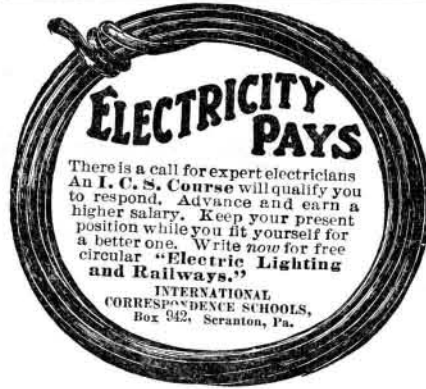


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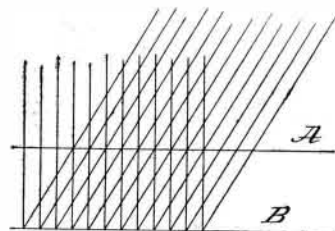
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whether the drops fall obliquely or vertically, because in the former case the drops are nearer together. I do not seem to see it that way. I submit a diagram showing how it looks to me.



The drops of water in the same horizontal plane will be the same distance apart, whether they fall in slanting or perpendicular direction. The drops also pass between the two planes, A and B, in the same time, whether they pass in a slanting or straight direction. Manifestly, tilting the gage would make a difference because in so doing you would change or shorten the plane of the opening: changing the direction of the rain drops in the manner specified, however, does not change the number passing through a given opening in the same plane. A. The rain gage seems to have excited more interest than any other problem which has arisen in a long time. We will give a final word upon the subject. If rain falls vertically, and one inch of rain falls to the ground, the rain gage will show one inch of rain. That all are agreed upon. Now our additional statement is if one inch of rain falls to the ground, at any angle of slope, a rain gage placed on the ground at that place will catch one inch of rain. We do not see any escape from this conclusion. The cut in answer 8461 shows that fact. In order that an inch of rain should fall at a slant, the lines of the drops must be nearer together than if the rain fell vertically. There is no escape from that conclusion. If one inch of water falls upon a square foot from a storm and falls at a slant, the lines of rainfall will be nearer together than if it fell vertically from the cloud. Do not confuse the question. It is: With a given rainfall, will the drops be nearer together when the rain falls at a slant? It will be admitted by all that a rain gage set at the surface of the ground catches all the rain that the ground would receive if the gage were not there. Any other conclusion than this would be indefensible and inconceivable. The presence of the gage makes no difference (as has been before pointed out in the discussion) except for the eddies of the wind produced by the recess of the mouth of the gage. If one inch of rain falls upon a square foot, a rain gage set at that place will catch it; and if the rain falls at a slant, the lines of the drops will be nearer together than if it fell vertically.

(8519) L. A. H. says: Please inform me as to whether there is a way by which the fly specks can be removed from chandeliers without taking them down. A. Have the water clean and boiling in two vessels. Dip in one water and then in the next as soon as taken from the nitric acid bath, so that there shall be no traces of acid on the fittings. Dry in box-wood sawdust while hot, and place upon a piece of hot sheet iron over a stove. As soon as all traces of water have left, quickly lacquer with very thin shellac varnish, using a camel's hair brush. You can make the lacquer by dissolving shellac in best alcohol. Do not touch the metal with the fingers before lacquering.

(8520) R. T. P. asks: Do you know of a material which is a non-conductor of electricity, which is as strong as steel, or do you know of a material which is nearly as strong? A. There is no other metal which is as strong as steel. If there were, it would not answer your purpose, since all metals are conductors of electricity. You seem to be seeking for a substance which does not exist.

(8521) H. A. H. asks: Can you inform me whether or not electricity is used on a phonograph while recording? If so, how? A. The phonograph is not an electrical apparatus, except that an electric motor is often employed to turn the cylinder. It can be turned by hand if any one prefers to do so. The phonograph is entirely an acoustic apparatus.

(8522) C. W. asks: If a rain gage was suspended on pivots like a ship's compass and having wing-like blades attached to the lower end of the gage, would it not in a high wind incline in the direction of the wind and give a more accurate record of rain fall? A. A rain gage fitted with wings to turn toward the wind would give too large a rain-fall. It would catch too much water, more than the same surface of the ground would catch. The rain gage should catch the rain which would fall upon an area of the same size as the mouth of the gage in the same circumstances.

(8523) W. A. M. asks: Will you answer through Notes and Queries whether or not the wind has any effect on a thermometer? That is if one thermometer is placed where the wind strikes the bulb, and another is placed so the wind cannot strike it, will they register the same? A. A thermometer in the wind should read lower than one in still air, unless the air is equally dry in both places. The reason is the same as for a person. A person feels cooler in a breeze than in still air because of the evaporation caused by the wind.

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