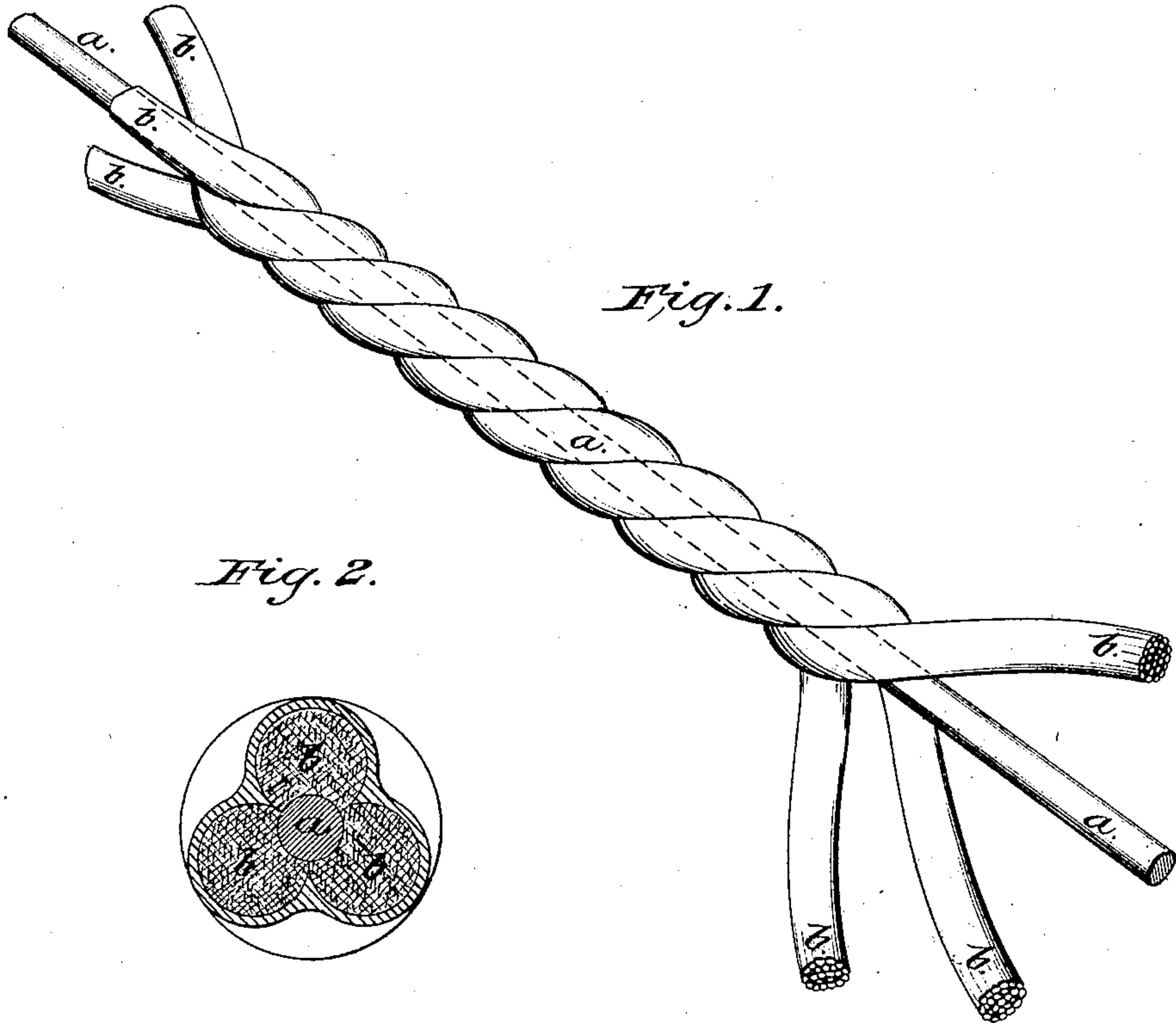


W. GORDON, dec'd.
T. GORDON, Adm'r.
TELEGRAPH WIRE.

No. 175,693.

Patented April 4, 1876.



Attest:

R. Y. Campbell
J. N. Campbell

Inventor:

W^m Gordon,
Lim Oluy Gordon, Adm'r
by
Mason Knick & Lawrence

UNITED STATES PATENT OFFICE

TIMOTHY GORDON, OF TAUNTON, MASSACHUSETTS, ADMINISTRATOR OF
WILLIAM GORDON, DECEASED.

IMPROVEMENT IN TELEGRAPH-WIRES.

Specification forming part of Letters Patent No. **175,693**, dated April 4, 1876; original application filed May 13, 1848; renewal application filed January 7, 1871.

To all whom it may concern:

Be it known that WILLIAM GORDON, deceased, late of Taunton, in the county of Bristol and State of Massachusetts, did invent certain new and useful Improvements in Telegraphic Wires; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein are set forth the nature and principles of his said improvements, by which said invention may be distinguished from others of a similar class, together with such parts as are claimed and desired to be secured to me, his administrator, by Letters Patent.

The distinguishing and novel feature of said invention consists in covering an electric conducting-wire with a non-conducting covering, formed of strands or yarns of hemp or other fibrous material, thoroughly saturated with a solution of gum-shellac or other non-conducting substance; but there are peculiar advantages resulting from the use of gutta-percha for this purpose, as well for saturating the threads as for coating them, especially when the conducting-wire is to be laid in moist earth or water. In fact, it may be considered as indispensable in such cases; and as the great purpose is to insulate the wire and to give it extraordinary longitudinal strength while its flexibility is preserved, that object may be attained, perhaps, as well by placing the insulating-gum around the wire and within the strands of the rope as by coating those strands with it on their outer sides, said strands or yarns so saturated being "laid up" about the wire in the same manner as they would be to form a rope in any of the machines used for laying up cordage, &c., the exterior of the whole being coated with a wash or varnish of gum-shellac, or with caoutchouc, gutta-percha, or other similar substance.

The figures of the accompanying plate of drawings represent a piece of wire so covered and prepared—

Figure 1 being a perspective view of the same, in which the wire is shown at *a a*, and the covering of strands of hemp, &c., saturated, laid up, and coated, as aforesaid, being

shown at *b b*. Fig. 2 is a section through the center of the same.

The advantages of the above-described preparation or covering of electric wires are, that they may be thus entirely insulated, and the electric currents unerringly transmitted along the wires, as the non-conducting covering of hemp, &c., avoids all liability to interruption.

Wires prepared or covered as above described are also much strengthened and less likely to be broken, while at the same time they are perfectly pliable, so that they may be used with great success for any purpose for which they are needed.

It is not indispensable that the strands with which the wire is surrounded should be saturated with any non-conducting substance, provided the whole be thoroughly coated with gutta-percha, or other non-conducting substance which is impervious to water, though I much prefer thus to saturate them, and with some substance which, while it renders them non-conductors of electricity, will leave them sufficiently flexible, the great purpose being to increase the strength of the wire, while at the same time it is completely insulated and left flexible.

I am aware that telegraph-wires have been insulated by a woolding of silk or other thread, and by being afterward coated by gum-shellac or other non-conducting substance, so as to be proof against the effect of water and other conducting medium from without; but this has made no sensible addition to the strength of the cable, which is often of great importance.

I am also aware that telegraph-wires have been insulated by surrounding them by a mixture of cotton and india-rubber, or other non-conducting substance, and then passing them through iron pipes or glass tubes; but this left them inflexible.

What I claim as new, and desire to secure by Letters Patent, is—

1. A telegraph-cable consisting of a conducting wire or core which is protected from external injury, and relieved in a great measure from strain, by strands of hemp or other fibrous material, laid up substantially as above described, and duly insulated electrically by

the use of gutta-percha or other non-conducting substance, the whole being thus left sufficiently flexible for the purpose contemplated.

2. In the construction of a telegraph conducting wire or cable, the employment of strands of hemp or other fibrous substance, laid up around the wire in the form of a rope or its equivalent, so as to give great longitudinal strength to the cable, while it is left sufficiently flexible for its intended use, substantially as and for the purpose described.

3. In a telegraph conducting wire or cable, which is surrounded and strengthened by

strands of a fibrous material, laid up around the wire in the form of a rope or its equivalent, so as to give it extraordinary longitudinal strength, while it thus protects the said wire from injury, and at the same time leaves it flexible, I claim the use of gutta-percha as an insulating substance, substantially as set forth and described.

TIMOTHY GORDON,
Administrator, &c.

Witnesses:

GEO. H. BABBITT, Jr.,
B. R. HOLT.