

AGENTS. THOS. SMITH, Rossburg, Douglas county. STEPHEN RADON, Pleasant Hill, Lane county.

THE Scientific American FOR 1873.

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DR. E. Y. CHASE, DR. W. L. COLLETT, Surgeon U.S. Volunteers. J. QUINN THORNTON, ATTORNEY AND COUNSELOR AT LAW.

The Contest in Illinois. The farmers of Illinois are fighting a battle in which they deserve not only the co-operation of all the farmers throughout the land, but also the support of the whole newspaper press.

BENTON COUNTY.—The Democrat, June 21, says the building of the farmers' warehouse in Corvallis has been commenced.

Corvallis College closed its labors for the school year of 1872-'73 on the 18th inst. The baccalaureate sermon was preached on Sunday by Rev. E. J. Dawne, of Salem.

Under the institution of "local option" laws in rattlesnake regions, there has been an alarming increase in the number of persons suffering from the bites of those venomous reptiles.

Grand Jury Report. JUNE TERM, 1873. We the Grand Jury of Marion county, State of Oregon, having disposed of twenty-five cases brought to our notice, and completed our labors, respectfully make the following report:

1st. We have visited the State Penitentiary and report the same in good condition, the discipline excellent, the convicts healthy, cleanly and orderly.

The Farmers' State Convention. REPORT OF THE ENGINEER OF THE W. F. C. & L. CO. ENGINEER'S OFFICE, W. F. C. & L. CO. Mr. B. Goldsmith, President W. F. C. & L. Co.—DEAR SIR: I herewith submit the following statement as to points presented in your letter of January 17th:

1st. The total length of the Willamette Falls Canal and Locks is 3,600 ft. Consisting of approach to first or north lock 200 ft. Four lift locks, 210 feet long, 40 wide, 10 deep 840 ft. Canal north of guard lock, 60 to 100 feet wide 1,273 ft. Guard lock, 210 feet long, 40 wide 210 ft. Canal and basin south of guard lock, from 80 to 250 feet wide 1,077 ft. Total 3,600 ft.

The four lift locks are what are called combined locks, the lower gate of one serving as the upper gate of the lock next below. The walls are 10 feet in height above the locks' floors, 5 feet wide on the top, with a batter of 3 inches to the foot, founded in all cases on solid rock, through which the locks are cut.

The masonry is laid in hydraulic cement, with no intermixture of lime. Above the guard lock, the wall on the east side is of lumber, the bents five feet apart, and each bent bolted to the rock by three iron rods extending the full length of the braces.

The maximum depth of water is 3 feet, and when the depth in the canal above the guard lock is less than this the guard lock gates are left open, but for greater depths boats must lock through.

Boats can now pass through with a depth of 15 feet of water on the upper guard lock gates, and it is designed to add an additional rail, so that they can be passed through with 17 1/2 feet of water.

2d. The number of lineal feet of masonry and wood-work, exclusive of 800 cubic yards of foundation walls, and fenders of the five locks are as follows:

Table with 2 columns: Item and Quantity. Masonry, lineal feet 1,138; Wood work (canal walls) above the guard lock 1,042; Wood work (canal walls) below the guard lock 1,192; Excavation, rock, cubic yards 48,603; Excavation, loose rock 1,334; Excavation, earth 1,629; Masonry, 1st class, cubic yards 900; Masonry, 2d " " 4,123; Masonry, 3d " " 700; Filling in gulch north of guard lock, composed of rock 20,900; Cement, lbs. 4,123; Lumber in gates, canal walls, fenders, etc., ft. 1,226,000; Iron for gates, lbs. 180,700; Bolts for canal walls, fenders, etc., lb. 71,000.

This does not include iron used in machinery, derricks etc., or steel, but only the iron placed in the works. 4th. The waterpower is almost unlimited in quantity. The lowest depth of water, above the guard lock is 4 feet 6 inches, and this only at extreme low water.

This could be doubled or trebled by taking the water from above the guard lock. Between the guard lock and the entrance to the locks below the Falls, there are over 2,000 feet of shore line with a width back of from one to three hundred feet, all well adapted for manufacturing purposes.

2,800 cubic yards of excavation at \$2.50 \$7,000. Gates and wood-work 1,500. Purchase of site 1,000. Contingencies 1,000. Total estimated cost \$10,500.

than \$7,000, but to make a more accurate estimate, it would be necessary to make a survey and determine the relative amount of earth and rock in the excavation and also the quantity. 5th. The works I consider to be in excellent condition.

7th. For the first four or five months there will be necessarily some work to be performed which belongs more properly to construction than to maintenance. After that I think \$600 per annum will cover the ordinary repairs.

8th. There is no question but that freight can be taken through the canal and locks at lower rates than by rail or through the works at Oregon City.

In a densely populated country, with level grades, railroads may compete with steamboats, but when the quantity is comparatively small, and the grade such as on ordinary roads, the cost of river or canal navigation is not more than half what it is by rail.

In the report of the New York State Engineer for 1869 the following statement is made as to comparative cost of freights by canal and rail:

It is true that the comparatively small amount of freights in the country would not justify the above rates, but the diminished quantity would be more to the disadvantage of the railroad than of the river navigation.