

Nothing Stops This Gun

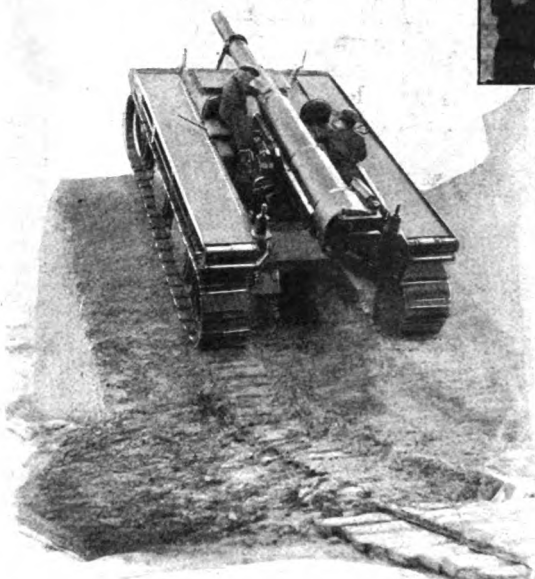
THIS caterpillar gun will ride over any incline that does not exceed 45 degrees. The caterpillar chassis carries a 6.2-inch gun, the muzzle of which is clamped down while the machine is in motion.

This new type of gun was developed through the work of Mr. Walter Christie in cooperation with the United States Ordnance Department. It is a very mobile unit, self-propelled and able to take part in virtually any kind of an engagement. The power plant, which is a large gas-engine, is located directly underneath the muzzle and the controls of the gas-engine are within reach of the operators.

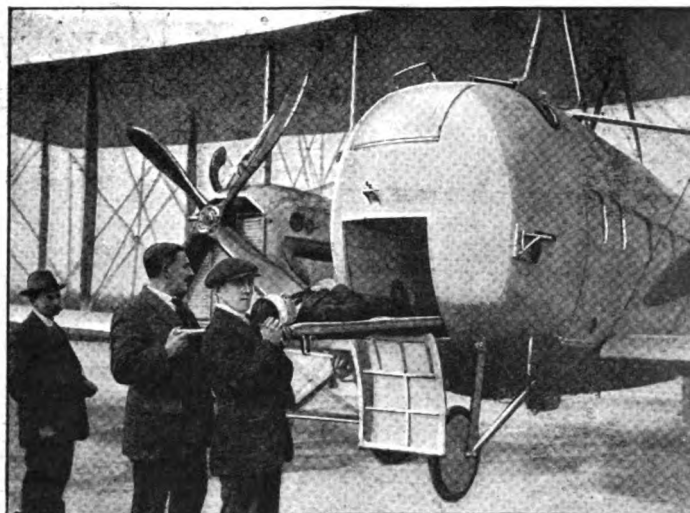
The big gun is here seen crawling over a steep hill somewhere in New Jersey, where it was given its first trial.

One side of the embankment was 45 degrees and the other side was 35 degrees. The gun crawled over it with perfect ease. A traveling track, which is seen over the wheels, is used when the machine is crossing swampy country.

Even in hilly country the new gun can reach a speed of twelve miles an hour. This may be increased to sixteen on a straight road.



The new caterpillar gun of the United States Ordnance Department, crawling over an embankment



Fitted up for four patients, this airplane has room for a pilot, a mechanic, a doctor, and a nurse

Ambulance on Wings

IN England an airplane manufacturer has designed and constructed a hospital of the air. It is a big, powerful machine equipped with two 450-horsepower engines. These are able to drive it through the air at a speed of 110 miles an hour. It carries a pilot, a mechanic, a doctor, one nurse, and four patients. If the patients can remain in a sitting position, the cabin of the machine will accommodate eight of them. Special supports are made for the stretchers, which slide in through a special door at the head of the machine. The stretchers rest in a tunnel that passes through the cabin.

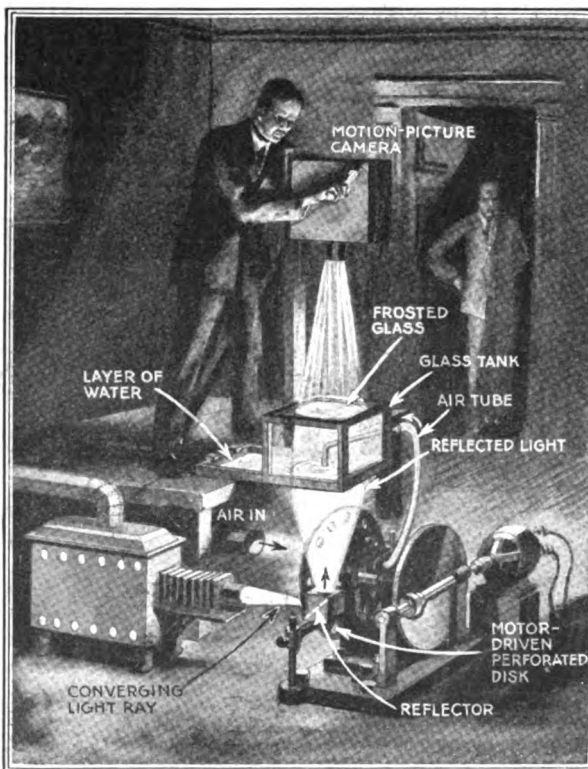
The biplane used has a span of 68 feet and a length of 43 feet. It can carry a two-ton load and can climb 6500 feet in ten minutes with this load.

A Motion-Picture Cure for Faulty Acoustics

AN apparatus by which the action of sound waves and the phenomena of echoes and reverberations in auditoriums can be reproduced in moving-pictures has been invented by Dr. F. R. Watson, professor of physics at the University of Illinois.

By means of this invention the acoustics of a proposed building can be tested out from the architect's plans, making it possible to conquer echoes and other acoustic defects before, rather than after, the building is erected.

A longitudinal section of the building under consideration, made from a narrow strip of metal, is set in a glass tank containing water of less depth than the metal strip. Intermittent puffs of air from an adjustable rubber tube are then directed upon the water in the model from a position corresponding to that of a speaker on a stage. The waves thus set up are exactly comparable to waves of sound; they are reflected from walls and ceiling in exactly the same man-



By taking moving-pictures of shadows reflected from water, building acoustics can be determined

ner as sound waves. These waves, so faint as to be invisible, are made to throw an enlarged shadow on a plate of frosted glass above, which is distinct enough to be caught by a motion-picture camera that is placed vertically.

The streams of both light and air depend on a motor-driven device placed beneath. A stream of air is periodically interrupted by being directed against a row of holes punched in a rotating iron disk.

The air, passing through the holes thus intermittently, is conveyed upward through a tube to the tank.

Against a second row of holes in the same disk is directed light from a lantern.

These spasmodic gleams of light are then reflected upward by a small mirror in such a way as to illuminate the model and throw an enlarged shadow of the water waves on the frosted glass plate, and it is the moving-pictures of these shadows that guide the acoustic expert.