Peace Taking Over War's Inventions
Tests for Gun Barrels Serve for Steel Rails and Big Gun Detectors
Strains—Bureau of Standards' War Work Not Lost

Where Theodore Roosevelt Was Born

House Which Will Be Reconstructed as It Was When Occupied by the Roosevelts or on Rare Occasions when there were Parities

A PUNID of $1,000,000 will be sought by the Woman's Memorial Roosevelt Association to restore the house in which Theodore Roosevelt was born and to establish it as an American citizenship center. The building, greatly altered since the time it was owned by the Roosevelt family, was recently purchased by a number of New Yorkers. It is at 28 East Twentieth Street, between Broadway and Fourth Avenue, and is practically surrounded by tall structures. The intention of the buyers is to restore the house to its exact condition prior to the civil war and to furnish it as far as possible in accordance with the household furnishings of that period, following the Colonel's own description in his autobiography.

"On Oct. 27, 1868," he wrote, "I was born at 28 East Twentieth Street, New York City, in the house in which we lived during the time that my two sisters and my brother and I were small children. It was furnished in the canonical taste of the New York which George William Curtis described in the Putnams Papers. The black haircloth furniture in the dining room scratched the bare legs of the children when they sat on it. The small library was a library, with tables, chairs, and bookcases of every elegance. It was without windows, and was available only at night. The front room, the parlor, seemed to us children to be a room of much splendor, but was open for general use only on Sunday evening.

The plan, yet in embryos, is to adapt the instrument that listens to guns to listening to steel bridges, and by the vibrations received in the microphones to calculate the measure of the strain on the structure, or on any part of it.

Another illustration: In the early days of the war, when we were just beginning to equip our men by the hundreds of thousands, there was a great shortage of rifles, as everyone remembers. The manufacturers were pressed to speed up. One difficulty, if not transponts, was a 'chase' cause of delay. That was trouble in getting good steel for the barrels. Lack of uniformity in business, the hard of the steel rods out of which the barrels were made caused the drill boring the holes through the centre of the rod to diverge. A hidden hard spot threw the drill from its course, and there was another ruined barrel. This happened so often that the War Department called upon the Bureau of Standards.

"Is there any way," was asked, "to find out if a piece of steel is of uniform hardness and texture without drilling it?"

The bureau went to work. The principal followed the idea that steel was a mixture of iron and carbon, and it was magnetized with the quantity of the steel, its hardness or softness, and its strength. The theory was, made, contrived deliberately to measure the hardness and metal of the steel barrel rod passed through it. If there was an inner flaw it was brought to the surface by this test, for the flaws were thrown out beforehand; the making of rifles for our men took a big amount just now.

This device can be salvaged for peace use in many valuable ways. A flaw in the rail is the explanation of rail railroad accident in which lives are lost and property destroyed. A defect in the railway has the same effect on a steam engine as on a rail. This device developed to test large piece of steel, a slamp from uncertainty to certainty is an important matter will be taken in a great industry.

On the other side there are many for which the new device will prove valuable. An engine that was finding its home landing in a heavy fog, another question, one of a great importance, will be answered. It is a question of how far ships are expected to increase this distance. In commercial aviation of the future this invention will play a great part.

During the war the methods for firing from airplanes had serious drawbacks. Both the mechanism and the electrical devices gave trouble; the timing by which they had to shoot to the blades of the propeller, the difficulty in telling how frequently, and pieces of the propeller were shot away. The difficulties encountered were solved by various instances of firing through the hollow axis of the propeller. The Bureau of Standards was called on to determine, just before the war ended a method was worked out for firing the aircraft guns by this axis. The propeller is cut on a lathe and is ready to fire, the gun is attached to it, and no matter how far the gun is held the holding the trigger necessary if the trigger gun propeller blade is out of the way. There is a double electric system, one by which contact with the pressure of the propeller axis the gun cannot fire; the other by which the aviator, by pressing on a button or by blinding on a small ribbon, can fire. The latter is simpler than the former, may be regulated in any degree up to this point of contact. One of the effective air-firing blade was the advantage. The aviator regulating fire from his mouth when a projectile blade is in the way; the other by which the aviator, by pressing on a button or by blinding on a small ribbon, can fire. The latter is simpler than the former, may be regulated in any degree up to this point of contact. One of the effective air-firing blade was the advantage.
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Hitherto, Sweden has had a virtual monopoly on gauges. The latest series of these gauges shows a precision and workmanship never before attained. They are accurate to less than one-millionth of an inch.

In an earlier stage the Bureau of Standards had a slow fight for recognition. For ten years it had been trying to get a new building for industrial research. Congress was preoccupied with river and harbor bills. Then came the war and a thousand questions for science to answer. Facilities had to be increased. Out of his own fund the President gave the money for two large buildings. The bureau had no funds to conduct the costly and extensive experiments called for by the Army and Navy Departments. Out of the ample funds voted by Congress for them the Army and Navy Depart-

ments transferred the needed money to the bureau, about $2,000,000 all told.

But the war is over now and the question is up to the future of the bureau—whether it is to be developed in accordance with the vast expansion expected in American industry as a great laboratory for national advancement in manufacture and commerce or is to be held down by lack of funds as in the past. The Department of Agriculture receives an appropriation of $25,000,000 a year, the Bureau of Standards something more than $1,000,000. The friends of the bureau do not expect a rapid increase to what is allotted the Department of Agriculture by Congress, but they do expect, in view of the more and more important part played by physical and chemical research and scientific and technical standardization, large and steady increases in the appropriations for the maintenance and expansion of the bureau.

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