

side with the excavated material was unsuccessful. Notwithstanding the large size of the pieces blasted out, they were removed by the waves in very short order. By the exertion of much effort and skill the large derrick was landed and set in place, the mast being forty-five feet high and the boom seventy-five feet long. Another large derrick, four small ones, and a large engine for operating them, were also landed. The material used in constructing the works was 5,914 cubic feet of first-class ashlar stone, 2,880 of second-class ashlar, 96,664 brick, and 7,635 cubic feet of sand. These were all prepared and shipped ready for use, and landed from the deck of the vessel by the large derrick.

It is unnecessary to follow step by step the construction of this important station, nor to give in detail the thousand obstacles that presented themselves and were overcome by patience and skill. Enough has been told to give all that was intended, an idea of the expense, danger and difficulties attending the light house system. The work was completed and the light first exhibited January 21, 1881, and the machinery was placed in the fog signals three weeks later. Supplies are now landed by means of the derrick, as shown in the engraving, and a safe anchorage will soon be made near enough to the rock for convenient working of the derrick and far enough from it to escape danger from the swell. Considering the increasing commerce of the Columbia river and the northwestern coast, the light house at Tillamook may be reckoned as one of the most important stations ever established; and by giving it telegraphic connection with Astoria its usefulness may be vastly increased, as then vessels arriving outside can be informed of the condition of the bar, while owners and tug boats inside can be notified of their arrival and if necessary go to their assistance without delay.

STEAMBOAT PASS.

Puget sound, with its long branching arms, its islands, capes, bays and wooded hills, its background of timber-clad mountains, and snow-crowned peaks, is one of the most beautiful bodies of water in the world. It is one immense harbor where all the ships of the world can anchor in safety and not obstruct the channel. So deep is it and so abruptly do the shores rise from the water, that in many places there is no anchorage near the bank. Steamers wind in and out of the long projecting rocks, now disappearing around some jutting headland or verdant island, now in the broad open bay and then darting through some narrow, rocky channel just wide enough to admit of their passage, constantly revealing new beauties to the traveler at every turn, and making his voyage a succession of lovely pictures. The Steamboat pass, of which we give an engraving, is a narrow channel between the rocks and islands near the foot of the sound, and is used by steamers and small vessels as a "cut off" from the regular route. The water is deep and to a vessel propelled by steam and guided by a skillful hand the passage presents no dangers. As the boat approaches, it seems as though it was being run full tilt upon the rocks, and the stranger, unaware of the passage, sees nothing but wreck and disaster before him. Suddenly a little opening appears, and into this the vessel glides, following a narrow channel well known to the pilot until it again passes out into deep water on the other side. This is but one of the many incidents that make a journey on that inland sea so full of interest to the traveler.

TRANSPORTATION.

The Pacific Coast Steamship Co. has chartered the *Mexico* and placed her on the route from San Francisco to Puget sound, to accommodate the increasing traffic.

The Bellingham Bay & British Columbia R. R. Co. has been incorporated with a capital stock of \$1,000,000, to build a line from Whatcom to a point on the Canadian Pacific about thirty-six miles east of Burrard inlet.

An extension of the California Northern railroad is now being surveyed from Oroville, California, passing through Butte, Plumas, Lassen and Modoc counties to Goose lake. Its route beyond that place and its objective point have not yet been announced.

The Southern Oregon Improvement Co. has elected W. H. Besse, of New Bedford, Mass., president; Jonathan Burne, Jr., of Portland, vice president; William Roach, of Boston, treasurer; Cecil Holcomb, secretary. Work on the railroad from Roseburg to Coos bay will be commenced immediately.

On the extension of the Oregon and California the Grave creek tunnel has been completed. It is 2,110 feet in length. The long tunnel at Cow creek, this side of the other one, will be finished in a few weeks, and then track-laying can be pushed on to Rogue river valley without interruption. Work on the great tunnel through the Siskiyou mountain has been commenced in earnest.

Work on the connecting link between Portland and Kalama is progressing rapidly. An incline has been constructed from the road to the river at Columbia City, up which two locomotives have been taken to the track, and track-laying has been commenced at that point. It is the expectation to have the road completed in time for Mr. Villard's through train, the first week in September. Coffin rock, seven miles below Kalama, is the point finally chosen for crossing the Columbia. The transfer will be made on barges for a few months, until the mammoth ferry boat is put together by the contractors.

There were entered and cleared in the district of Puget sound, at the custom house in Port Townsend, during the fiscal year ending June 30, 1883, a total of 1,314 vessels, aggregating 813,962 tonnage. Of these 288 sailed coastwise, and 1,026, with a tonnage of 543,815, entered and cleared foreign. This is exceeded by only three ports in the United States and shows at what rate commerce of the northwestern coast is developing. Lumber and coal are the staple articles of export, but there will no doubt be a large increase in the wheat shipments during the next few years.

The Oregon Short Line is making satisfactory progress westward. Passenger trains have been running to Little Canyon creek, fifty-two miles west of Shoshone, for several weeks, and by the first of August will be running to Rattlesnake creek. It is now the expectation to reach the point of junction on Burnt river some time in December. The survey down the Snake has been completed from the mouth of Burnt river to Lewiston, a distance of 187 miles. The maximum

grade is less than twenty feet, while the average grade for the whole distance is but seven feet. The engineer estimates the cost at \$2,805,000 or \$15,000 per mile. What all this surveying will result in is a mystery to the uninitiated.

Captain H. H. Pierce and Lieutenant Rodman started from Vancouver early in July with a detachment of the 21st Infantry, to explore a new pass through the Cascades east of Bellingham bay. The pass was partially explored by Captain Pierce last summer, and the guide who now accompanies the party asserts that he will conduct them through a pass far superior for railroad purposes to the Snoqualmie, Stampede, Naches, or any other yet found. If such a route exists it will no doubt be utilized by some of the lines seeking an outlet on Puget sound, and the Whatcom country will then realize the fruition of its dearest hopes. Captain Pierce, who had been in ill-health for some time, died in the mountains a few days ago, and the exploration is now being continued under the direction of Lieutenant Rodman.

Colfax and Moscow are jubilant over their railroad prospects. The former city has been selected as the point of junction of the Moscow branch of the Palouse road, the line to run up the South Palouse instead of diverging on Rebel flat as at first surveyed. For this consideration the people of Colfax donate to the company the right of way from that place to Pullman and 240 acres of land adjoining the city on the north, for depot, side tracks, shops, etc. The citizens of Moscow have donated 470 acres of land, 96 town lots and the right of way to Pullman, for which they have received assurances that the road will be extended to that city by the first of January if possible. Contracts have been let for the material required for the large grain elevator to be erected in Moscow this fall.

Though no large ship yard exists at Seattle, there is considerable activity displayed there in building the smaller craft that ply upon the waters of the sound and along the coast. The *Kate Vansandt*, a stern wheel steamer 112 feet long, was recently launched from T. W. Lake's yard, and will probably be placed on the route between Seattle and Whatcom. Another steamer, the *Bob Irving*, 85 feet long, is being constructed in the same yard, to ply on the Nooksack and other rivers emptying into the sound. J. F. T. Mitchell's yard has just turned out the little tug boat *Tillie*, 65 feet long. The *J. C. Brittain*, the hull of which was built a year ago at an expense of \$5,000, will be completed at once. She is 130 feet long, twenty-six feet beam, and will be a first-class passenger and freight boat. As to the prospects for ship building, Mr. Lake says, if he had a company with a capital of \$100,000 to back him, he could build vessels of any description, either iron or wood, for service on the rivers of the sound or at sea, and build them so well and for so little money that Seattle would soon compete successfully with the greatest ship building ports in the world. There is a great demand for ship and boat building there, but he is without the capital for constructing the larger classes of wooden and sea-going vessels. There is a great demand for first-class ship carpenters and builders Seattle.