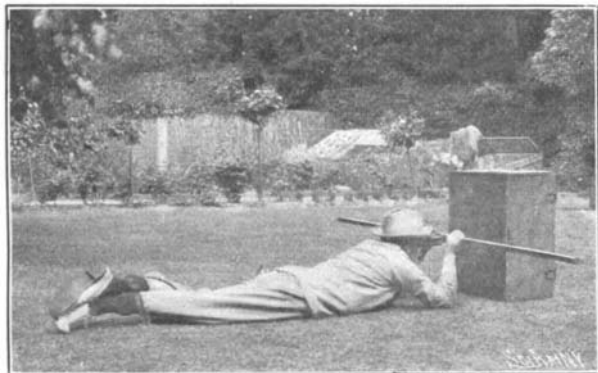


**DESTRUCTION OF STEAMSHIP "PROGRESSO,"**  
BY ENOS BROWN.

The destruction of the steamship "Progresso" at San Francisco on the morning of December 3, with a lamentable loss of life, was a catastrophe that has excited much comment, particularly in the West, where a general movement for the installation of oil in place of coal for fuel was in process of accomplishment. The "Progresso" was an iron steamship of about 3,000 tons capacity, and had been employed as a collier and government transport. Six months ago she was with-



**PROF. FORBES AND HIS RANGE FINDER BEHIND COVER.**

drawn from traffic and taken to the ship yards of the Fulton Iron Works, San Francisco, to be converted into an oil-burning and oil-carrying steamer. She was to be employed in conveying oil in bulk from Texas to northern Atlantic ports. New boilers and engines had been installed. Storage and supply tanks had been provided and in a few days the repairs would have been completed and the steamer turned over to her owners. Engines and boilers were inclosed in a compartment with iron coffer dams or bulkheads provided with water backing. Every customary protection had been employed to make the "Progresso" safe in any contingency. Steam had been raised to test the new machinery. The system of ventilation was thought to be perfect. The storage tanks were empty, as it was intended to carry the steamer to her destination with water ballast. The only oil aboard was about 400 barrels that had been pumped into the supply tank but a few hours before. This oil is said to have come from the wells of Fresno and Fullerton districts. Its specific gravity was 24 deg. California oils vary in specific gravity from 18 deg. to 30 deg. From 18 deg. to 24 deg. is regarded as a fair average.

The weather on the day of the explosion, and while the oil was in the tank, was noticeably cold for the latitude, and the oil, consequently, extremely sluggish in flowing. Two or more qualities of oil were mixed in order to overcome the low gravity of the heavier, though the seller refuses to admit this, and claims that the oil supplied was such as the buyer ordered to be delivered. The tank containing the oil was uncovered at the time the catastrophe occurred. Some sixty mechanics and men were employed about the steamer, mostly in the hold, where the light was dim and the temptation to employ artificial illumination was great. Early in the morning, a violent explosion took place, tearing out the sides of the vessel and completely wrecking the interior. A conflagration followed, blocking all egress from the hold and suffocating a dozen men, who were unable to make their escape. The destruction is so complete that any attempt to raise the steamer will be abandoned. As she lies, her value will only be realized as scrap iron, and the only method of removal will be by the

use of dynamite. The responsibility for the catastrophe will probably never be located. It seems to be the confirmed opinion of experts that an unfortunate workman struck a light, for some purpose, which, communicating with the volatile gas arising from the oil contained in the uncovered tank, caused it to explode. The company supplying the oil deny their responsibility, inasmuch as the oil was the same as that burned on many steamers, and heretofore without accident of any kind. The contractors, whose men were employed in making the repairs, assume no responsibility whatever. They are heavy losers by the calamity. A great deal of litigation over the affair is in prospect, and a long investigation by government inspectors is in progress.

Although public confidence in the safety of fuel oil on steamships has received a rude shock, expert opinion is inclined to the belief that the disaster was the result of carelessness in breaking the rules which govern the safe use of liquid fuel.

**Prof. Bell's Aerial Experiments.**

Rumor has been rife for a long time that Prof. Alexander Graham Bell, of telephone fame, is the inventor of a flying-machine. In the interviews which he has given to representatives of the daily press, Prof. Bell has been extremely reticent. He states, however, that he has not invented a flying-machine, but that he has been engaged in experiments in kite-flying which he believes will have some bearing on the invention of an operative aeroplane. It is understood that Prof. Bell and Prof. S. P. Langley have collaborated to a certain extent in carrying out these experiments.

The tangible result of Prof. Bell's experiments to the present time has been the construction of a kite capable of carrying up into the air a weight equivalent to that of a man and an engine, and of such construction that it is capable of being used as the body of a ship.

**THE NEW BRITISH ONE-MAN FOLDING RANGE FINDER.**

BY AN ENGLISH CORRESPONDENT.

During the past few weeks the writer had, owing to the kindness of Prof. George Forbes, F.R.S., M.I.C.E., exceptional opportunities for witnessing the working of a new one-man folding range finder, of which Prof.



**TAKING A RANGE BEHIND A BUSH.**

Forbes is the inventor. Although no official statement has been made on the subject, we have the best authority for stating that the new instrument will very shortly be adopted by the British War Office as the new service range finder for use both with infantry and artillery. It is a curious fact that although the trekometer, which is the present British service range

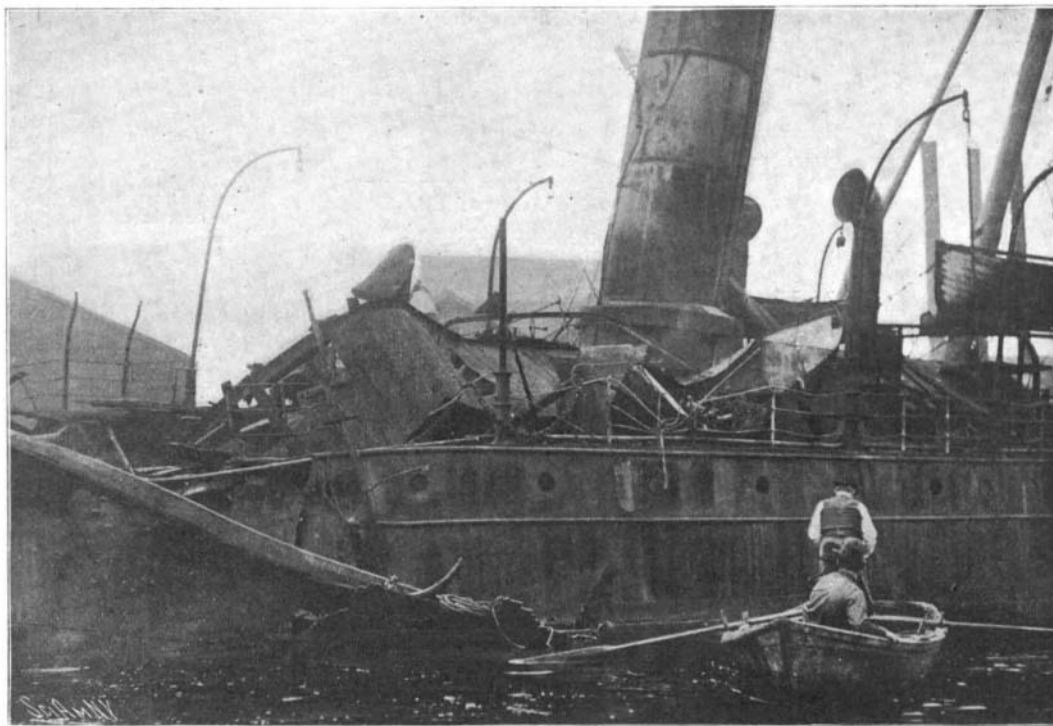
finder, is served out to the British troops in the field, neither this nor any other range finder is ever used by the infantry or cavalry in the field. Even if the trekometer be ever used with artillery, British officers seldom rely upon it because the time taken is excessive, the exposure of the men is objectionable, and the errors introduced by two men dependent upon each other are fatal.

Prof. Forbes in the early part of this year went out to South Africa at his own initiative and at his own expense to test his new range finder, which was the result of work on which he had been engaged, intermittently, for the past few years. After a series of practical trials with his new instrument at the front, the reports were sent to Lord Kitchener, who had taken a great interest in the invention. The Commander-in-Chief's reply was as follows: "Reports sent in on your range finder seem most exhaustive, and I do not think anything further is necessary.

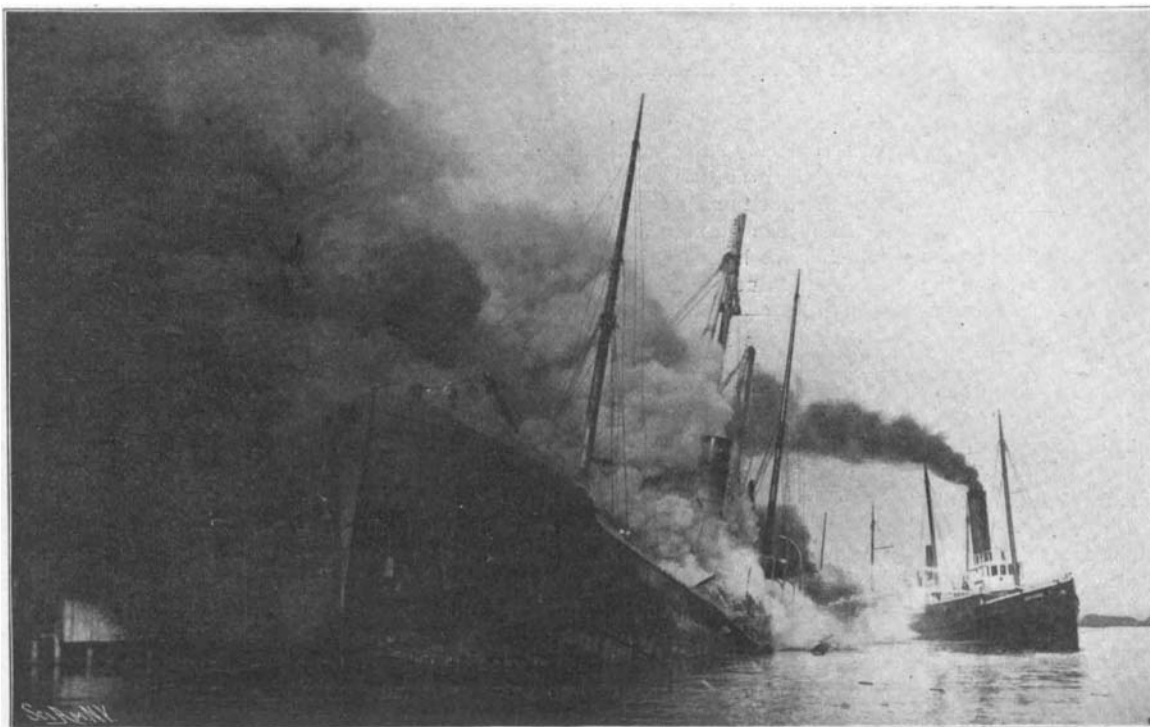
I will submit them to the War Office in due course. Regret that I cannot make a personal inspection of the instrument."

The following description of the range finder has been taken from a lecture delivered by the inventor before the Royal United Service Institution:

The range finder consists of two parts, the base and the binocular. The base, which is a tube of rectangular cross-section, consists of two half bases hinged together; each half base is one yard long. On the left half base at the hinge there is a vertical slot facing the range-taker to receive the tongue of the binocular. On the two halves of the hinge facing the range-taker are the middle openings, closed and opened by the middle shutters, which expose to view the glass faces of the middle prisms which are



**The wreck of the "Progresso" amidships. The men in the boat are grappling for boilers.**



**The "Progresso," with her back broken, sinking under the weight of the water thrown into her.**

**THE BURNING AND THE WRECK OF THE "PROGRESSO."**