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 in view two objects, namely, to prevent the destruction of dwellings and the injury to persons in the prevention of damage to buildings, and thus to prevent the loss of human life. If we could build a building that would not be struck by lightning-discharges, we could build a building that would not be considered a loss.

The question as to the lightning-rod was first proposed, the science of energetics was entirely undeveloped; that is, to say, in the middle of the last century scientists had not come to the fact that the different forms of energy—heat, electricity, mechanical power, etc.—were convertible into one another, and that each could produce as much of each of the other forms, and no more. The doctrine of the conservation and conversion of energy was first clearly worked out in the early part of this century. There was, however, some facts known in regard to electricity a hundred and forty years ago; and among these was the attracting power of points for an electric spark, and the conducting power of metals. Lightning-rods were introduced with the idea that the electricity existing in the lightning-discharge could be conveyed around the building which it was proposed to protect, and that the building itself would be saved.

The question as to the dissipation of the energy involved was entirely ignored, natural, and from that time to this, in the age of the best endeavors of those interested, lightning-rods constructed in accordance with Franklin's principle have not furnished satisfactory protection. The reason for this is that when it is considered that the electrical energy existing in the atmosphere before the discharge, or, more exactly, in the columns of air from earth to cloud to earth, above referred to, reaches its maximum value on the surface of the conductors that are intended to be used, a column of diestaticso that the greatest display of energy will be on the surface of the very lighting-rods we are meant to protect, and not on the side of the building itself. The building will, therefore, be saved.

It will be 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 earth, and in any event, the very existence of such a mass of metallic material lining the old-lightning-rods has only tended to produce a dissipation of electrical energy upon the surface of the building, so "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 in view the fact that in providing protection against lightning we must furnish some means by which the electrical energy may be harmlessly dissipated, the question arises, "Can an improved form be given to the rod so that it shall aid in this dissipation?"