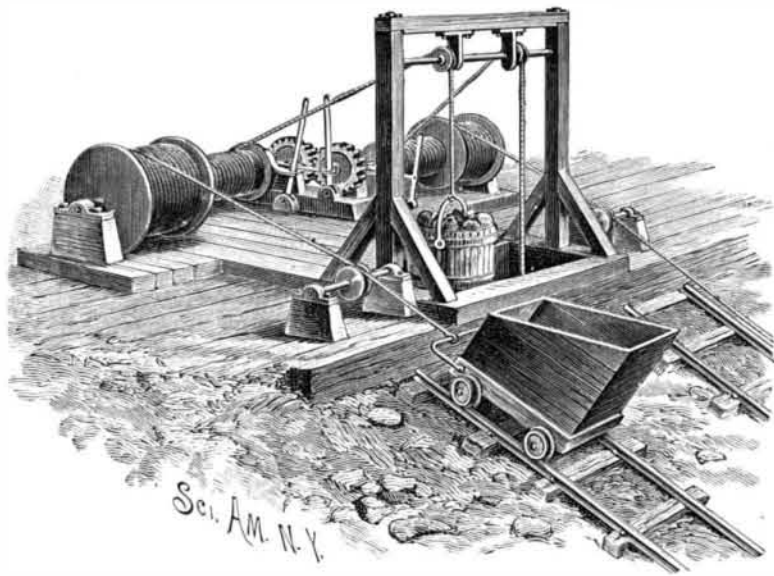


**A SIMPLE AND EFFICIENT GRAVITY HOIST.**

The apparatus shown in the illustration is especially adapted for use in sinking deep wells and shafts, and may be employed in elevating and disposing of material taken from mines, and for many similar uses. It has been patented by Mr. William J. C. Doyle (box 874), Aspen, Col. The drums or windlasses of the apparatus are carried by two shafts geared together at their inner ends, each shaft carrying two drums, one of

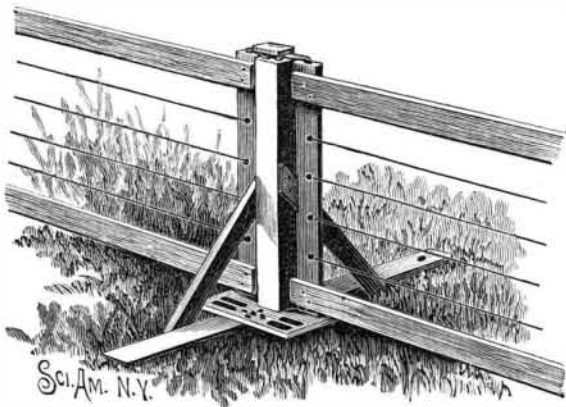


DOYLE'S GRAVITY HOISTING APPARATUS.

which is larger than the other. On the smaller drums are wound the hoisting ropes, which pass over pulleys on a shaft in a suitably constructed frame, and are connected with the buckets traveling in the well or shaft, the arrangement being such that when one bucket descends the other one rises, and *vice versa*. On the larger drums are wound cables connected with cars traveling in opposite directions on inclined tracks, the cables and the hoisting ropes being so arranged, relatively to each other, that when an empty car is at the upper end of the incline a filled bucket will also be at the top of the shaft, in position to be conveniently emptied into the car, the downward travel of each filled car along the inclined road exerting a pull on one of the ropes on the large drums to cause a filled bucket to be raised, while at the same time an empty car is drawn up and an empty bucket let down. A brake band is provided for each shaft, operated by a lever conveniently arranged, and, that the two shafts may be readily disconnected, for lengthening or shortening the cables or other purposes, their inner bearings are fitted to slide, and are each connected by a link with a lever pivoted on the frame, by means of which the bearings may be moved to disengage the gear wheels. The construction is very simple, and the hoisting work is all the time under the control of the operator.

**AN INEXPENSIVE PORTABLE FENCE.**

The fence shown in the accompanying illustration is designed to be staunch, durable, and of inexpensive



HARRIS' PORTABLE FENCE.

construction, and capable of being quickly and easily set up on even or uneven ground. It has been patented by Mr. Charles E. Harris, of Brandon, Manitoba, Canada. The post from which the fence sections are supported is secured to a block or plate attached to a bed-beam, beveled under at each end, and having end apertures in which a hook may be inserted for convenience in moving the beam over the ground. The block or plate on the bed-beam has near each end a series of slots and central apertures, each adapted to receive a tongue on the lower end of a post of a rail section. The body section and the bed-beam section of the post are connected by braces, and the top of the post has three or more triangularly arranged recesses, and is covered by a metal plate with apertures corresponding to the recesses, there being arranged upon the plate an angular cap mounted to swing horizontally. The fence sections may be made in any approved manner, but the end posts of each section have recesses in their upper

ends, and their lower ends are provided with integral or attached tongues. In erecting a fence, the tongue on the lower end of a section post is placed in one of the slots of the plate on the bed-beam nearest the main post, and the upper end of the post is connected with the top of the main post by a staple, the cap being first swung to one side, and when the staples have been forced down into place the cap is carried over them, preventing their withdrawal. If the ground is slanting or uneven, the end post of the section may be placed in one of the other slots of the bed-plate, and where another fence intersects the first one at an angle the end post of the diverging fence will be placed in one of the other apertures. It will be seen that a section of this fence can be easily removed to make an opening to an inclosure, while the whole fence can be quickly taken down and set up again.

**Concrete Buildings.**

The members of the Technical Society of the Pacific Coast lately went to Palo Alto on the invitation of E. L. Ransome, who has nearly completed two large concrete buildings for the Leland Stanford, Jr., University. One of these is the girls' dormitory. The larger one is the museum building, and is the finest piece of building concrete work yet done in this vicinity. The structure is absolutely fireproof, and intended also to be earthquake-proof. It is built on the system patented by Mr. Ransome, so as to be a homogeneous structure as to walls and partitions, there being no joints. Twisted iron rods are used for additional strength where necessary. The cement is mixed in the Ransome patent mixer and elevated to points where used. A large force of men has been at work on this building for some time and it is now almost complete. Even the interior arches and ceilings are of concrete.

The stairways are made of concrete, and these will be covered with marble steps. The hallways will be finished in marble over the concrete. There is no wood anywhere in the building, the window frames, etc., being of metal. The exterior is furnished with a smooth coat of cement to resemble brownstone. The heavy columns of the entrances are, like the main structure, of concrete, and the statuary to surmount the building is moulded of the same material.

There are two concrete buildings now and others are to follow. They were built by contract by Messrs. Ransome & Cushing in an exceedingly short space of time. Stone buildings of equal dimensions would have taken three or four times longer to construct.

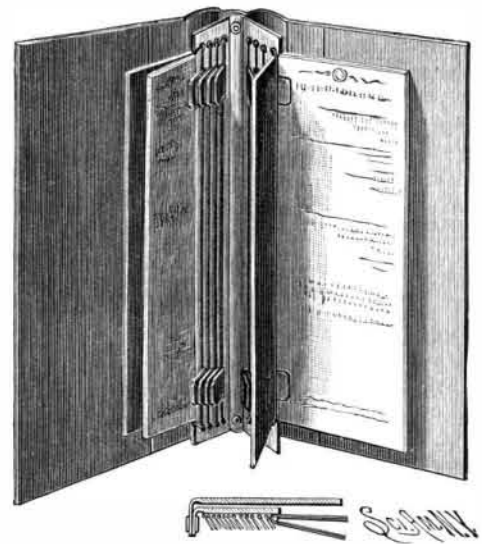
**A PORTABLE HOIST FOR HEAVY ARTICLES.**

A hoisting machine designed to travel on rails, for conveniently lifting heavy articles to and from cars, ships, warehouses, yards, etc., is shown in the accompanying illustration, and has been patented by Mr. Ed. Burns, Superintendent of the Berlin and Montello Granite Co., works at Montello, Wis. The machine is employed in handling all sizes of stone to and from the stone cutters, and is said to have proved its superiority to any kind of traveler hoist or previous means employed in this kind of work. Centrally on a platform car is a plate on which turns the base of the hoist, the base having a downwardly extending pivot passing through the plate and having a nut at its lower end abutting against the under side of the platform. On the base are lugs in which is pivoted the lower end of the boom, as shown also in one of the small views, the boom having, just in advance of its pivotal point, a short foot or bracket in which are journaled rollers adapted to travel on a circular track. The hoisting chain, passing over the pulley on the outer end of the boom, is wound or unwound from a hoisting drum of any approved construction on the base of the hoist. On the under side of the platform, near each end, are guideways adapted to support a beam, which may be drawn out to rest on blocks, the beam being extended to that side of the car on which the boom

projects, to prevent the car from upsetting or leaving the rails, when a heavy article is being lifted. One of the small figures represents a special device to hold the car to the rails. It consists of an arm fastened by a key to the car timbers, the lower end of the arm being formed into a hook to engage one side of the head of the rail, the other side being engaged by a hook pivoted to the arm and locked in place by a wedge. The boom and hoisting drum can, with this improvement, be readily turned in any direction, carrying the load with ease and perfect security, while the construction is simple and durable.

**A BINDER FOR PAPERS, MAGAZINES, ETC.**

This binder, which has been patented by Messrs. James Fitzpatrick and John Ring, is designed to provide a convenient means for removably securing papers, pamphlets, etc., within permanent covers, the device being of very simple and durable construction. The cover has a flexible back, centrally in which an auxiliary back is secured by means of rivets, the auxiliary back comprising two rigid side board sections and an intermediate section, united by any approved form of hinge. When the sides are of pasteboard or similar material, covered with canvas, the fabric may be continued from one side to the other, thus forming a flexible intermediate portion. In each side of the auxiliary cover, at the ends, is a series of eye-letted openings, through which cords are run longi-

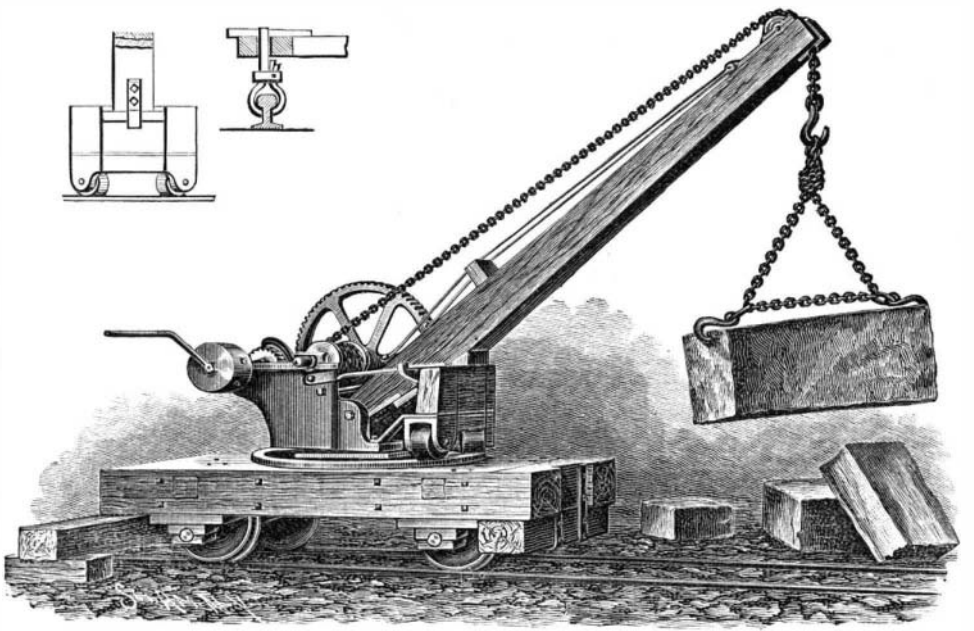


FITZPATRICK AND RING'S BINDER.

tudinally across the inner face of each side, the cords being simply looped upon the under face of the sides of the cover at both ends. Wire may be used instead of an ordinary cord if preferred, and attached to each strand or cord, at top and bottom, is a two-leaved tab, a sleeve uniting the leaves, whereby the tabs may be slid up and down on the cords, to accommodate pamphlets or papers of different lengths. The leaves of the tabs are covered on their outer faces with mucilage or other adhesive, and the paper or pamphlet to be introduced into the binder is opened in the center and passed half way under one of the cords, when the tabs are cemented to the central leaves, the paper being thereby re-enforced at the top and bottom edges, while the inserted publication is held in the position in which it is placed.

Further particulars with reference to this improvement may be obtained of Mr. John Cassidy, Nos. 221 to 225 Fulton Street, New York City.

To make a good sticky fly paper, mix by heat 3 1/2 ounces raw linseed oil, 1 pound resin, and add 3 1/2 ounces molasses. Apply to paper while warm.



BURNS' PORTABLE HOISTING MACHINE.