

UNITED STATES PATENT OFFICE.

ANDREW J. RUSSELL, OF NEW YORK, N. Y., ASSIGNOR TO WILLIAM EDWARD SAWYER, OF SAME PLACE, AND JAMES GILMORE SMITH, OF HACKENSACK, NEW JERSEY.

IMPROVEMENT IN TRANSFERS FOR COPYING-TELEGRAPHS.

Specification forming part of Letters Patent No. **176,356**, dated April 18, 1876; application filed January 14, 1876.

To all whom it may concern:

Be it known that I, ANDREW JOSEPH RUSSELL, of the city of New York, in the State of New York, have invented certain new and useful Improvements in Transfers for Copying-Telegraphs, of which the following is a specification:

My invention consists in a method of preparing messages for transmission over a line of telegraph, so that they may be reproduced at the distant station in the handwriting of the sender, and is designed especially for use in the copying or autographic telegraph system of William Edward Sawyer, Letters Patent No. 171,051, dated December 14, 1875, although it may obviously be extended to many other uses.

While the application of my invention is similar to what is set forth in that portion of the eleventh claim of the Letters Patent of William Edward Sawyer, No. 159,460, dated February 2, 1875, which says, "In a chemical or copying telegraph, the method of obtaining an insulating writing-surface upon a metallic surface, consisting of transferring the lines of writing first formed in a prepared ink upon paper to a metallic surface lithographically," my invention comprises an improvement not contemplated therein, as I shall describe. In that invention the writing was necessarily in an ink containing oily matter to prevent rapid drying, as when dried the writing could not be transferred by pressure to a metallic surface, as therein contemplated.

The principal feature of my invention consists in pressing the face of a written message against a heated metallic plate, whereby the lines of writing are drawn from the message-blank, and thus transferred to the plate. When this is done the writing should, preferably, be in an ink containing a material readily liquefiable by heat. This material may be in the ink itself, or may be sprinkled upon the writing after the message is written. In the latter case almost any ink may be used, provided it is not permitted to dry before the insulating material is sprinkled upon it. When an ink containing oily matter is used, the writing should be blotted previous to sprinkling it with the insulating material; otherwise it may take up so much of this material as to spread and blur when the message is pressed against the heated plate. If any insulating

material sprinkled upon the writing, or contained in the ink, will not of itself readily melt with heat, but will so melt with the addition of moisture—such, for instance, as gum-arabic—the writing or the blank upon which the message is written may be moistened previous to transferring to the heated plate. Powdered asphalt, gum-shellac, and Burgundy and Trinidad pitch are among the best insulating materials for sprinkling the writing. The metallic plate should not be very hot, and in making the transfer it is preferable to pass the message and the plate between pressure-rollers as rapidly as possible. A considerable amount of pressure is desirable, and if the plate is properly heated, the more rapidly it and the message are passed between the rollers the more perfect is the transfer.

It is obvious that upon placing the metallic plate containing the transferred message in a copying-telegraph instrument, the message may be transmitted over a line of telegraph in the handwriting of the sender, the blank space of the plate conducting and the insulating writing interrupting the electric current. Roman letters, sketches, drawings, &c., may be transmitted with equal facility.

If desired to transfer printed matter it is only necessary to go through a well-known lithographic process, in which the letters are made to take up a transferable ink, which the blank rejects, and then proceed to transfer upon a metallic plate, as hereinbefore described.

If deemed desirable in any case, in order to secure great hardness of the insulating writing upon the plate, the plate may be again heated after the transfer is effected.

Having thus fully described my invention, what I claim as such, and desire to secure by Letters Patent is—

In a copying-telegraph, the method of obtaining a transfer of a message upon a metallic plate, consisting in pressing the message and the plate together while the plate is in a heated state.

The above specification of my invention signed by me this 11th day of January, 1876.

ANDREW J. RUSSELL.

Witnesses:

W. E. SAWYER,
I. G. SMITH.