

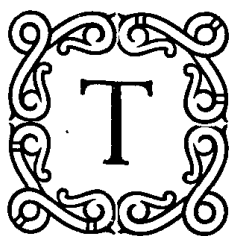


FILLING TOPOGRAPHERS' GULCH IN THE CASCADES.

Hydraulic methods are here employed to make a fill 232 feet deep and 200 feet long, asserted by engineers to be the biggest in the world.

# RAILWAYS DIVIDE A NEW KINGDOM

By WILLIAM THORNTON PROSSER



TWENTY-FIVE years ago a party of distinguished foreign financiers, noblemen and diplomats, accompanied by their friends and notable American public men, all in charge of the country's then most prominent railway promoter, boarded a series of special trains at New York, Chicago and St. Paul for the first official trip over the new Northern Pacific railway, which crossed the continent to the Pacific northwest. Gradually the rails of this new transcontinental system had been extended westward over stretches of waving grain, then barren plains and deserts, bad lands and mountain ranges, until after a distance of 2,000 miles it formed the longest link in a highway from ocean to ocean. The leader of that famous expedition was Henry Villard, whose far-sightedness into the future of the West had brought to realization his dream for the completion of this great project.

Filled with pride and elation at the triumph of the undertaking, these cars bore upon the journey as they left the east capitalists from Germany, Belgium and other European countries who had crossed the Atlantic at the call of Mr. Villard to see how he with their money had conquered the backbone of the American continent, and had joined the far northwest in intimate bond with civilization. Under the spell of the promoter's eloquence, and stirred by his enthusiasm, these continental investors looked forward to seeing a great, rich, fertile land that would bring the new railway profit and wealth from the opening of the line. They thought of their own thickly populated and well cultivated acres at home, and smiled with satisfaction as they beheld the wheat fields of Minnesota.

But swiftly moving toward the realms of the setting sun these trains left behind evidences of man's work in the tilling of the soil, and the engines led the way across the bleak plains of Dakota. Soon the travelers began to wonder how these wind-whipped steppes could support a great railway system. Hour after hour barrenness succeeded barrenness, with stations farther and farther apart, and nothing but the fervid words of Mr. Villard to steady doubting hearts.

"Wait!" he said, and told them how in future years these plains would be the great wheat producing district of America. "But now—?" they asked.

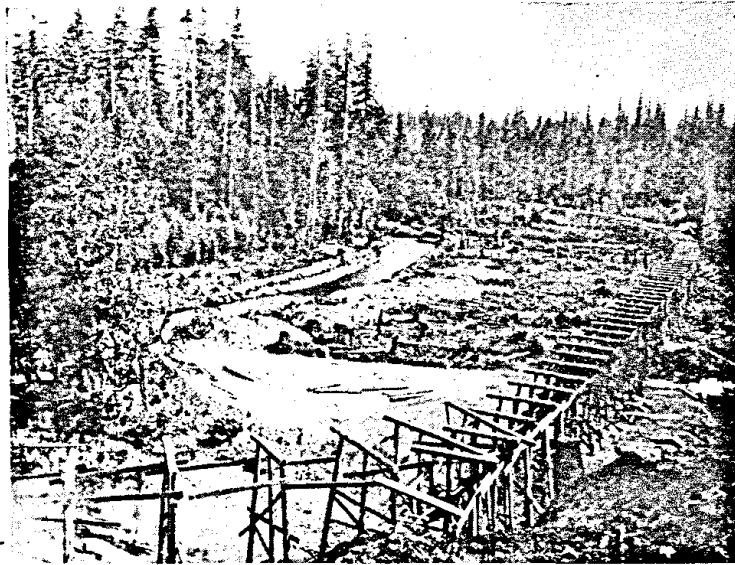
Then came Montana's dreary sage brush, with scarcely a habitation from end to end, and the spirit of the foreign financiers grew still more depressed. "How can there possibly be a traffic great enough to pay us interest on hundreds and hundreds of miles of unproductive track?" they queried each other, and one by one these distrustful and discouraged European capitalists quietly wired back to their brokers:

"Sell Northern Pacific."

Rugged mountain ranges succeeded sandy, greece-wood stretches, and more wires went eastward:

"Sell Northern Pacific," with each man thinking he alone was to fool the others, and emerge from the disastrous venture with undepleted pocketbook. Ignorant was the host of the evil messengers that flashed from each stopping place. By the time those special trains reached Tacoma, then the terminus, there was scarcely a man on board who still owned Northern Pacific, panic gripped the New York stock exchange, and Mr. Villard was financially ruined.

Perhaps if there had been no telegraph wires to receive those fateful messages of "Sell!" "Sell!" "Sell!" the original stockholders would have been content to hold their railway shares, after they had



PREPARING FOR A FILL ALONG THE ST. PAUL ROAD IN WESTERN WASHINGTON.

seen Western Washington, and become convinced that the promises of future years would be fulfilled. But they could not realize the verity of the Villard predictions, they did not know that irrigation would make sage-brush land a blossoming garden, or that the broad expanses they saw retreating to the horizon would yield millions upon millions of bushels of grain. They could not see that all the East would call for the timber of Puget sound, or that the commerce of the Orient would reach tremendous proportions, nor yet that gold would make the name Alaska a synonym for wealth.

After the Northern Pacific followed James J. Hill with the Great Northern. He completed his transcontinental line without the aid of an immense land subsidy. His tracks were laid into Seattle in 1892. The Canadian Pacific crossed the continent still farther to the northward. The opening of the Oregon Railway & Navigation Company's lines had been about the same time as was the Northern Pacific.

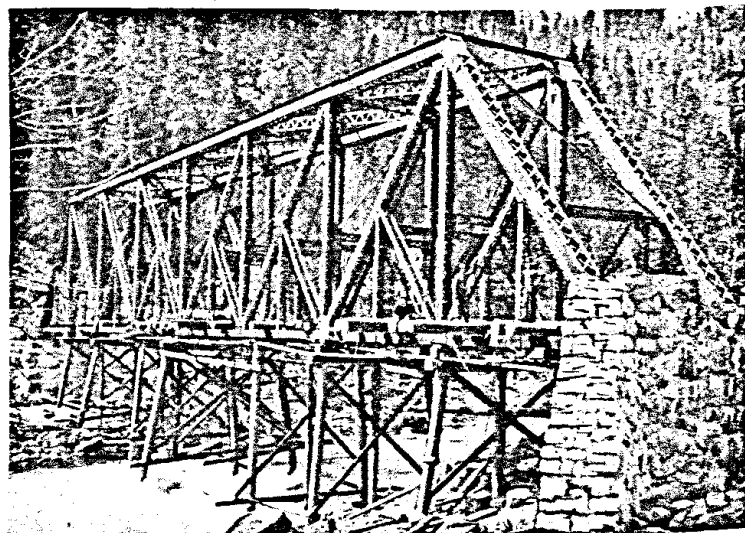
Then followed a period of inactivity in railway

building. All the while thousands upon thousands of people were drawn from the Eastern states and Europe to make their homes in the New West. Years passed, and the Northwest found its transportation facilities utterly inadequate for hauling its products or handling its commerce. It set up a cry for more railways. That cry is being answered, for more miles of railway are now outlined or under construction in Washington than in any other state in the union. The total reaches above 2,500 miles for the one state alone, and Oregon, Idaho, Montana and all the far

Western commonwealths are boasting of their gains in trackage, while 4,000 miles of steel are to be laid in Western Canada.

Because of this activity the northwest to a lesser degree than any other part of the country has felt the effect of disturbances in money centers. Most of the big undertakings were financed early in 1907, so the work was well under way when October's unpleasantness came.

Seattle is the objective point whither most of these rail lines are hastening. From Chamberlain, S. D., the Chicago, Milwaukee & St. Paul is hurrying across



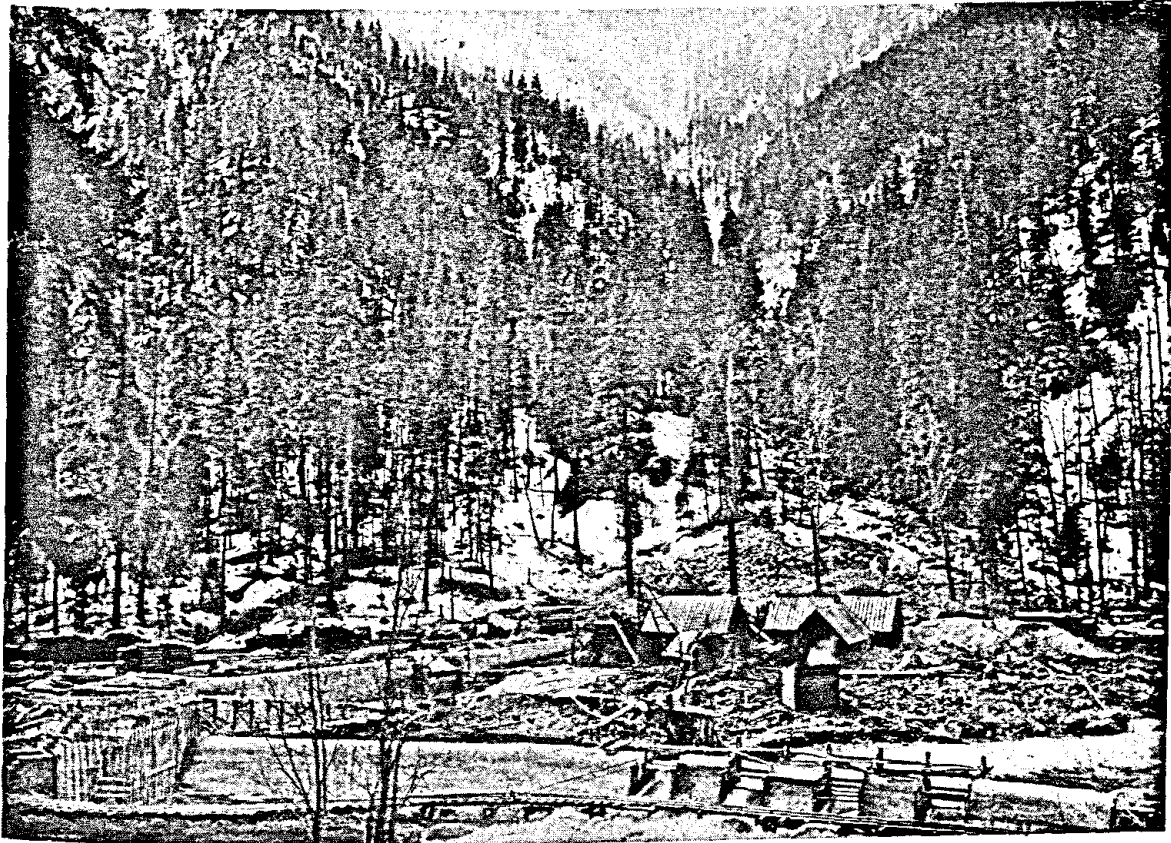
STEEL BRIDGE ON THE GREAT NORTHERN ACROSS THE WENATCHEE RIVER.

Montana, Idaho and Washington, more than 1,000 miles, to reach Puget sound ere the gates of the Alaska-Yukon-Pacific exposition open there in June of next year, and likewise the Harriman lines are building north from Portland to terminals in Seattle, the acquisition of which cost \$15,000,000.

In retaliation for the Great Northern's

has shown signs of following the Milwaukee's lead. Other new lines of lesser prominence are projected or under way, notably the North Yakima & Valley, partly built from North Yakima, in the central part of the state, to Tacoma. This is another unknown quantity.

But the Northern Pacific and Great Northern have not been passive. To-



GREAT NORTHERN DAM IN THE WENATCHEE RIVER, TWO-AND-ONE-HALF MILES ABOVE THE POWER PLANT.

invasion of Canadian soil the Canadian Pacific is preparing to build a line across Washington from Spokane to Puget sound, thence northward to its present terminus at Vancouver. The North Coast Railway, the enigma of the western railroad situation, is another line, with branches and trunk amounting to 644 miles, building from Spokane to Seattle. So secretive have been the construction officials of the North Coast that the public does not know whether this is the Canadian Pacific in disguise or the Chicago & Northwestern, which already extends far toward the Northwest, and which for the last two or three years

gether they are building the Spokane, Portland & Seattle, both the larger lines being under the direction of Mr. Hill. This jointly-owned line, more than half completed down the north bank of the Columbia river, provides a water-level outlet from the great Inland Empire. Grain for tidewater will be brought down this new artery, and eventually much traffic of the two main lines will be routed that way. The timber of southwestern Washington will be hauled eastward by easy grades. The construction of this line requires some of the most remarkable feats of modern railway engineering, and in parts is the most ex-





#### TOPOGRAPHERS' GULCH

The tracks would rest level if placed on top of a

pensive on the American continent, so engineers affirm. The total length is 377 miles.

In what is known as the Boundary District, on each side of the international boundary line, Mr. Hill has been busy. Eventually he will have still another line across the Rockies, from Winnipeg westward, and with extensive terminals in Vancouver, B. C. This district had for years been looked upon by the Canadian Pacific as its own particular territory, and the action of the Great Northern magnate in deliberately invading it aroused the Canadian powers, so that they immediately began the financing of American extensions that mean the expenditure of many millions.

For years Mr. Hill with his two big lines has been the dominating figure in transportation in all the states that border western Canada. He has had mastery supreme, and while his rule was sometimes harsh, the name of a great industrial builder as well as that of a transportation king, will be his for all time. He developed the country as he

built, for he knew his railway could not be supported without traffic for every mile. Dozens of branch feeder lines to the railway that bears his personal stamp, the Great Northern, attest this fact.

But this immense district is no longer to be the sole property of James J. Hill, for the Milwaukee, Harriman, the Canadians and other interests are fighting for share and share. Washington, as the most rapidly developing of the northwest states, now has 1,125,000 people. Her wheat yield is worth \$40,000,000 a year, and her timber \$85,000,000. Her fish mean \$15,000,000 annually, her coal \$10,000,000, and her Alaska commerce \$21,000,000. Seattle, with 275,000 people, has a port commerce of \$140,000,000. The commerce of Puget sound with China, Japan, Siberia, the Philippines, South America, Australia and Europe is reaching momentous proportions. For the last fiscal year it was a trifle less than \$70,000,000, with exports nearly double the imports. A ship sailed from Seattle the other day loaded solely with grain reapers to be used on the ex-



PARTLY FILLED.  
twenty-story building set in the depths of the ravine.

panding wheat fields tributary to Vladivostok. Alaska has sent to the Seattle assay office almost \$175,000,000 in virgin gold.

Here, indeed, is a commerce worth fighting for. The only marvel is that Mr. Hill should have been in undisputed control so long. Puget sound, nearer the Orient by several hundred miles than the California ports, boasts a larger foreign trade than the Golden Gate. For years and years to come, if not for always, Alaska, with its area as big as our four largest states, must buy and trade and travel through Puget sound. But to the railways the most attractive prize for immediate profit is the timber of the western slope.

After the merchantable trees of every other part of the United States fall, forests will stand on the north Pacific Coast. Fast as is the western timber diminishing, decades must pass—yes, scores of years—before it is gone. With the northwest the only source of supply, all the country will need the lumber that comes from the tall fir trees. Mr. Hill

has remarked that an acre of timber at the first cutting produces more freight than an acre of wheat cultivated for forty years. President A. J. Earling, of the Chicago, Milwaukee & St. Paul, has said that if he can haul over his new road to the coast four trainloads of lumber a day the entire operating expenses of the line will be paid. Under normal conditions the lumbermen assert that they more than pay for the operation of the Northern Pacific, which now carries two-thirds of their eastern shipments.

This annual lumber yield of Washington, including the shingles that are cut from the cedar trees, would fill a train 1,035 miles in length—enough to reach half the way from Portland, Ore., to St. Paul, or from New York to Chicago, with a good many miles to spare. The timber industry of Washington has 100,000 men directly dependent upon it—it represents 62½ per cent of the business of the state. Well may great railway systems race into such a field. Instead of defiance, the Hill answer is:

"There's business enough for all."

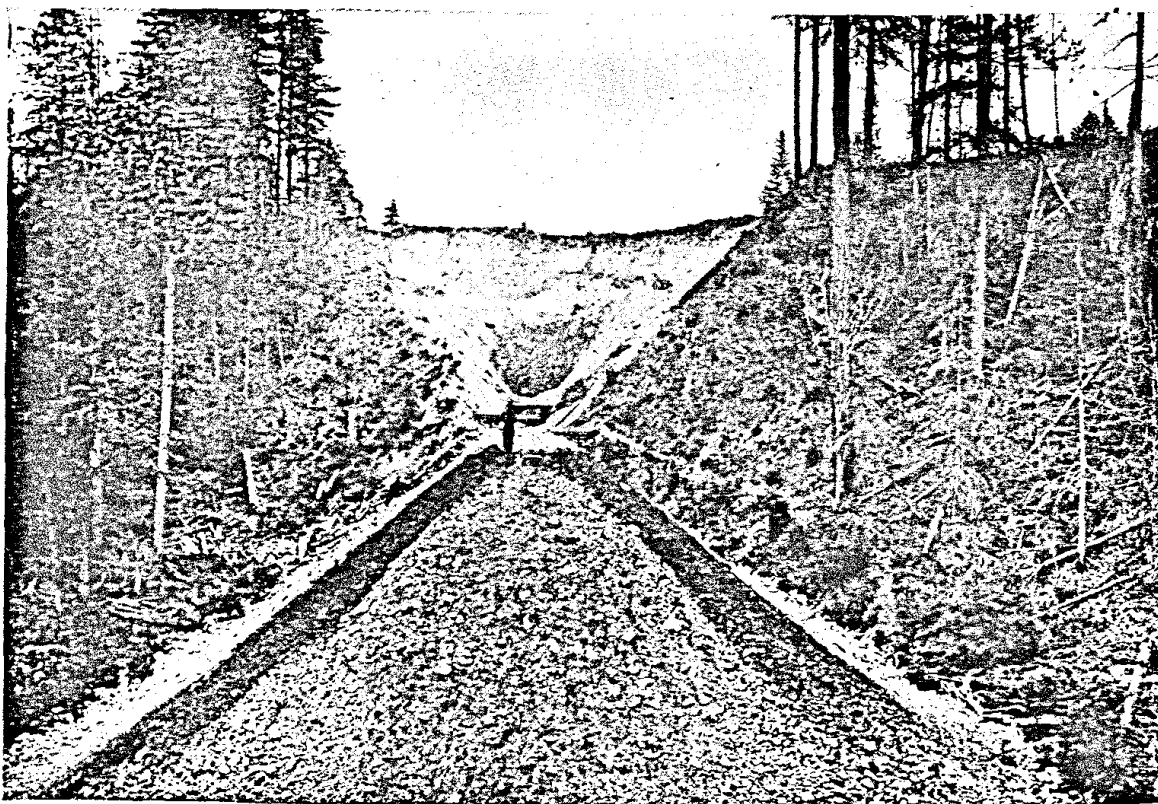
The last year has seen the greatest struggle ever witnessed in the west between an immense industry and a coalition of the transportation lines. For years the lumbermen had not been able to get anything like enough cars for the forwarding of their cut. Each season the shortage was more acute, with railways congested from end to end, and giving preference to wheat and perishable articles as against lumber. Sometimes the lumbermen received less than half the number of cars they needed.

Then the railways last fall—before the financial flurry—advanced their lumber rates about twenty-five per cent. This virtually cut the lumber shippers out of the middle states' market in competition with the timber from other districts. The fight against this new rate in the Federal courts and before the Interstate Commerce Commission has attracted attention far and wide. Even under the old rates Washington lumbermen, according to their testimony before the interstate body, were wasting in the forest and in the mill something like \$15,000,000 worth of timber annually, of the

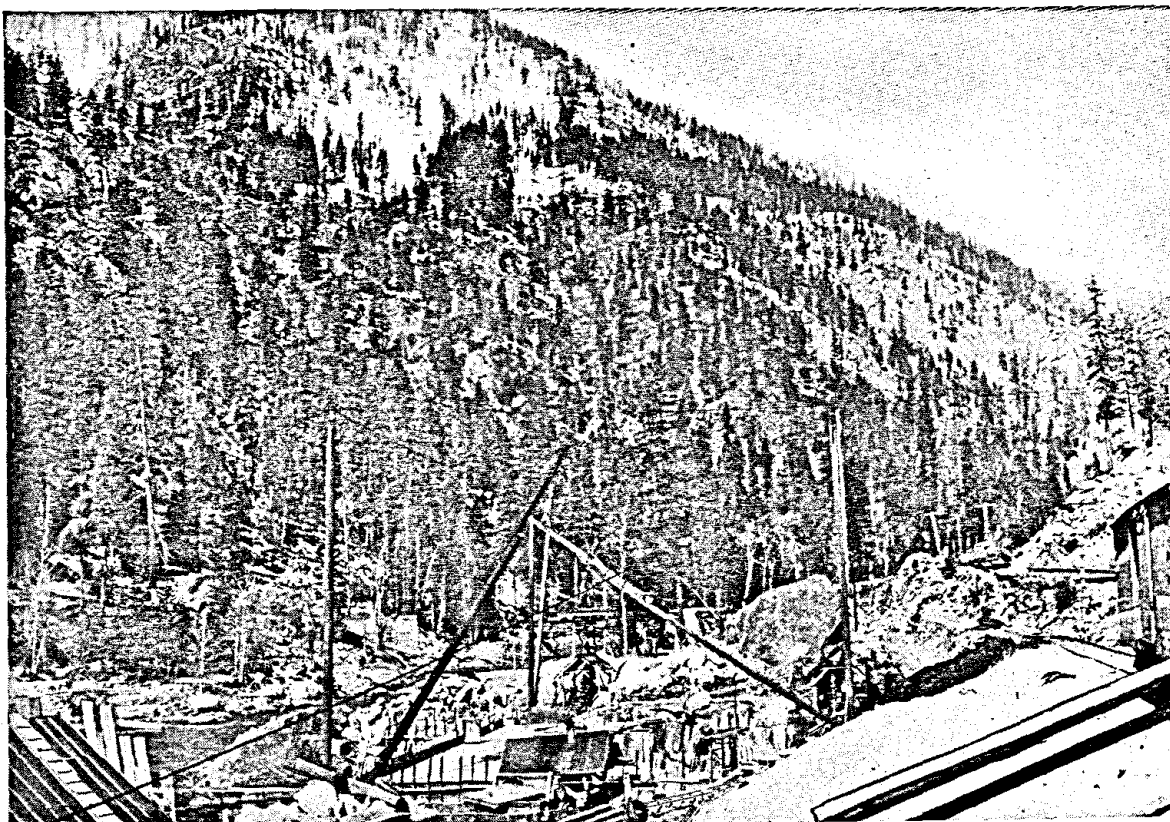
lower grades that they could not afford to ship to eastern markets, because of the freight tariffs. But the coming of new roads with competition and a broader territory for a market will right these conditions, it is confidently believed.

Greater popular interest centers in the progress of the Milwaukee than that of any of the other roads, because its completion to Puget sound will precede the others, and because its entry into the field cannot but be fraught with the most far reaching consequences. When the officials of the road first announced the extension they set an approximate date upon which it would reach the coast, and so far operations have been carried out on schedule time. It now seems certain that the first Milwaukee trains will roll into their Seattle terminal grounds before the spring of next year is ended.

The Milwaukee will be one of the first of the far western roads to adopt the use of electricity as a motive power on an extensive scale. According to present plans, trains will be taken through the Rockies almost entirely by the electric current, supplied by power stations



CUTTING THE ROADBED THROUGH A HILL.



FOUNDATION OF THE GREAT NORTHERN PLANT IN TUMWATER CANYON. THE STRUCTURE TO BE COMPLETED BY AUTUMN.

at intervals along the line. Abundant power may be developed, for the waterfalls are plentiful through western Montana and northern Idaho, and the Cascades may also be negotiated in the same manner. Undoubtedly this method of propulsion will prove more economical and more satisfactory in a dozen different ways than steam, and the success of its introduction in the mountain regions where grades are heaviest, and to a degree never before equaled, will be the forerunner of electrification for most of the other lines that cross the western mountains. Hundreds of thousands of horse power go to waste daily in the turbulent streams.

In crossing Washington the Milwaukee will open much territory that is now without intimate connection with the outside world, and will develop some of the richest portions of the state. It crosses the Cascade mountains and the Columbia river basin a little below the center line, between the Northern Pacific and the Great Northern. Track-laying is progressing rapidly, especially in the eastern

portion of the state, where the country much more easily adapts itself to railway construction.

Just west of the Cascade summit the road is making what is believed to be the deepest railway grade fill ever undertaken, either in this country or abroad. The route to be taken by the tracks down the mountain-side is intercepted by Topographers' Gulch, 800 feet from side to side at the required level, and 282 feet deep. The tracks might rest on a twenty-story building set in the depths of the ravine. In ordinary circumstances a bridge would have been built, but the approaches were unsatisfactory for the construction of a span, though they lent themselves to sluicing operations. So with the aid of hydraulic apparatus this deep gulch is to be filled to the proper level. Sixty thousand dollars was spent in fluming, piping and machinery for the big nozzles before a yard of earth was moved.

At Seattle the Milwaukee will connect with a line of Japanese steamships to be established upon the completion of the



new transcontinental highway. These will sail every ten days for the Orient, and will provide keen competition for the Hill line, the Nippon Nusen Kaisha and other services.

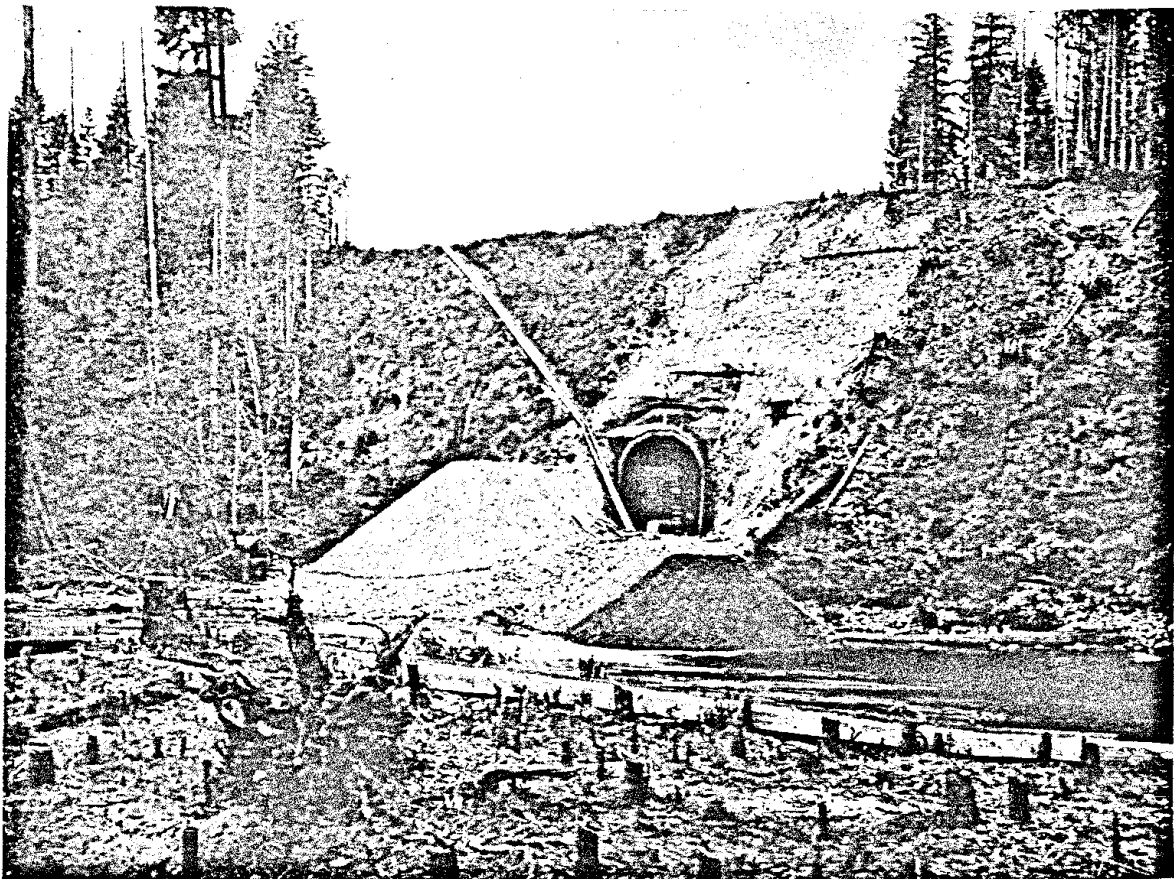
It may be remarked as strange that the Milwaukee does not establish its own Oriental line, but under present conditions no American concern will embark extensively in Pacific commerce against the Japanese. With their heavy ship subsidies, cheap labor and economical methods of operation the Nipponese have such a tremendous advantage that they have virtually driven Germany and England out of the Orient commercially, and America is going in the same way. The foreign carrying fleet of the United States upon the Pacific has declined forty-six per cent in the last two years.

Mr. Hill made the experiment of establishing a line of his own in connection with the Great Northern, and built the mammoth freighters *Minnesota* and *Dakota*. It proved an expensive experi-

ment. The *Dakota* piled up on the rocks of Japan in broad daylight, with the open sea all about her, and the *Minnesota* catches on fire or meets some sort of ill-luck every time she enters Japanese waters. Meanwhile the Japanese boats, which are increasing at a marvelous rate, are carrying more and more of American exports and imports.

Mr. Harriman has laid the foundations for immense operations in Seattle. He will reach the city directly from the southward, paralleling the tracks of the Northern Pacific northward from Portland, and entering Tacoma through a tunnel which obviates most embarrassing grades now met by the older line. On terminals, yards, station and other improvements the Harriman interests will spend large sums in Tacoma—in fact work on a large scale is under way.

Broad rights-of-way, extensive tide land holdings and city blocks were bought by the Union Pacific in Seattle, and preliminary work for utilizing them



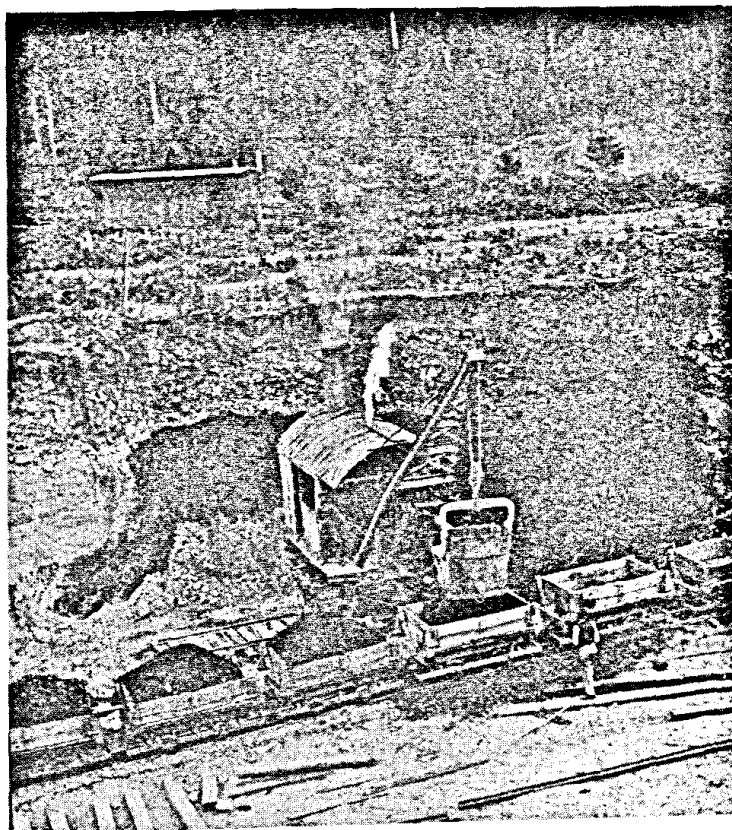
TUNNEL ON ST. PAUL ROAD NEAR SEATTLE.  
One of the many instances of hill-and-mountain boring in the northwest.

is progressing rapidly. Between one and two years will yet be required before the work is entirely completed.

Following the example of Mr. Hill, Mr. Harriman is boring under Seattle a tunnel that will lead to large waterfront acreage in the northern part of the city, where great docks are to be established for the Union Pacific's foreign commerce. The genius of the Southern Pacific does not plan to let Mr. Hill and the Milwaukee divide between them the trade of Puget sound with all the world. It is to be a struggle for supremacy, with the Northwest as the battle ground. The Harriman tunnel, it is predicted by railway men, will be used also by the Canadian Pacific, and eventually the Union Pacific will reach all the northern coast district, not stopping with Seattle. The timber of northern Washington and of British Columbia will lead it on.

At present the Northern Pacific and Great Northern run into a new Union station in Seattle. Across the street from this the Union Pacific will erect a general terminal building at a cost of \$500,000, and nearer the water front the Milwaukee plans a handsome structure. Purchases of these tide land grounds for terminal purposes produced one of the most remarkable booms in Seattle water front property that any city ever experienced, and strange to say values to this day have remained close to the top notch reached in the flurry. Men who owned property covered by water which they had forgotten, suddenly found themselves worth a fortune from this unexpected source. Areas that had been transferred under tax titles for a few dollars in previous years came to be worth thousands.

The wonderful progress of Seattle through all this activity, due to the advent of new railways, the discovery of



STEAM-SHOVEL AT WORK LOADING CARS.

gold in the north, the expansion of Pacific commerce, and the in-rush of people to Washington from every part of the United States, has been one of the marvels of the country. In 1880 Seattle had a population of 3,533; in 1890, 42,847; in 1900, 80,000, and at the present rate of growth it will have 500,000 ere the close of 1910. Few cities in the world have grown so fast in the last few years, proportionately, as Seattle.

With the idea of advertising this progress to the world, and bringing Alaska into closer touch with the country which adopted it some forty years ago, Seattle is at work on the Alaska-Yukon-Pacific exposition, which will last through the summer of next year, and upon which the city, the state, the United States, collectively and individually, and foreign countries will expend \$10,000,000. Several buildings have already been completed, on the campus of the University of Washington, between two lakes which lie in the city limits, and at the close of the exposition these structures will be used as permanent additions to the University group.

One notable feature of railway building in the Northwest is the extension of interurban lines between the cities and from the centers of population out through the thickly settled and rich farming districts. Within a few years all the Puget sound country will be a network of interurban rails, acting as feeders to the main trunk lines of railway. The finest interurban cars in use in America are on the line between Seattle and Tacoma. Spokane has become a center for interurban activity, lines radiating to the east, south and west, and their remarkable success means their continued extension.

Canadian railway building is even more spectacular than that on the American side, because of the rivalry between the lines which are hurrying to the coast, and the long stretches each must cover. It now is announced that in addition to the Grand Trunk, the Canadian Northern will hasten to extend to the Pacific, and the Canadian Pacific will build another line westward to the north of its present trackage. Prince Rupert, the Grand Trunk terminus, is to be a model town, and laid out on beautiful and majestic lines by the famous Olmsteads, the landscape gardeners, of Boston.

After reviewing the railway situation it may not be amiss to give a concrete illustration of the appreciation in the value of western timber lands. When the Northern Pacific was built it was given a land grant of each alternate section within forty miles on either side of its right-of-way. After holding the greater part of its western Washington timber for fifteen or twenty years it made a deal with Frederick Weyerhaeuser, of

Minnesota, now the timber king of America, selling almost 1,000,000 acres of land at a little more than \$6 an acre.

Now that same land is worth from \$50 to \$125 an acre. Thus one of the greatest of American fortunes passed out of the hands of the railway to which it was given by the government, and Weyerhaeuser's wealth was increased by manifold millions. Yet at the time of the sale the railway was considered to have made a good deal. If it possessed that million acres today the increase in value would more than equal the entire indebtedness of the road.

By the time the east turns Seattleward in the spring of 1909, lured to the golden Northwest by the Alaska-Yukon-Pacific exposition, the Great Northern trains will be lifted over the Cascade range and dropped down on the Pacific slope by electricity.

At a cost of \$1,000,000 the work of harnessing the tumbling waters of the Wenatchee river in Tumwater canyon is rapidly progressing, the dam and powerhouse now nearing completion. Approximately 8,000 horse-power will be generated, sufficient to drive the 150-ton engines and their trains up the range, through the Cascade tunnel and hold back the great weight until the cars have skidded down to Seattle, Tacoma and other Pacific ports. The St. Paul will not finish its task of harnessing the waters of the St. Joe river in northern Idaho until after the Great Northern has demonstrated that the Wenatchee water-power is sufficient. In the meantime Mr. Harriman's agents are still filing on water-power sites and planning projects soon to be begun.