

To Preserve California's Big Trees.

The Fifty-first Congress, during the closing days of its first session, set apart more than a million acres surrounding the Yosemite valley as a public pleasure ground under national control. By another act of about the same date a tract in California much smaller in area, but covering groves of extraordinary importance, was made a reservation also. To this Second park the name of Sequoia has been given by the Secretary of the Interior, for the reason that the giant trees there were so named by Endlicher, "in honor of a most distinguished Indian or half-breed, the inventor of the Cherokee alphabet."

The origin of this legislation is interesting. Last August Dr. Eisen read before the California Academy of Sciences a paper setting forth that the big tree forests of the Sierra Nevada were in danger of total destruction. This body at once called the attention of Congress to the subject in a memorial, asking that all lands in California containing the Sequoia gigantea should be withdrawn from entry, and also that two canyons of especial beauty and grandeur—one on the south fork of King's River and the other on the Big Kern—should be set apart as national parks. The memorial proceeded to give the reasons:

"These forests, or rather groves of big trees, very limited in extent, are isolated one from the other, and situated near the head waters of certain streams at an altitude between 4,000 and 7,000 feet. The number of trees in each grove varies from 100 to a few thousand trees. The average size of the big tree is from 15 to 20 feet in diameter at the base and 200 feet in height, but single trees reach 300 feet in height by 30 to 42 feet in diameter. The beauty of these sequoias as well as of the forest surrounding them is indescribable, and superior to any forests elsewhere on this earth. A tree recently cut measured $41\frac{1}{2}$ feet in diameter, 250 feet in height, and the rings in its wood numbered 6,126. Allowing one ring for each year, this tree was already 2,000 years old when the pyramid of Cheops was built, and it was over 4,000 years old at the beginning of the Christian era. Only one more tree of this size exists, the largest other tree being little more than 30 feet in diameter.

"The preservation of these trees is of national importance, not only on account of their influence upon the climate and watershed for the irrigation of the land below, but also because of their great beauty,

curiosity, and rarity. They are the last remains of a gigantic creation which has now mostly disappeared and which is fast being exterminated from the face of the globe. The sequoia trees are rapidly dying out and few young or medium-sized trees are found in or outside of the old groves. There are few trees which are less than ten feet in diameter.

"At a recent visit to one of the lumber mills we found millions upon millions of feet of lumber rotting on the ground. Generally only a very small part of each tree is used for lumber, the balance is left to rot. Trees from 30 to 40 feet in diameter have been cut for curiosity's sake, in order that a small section might be exhibited and a few hundred dollars gained. Of other trees a small section is cut out for lumber, the balance is fired in order to get it out of the way and make room for new logs more readily managed."

To the special plea for the park was added the possibility of securing at the same time more than fifty imposing peaks from 10,000 to 15,000 feet in altitude, crowned by Mount Whitney; the glaciers on the flanks of Mount Goddard and the Palisades; the Tehi-pitsee Yosemite, on King's River; the Grand Canyon of the South Fork, with the cascades; the stupendous cliffs of the Kern; the extinct volcanoes; the Shagoopa Falls, with their wonderful descent. This appeal was heard by Congress, and the tract constituting the Sequoia National Park was set apart, and therewith another tract in the Fresno region of Sequoias, containing the great tree popularly known as the General Grant.

Kola Nuts.

In the SCIENTIFIC AMERICAN of September 13, 1890, we gave an interesting article, by Consul Pike, on the kola nut, its uses, characteristics, and value. Recently, in London, one of the chief dealers in kola nuts, Mr. Thos. Christy, was sued on a disputed bill for a quantity of the nuts which he had purchased. In the course of his testimony as a witness, Mr. Christy gave the following: I have had nine or ten years' experience in kola nuts. Until a year ago all the kola nuts which came into Europe passed through my hands. I pointed out to the plaintiffs when they offered the nuts for sale that mouldy nuts were useless, and that I must have them fresh. The nuts are used medicinally, also for refining beer. The nuts prevent people going on drinking. (Laughter.) It makes people nauseate. If

a man is lying insensibly drunk on the floor, or under the table, and a nut were put into his mouth, in fifteen minutes the man would rise, and one would not know he had drunk. He would not even have a headache. Even if within four or five days he went to take spirits again, the effects of the nut would still produce a nausea in his throat and mouth. (Laughter.) This was a well-known scientific fact. As the nuts are used medicinally, it is an important matter not to have them mouldy. A kola nut, when once it becomes mouldy, changes its character and becomes a fungus. They are then of no use.

How to Unite the Ends of Lead Pipe.

What may be found a convenient method of uniting the ends of pipe, the *American Engineer* thus explains: Whatever the size of the pipe may be, procure a block of hard wood, say four or five inches long, and four inches in diameter, bore a hole straight through the center, so nearly the size of the pipe that the block can be driven on the end of the pipe with a light hammer. If one has a set of auger bits, it will not be difficult to select a bit of the proper size to make a water-tight fit. Let the block be driven clear on the pipe, so that the end of the pipe will be flush or even with the end of the block. Now place the two ends of the pipe together and drive the block off one pipe on the other, until the joint will be at the middle of the block. If the hole in the block is made of the proper size, the block will fit so closely that the joint will be water-tight; and if the ends of the pipe are dressed off true and square the joint will be so strong that it will sustain the pressure of a head or column of water one hundred feet high. Iron pipe may be united in the same manner. Should the joint leak a trifle, let shingle nails be driven into the wood around the pipe so as to press the timber firmly all around the pipe.

ACCORDING to an amendment of the school laws of the State of Michigan, children suffering from consumption or chronic catarrh must be excluded from public schools. The circumstance is interesting as a first step toward the public recognition of a most important truth, the fact, namely, that the disorders of the respiratory organs can be propagated by direct contagion, and that the atmosphere of a consumptive's sick room, unless constantly ventilated, is apt to become a virulent lung poison.

RECENTLY PATENTED INVENTIONS.**Railway Appliances.**

LOCOMOTIVE CAB SEAT.—Edward M. Stannard, Appleton, Wis. By this invention a frame is supported yieldingly above a base, with an upholstered seat, and an adjustably connected upholstered back, the whole arranged after a novel plan, to provide a portable, inexpensive, and comfortable seat for the engineer of a locomotive.

RAIL CLEANER AND LUBRICATOR.—Horace T. Currie, Albina, Oregon. This invention consists of nozzles connected with a liquid supply on the locomotive and adapted to be projected within a short distance of the rails, to remove the sand from the rails at the rear of the driving wheels, and to lubricate the rails, to permit the car wheels to run smoothly.

Agricultural.

SHOCK COMPRESSOR.—Joseph C. Vail, Maple's Mill, Ill. This is a device having a pointed shaft to thrust into the body of the grain, with a cross bar handle for turning it, while a cord is connected with the shaft and drawn tightly around the shock as the shaft is turned, to compress and bind the shock ready for tying.

HAY PRESS.—Frank Donald, Denison, Texas. This is a press of novel construction designed to work easily and rapidly, and to operate in such manner that the hay cannot clog it, the plunger or follower being automatically reciprocated by a continuous motion of the main pulley, while the tension is very easily regulated.

Miscellaneous.

WHIFFLETREE COUPLING.—John J. Kocher, Los Angeles, Cal. This invention covers a novel construction and combination of parts by which it is designed to avoid the difficulties incident to the use of the ordinary whiffletree bolt, such as its twisting or breaking and the bolt getting loose, the construction affording interlocking portions which keep the whiffletree snugly in place and yet permit the necessary play.

HAME HOOK.—William J. Dankworth, Gatesville, Texas. This hook is composed of two members hinged together and adapted to be clamped upon a hame staple, one of the members having a pin adapted to project into an opening in the opposite member, the construction being strong and simple and the hook quickly and easily applied to securely hold a trace.

TETHER PIN.—Loris P. Carl, Perris, Cal. This is an adjustable pin with a swivel device for the connection of a tether rope thereto in a manner designed to avoid the fouling of the tether, the device being simple and inexpensive, and affording means for quickly securing the halter or tether rope to the ground at any desired point.

MARTINGALE ATTACHMENT.—Stillman E. Mathews, Fullerville, N. Y. A rigid bar has a fork at one end carrying a bit to be connected to a

bridle, a sleeve adjustable on the rod being attachable to a breast collar or strap of the harness, to coact with the ordinary riding or driving bridle and afford means to control the head of the animal and hold it up as desired.

LEGGIN HOLDER.—Alfred Steiner, New York City. This holder consists of radiating limbs with hooks adapted to engage the marginal edge of the foot-covering portion of the leggin, the device being cut or stamped from thin sheet metal, and to be worn on the bottom of the sole, to hold the front portion of the leggin down, and thus afford complete protection to the entire foot.

CARPET OR OIL CLOTH STRETCHER.—Andrew R. Anderson, New York City. The stretcher bar has at its rear end a presser plate and at its forward end a fixed clamping jaw, a relatively moving clamping jaw being pivoted to the stretcher bar, an operating lever being connected by a link with this jaw, making a device which can be quickly and easily adjusted to stretch oil cloths or carpets without injury.

ANTI-FOULING PAINT.—Nicholas B. Denny, London, England. This is a paint for the protection of ships' bottoms or other submerged surfaces of metal or wood, and is made of sulphate of zinc, sulphate of mercury, oxide of iron, oxide of copper, zinc slag, metallic zinc, tannin and other ingredients, in proportions stated, and mixed and applied in a manner described, being designed to be very effective and durable.

DOOR HANGER.—Johnson B. Flanders and John M. Smith, Toledo, Ohio. This is a device specially adapted for hanging the sliding doors of railroad cars, gates, etc., and is of very simple and inexpensive construction, and is not liable to get out of order, or clogged up by ice or snow to bind on the guide rail.

FIRE ESCAPE.—Henry C. Moir, Sydney, New South Wales. Combined with an endless guide rope adapted to run over pulleys on the outside of a building is a basket of asbestos or other fireproof material, connected to one end of a rope whose other end is attached to a spring drum on the inside of the building, with other novel features, to facilitate the escape of the occupants from the upper stories of a burning building.

ENVELOPE.—Herman A. J. Rieckert, New York City. This envelope has openings in its back and cover flap, and a separate flat strip adapted to engage the openings to interlock the back with the covering flap, serving to prevent the opening of the envelope by steaming or otherwise and afterward resealing it, making an article especially designed to safely contain valuable documents, and preclude the contents being meddled with by unauthorized persons.

FISH HOOK.—Joseph Stretch, Newark, N. J. This hook has two jointed hook portions with their barbs concealed when in closed adjustment, but adapted to open and spread when the bait is seized by the fish, whereby the capture of the fish is rendered more certain, while the device is simple in form and inexpensive to manufacture.

ANIMAL TRAP.—Henry H. May, New Albion, Iowa. According to this invention a turnstile

contained in the trap is designed to act automatically the moment the platform is pressed, and before the bait is touched, to force the animal from the platform into a cage or prison compartment, the turnstile automatically setting itself for a repetition of the operation with the entrance of the next animal.

THILL COUPLING.—Lorenzo C. Mills, Stony Brook, N. Y. The axle bracket has a head block with a slot the top portion of which forms a pintle, while the thill iron has an extension with a recess on its under face, and a spring on the thill projects through the slot of the bracket, whereby the thills may be readily attached and detached, the construction also forming an anti-rattler.

END GATE FASTENING.—John J. Cook, Columbus Junction, Iowa. Combined with a rocking plate and locking bars pivoted thereto is a lever with opposite cam faces adapted for engagement with the pivoted ends of the locking bars, forming a simple device to be applied to any vehicle, whereby, on the manipulation of a lever, the end gate may be released or locked in position.

ANTI-FRICTION BEARING.—Phineas Arnold, Canal Dover, Ohio. This is an improvement especially designed for use with the axles or shafts of wheeled vehicles, two sets of friction rollers with spherical ends being arranged within the journal box, one set of rollers being separated from the other by a central steel washer, and there being also washers at each end of the box.

HOLDBACK FOR VEHICLE POLES.—Henry W. Roberts, Cheboygan, Mich. The pole iron is made with a raked surface, and the holdback with a corresponding surface, with means for adjustably attaching it to the pole iron, the device being attachable to all sorts of vehicle poles to bring animals of different sizes into the same relation to the load without changing the length of the tugs.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

SCIENTIFIC AMERICAN BUILDING EDITION.

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1. Handsome colored plate of an elegant residence on Riverside Avenue, New York City. Cost \$60,000 complete. Floor plans, two perspective elevations, etc. Mr. Frank Freeman, New York, architect.
2. Plate in colors showing an attractive cottage at Maplewood, Chicago. Estimated cost \$3,000. Perspective view and two floor plans.
3. A cottage at Rutherford, N. J., erected at a cost of \$6,000 complete. Perspective elevation, floor plans, etc.

4. An elegant residence at Chestnut Hill, Pa., recently erected for Mr. Alfred C. Rex. Cost \$30,000 complete. Floor plans, perspective elevation, etc.
5. Sketch and floor plans of a residence at Stockton, Cal. Estimated cost \$10,000.
6. Cottage at Englewood, Chicago. Perspective view and floor plans. Cost \$4,200.
7. Residence on Powelton Avenue, Philadelphia, Pa. Cost \$30,000 complete. Architect Thos. P. Lonsdale, Philadelphia. Floor plans, perspective elevation, etc.
8. A cottage at Jackson Park, Chicago. Estimated cost \$4,000. Floor plans, perspective elevation, etc.
9. Cottage on Munroe Avenue, Chicago. Two floor plans and perspective view. Cost \$900.
10. Residence at Wayne, Pa., from plans prepared by W. L. Price, architect, Philadelphia. Cost \$7,000 complete. Floor plans, perspective view, etc.
11. An attractive country church of moderate size recently erected at Glen Ridge, N. J. Estimated cost about \$15,000. Perspective view and floor plan.
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13. A stable combining both beauty and convenience, erected for Mr. A. C. Rex, at Chestnut Hill, Pa. Cost \$1,800. Plans and perspective.
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