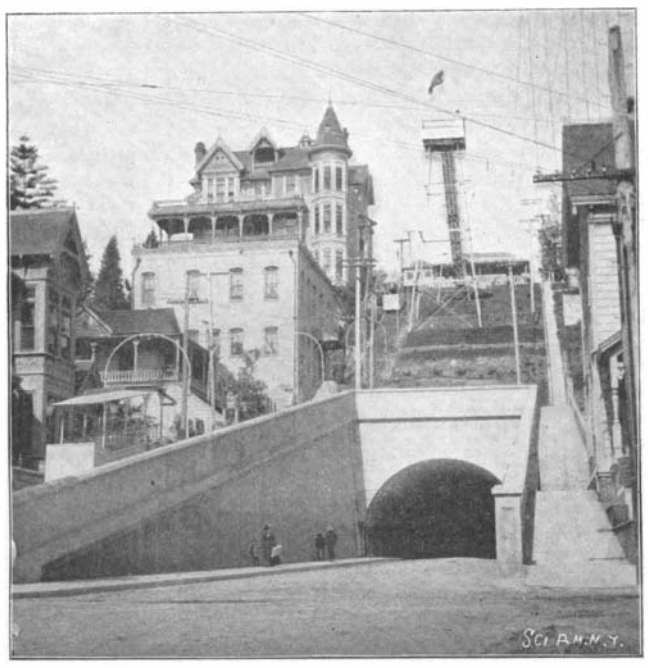
## A UNIQUE RAILWAY.

BY C. E. PRICE.

Probably the shortest paying street railway in the world, and certainly one where more rides can be obtained for a dollar than anywhere else in America, is the "Angel's Flight" in Los Angeles, California.



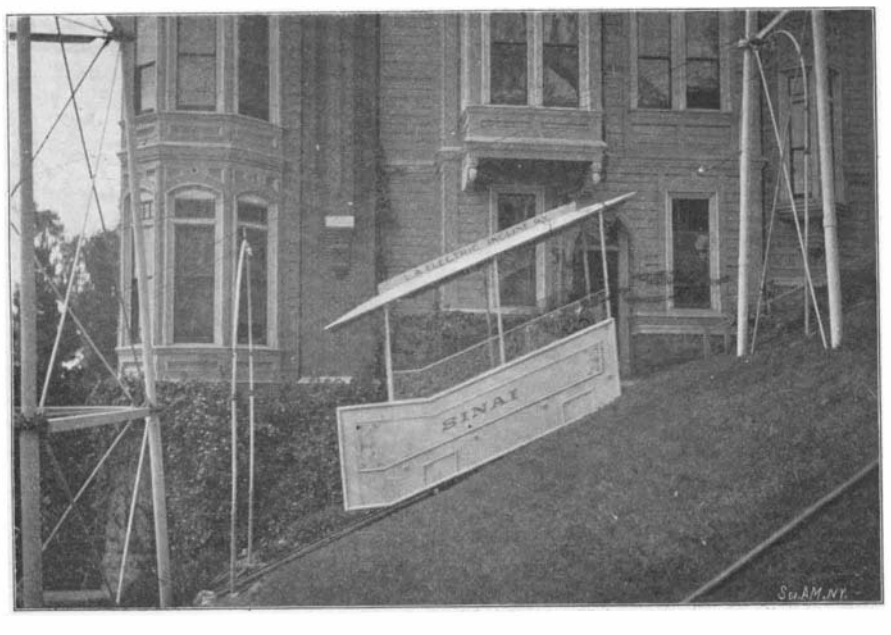
General View of the Railway and Observatory Tower.

Formerly the pretty residence portion of the city, "Olive Heights," could only be reached either by a long detour or climbing a great number of very steep steps. One of Los Angeles' citizens conceived the idea that a railway up the steep incline could be made to pay, and within a few weeks he had his road in operation.

The road is 350 feet in length between terminal points, and rises one hundred feet in this distance; it is built on the three-rail, automatic, turnout system. The two cars, "Olivet" and "Sinai," are attached to the ends of a double cable, which is wound over a drum operated by a ten horse power electric motor at top of the hill. As one car goes up, the other descends, the two cars counterbalancing each other, and thus effecting a great saving in power.

Entering the lower station, the first thing we notice is the "bill of fare." "One ride 5c., 3 rides 10c., 10 rides 25c., 100 rides $1.00." The cars will hold ten people seated, which is the limit; a number of signs announce that no standing is allowed, as a sudden jar might throw the passenger out and down the steep incline. Another sign instructs the passenger to press the button when he is ready to start, and on his doing so the car starts. During the ascent a beautiful view is obtained of Los Angeles. Arriving at the top, one steps from the car into the ticket office, where he pays his fare, and passes into a small building, open at the sides and filled with comfortable seats, from which the view may be enjoyed, and where a sign informs the passenger that he has reached "Angel's Rest." Here is a pretty little terraced park with flowers and a fountain. Then by climbing the stairs of the large iron observation tower to the "Angel's View," 156 feet above the street below, another excellent view is had of Los Angeles, the surrounding towns, and the Pacific ocean.

It was estimated that the patronage of the people living on the Heights would pay the expenses of the road with one-cent fares, and that the tourist and curiosity seeker, in their anxiety to ride on so unique a road and obtain the view from the tall tower (which, by the way, costs 5 cents extra), would furnish the profit. As the cars can make a trip every minute, and the one man in the power house can run the cars, collect the fares and perform the duties of all the several officials necessary on an ordinary railway, the expenses are light, and the enterprise bids fair to be as much of a success from a financial standpoint as it is from a mechanical one.




A Car Descending the Steep Grade.

A UNIQUE RAILWAY.

## The Price of Progress in Agriculture.

BY B. F. W. THORPE.

Special development of plant and animal life to their highest degree of excellence and productiveness brings an increased liability to disease and derangement. The very effort of producing an abnormal yield of milk in the dairy animal, of flesh and bulk in the beef and draft breeds, or those intensive qualities of nerve, bone and muscle combining to make possible the two-minute racer, is at the expense of a part of the inherent vitality of the animal in question. The same principle holds true in the plant world. The most highly improved and prolific varieties of fruits, grains and other vegetable products have reached their positions of excellence, as a rule, with a certain loss in vigor in some direction. In short, there is apt to be a weakening in resistance power against exposure and disease in both plants and animals when any particular function is worked beyond its natural capacity. Thus have utility breeding and hot-house methods of improvement created a greater necessity for protective remedies against pests and diseases, as well as a greater need of vigilance in their application in the realms of both animate and inanimate nature. In addition to the above-mentioned causes the constantly expanding territory devoted to agriculture and the rapid increase and extension of commerce serves to promote and distribute the husbandman's hindrances in a constantly increasing ratio. It is not the writer's intention to here enter into detailed consideration of these forces of opposition which the modern farmer has to intelligently meet and conquer, or at least effectually hold in check to insure compensation for his toil. Rather the idea is to emphasize the need of keeping well abreast of the higher levels of thought and improvement which do not remain stationary for a single year, or season even. The National and State stations of experiment and investigation from Maine to California, north, south and central, have at all times scores of scientific and statistical grists feeding into their experimental hoppers from which all grades of intellectual food-stuffs are issuing. These bulletin brain-rations composed of figures, facts and fiction later pass through the sifters, blowers, cleaners, graders and retorts, comprising the agricultural press, farm organizations and individual farm experiments, where by the aid of "quiz" column, question box, discussion, essay and editorial comment the practical is eliminated from the theoretical. It has been mainly by such helps that the reading and thinking farmers have been enabled to make such strides in both method and quality of production as to cause the admiration and astonishment of the civilized world. Those farmers who have heretofore expressed contempt for "book farming ideas" have been doing some quiet thinking while critically observing the effects produced by adaptive fertilizing, utility breeding, intensive tillage, disease and pest controlling remedies and other of the lengthening list of science-founded helps. The fact is dawning on many such former skeptics that a few dollars judiciously expended for farm publications and books treating on special and general lines of their work, with a reasonable amount of time devoted to study and discussion, may be profitable, not only in direct financial returns, but in the increased respect felt by themselves and others for their occupation. The progress attained in agriculture, practically in the past half century, though so marked and far-reaching in effect, is but the beginning of the triumphs which are to follow in this most important and fundamental of industries. Nearly all the inventions and discoveries which have revolutionized the industrial world are found to bring additional profit and power to the farmer as he becomes qualified to take advantage of nature's unlocked secrets. The farmer must realize the full importance of the fact that his vocation is pre-eminently the one where practical adaptation must be combined with exact compliance to fixed natural laws, or, in other words, agricultural science. These necessary laws are not very numerous or difficult to get a working knowledge of, but must be comprehended sufficiently to make their importance understood. The progress already attained and now steadily going forward must ere long make the farmer's lot in reality what is has always been in possibility, among the most attractive and noble of pursuits.

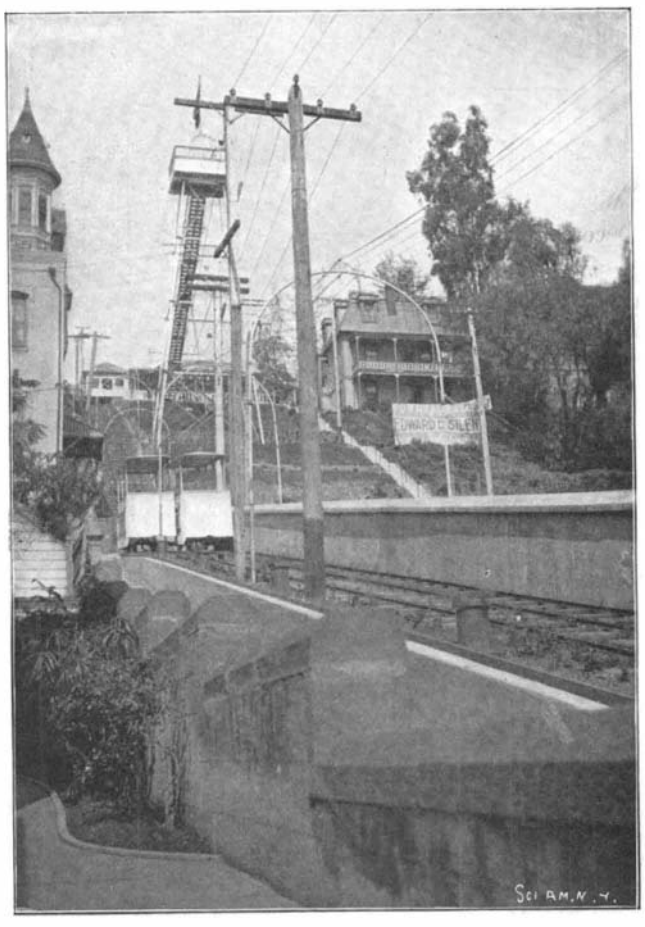
## Oil Fuel for Torpedo Boats.

One of the objections to the use of oil as a fuel for vessels has been the heat of combustion, which, it is claimed, is too intense for the endurance of the men in the boiler-room. In order to determine whether this objection is of sufficient weight, the United States Naval Department is about to make an experiment with the torpedo boat "Rodgers." The crew is to be engaged for five days in a test, which will be conducted by the members of the Board on Oil Fuel and which will show conclusively whether petroleum can be successfully used on this type of craft.

## A New Time-Fuse.

It is reported that a new time-fuse for armor-piercing shells has been successfully tested by the Ordnance Department, under the direction of its Chief, Brig.-Gen. William Crozier. The chief merit of the fuse is to be found in the fact that it does not detonate the shell until the plate has been penetrated. It is said that a shell fitted with this fuse and fired from a 12-inch gun penetrated 14 inches of Krupp armor before detonation. The importance of these results will be appreciated when it is considered that the thickest Krupp armor so far made is but twelve inches.

The tests were conducted with the army 12-inch rifle, which is heavier than the navy weapon of the same caliber. No doubt good results can be obtained with the navy gun.



View Showing the Two Cars Passing at the Automatic Turnout.

## Further News of the "Belleisle" Tests.

In spite of the great secrecy preserved by the British officials, additional information has leaked out of the results obtained during the recent tests made with the old battleship "Belleisle." If all accounts are to be believed, the result was a decided triumph for the conning tower, which, though covered with old compound armor, withstood the attacks of 9.2-inch guns. A rat imprisoned in the tower for the purpose of determining the effect of lyddite fumes and the concussion of shot and shell was found to be uninjured. How destructive was the lyddite was shown by the total destruction of two torpedo nets.