

**A NOVEL SELF-CLOSING GATE.**

An invention has recently been patented by Dr. Peyton B. Green, of Wytheville, Va., in which a simple and ingenious device is provided for closing a gate automatically.

Referring to the accompanying engraving, it will be observed that, on the top bar of the gate, a roller is journaled which is engaged by an inclined rod fulcrumed at its lower end on a fixed support set at a proper distance from the hinge-post. A weight is held on the rod and can be fastened in any desired position by means of a set screw. To prevent the rod from leaving the roller when opening and closing the gate,



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the bracket in which the roller is journaled is provided with a loop.

When the gate is swung open, the free end of the rod travels over the friction-roller and assumes nearly a vertical position. As soon as the gate is released, the weight of the rod pressing against the roller closes the gate. By changing the position of the weight, the gate can be closed with more or less force.

**A GREAT RAFT OF PILES ON THE PACIFIC.**

The largest marine structure that ever entered the bay of San Francisco arrived in that port the first of August. It consisted of an immense raft of piles, ten thousand in number, which had been chained together at Stella, State of Washington, a point about seventy miles from the mouth of the Columbia River. The dimensions were: Total length, 600 feet; breadth, 50 feet, with a depth of 45 feet. The 10,000 piles, which varied in length from 30 to 90 feet, were from 12 to 18 inches in diameter at the butt. The raft drew 30 feet of water, and it contained upward of 5,000,000 lineal feet of timber. The distance from starting point to destination is about 700 miles, and 5½ days' towing was employed in bringing it to port.

To transport the same number of piles by steamers would have employed twenty at least, of the ordinary size. The journey from the shipping point was made without accident, owing to the unusually favorable weather, and the successful result of the venture has encouraged the Northern timber dealers in continuing this method of shipment.

Owing to the excellent financial results of rafting, attempts have been made in past years to introduce this method on the Pacific coast. So far five attempts have been made, and success has attended three of them. One grounded on the bar at Coos Bay and another was lost at sea. This last was far and away the largest yet attempted and will be succeeded by another fully as large. Shipments of piles only have so far been made in this way, but it is the intention to experiment in shipping lumber either sawed or in the rough, the saving in freight alone allowing a margin for large losses.

The method of building these rafts at Stella differs radically from that pursued at the East, when the attempts were made to raft timbers from Nova Scotia to Eastern ports. The Canadians constructed theirs upon ways built upon the land, which were launched when

completed, just as vessels are in Washington. However, the rafts are constructed in a different manner. First of all a cradle is built of the length of the proposed raft, with side timbers of about 20 feet in height, separated from each other by blocks. The interior of this cradle is of the shape of the raft, largest in the center and tapering to a point at both ends. By means of an engine and tackle the piles are hoisted over the sides of the cradle and land in their proper places by hand. When the raft is built up to one-half the proper height, a chain cable, 2 inches in diameter, is stretched from end to end, and at every 10 feet a chain is made fast to the central cable and extended to the outside, where two ends are fastened to the cable which surrounds the raft. The strain by this connection extends from the central to the outside chains and adds to the rigidity and strength of the whole. Sixty tons of chain, in separate lengths of 50 to 150 feet and 1½ inches in diameter, were used. The outside was surrounded by these cables at intervals of 10 feet.

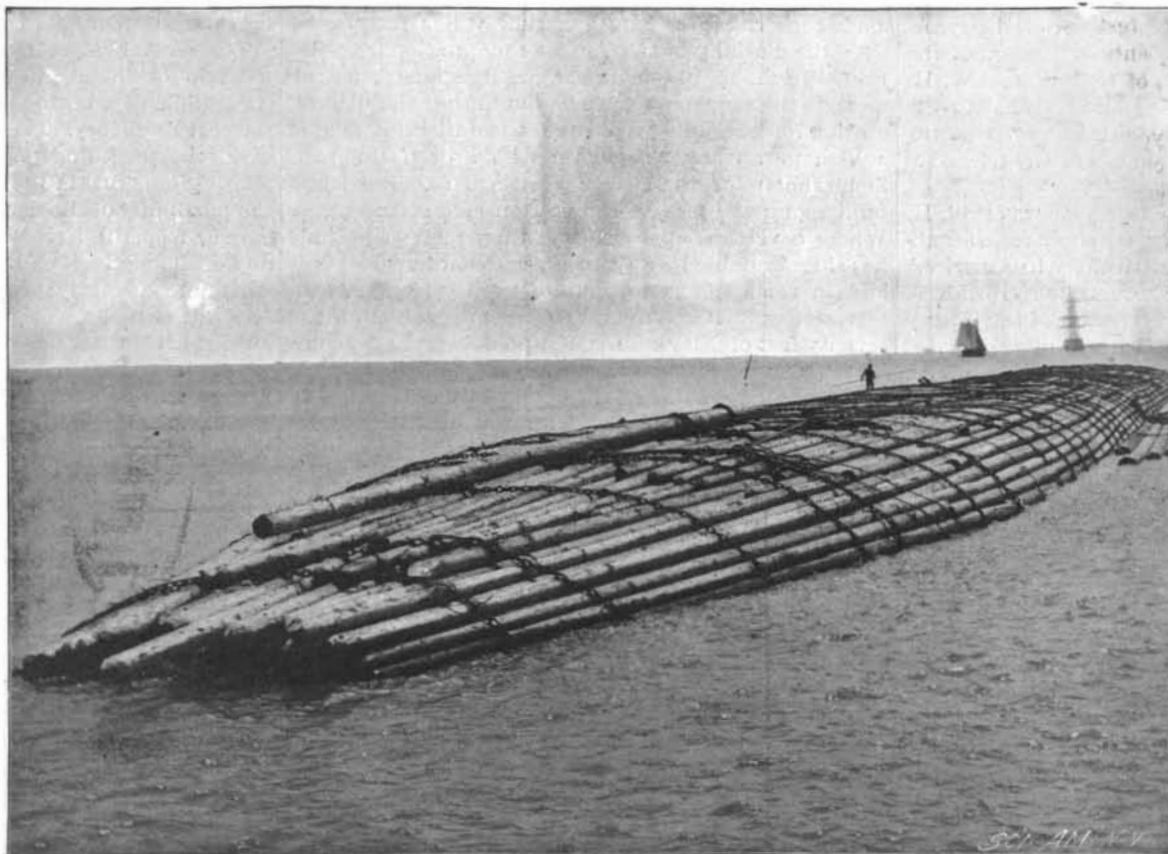
The stretching of the cables around the outside is not accomplished until the whole structure has been built up. At every 10 feet between the timbers of which the cradle is constructed a wire is stretched around the raft. The end of the chain is fastened to the end of the wire, and is thus drawn around the raft and fastened at the top.

The cradle timbers, after the raft is finished, are drawn from either side of the raft, which rests upon the water, ready for towing.

The timbers are again set up, and the building of a new raft begun.

**The Coldest Country in the World.**

Symon's Monthly Meteorological Magazine gives an interesting account of "Life in the Coldest Country in the World," which has been taken from the bulletin of the Royal Geographical Society of Irkutsk. The name of the place is Werchojansk, in Siberia, longitude 133° 51' E., latitude 67° 34' N., where the lowest temperature of minus 90° Fah. has been observed, and the mean of January is minus 48° Fah. It is inhabited by about 105,000 persons of the Jakut and Lamat races. In a large part of the region, according to Prof. Kovalik, the air is so dry and the winds are so rare that the intensity of the cold cannot be fully realized. In the most distant part of the East there are sometimes terrible storms, which are most fatal to life in their consequences. During the summer time the temperature occasionally rises to 86° Fah. in the shade, while it freezes at night. The latter part of the season is often marked by copious rains and extensive inundations, which invariably lay waste a vast acreage of land and prove to be a serious obstacle to the cultivation of the soil. Vegetation is very scanty. There are practically no trees—only wide, open meadows. The people hunt fur-bearing animals, fish, and raise cattle and reindeer. It requires about eight cows to support a family, four being milked in the summer



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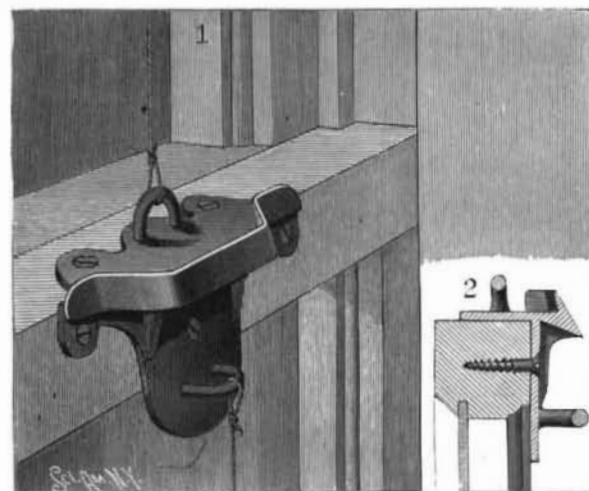
Length, 600 feet; breadth, 50 feet; depth, 45 feet; number of piles, 10,000; total amount of timber, 5,000,000 feet, B. M.

and two in the winter. The cattle are very small in size, and are fed with hay in winter. Occasionally they are allowed to go out when there is the slightest break in the weather, but their teats are always carefully covered up with felt. Milk is the principal food. This is sometimes supplemented with hares, which are quite abundant, but not very relishable. The houses

are constructed of wood covered with clay, and, as a rule, consist of only one room, in which the people and animals live together. The upper and wealthier class are better provided with lodging and food. As a race they are exceedingly courteous and very hospitable, and they are excessively punctilious concerning points of honor, such as the proper place at table and at festivals.

**AN IMPROVED WINDOW-SASH-LIFT.**

The sash-lift pictured in the engraving is designed to be attached to a sash in order to facilitate the opening and closing of the window. The device can be readily applied and is designed to prevent the acci-



**GREEN'S WINDOW-SASH-LIFT.**

dental breaking of the glass by the slipping of the hook or pole used for raising and lowering the window.

Of the accompanying illustrations, Fig. 1 is a perspective view showing the device attached to a sash. Fig. 2 is a central cross section of the lift.

The device comprises a plate or shield which is attached to the top rail of a sash. This shield has an outwardly extended flange engaging the upper surface of the sash rail. On this flange a stop is formed in the form of a staple or loop, serving the dual purpose of preventing the hook or pole used from slipping and striking against the glass of the upper sash, and of offering a means for attaching a cord by which the sash may be raised when it is not desired to use a hook. Extending inwardly from the upper end of the plate or shield is a ledge having its under surface downwardly and inwardly inclined. This ledge is designed to be engaged by a pole or hook for the purpose of raising the sash, the inclined under surface preventing the hook from sliding outwardly; by providing the plate or shield with brackets, the raising instrument is prevented from sliding laterally. Around the upper inner edge of the ledge is an upwardly extended flange designed to be engaged by a hook or pole for the purpose of lowering the sash. Extending outwardly from the plate or shield is a stop in the form of a staple or loop which, like the first mentioned stop, serves the purpose of preventing the hook or pole from slipping and of offering a means for attaching a cord for the purpose of lowering the sash. This window-sash lift is adapted for use in factories and shops where obstacles such as work benches are usually placed near the window, rendering access to the sashes difficult. Since under these circumstances workmen usually employ a rod or pole to open a window, a device like the one described would lessen the danger of breaking the glass.

The attachment described is the invention of William H. Green, 323 Fulton Street, Elizabeth, N. J.

**Another New Element — "Xenon."**

At the meeting of the British Association, which was held this year at Bristol, England, it was announced that on September 8, Prof. Ramsay and Mr. Travers had discovered another elemental gas which they called "xenon." It is found to possess a spectrum analogous to that of argon, but the position of the lines differs materially. It seems to only exist in minute quantities.