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Spectacular discoveries and developments of its famous research laboratory are shown and explained in the "House of Magic," the feature of the General Electric Company's exhibit at A Century of Progress Exposition. The company has concentrated nearly all of its displays in 9000 square feet of space on the main floor of the great circular hall of the Electrical Building.

In the little auditorium, which is completely air conditioned, 200 people can be accommodated for each group of lectures and demonstrations, comprising one of an all day series of performances which illustrate the striking advances in the electrical art that have been made during the last few years. The lighting system alone, utilizing a combination of the newest types of equipment, provides an interesting demonstration in addition to furnishing adequate lighting.

With no attempt to supplant more conventional methods, corn is popped in a glass container set on a table between two other containers filled with ice and water. High frequency coils and vacuum tubes do the job, and in another setting their ability to melt an ordinary saw blade without injuring a human hand placed in the same furnace is demonstrated. Photoelectric tubes, more popularly known as "electric eyes" show off their ability to distinguish color by sorting black and white balls rolling down a chute.

Another one prevents the lecturer from lighting a candle with a match. Still others detect the presence of cigarette smoke and turn on a fan, count the invisible flickers in an ordinary lamp, and help to pick up music that is being transmitted through the air on nothing more substantial than a beam of light. A novelty that attracts small boys particularly is the voice-controlled toy electric train, which may be made to go forward, stop, or backup with no more effort than speaking orders into a microphone or telephone mouthpiece.

A device called the cathode ray oscillograph gives the audience a chance to see what sound looks like in the form of light vibrations, and almost weird demonstrations of the effects of ultra-violet are shown with objects coated with fluorescent paint. The fever machine, Geiger counter, dental X-ray, stroboscope, and many other ingenious devices are put through their paces, while a Thyratron organ no bigger than a toy piano but capable of sound volume equal to great pipe organs furnishes a musical interlude. A wave of the scientist-magician's wand opens the exits at the close of the performance.

Outside the "House of Magic" and under a balcony that supports massive pillars covered with mural paintings depicting the development of the electrical industry are interesting displays of General Electric products and processes, many of them in operation, that dramatically portray the part played by electricity in the home, in commerce, and in industry. The whole exhibit was obviously designed to make many applications

of electricity understandable to men, women, and children alike and, in addition to providing an explanatory picture of common uses of electricity, to suggest new and better uses for the future. In such surroundings, endless possibilities crowd the imagination.

In a setting built to represent the basement and first floor of a house, two different types of air conditioning installations are shown. In one section, the furnace and central air conditioning unit for year round use are in operation to demonstrate how air is heated, washed, humidified, and distributed in winter; and cooled, conditioned, and distributed in the summer. In another section, air conditioning equipment for a single room is shown in operation.

Displays of electric ranges and refrigerators are placed on either side of a section identified as the G-E Kitchen Institute exhibit, consisting of two model kitchens, each equipped with electric range, refrigerator, dishwasher, clock, and other small home appliances.

One kitchen is explained by an electrical talking device which operates a battery of spotlights, turning on one at a time to emphasize the item of equipment which is being discussed. Having heard the story of the talking kitchen, the visitor may move on to another kitchen in which plumbing and electrical connections have been made and may examine the various features at close range. Between the kitchens is the Institute's planning room.

More equipment for electrical housekeeping is shown in the model laundry designed in accordance with scientifically proved ideas in home planning. Representing a bright, airy room, about 15 feet square, the laundry is equipped with every modern convenience--electric washer, flatplate ironer, ventilating fan, electric clock, iron, work tables, sorting bins, and other accessories. From start to finish, it was planned and constructed progressively so that the family washing can be done with a minimum of effort in the shortest possible time. Demonstrations are given every day.

The part played by electricity in modern transportation is shown in the apparatus section of the exhibit. Models are used to tell the story of electric ship propulsion. One is a reproduction of the S. S. "California," and the other is a framework model showing the generating equipment, propulsion motors, and auxiliaries necessary to operation. Electric transportation on land is represented by a working model of a giant bi-polar electric locomotive built by G-E.

Reproduced in miniature is the 20,000 kilowatt mercury vapor turbine station built at the Schenectady Works of the Company, and for people who want to see what makes the wheels go round, there is a cut-away turbine which shows what happens from the time steam is introduced into the machine until it is exhausted. To show how a nest of gears will cut down speed from 1800 revolutions per minute to as low as 13 revolutions without loss of power, there is a new machine called the gear-motor. A section of the enclosing case is cut away.

For use in hospitals, hotels, apartment buildings, and office buildings where mechanical noises are undesirable, there is a new motor designed especially for quiet operation, and there is still another motor being operated in a tank with water splashing over it. The tiny motors which operate home appliances, office machines, and other small devices, an electric welder, portable farm motor, electrically operated valves, pilot devices for magnetic control, and the explosion-proof motor for gasoline pumps are also on display.

A recent development known as a Thyatron reactor control panel which operates the changing colored lights in the exhibit is displayed with the apparatus. And the various little devices used in house-wiring, and other construction projects are displayed in a special compartment.

A large space at the east end of the exhibit is occupied jointly by the Incandescent Lamp Department of the company and the General Electric Vapor Lamp Company. In the Vapor Lamp section, a striking feature is the floating opal ceiling of ever-changing colors, illuminated by gaseous conductor tubes in which various types of gases are used to produce the complete range of delicate pastel shades that appear and disappear over the entire surface.

The most efficient practical light source yet developed, the sodium lamp which produces three or four times as much light as the ordinary light source, is demonstrated. Mercury vapor lamps, some of which radiate healthful ultra-violet rays, are lighted to show the type of illumination used in automobile

factories, machine shops, textile mills, and other establishments where high visibility is of prime importance.

More than 300 different types of MAZDA lamps, representative of the 8,893 different lamps made by General Electric, are on display in the Incandescent Lamp Division. Among them are the largest and the smallest incandescent lamps in the world.

A working display of many of the instruments and machines used in the inspection and manufacture of MAZDA lamps has been set up for demonstration by an attendant, while unusual uses of artificial light are shown in pictures, illuminated transparencies, and models.

To show almost ideal lighting of large buildings, there is a group of models lighted in accordance with the most advanced standards of practice. The central figure in the group is a 10 foot model of a 50 story office building built to a 1/64 scale.

The General Electric X-Ray Corporation has its exhibit in the Hall of Science. Planned to give visitors a better insight to the fascinating subject of X-ray, selected radiographs are displayed with various types of apparatus to represent the applications of X-ray in medicine, dentistry, science, and industry.