knives. The pivotal portion of the blade has a projection, and a receding part terminating in a point or heel, their relative positions to the pivotal point of the blade being such that the projection and the heel will bear against the blade spring in the back of the knife to hold it slightly open. To hold the blade in closed position, when pressed into the handle, a locking device is provided consisting of a pin mounted on a spring arm, the pin projecting through an opening in one of the end tips. After the blade has been slightly opened by moving the pin laterally, which is done by pressing back the tip, the blade may be seized by the fingers and pulled to fully opened position, when the pin will rest against the side of the pivotal portion of the blade.



WILZIN'S POCKET KNIFE.

AN IMPROVED BINDER.

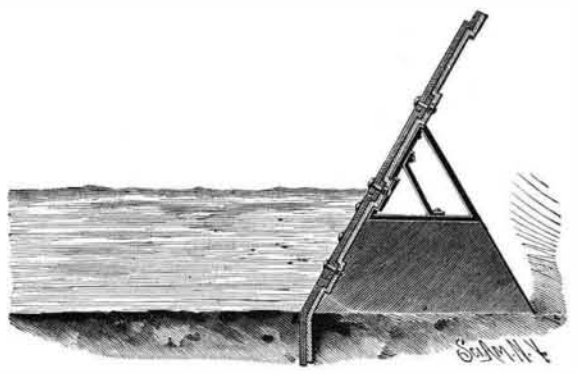
A binder or portfolio in which sheets of a newspaper, pamphlet, etc., may be conveniently bound and quickly removed when desired, and in which a sheet containing an illustration may be extended across the fold in such way that all parts will be visible, is illustrated herewith, and has been patented by Mr. Emil Wansleben. The portfolio has angled brackets attached to its inner face adapted to hold a longitudinal bar in fixed position, from which bar a series of pins is projected. A second detachable bar of equal size is provided with apertures corresponding with the pins, and upon the outer face of this bar springs are held to slide, their movement being limited by studs integral with the bar, projecting through elongated apertures in the springs. One spring is placed between each two apertures in the detachable bar, and a semicircular recess is formed in each extremity of the spring adapted to bear against the pins on the fixed bar when the device is in use. The springs are slightly bowed, and are expanded by sleeves sliding over them upon the detachable bars. The needle employed consists of a strip of wire bent upon itself to form a series of staples corresponding to the number of pins on the fixed bar.

For further information relative to this invention address Mr. Henry Rohr, St. John, Kansas.

MR. JOSEPH M. GRIGGS, general ticket agent of the Boston and Albany for about 24 years past, has resigned, and is succeeded by his son, George B. Griggs, who has been in the service for several years. The retiring general ticket agent has been in the service of the Boston and Albany and its predecessor, the Western Railroad, for 47 years, having begun in 1842. He was for a long time cashier of the road, and before that was local ticket agent.

IMPROVED PROTECTOR FOR DIKES OR LEVEES.

A removable shield or protector, which may be placed at points of danger in dikes or levees in times of high water, in order to prevent disaster, is illustrated herewith, and has been patented by Messrs. James M. McLemore and Charles D. Jones, of Coushatta, La. The shield is made in sections of cast or wrought iron, bolted together, each of the sections being formed with a rabbet, on which the overlapping section fits to make a smooth front and a water tight joint. This shield is applied to and extends below the water front of the levee, as shown in the sectional view, where four of these sections are used. The shield is backed by the front wall of the levee, but extends above the crown of the latter, where it is strengthened by braces firmly bolted or otherwise anchored. This shield can be used upon either old or new levees, and when used in new constructions allows a much smaller quantity of material to be employed than ordinarily.

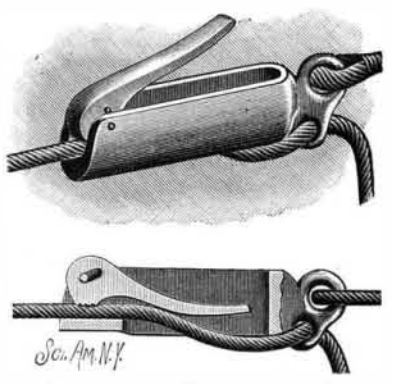


McLEMORE & JONES' LEVEE PROTECTOR.

AN IMPROVED ROPE CLAMP.

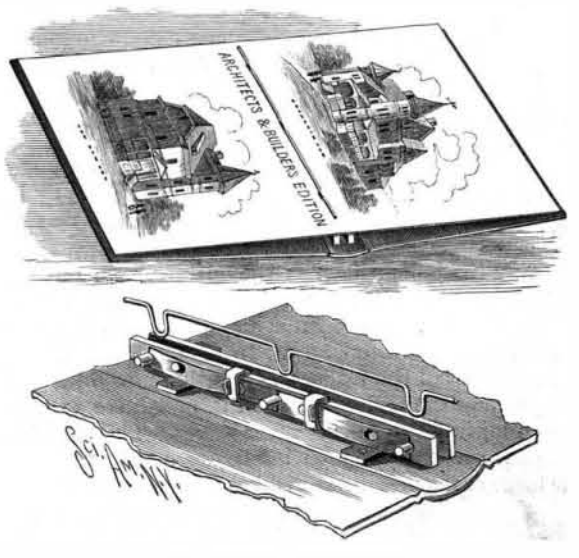
A simple form of clamp, especially adapted for use on clothes lines, tent ropes, etc., is shown herewith. It has been patented by Mr. S. William Conklin, of Yonkers, N. Y.

The frame of the clamp is preferably made of malleable cast iron, in one end of which is pivoted a clamping lever, formed with an eccentric notched upon its lower surface to engage the rope. The clamping lever has an inclined slot for its pivotal pin, so that any strain upon the rope will tend to draw the lever forward and force it downward upon the rope, thus increasing its holding action. The opposite end piece is formed with a ring by which the clamp is secured to one end of a rope, and also a lower ring through which the opposite end of the rope is passed after being drawn through the open space back of the clamping lever.



CONKLIN'S ROPE CLAMP.

IN a recent lecture at the Society of Arts on the Forth Bridge, Mr. B. Baker described a practical method he had adopted for the purpose of determining the effective area of the bridge exposed to a wind pressure striking the work at different angles. A model of the bridge was made and towed in water at different angles to the stream; the area of a flat board normal to the current was then determined, which exerted the same drag as the model. This area was then taken as the effective area of the bridge for the particular angle at which it was towed.



WANSLEBEN'S BINDER.