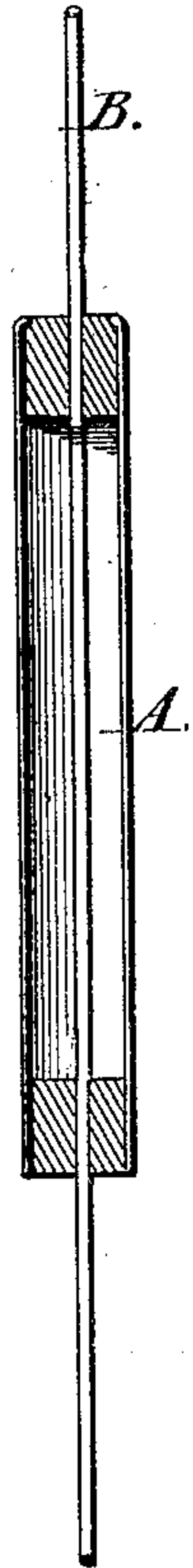


W. E. PRALL.

INSULATING TELEGRAPH WIRE.

No. 172,495.

Patented Jan 18, 1876.



Witnesses:

*Alfredus  
J. R. Plunk*

Inventor:

*W. E. Prall*

# UNITED STATES PATENT OFFICE.

WILLIAM E. PRALL, OF WASHINGTON, D. C., ASSIGNOR TO PRALL RAILWAY  
SIGNAL AND TELEGRAPH COMPANY, OF NEW YORK, N. Y.

## IMPROVEMENT IN INSULATING TELEGRAPH-WIRES.

Specification forming part of Letters Patent No. **172,495**, dated January 18, 1876; application filed  
December 20, 1873.

*To all whom it may concern:*

Be it known that I, WILLIAM E. PRALL, of Washington, District of Columbia, have invented an Improved Method of Protecting Telegraphic Wires, of which the following is a specification:

My invention relates to an improved system for utilizing compressed air as an auxiliary in the management of railways and electric telegraphs. It consists in the combination of one or more telegraph wires or cables with a pipe charged with compressed air, the object of my invention being to insure a more perfect insulation of the wires, and their complete protection from atmospheric disturbances.

In the accompanying drawing, A represents a pipe, or section of pipe, charged with compressed air, and inclosing a telegraph-wire, B.

In carrying my invention into practice, a continuous line of pipes, A A, is laid between the points which are to be connected by the telegraph, or where especial protection of the wire B is deemed important and advisable. The pipes are so connected as to form practically an extended air-tight vessel, and a suitable air pump or compressor is combined therewith, and operated to fill the same with air under pressure, and to maintain such pressure therein.

In practice, a compression of the air to two

atmospheres will be found efficient; but as the properties of air as a non-conductor for the electrical current increase with its compression, it will be found preferable to maintain the compression at several atmospheres, especially as the pipes used for inclosing the wires may be utilized as a reservoir from which the compressed air may be drawn for use as a motive power for various purposes, such as the movement of signals along a line of railway, the elevation of water for the supply of the locomotives upon the road, &c.

I do not claim as new the combination of one or more telegraph-wires with a continuous line of pipes inclosing and protecting the same, my invention relating solely to the protection of the wires by surrounding them with, or inclosing them within, an envelope of confined or compressed air.

I claim as my invention—

The combination, substantially as herein set forth, of one or more telegraph wires or cables, with a continuous line of air-tight inclosing pipes charged with atmospheric air under compression.

W. E. PRALL.

Witnesses:

DAVID A. BURR,  
ROBT. G. LOUGHERY.