



Forts on Rails to Travel Along Our Defenseless Coasts

A New York inventor, Lawrence Luellen, proposes the mounting of heavy guns on rails, to be run between concrete emplacements at suitable points. General Crozier, the foremost ordnance expert of the United States Army, has thought well enough of the proposal to sketch mountings for the guns. The guns can be quickly mobilized and used wherever an attack is threatened or actually begun. Any desired number of guns can be concentrated at a single spot—something which is not possible with permanent fortifications

Popular Science Monthly

239 Fourth Ave., New York

Vol. 88
No. 3

March, 1916

\$1.50
Annually

Railroad Forts That Go Where They Are Needed

A New Idea in Preparedness

WE have large cities, long coast lines and borders, also extensive areas that must be protected. It would be impracticable to fortify most of them by expensive fixed fortifications even though such fortifications were considered efficient.

The conditions of our roads, bridges and general topography of the country make it impracticable to move very heavy artillery rapidly, and we must look to the railroads both to transport heavy guns and to provide suitable bases from which to fire them rapidly and accurately.

The vastness of our areas, coasts and borders, demands that we have an extremely flexible as well as powerful land armament which can be operated by comparatively few men and used anywhere.

Railroads can mount twelve, fourteen and sixteen-inch guns for defense through a new invention patented by L. W. Luellen of New York, which makes it possible to protect with heavy mortars and guns our inland cities and five thousand miles of coast line, instead of the three hundred miles now protected by fixed fortifications.

Heavy guns are permanently mounted on especially constructed railway cars, which are to be quickly locked on solid concrete foundations for instant use, to secure accuracy and rapidity of fire control. These mobile armament cars are designed to utilize the present coast and inland railways to protect our seaboard, thus increasing the flexibility and strategic value of high-power guns such as are now mounted on fixed foundations.

Mr. Luellen would install at fixed

points along existing railroads or at desirable strategic points, suitable concrete foundations, from which the highest powered guns may be fired. A specially-designed car will permanently mount high powered guns which may thus be swiftly transported to the point of attack, located on the foundations and brought into action.

These concrete foundations may be situated, at a very nominal cost, on main lines, spurs, or side-tracks, either singly or in groups, behind hills, in railway cuts and in secluded spots along the region it is desired to protect, as compared with the cost of placing fortifications at such points.

Should the enemy locate and obtain the range of one of the mobile batteries, the car can be quickly unlocked and moved to another location.

Present railroad facilities along the coasts of Massachusetts, Rhode Island, Connecticut, New York,—including Long Island—and New Jersey, are so located that ample gun foundations could be placed on spurs or side tracks so that any boat attempting to land must come within range of any desired number of guns. By properly grouping the concrete bases and placing one hundred and forty of them on the coast line mentioned, no landing party could reach the shores without coming within the deadly nine-mile range of six mortars.

These concrete bases would cost approximately three thousand to four thousand dollars each—total cost of one hundred and forty bases, including labor, about five hundred thousand dollars.

The mortar armament cars should be located at stations along the coast, where, upon an hour's notice, several of them could be moved into position for action.

It is estimated that to cover this shore line would require in the neighborhood of fifty mortars and ten rifle armament cars. This would mean that there would be one hundred and ten guns on mobile car equipment with total outlay (estimating the car and guns to cost one hundred and fifty thousand dollars) about nine million dollars.

Approximately twenty to twenty-five men would be required per car. Thus, for the cost of one modern battleship, we



This hen stops at a hotel. Lady Eglantine, the prize egg-layer of history, is worth anything you please because she transmits her admirable proclivities to her progeny

could equip these shores with new mobile armament containing one hundred and ten guns, which could be more accurately fired and which would be strategically more effective, with little risk of losing a single battery.

This is not the first time that railway forts have been proposed. The idea is at least twenty-five years old. The famous Creusot works of France about three years ago actually built a railway battery. How successful it was we do

not know. Mr. Luellen has made a distinct contribution in suggesting concrete emplacements.

Lady Eglantine: The One-Hundred-Thousand-Dollar Hen

A HEN whose value ranges all the way from \$1,000, to a prince's ransom (whatever that may be), because money cannot buy her, recently attracted the crowds that frequented the poultry show held at the Grand Central Palace.

There was nothing about this clucking heroine to distinguish her from other white leghorns, and she is as modest in her fame as world's title holder as if she had not laid one of the three hundred and fourteen eggs that she deposited to her credit in three hundred and sixty-five days. Furthermore, she was bright and lively and exhibited none of the temperament that one reasonably looks for in any great *artiste*.

In the first place, and so that your understanding of this item of the day's news may be well based, the bird was hatched at Greensboro, Md., April 15, 1914, on the Eglantine Farms, run by A. A. Christian. She was one of five single-comb white leghorns placed in a pen at the egg-laying competition on the grounds of the Delaware Agricultural Experiment Station at Newark, Delaware, from November 1, 1914, to October 31, 1915. In this time she made her record. She is black-eyed, fourteen inches high and weighs four pounds. She has a perfect figure.

Mr. Christian was offered a great deal of money for Lady Eglantine but he will not sell her. No price, he says, will tempt him. When Mr. Christian's attitude on this became known somebody said the bird was worth \$100,000, whereupon she was called the "\$100,000 hen." But she might just as well be called a \$1,000,000 hen, for nobody can estimate her value.

THERE was a large decline in the industry of mining precious and semi-precious stones in the United States during 1914.

The April Popular Science Monthly will be on sale Wednesday, March fifteenth (West of the Rockies, Tuesday, March twenty-first).