

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF  
AND GEORGE HARRINGTON, OF WASHINGTON, D. C.

## IMPROVEMENT IN CHEMICAL TELEGRAPHY.

Specification forming part of Letters Patent No. **166,861**, dated August 17, 1875; application filed  
July 25, 1874.

CASE No. 90.

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Chemical Telegraphs, of which the following is a specification:

The object of this invention is to record dots and dashes upon chemically-prepared paper by electro-decomposition for telegraphic purposes.

The invention consists in combining a protosalt of iron with the sulpho-cyanide of potassium, in which the paper is to be moistened. The recording-stylus is formed of platinum, or metal that is not oxidized by the nascent oxygen.

The action is as follows: When the copper end of a galvanic battery is connected to the platina stylus, resting on the paper that is moistened in the above-solution, and the zinc end is connected to the metal upon which it

rests, oxygen is evolved at the platina point. This raises the protoxide to a sesquioxide or peroxide, when the sulpho-cyanide of potassium, which has no action on a protosalt of iron, combines with the higher oxide to form the blood-red sulpho-cyanide of iron.

The reaction is very delicate. I prefer to use the protosalt of iron in the form of the protosulphate of iron. Chloride of sodium added to the solution increases the delicacy.

I claim as my invention—

The combination of a protosalt of iron, sulpho-cyanide of potassium, and a non-oxidizable stylus, for the purposes set forth.

Signed by me this 1st day of June, A. D. 1874.

THOS. A. EDISON.

Witnesses:

GEO. T. PINCKNEY,  
CHAS. H. SMITH.