

conditions. I don't believe mathematical formula will help in this any more than it will help to ride a bicycle.

I will give results of present experiments later on.

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FREDERICK, MD., January 14, 1895.

UNITED STATES WAR BALLOONS.

THE balloon park of the United States Army, or the headquarters for experiments and practice, is at present located at Denver, Col. The view which we give herewith is of the balloon ready for an ascent.

Efforts are now being made to get the needed authority for the construction of another balloon, and the following particulars in relation thereto are taken from the *Rocky Mountain News*, published at Denver. That paper says:

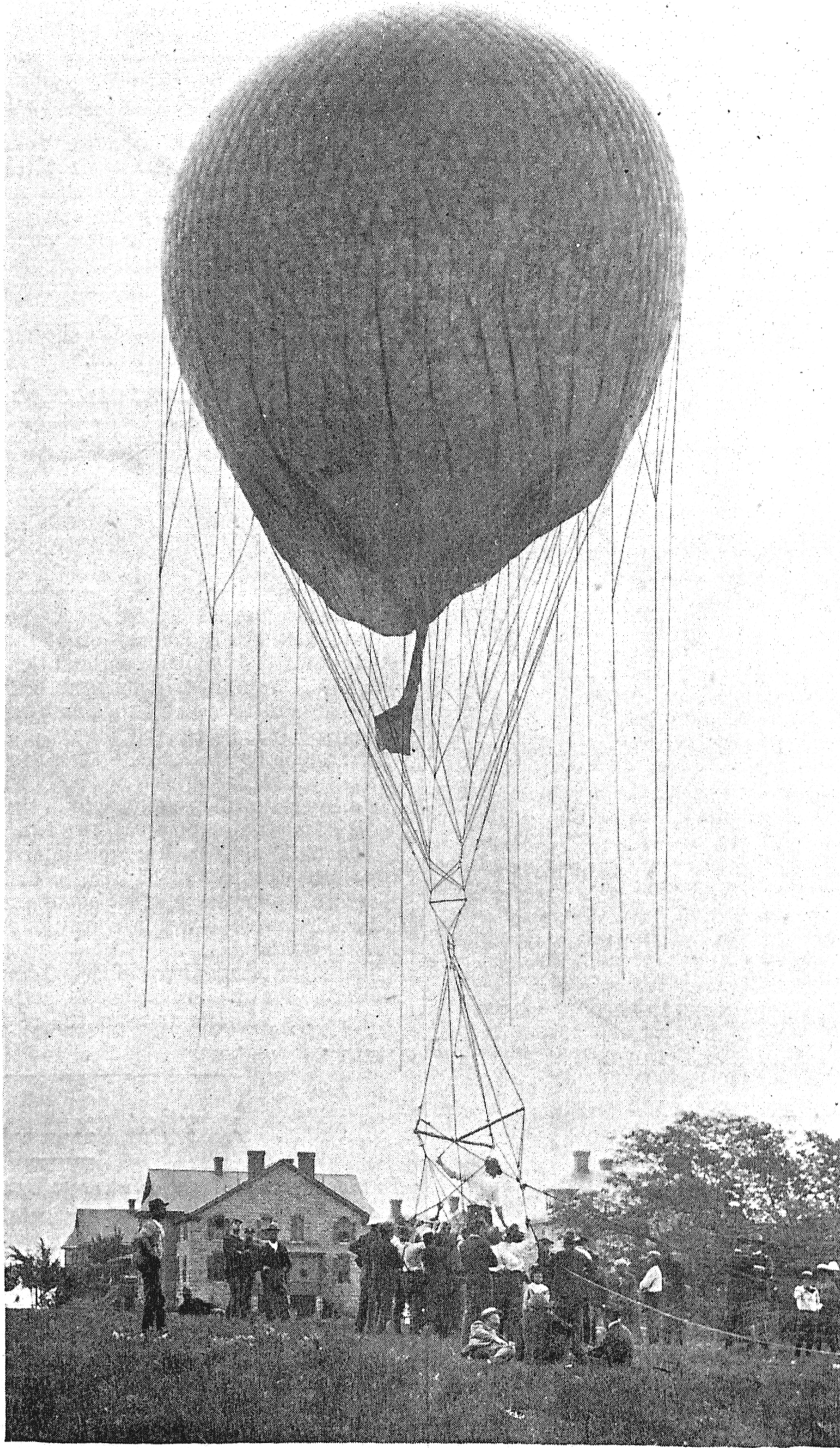
"General McCook has taken an active interest in the development of the signal service, as exemplified by Captain Glassford and his corps of assistants, and he is now urging the appropriation of a special fund for advancing the service. Before he retires from office, next April, the general desires to see a new war balloon in complete working order. Plans have been made by which the airship can be built in Denver at a cost of about one-third of that required in the manufacture of the *General Myer* in France. Captain Glassford estimates that, with the assistance of Sergeant Baldwin, he can turn out the balloon complete for \$700. No such balloon as is contemplated has ever been made on this side of the Atlantic, and the process will be watched with great interest by aeronauts in all parts of the country.

"The object of having two war balloons in the signal corps is for the purpose of making exhibitions at different posts where the army is located, and giving signal men an opportunity to learn how to operate the balloons at different elevations and under various circumstances.

Applications have been made at Washington by heads of the signal departments at San Antonio, Tex., and San Francisco, Cal., asking that the *General Myer* be sent to those points to be tested by the specialists of the department. The question at once presented itself, that if the balloon park is to be permanently located at Fort Logan one balloon could not fill the requirements, and it would be necessary to have at least two balloons at the command of the department if the field is to be satisfactorily covered. The plan which General McCook favors is for one

balloon to be kept at Fort Logan and its companion to be sent over the country in charge of a competent officer. The hydrogen gas for inflating the balloons is to be manufactured at Fort Logan and shipped in iron cylinders to points where the perambulating balloon is on exhibition. The apparatus for manufacturing the gas is almost complete, and the first shipment of gas will be made in a few days. The tubes will be sent to Fort Riley, where the *General Myer* has been kept until experiments can be performed before the cavalry and artillery school. At the conclusion of the tests the balloon will be bundled up and sent to Denver, where it is to be permanently located."

The officers in charge of the balloon corps have, of course, kept themselves informed of all the experiments and investigations which have been made in aeronautical matters, and Captain Glassford, who is in charge of the United States balloons at Denver, is reported to have given as his opinion, after years of study of the subject, that the aeroplane will finally prove to be the solution of the vexed problem. The French dirigible balloons have not attained a perfection that entitles them, in the opinion of Captain Glassford, to serious attention when compared with the airship that has been developed by Maxim. The experiments of Maxim prove that a machine can be made sufficiently powerful and light to lift itself into the air. The experiments also prove that the aeroplane will lift a great deal more than a balloon of the same weight, and that it can be driven through the air, by means of a screw propeller, at a great rate of speed. Mr. Maxim takes the position that if the French balloon experts had spent half the money on aeroplane experiments that they have expended in fruitless attempts at making dirigible balloons, the flying machine would be as common as the torpedo-boat. The one feature in experimentation which Maxim has not reached is the attempt to steer the aeroplane through the air. In Sergeant Baldwin, who has had years of practical experience in riding in balloons and



A UNITED STATES WAR BALLOON.

taking parachute flights through the air, Captain Glassford thinks he has a man who is especially adapted to make the supreme test. Captain Glassford furnishes the technical knowledge, and Baldwin puts the plans into execution.

Our Denver contemporary is authority for the statement that Captain Glassford "hopes to be able to take up the flying machine at the point it has reached through the remarkable experiments of Hiram S. Maxim, and build a machine that