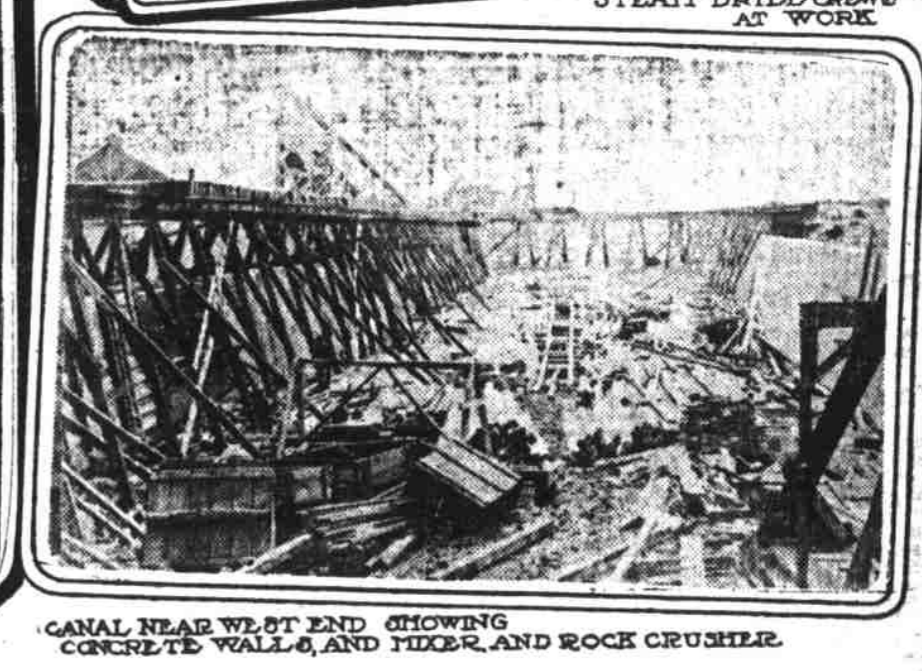
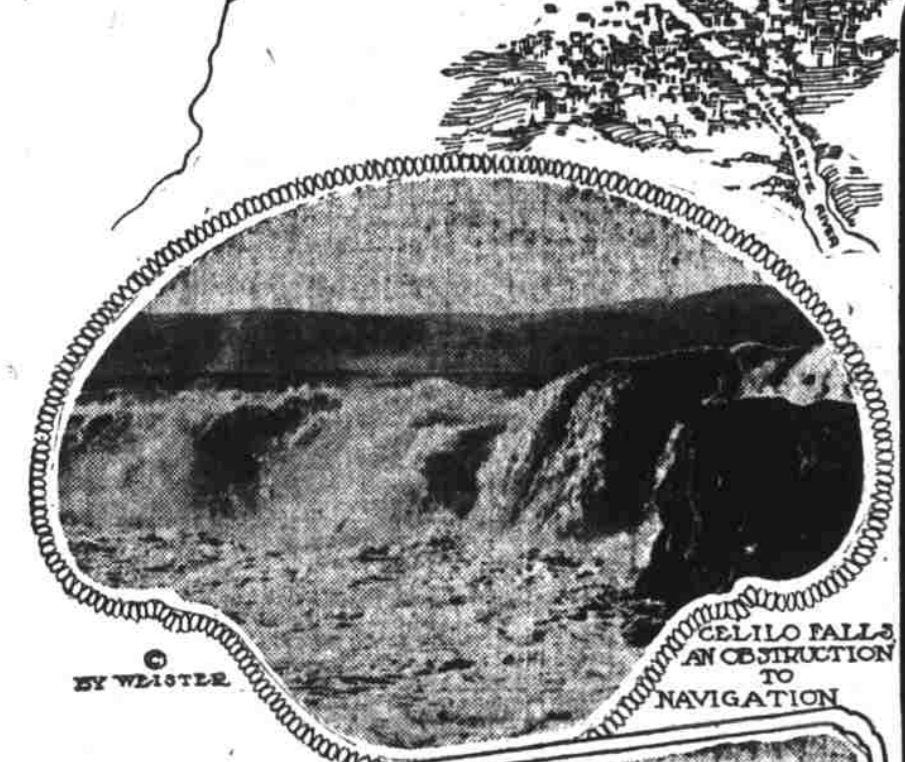
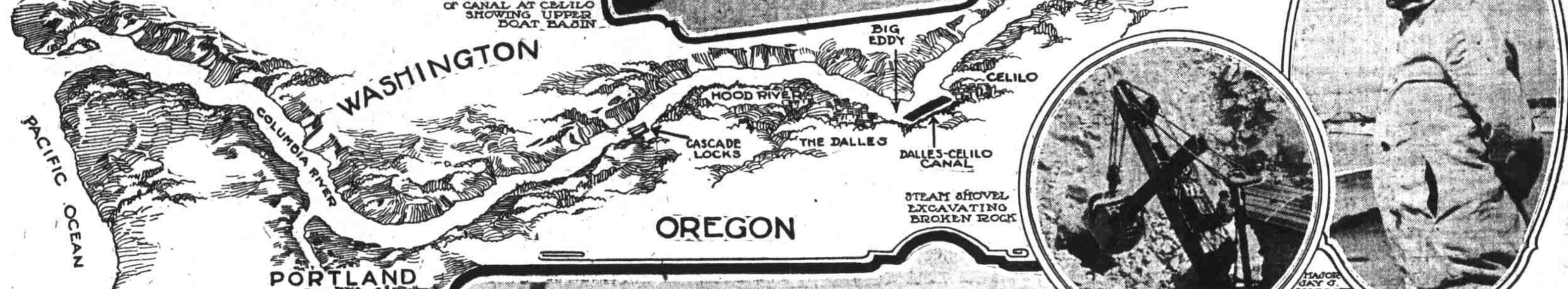


# ALTERING NATURE TO SUIT MAN'S NEEDS

The Dalles-Celilo Canal—An 8½ Mile Channel Now Being Carved Through Rock In Interest of Commerce At Cost of \$4,500,000



(Written Exclusively for The Journal.)  
**I**N ORDER to alter nature's handicraft and adapt it to the needs of man, the federal government is expending approximately \$4,800,000 to overcome the obstructions in the Columbia river in its turbulent 12 mile course between the foot of Threemile rapids and the head of Celilo falls. This gigantic effort to surmount natural obstacles includes, besides the open river improvement at Threemile rapids, the construction of the Dalles-Celilo canal—a 6½ foot waterway, eight feet deep and eight and one half miles long, which alone will cost \$4,500,000 when completed and take several years in the building, in the meanwhile giving employment to an army of men that varies in numbers from 500 to 1000.

Once in operation this inland waterway will permit continuous navigation of the Columbia river from its mouth to Priest Rapids, above Pasco, Wash., a total distance of 400 miles, and to the Grand Ronde above Lewiston, Idaho, on the Snake river, a total distance of 470 miles. With possibly one exception, this is the greatest single inland waterway work now being conducted by the government within the United States proper, and when once adapted to the ends of commerce it will exercise an immense influence in the commercial upbuilding of the vast region to whose immediate markets it will bring uninterrupted water transportation facilities. The benefit to be derived will include not only the improved steamboat traffic to up river points, but also the effect that water transportation, independently operated, ever has in compelling lower railroad rates to and from competitive points.

**Water and Freight Rates.**  
 The direct effect of water transportation upon producers is shown by the wool movement on the Pacific coast. At the present time the Idaho woolmen have a suit before the Interstate Commerce Commission in which they complain that water is not a compelling force in the reduction of freight rates. By way of illustration, however, a few figures will suffice to show the effect of water transportation even under present conditions.

From The Dalles, for instance, the through water rate to Boston for wool in bales is in round numbers 71 cents per hundred pounds, by rail \$1.18. On scoured wool the water rate is 71 cents and the all rail rate \$1.80. Going farther back in the interior, from Lewiston to Boston, the rate on wool in bales is \$1.15, by rail \$1.85, a saving of \$0.70. From Baker, where a high local rate prevails to Umatilla, where wool may be put on boats bound for Portland and thence transported to Boston by water, the combined rail and water rate on wool is \$1.40; the all rail rate \$1.82. Even under such adverse conditions there is a saving of 42 cents per hundred. It appears that all over this section the rate on wool is necessarily affected by water transportation. The consequence of a canal will be that there has been much wool

shipped by water to Boston this year. With the improved water transportation facilities that the canal will afford, Portland will become a greater distributing point for all that great interior district in the Columbia river basin. As it is, Spokane merchants making sales in Lewiston find it more advantageous to ship their goods from Portland by water than from Spokane by rail. And Seattle, Tacoma and San Francisco merchants do likewise in the cases of Pasco and Kennewick.

The existing canal project was approved by congress March 3, 1905. Since that time it has been pursued almost continuously, at first by contract and at present by hired labor and the purchase of materials. To date approximately \$1,500,000 has been spent on the canal which is about one-third completed. Were the \$3,000,000 that will be required to finish the work forthcoming in two equal annual installments, it is estimated that the canal would be ready for service within three years. As it is, however, with congress appropriating \$600,000 at a time, it doubtless will be five years before the date of completion.

**Canal Fruit of Years' Effort.**  
 Behind the construction of the Dalles-Celilo canal is years of agitation and concerted effort on the part of those interested in river navigation. Arrayed against these was the powerful influence of certain interests, representing the railroads and others who successfully prolonged the struggle for this huge waterway improvement. During the years of work for some scheme of improvement, three different methods of passing the rapids were evolved, two of which were later discarded as impractical. The first project, as adopted in 1894, contemplated the construction of a boat railway capable of transporting boats of 600 tons. Two hundred and fifty thousand dollars were appropriated for this purpose. In 1900 a preliminary examination and survey was authorized which proposed the construction of a short canal and locks around The Dalles of Five-mile rapids, and another around the falls of Celilo with intermediate river improvement at an estimated cost of \$4,000,000. The existing project as adopted by congress in 1905 provides for a continuous canal on the Oregon shore between the pool above Celilo and the pool below Five-mile rapids with open river improvements at Threemile rapids. As subsequently modified in minor details the canal will have five locks, two at the lower end of the canal at Big Eddy, one at Tenmile rapids and one at Celilo falls.

There are four great obstructions to navigation that are to be overcome—Threemile rapids, a crooked channel 1500 feet long that is narrow and rocky; Five-mile rapids, where for the distance of a mile and a half the river rushes with great velocity between precipitous walls of basalt 150 to 300 feet apart; Tenmile rapids, a similar gorge

but only one-half mile in length and Celilo falls with a sheer fall of 20 feet. The total fall is about 81 feet at low water and 60 feet at high stages. But at no time can the river be navigated in this vicinity. At the present time it is necessary for river cargoes to be transported between The Dalles and Celilo on the Oregon State Portage railway. During the years of 1905 to 1909 inclusive, this line carried 42,510 tons of freight having an estimated value of \$1,829,550. Of this gross amount 25,482 tons valued at \$1,023,185 were carried in 1909 alone, this being the first year that large boats were put in the upper river.

**A Miniature Panama Canal.**  
 An inspection of the work impresses one with the magnitude of the task, which presents many of the essential details of a miniature Panama canal. Major Jay J. Morrow, corps of engineers United States army in charge of First Portland District River and Harbor improvement, has general supervision of the work having under his orders Lieutenant H. H. Robert, corps of engineers United States army, who directs the work on the ground.

A journey of 100 miles eastward from Portland on the O. N. R. & N. brings one to Big Eddy several miles above The Dalles where the main camp is located. Here one finds the offices, shops, quarters, mess houses, bunk houses and other structures, all temporary, but capable of housing and carrying for the hundreds of men engaged in the work. Lieutenant Robert has almost a score of employes, clerks and the like, in his offices together with the necessary engineers and others. Within all is business, without all activity—the aim being to construct this great ditch with dispatch and economy. There are two other important camps located at convenient stages along the line of the canal with a full complement of engineers in charge.

Located at Big Eddy are the machine and blacksmith shops, of goodly proportions, where, among other things, the necessary repairs are made to the equipment which includes three 60 ton, one 40 ton and one 30 ton steam shovels, 14 locomotives, 100 dummy cars, 10 derricks, 30 steam drills, etc. A vulcan land dredge is employed which is one of the two largest in the United States being a self propelling machine with a 65 foot dumping radius and a 25 foot lift.

The provisions made for the housing and feeding of the hundreds of employes is quite interesting. The main mess house seats 240 men at a time and is adjacent to the kitchens, of which the leading features are a cold storage plant and a portable oven having a capacity of 120 loaves. In an adjoining building is located a branch of the Y. M. C. A. with a secretary in charge. During the evening hours the billiard and pool room and reading and writing room are crowded with men.

Another structure houses the hospital with a resident physician and trained nurse in charge. A complete rock crushing plant is used, among other purposes, for the manufacture of sand necessary in the concrete work. It is an odd prank of nature that the huge sand in the dunes that are repeatedly piled up by the wind along the river in this neighborhood are totally unfit for construction purposes.

**Great Tandem Lock Cut.**  
 To return to the canal proper. The lower end of the ditch is at Big Eddy. And here perhaps is the most interesting feature of the work at the present time. A great 700 foot cut, shown among the accompanying pictures, has been blasted through solid rock for the accommodation of the "Tandem lock" which will cost \$132,000 to install. Half of this great cut extends 70 feet below the water level and the other half 35 feet. The greater part of this cut has been made. Here the boats entering from the lower river will be raised 70 feet. To one standing on the upper edge of this great cut and looking down into it, the scores of workmen below appear as pygmies, in contrast with the giant rock walls on either side. The other three locks, that will be installed near the upper end of the canal, are more for convenience than to lift the boats to higher levels. Just east of the "Tandem lock cut" excavations are being made for the lower boat basin where craft bound in opposite directions may pass each other.

A ride over the Portage railroad between Big Eddy and Celilo on one of the government engines gives the observer a comprehensive idea of the progress of the work. For miles the line of the canal stretches away in some places through solid rock and in others through less formidable formations.

The upper end of the canal for a distance of three miles, including the upper boat basin, is about completed. Part of this is lined with cement and ready for the installation of locks and in others through less formidable formations.

**Rock Excavation Proceeds.**  
 Near Tenmile rapids rock excavation is proceeding satisfactorily. It is intensely fascinating to watch the great steam shovels stick their noses into the loosened rock, raise it to the accompanying snorts of the mechanical monsters and deposit it on the waiting dump cars. These in turn are hauled by dummy engines to a neighboring sand plain and unloaded. The crushed rock is then spread out as a blanket over the sand. This is an essential feature of the work, since it had been anticipated that the drifting sand would cause an end of trouble to the canal. It has

**Estimated Cost of Dalles-Celilo Canal and Work at Threemile Rapids**

Excavation.	Cost.
Rock, 1,141,930 yards	\$1,151,300.00
Gravel, 660,760 yards	267,850.00
Sand, 360,640 yards	89,510.00
Concrete, 123,400 yards	815,370.00
Reinforced concrete lining, 98,050 yards	980,500.00
Riprap, 67,500 yards	75,150.00
Steel reinforcing	3,202.50
Overhaul of material	60,000.00
Sluice gates	10,000.00
Reclamation work	4,000.00
Bridges	8,000.00
Locks.	
Celilo lock	\$ 77,000
Tenmile lock	55,000
Five-mile lock	60,000
Tandem lock	192,000
Total, locks	384,000.00
Shops, tools and quarters	45,000.00
Work at Threemile Rapids	152,448.00
Engineering contingencies, etc.	796,776.50
Total	\$4,843,107.00

**Jim Patten, Humanitarian—Continued From First Page of This Section**

"Oh, Agnes has been home for some time. Poor girl, she made a great sacrifice for her brother's sake. What was the trouble? Well, my oldest son has been seriously ill; for that matter, we expected the worst. Agnes has been very much attached to her brothers, and we thought it best to let her know. She threw up her books and came straight home. She refused to leave his side and stayed with her mother and attended to the boy. We could sympathize with her, and didn't have the heart to make her go back to college, for she was worried about him."

Is it a pleasure for wealthy men to give money away? Did you ask if there was much happiness in it? Then Mr. Patten's face shone, his blue eyes twinkled. "Say, I've known men who thought that they were going to carry their money to the grave with them. Yes, sir; that's just the way they looked. What good will it do them or any one else? They have no joy in life. How much better would they feel if they would let others have the benefit of it once in a while? Why, it would make different men out of them. You can't imagine how much happiness there is in giving money to help others. When a man reaps a harvest he should spend his time in judiciously giving it away."

Perhaps Mr. Patten's own life of hard work is behind the advice he gives. He went up the ladder rung by rung, and he was not afraid to go back a bit to prepare for a fresh start when occasion demanded. His father, Alexander Patten, was the proprietor of a large general store at Sandwick, Ill., where he was born. The elder Patten died when "Jim" was in his teens. The family moved to Chicago, and James attended the Northwestern university for two years. He lived at Evanston with his uncle, Governor Beveridge, who helped him with his books.

Next he started his battle with the world. He "hired out" to a storekeeper at Sandwick, Ill., at \$25 a month. Out of this he paid his board and bought his clothes. The next year he got another position at \$40 per month, and he saved \$100.

In 1874 Governor Beveridge appointed him a grain inspector. He held the job for four years, but he became so interested in grain that he changed his \$1000 a year position for one that paid \$7 a week in a board of trade firm. Later he went in business with his brother George. In 1893 he joined the firm of Bartlett, Frasier & Carrington. Later the firm became Bartlett, Patten & Co., and when Mr. Patten retired it took the name of Bartlett, Frasier & Co. Mr. Patten has a magnificent home at Evanston, Ill., which cost \$100,000. He is very popular in his home town, and once had the distinction of being its mayor.