**OCTOBER 1946**

Fuel costs are such a relatively small figure in the overall expense of generating electricity that atomic power plants would reduce residential electric bills only slightly, according to a recent Westinghouse estimate. The investment required for central generating stations and distribution stations, and equipment maintenance, far outweighs the fuel bill.

"Some unusual set-ups are being used to give an accelerated but accurate measure of the way materials perform as parts of an entire unit. A refrigerator door, for example, may have a fine appearance and work well for a few times, but this is no assurance that it will function satisfactorily over a period of years. Therefore, in place of waiting for a housewife to open and close the refrigerator door to death, a machine was made which performs that operation continually—verging on the slamming side for good measure—24 hours a day to failure. An equivalent door life of 15 years is compressed to about 12 days by the robot door-slammer."

"Teacher, I can’t see the board’ used to be a familiar cry at the Bowditch School in Salem, Massachusetts, before the establishment of Room 4 as an experiment in schoolroom lighting. Keys to better seeing include triangular fluorescent luminaires that produce an asymmetric light distribution, with the greatest illumination facing the blackboard, and when louvers on windows can not adequately control sky glare, the fluorescent lamps are switched on or off by a ‘monitor’ pupil according to the indications of a simplified light meter fastened to his desk."

**OCTOBER 1846**

Animal magnetism, with all its boasted advantages in rendering people insensible to pain, appears likely to be superseded by a discovery of Dr. William T. G. Morton, of Boston. It is no other than a gas or vapor, by the inhaling of a small quantity of which, the patient becomes immediately unconscious, and insensible to pain, thus giving an opportunity for the most difficult and otherwise painful surgical operations, without inconvenience. [See illustration on page 124.]

"Jean-Baptiste Fourier, a French philosopher, established that there are three states in which material bodies exist and proved that when a solid body or a liquid (such as molten iron) becomes incandescent, the light which it emits is polarized; and that the light of incandescent gases, such as flame, is unpolarized. Now M. François Arago has, with most beautiful sagacity, established that the light from the sun is not polarized; the conclusion is inevitable, that the surface of the sun is covered by an atmosphere of flame." [Editors' note: Plasma, the fourth state of matter, was not recognized until 1952. The surface of the sun does give off unpolarized light but is actually composed of plasma.]

"Our engraving represents a recent invention, the Fire Shield, having for its object the protection of firemen from the excessive heat of the flames, while engaged in their gallant calling. The head is more sensitive to heat than any other part of the body, often compelling firemen to stand aloof, when, could their faces have protection, the flames might be approached much nearer; resulting, perhaps, in the rescue of valuable property. For this purpose a stiff leather mask has been constructed, with pieces of clear mica for eye-glasses and a small tube near the mouth for inhalation."