NEW METHOD OF PROTECTING BUILDINGS FROM LIGHTNING.

Spare the Rod and Spoil the House!

Lightning Destroys. Shall it be Your House or a Pound of Copper?

PROTECTION FROM LIGHTNING.

What is the Problem?

In seeking a means of protection from lightning-discharges, we have to view two objects,—the lightning as a perforating bullet, and the other the prevention of injury to life. In order to destroy a building in whole or in part, it must be done by a direct stroke, in which case the lightning is not insensible, nor capable of being taken in by the rods. Otherwise, it can cause no damage. This is not the case with the rods, which are capable of taking in the energy of the lightnings, and dissipated by them, and the other the prevention of injury to life. In order to destroy a building in whole or in part, it must be done by a direct stroke, in which case the lightning is not insensible, nor capable of being taken in by the rods. Otherwise, it can cause no damage. This is not the case with the rods, which are capable of taking in the energy of the lightnings, and dissipated by them.

Why Have the Old Rods Failed?

When lightning-rods were first proposed, the science of energetics was entirely undeveloped; that is to say, in the middle of the last century scientific men had not come to recognize the fact that the different forms of energy—heat, electricity, mechanical power, etc.—were convertible into one another, and that each could produce just as much of each of the other forms, and none more. The doctrine of the conservation of energy was early worked out in the early part of this century. There were, however, some facts known in regard to electricity a hundred and forty years ago; and among these were the interesting power of points for an electric spark, and the conducting power of metals. Lightning-rods were introduced with the expectation that the electricity existing in the lightning-discharge could be conveyed around the building which it was proposed to protect, and that the building would be saved.

The question as to the dissipation of the energy involved was entirely ignored, and it was assumed that the lightning was a 'mass' of electricity that would be dissipated, and that the conducting power of the metals would be sufficient to prevent the dissipation of the energy. Lightning-rods constructed according to Franklin's principle have not furnished satisfactory protection. The reason for this is apparent when it is considered that the electrical energy existing in the atmosphere before the discharge, or more exactly, in the column of matter from the earth, above referred to, reaches its maximum value on the surface of the conductors that are to be use as a column of dielectric, or that the greatest display of energy will be on the surface of the very lightning-rods that are meant to protect, and damage results, as a matter of fact, and cases.

It is understood, of course, that this display of energy on the surface of the old lightning-rods is aided by their being more or less insulated from the ground by the air, and the very existence of such a mass of matter as an old lightning-rod can only tend to produce a dissipation of electrical energy upon this body, as to draw the lightning, as it is so commonly put.

Is there a Better Means of Protection?

Having cleared our minds, therefore, of any idea of conducting electricity, and keeping clearly in view the fact that a conductor is only a means of conducting a current of electricity, we must furnish some means by which the electrical energy may be produced, dispersed, and conducted. The question arises—"Can an improved form be given to the rod so that it shall aid in this dissipation?"