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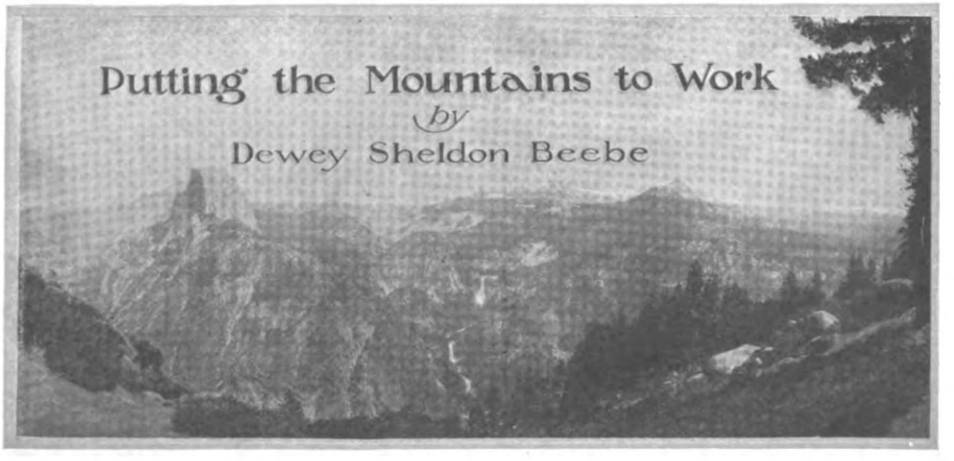


THE Sierra Nevada Mountains must go to work. Mr. E. H. Harriman, the "little wizard" of the railroad world, has decided that they have been idle long enough. Worse than that, they have been an absolute obstruction to transportation. It has taken three or four panting locomotives to painfully pull a short train of loaded freight-cars up the steep grade from Truckee, Cal., on the Southern Pacific, to the summit of Emigrant Pass, about 5,000 feet above sea-level. That climb up the mountain side has cut the heart out of profits and diverted considerable freight to other lines.

But—as is often the case when great financial genius and splendid engineering ability take hold of a case together—what seems almost a miracle has now been accomplished. The mountains themselves are to haul the freight trains to their own summits. Harriman has found out how to lift himself by his boot-straps.

The little mountain streams, starting from the melting glaciers which cap the

SNOW-COVERED SUMMITS, SOURCE OF MANY STREAMS.

ONE OF THE SWIFT-FLOWING MOUNTAIN STREAMS.

highest peaks, are to be "cribbed, cabined, and confined" and forced to furnish electric power for pulling Harriman's freight-trains up and over the mountain passes.

At the start a third rail electric system is to be put in over about eighty miles of the road. A huge power house is to be built on the California side of the pass, where a practically unlimited supply of water is always available. Once the enormous initial expense of building the power plant and equipping the road is out of the way, electric motors will take the place of steam locomotives, in the trip over the mountains, at a great saving in cost and time. It will no longer be necessary to make up short and light trains. The roaring mountain streams will furnish plenty of power to pull the heaviest freight trains over the mountains at a rate of speed impossible heretofore.

The great initial cost does not daunt Mr. Harriman, who has shown, in the building of the Lucien cut-off across Salt Lake and in other similar enterprises, an apparent disregard of first cost, so long as a permanent saving in running expense and in running time is in sight. His engineers have been at work for months. They have made all the necessary surveys and have fixed the location of the power-house and of the dam which is to gather the necessary water supply.

At the present time several of the largest electric corporations in the country are figuring on the contract for building the power plant and installing the road, and it is expected that the active work of construction will begin when the snow goes out in the spring.

True to the policy of secretiveness, which has made him famous among great railroad men, Harriman has instructed his lieutenants to give out no details of the plan for electrifying the Sierra Nevadas. "All announcements at the present time, are unauthorized and premature," writes one of the engineers, but, even before this article is printed, the contract may be let.

In putting in this third rail system, as in adopting all-steel passenger cars for the same road, Mr. Harriman shows his determination to put the Southern Pa-

NEAR SITE OF GREAT POWER HOUSE.

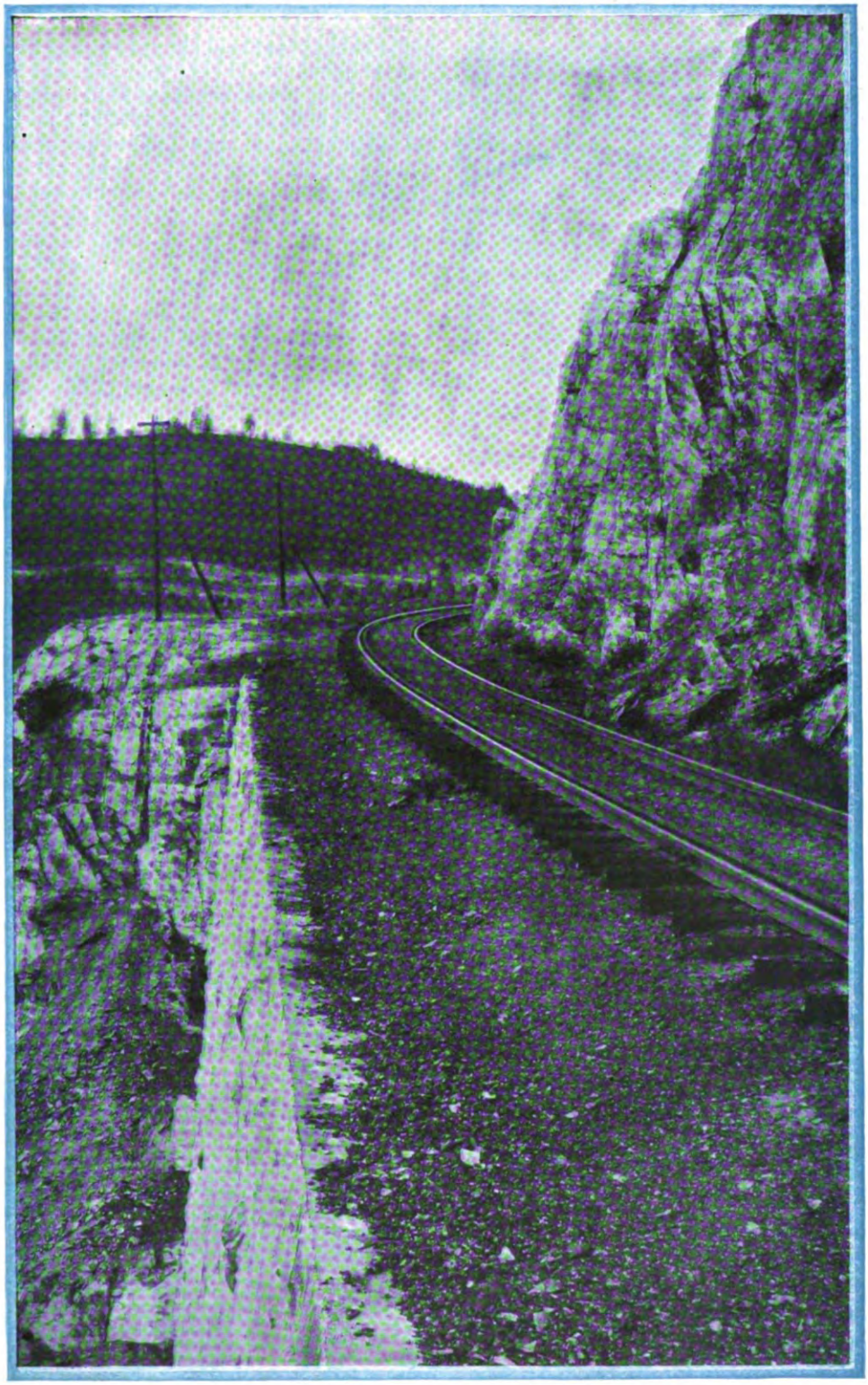
cific ahead of its transcontinental rivals, at any cost. Up to the north of him sits James J. Hill, the gray old master of the Northern Pacific and the Great Northern, and the only railroad man, up to the present time, who has successfully met and defeated Harriman in a great fight for a big stake. It is against Hill and the Hill domination of the Northwest that Harriman's present strategy seems chiefly directed, though, out of the struggle between the two Titans is certain to come cheaper, faster and better transportation for both passengers and freight across the continent.

ENGINEERS CLIMBING A SLOPE IN MID-WINTER.

If the Harriman innovation is as successful as his engineers predict, it is certain that other railroads running over the mountains will be forced to follow his example. Already many roads have adopted electricity as a motive power on their city terminals and on short branches, running through thickly populated sections. In mountainous regions the arguments for the substitution of electricity for steam are quite as strong, for, in climbing steep grades, a large amount of the steam power must be wasted in hauling up the fuel necessary for its production. With electricity, on the other hand, almost unlimited power is available at all points on the line. Furthermore, there is small chance of a train drawn by an electric engine "sticking" on an especially sharp grade, for the temporary "overload capacity" of the motor can always be called on to meet a sudden emergency.

A READY-MADE MOUNTAIN RESERVOIR.

Harriman is today the greatest single figure in the railroad world and one of the most interesting—because the most mysterious—men in the public eye. A slight, short little man, with sloping shoulders and a heavy, drooping black moustache, he is the undisputed master of more miles of railroad than were ever before under individual control. It is said that Harriman, personally, does not own more



WHERE THE ROAD CIRCLES CAPE HORN, CALIFORNIA.

PARTY OF ENGINEERS RESTING

than one per cent of the stock of the railroad systems over which he exercises a despotic rule. But he is, none the less, an enormously rich man, who controls, at the same time, the almost unlimited capital of a coterie of magnates whose identity has never been positively settled, though it has been often stated that Harriman is really the railroad manager of Standard Oil investments in railroad properties.

Born in an obscure Long Island village, the son of a poor clergyman, Edward H. Harriman is entirely a Wall street product. As soon as he was old enough to go to work he went into the office of a Wall street broker and he has lived his whole adult life in the atmosphere of the street. At a comparatively early age he was able, with the help of influential family connections, to establish a brokerage business of his own. But not until he had spent more than a quarter of a century in business was he known at all outside of a very narrow circle. In manner he is gruff and abrupt, and in disposition dictatorial and overbearing. At directors' meetings of the many corporations which he dominates, he lets the others do the talking. When he has heard enough, he takes the floor himself and dictates exactly what shall be done. It is said he is intolerant of the slightest opposition and has more than once left the room in a fury, when a fellow director ventured to oppose him.

But, though Harriman is typically a Wall street man he differs from his fellows in that he evidently believes in building his railroads on the most substantial and permanent basis possible. His policy of looking far into the future has made tremendous demands upon the skill and ingenuity of the engineering corps of his great railroad systems, embracing nearly 29,000 miles of road.

And the wonder-working engineer has rarely done anything more picturesque and dramatic than is here contemplated, in forcing the great mountain peaks, which stand like barriers across the path of a railroad, to actually furnish the power which shall pull loaded freight trains up and over their snowy summits.