No. 21,492. PATENTED SEPT. 14, 1858.

M. G. FARMER & J. M. BATCHELDER.

TELEGRAPH INSULATOR.

Fig. 4.

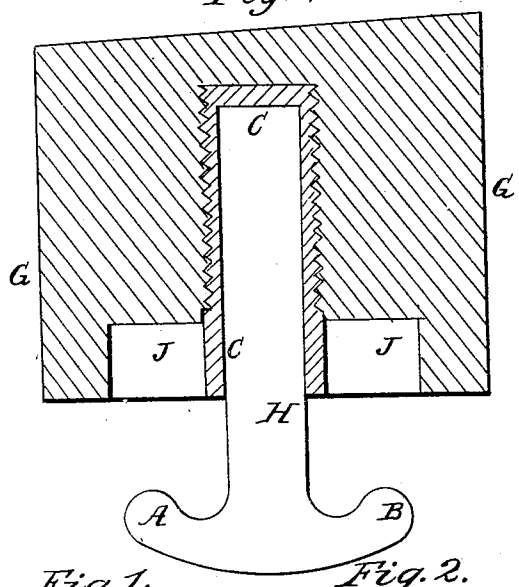


Fig. 5.

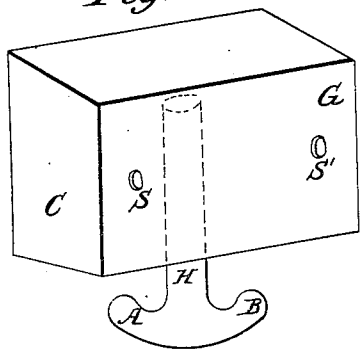


Fig. 1.

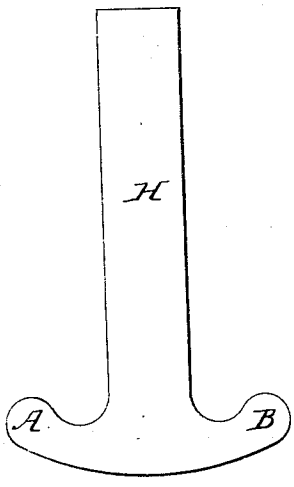


Fig. 2.

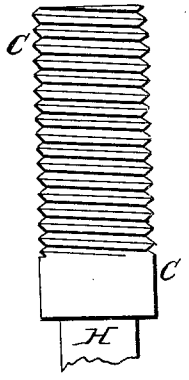


Fig. 3.

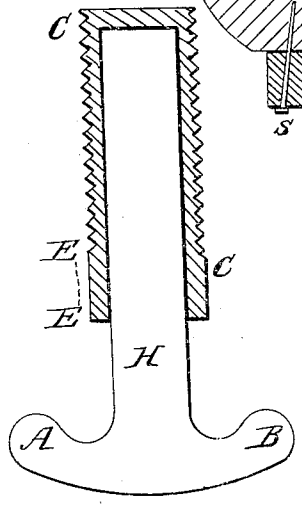
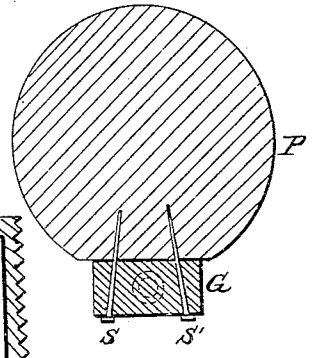


Fig. 6.



Inventors.

Moses G. Farmer

John M. Batchelder

UNITED STATES PATENT OFFICE.

MOSES G. FARMER, OF SALEM, AND JOHN M. BATCHELDER, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN TELEGRAPH-INSULATORS.

Specification forming part of Letters Patent No. **21,492**, dated September 14, 1858.

To all whom it may concern:

Be it known that we, MOSES G. FARMER, of Salem, in the county of Essex and State of Massachusetts, and JOHN M. BATCHELDER, of Cambridge, in the county of Middlesex and State aforesaid, have invented an Improvement in Telegraph-Insulators; and we do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, and to the figures and letters marked thereon.

Figure I is a section of iron supporting-hook; Fig. II, insulating-screw; Fig. III, vertical section of hook and insulating-screw; Fig. IV, vertical section through center of insulator; Fig. V, perspective view of insulator; Fig. VI, horizontal section of the insulator and post.

Our improved telegraph-wire insulator is constructed as follows:

A cast-iron hook, H, Fig. I, about four inches in length and three-fourths of an inch in diameter, forms the support for the telegraph-wire, the horns of the hook at the lower end being double, as at A B, and the upper part cylindrical. About three inches in length of the upper part of the hook is covered with hard india-rubber, commonly known as "vulcanite" or "hard compound," being the invention of Nelson Goodyear, Letters Patent having been issued to him for the same on the 6th day of May, A. D. 1851. This compound or gum is applied to the hook when in a plastic state, covering the end of the shank and about two-thirds of its length, as seen at C in Fig. III. The hook H, with its covering of rubber, is embedded in pulverized soapstone and placed in heaters or ovens, where it is exposed to a temperature of about 300° Fahrenheit for about ten hours, until it becomes perfectly black and hard. On being taken from the heater the rubber C is found firmly attached to the hook, its contraction being such that it is impossible to remove it without breaking the rubber. It is now placed in an engine-lathe and a screw, Fig. II, cut upon it, the depth of the thread being about one eighth of an inch, or half the thickness of the india-rubber. About an inch in length at the lower part, as at E, Fig. III, may be left plain or uncut, as but two-thirds of its length is required to screw into the wooden block seen at G, Fig. IV. The block is of square form, the back side being a little the highest to prevent water from remaining upon the top of it. A round hole, J, Fig. IV, about two inches in diameter, is bored in the wooden block, upon the under side, at its center, about one inch in depth, and within this another hole nearly one and a quarter inch in diameter and two inches in depth. The first forms an open chamber or space, J, around the rubber or insulating cap. This cap is of such strength that wrenches can be applied to the horns A B and the hook, with the attached rubber, screwed into place without previously cutting a screw in the wood. The thread upon the rubber cap or insulator displaces the wood which fills the cavities of the thread. The insulator-block is attached to the upright post P by two strong spikes, S S′, driven in holes bored at an angle with each other, as represented in Fig. VI.

The hard india-rubber is a good electric, and moisture is not so readily deposited upon it at certain states of the dew-point as it is upon glass.

The supporting-hook must always be made of iron. Wood will not bear the temperature required for the heating process without shrinking, and if exposed to rain and moisture it will swell and burst the rubber cap.

What we claim is—

The iron wire-supporter or hook, in combination with a screw-insulator made of hard india-rubber and attached to the hook or shank in the manner herein described.

MOSES G. FARMER. [L. S.]
JOHN M. BATCHELDER. [L. S.]

Witnesses to signature of Moses G. Farmer:
JOHN WARREN,
EDWIN HOLMES.

Witnesses to signature of J. M. Batchelder:
WILSON H. CLARK,
CYRUS KELSEY.