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A Peruvian Infernal Machine.

On the 3d of July the Chilean transport steamer *Loa* was destroyed in Callao Bay by an ingenious and effective torpedo boat. A Peruvian officer took an ordinary fruit boat, put a torpedo in the bottom, and over this he placed a false bottom, resting on springs kept down by the weight of the cargo. He then loaded it with a very choice assortment of camotes, yucas, chirimoyos, grandillas, fowls, turkeys, green vegetables, etc., and, towing it toward the blockading squadron before daylight, set it adrift.

After floating about for some hours the torpedo boat was seized by the Chileans and brought alongside the *Loa*. As the weight on the false bottom was diminished by the transference of the cargo, the machinery in connection with the torpedo was set free, and in a moment 300 pounds of dynamite were exploded and the *Loa* was almost lifted out of the water. The effect, as described by those who were watching the operation from the shore, was awful in the extreme. Every house in Callao was shaken to its foundations, and every ship in the bay shivered as though a fearful earthquake had spent its fury beneath them. The fated ship appeared

as enveloped in one mass of flame, which resolved itself into dense clouds of black smoke. When this cleared away she seemed not to have suffered, but suddenly she was seen to sink at the stern, while her bows went high in the air, and the *Loa* disappeared forever.

Boats from neutral vessels picked up about 40 of the *Loa*'s crew; the rest, to the number of 150 or more, perished.

The *Loa* was an English built iron steamer. She was armed with one long range seventy-pounder and four smaller pieces, and at the time of foundering had on board two long range seventies, which were to have been mounted on the iron clad *Blanco Encalada*, 140 tons of shot and shell, and a miscellaneous cargo for the fleet.

ELECTRIC LIGHT FOR MARINE USE.

The unprecedented number of disastrous and terrible accidents that have occurred from collisions of steam vessels in fogs, during the last six months, have created a great deal of speculation and provoked much discussion in mechanical and scientific circles as to the best means of averting such disasters. It is generally conceded that among all the

devices and appliances proposed for this purpose there is nothing that promises so well as the electric light. It is not only the strongest artificial light, but the smallness of the point from which the light emanates renders it singularly well calculated for projecting a concentrated or parallel beam, and makes it possible to get one hundred times more light exactly in the focus of a reflector than by any other means.

Fog is simply a supersaturated atmosphere, an atmosphere whose transparency is affected by a surcharge of vapor. A slight rise in the temperature dissipates it. The sun raises the temperature of the air, and the air absorbs the water and becomes transparent. The quantity of solid or liquid matter required to give a foggy appearance to the air is surprisingly small, and the heat required to dissipate it is not very great. The electric beam, owing to its great heat, warms up all opaque bodies in its path, and, as it might be said, cuts out a way for itself through the fog; thus giving it an unobstructed path for a considerable distance. To produce this result, however, the beam of light

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Fig. 2.

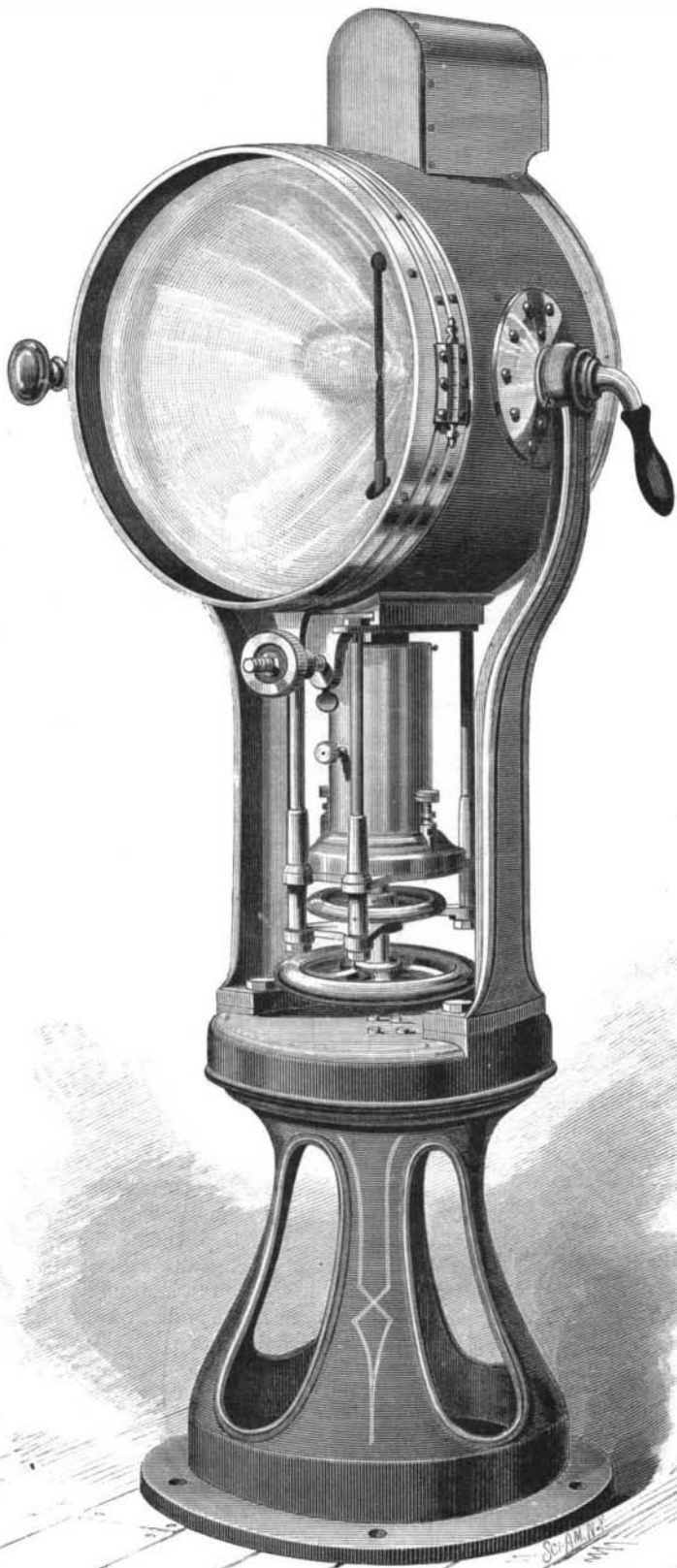
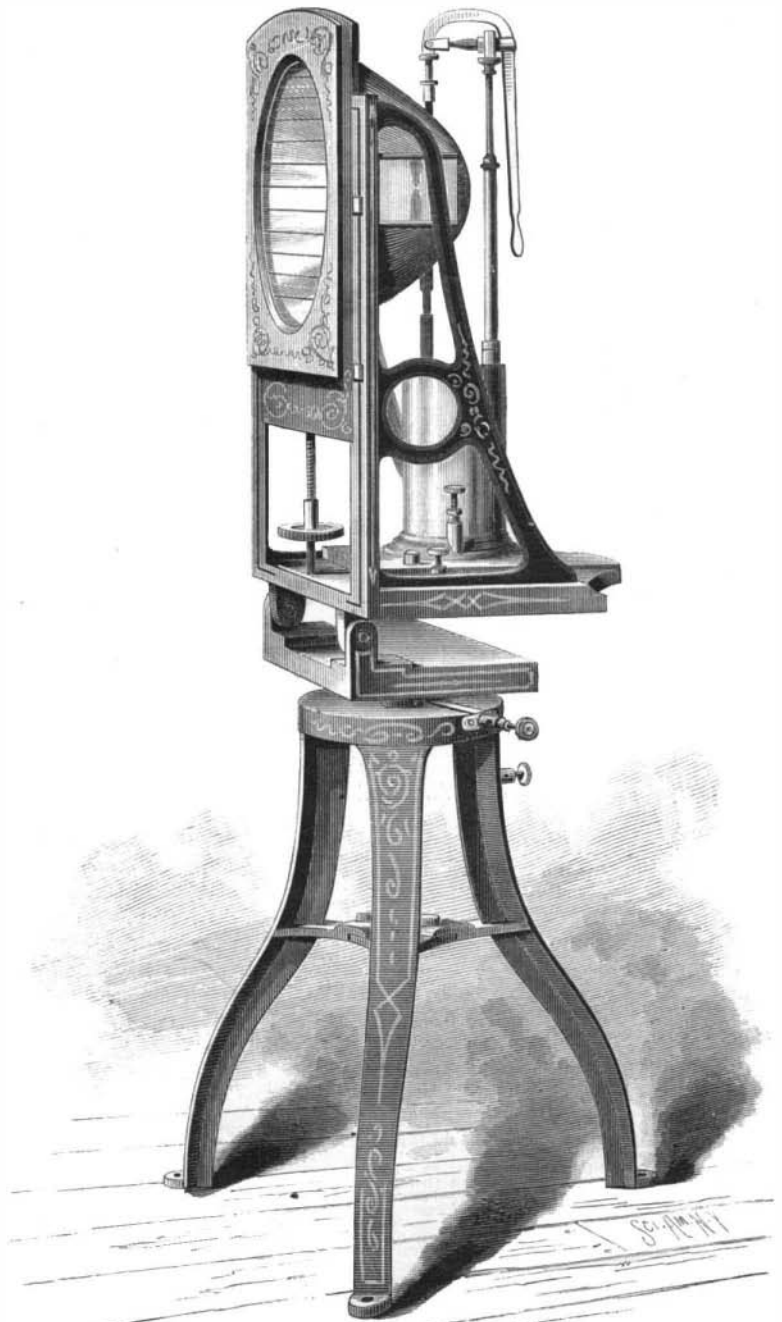


Fig. 3.



MAXIM'S ELECTRIC LIGHT PROJECTORS FOR LAND AND MARINE PURPOSES.