

## SERVICE PERFORMED DAILY FOR MANKIND BY ELECTRICITY

Story of How the Good Giant, Electricity, and the Great Giant, Steam, United to Build Up Omaha and Make It a Great and Prosperous City of Homes and Factories

**T**HIS is the story of how the good giant, Electricity, helped to build up the city of Omaha.

Somewhere in the enchanted pages of the Second or Third reader there is a story which invariably thrills the heart of the young pupil who reads it. It is the story of James Watt and the giant Steam. James, so the story says, was a dreamy sort of boy, who sat by the fire thinking while his hard-working grandmother took in washing and struggled hard to earn a living. The grandmother was accustomed to grumble considerably at the laziness of the boy and declared that he would come to no good end unless he reformed. But still the boy dreamed while the tea kettle simmered and poured the steam from its iron spout.

Then comes the really thrilling part of the story when the giant speaks to James. James himself was startled when he heard the voice of Steam. "I am shut up in this kettle," it said. "But I will do all your work for you. I will draw you across the country swifter than the swiftest horses can run; I will thresh your grain and grind the grain into flour; I will drive your mills and propel your ships; I will operate all kinds of machinery. I am powerful and mightier than anything else in the world. All I want is a machine in which to bottle up my power and I will do the work of a hundred million men."

The little readers' hearts thrilled at these generous promises of the good giant, and the harsh words of the grandmother to dreaming James were forgiven in the knowledge that she would soon repent and acknowledge the greatness and wisdom of her grandson. Eventually James succeeded in making a machine in which to put the giant to work, and the giant has toiled now these many years for the upbuilding of civilization.

### Debate Between the Giants

Some time after James Watt had invented the steam engine and had set the good giant to his task, another giant appeared upon the scene. It was Electricity. If the third readers were to put this giant into a story they would probably ascribe to Benjamin Franklin the honor of having discovered him and drawn him from his haunts to serve the world. Franklin, however, does not lend himself well to the purposes of this kind of story. He was a model boy. Writers of romances like to have their heroes misunderstood in the first few chapters in order that they may appear with the greater reluctance in the last. However, the appearance on the stage of the giant, Electricity, was an event of such import to the human race that there is no difficulty in giving it a romantic setting. See, then, the conflict between the rival giants.

"You can't run a machine a mile away from yourself," says Electricity.

"I know that," replies Steam. "You can't run an electric fan or sewing machine or anything like that," continues Electricity. "You are dirty; your smoke and cinders get in people's eyes and all over their clothes; you make a lot of heat with your nasty furnace and steam; you make a bad smell and you are altogether too disagreeable for decent people to have around at all."

The giant, Steam, may be supposed to hang his head at this catalogue of his failings and vices. Whereupon Electricity continues to recite his own virtues:

"Now, look at me," he says. "I'm clean; don't need any smoke and cinders and ashes around me. I'm just as fit for my lady's boudoir as for the dirty shop. I can travel instantly along a wire a hundred miles long and run a machine at the other end. Don't need a lot of grimy men sweating and toiling to shovel coal into my mouth. No, sir, I'm the gentleman, I am, and I'd have you know your place. From this time on I'll run these machines; I'll do the world's work; the world is tired of you; you were all very good in your way, but, then—ah, you don't weigh much."

With which pleasantry Electricity must be conceived to walk haughtily up stage. After a moment Steam cheers up suddenly with a great thought.

"Yes, all this is true," he says, turning to his rival. "It's true, but who are you? What are you? I ask you what are you? You haven't any existence; you are powerful; you can strike great buildings with your lightning and consume them with subsequent fire, but what good are you in helping out the human race?"

### Reconciliation and Agreement

Here the giant, Electricity, suddenly realizing his powerlessness, the emptiness of his vaunted strength to help the human race, claps a hand to his forehead and falls heavily to the floor.

The reconciliation between the two is reserved, of course, for the last act. There in appropriate setting they determine to join forces to do the world's work.

"I depend on you, my dear Steam," says Electricity. "All I want is a dynamo to work in, but, of course, I must ask you to run it."

"And I, my dear Electricity, shall be charmed to do as much for you. You will be of the greatest help to me. I know I'm rather behind the times; there are a thousand things I can't do. As you say, I can't distribute my power very far, while you carry yourself to an almost unlimited distance along simple wires. You have a wonderful future before you."

"And you know I can do something else besides work machines, my dear fellow," says Electricity. "I can make lights for the people to see by."

"Dear me," exclaims Steam. "You are a wonder. I shall be glad to subservise you in any way I can. You are the very fellow I have been looking for."

With which words the two walk arm in arm up stage and make their exit amid deafening applause from the enchanted audience.

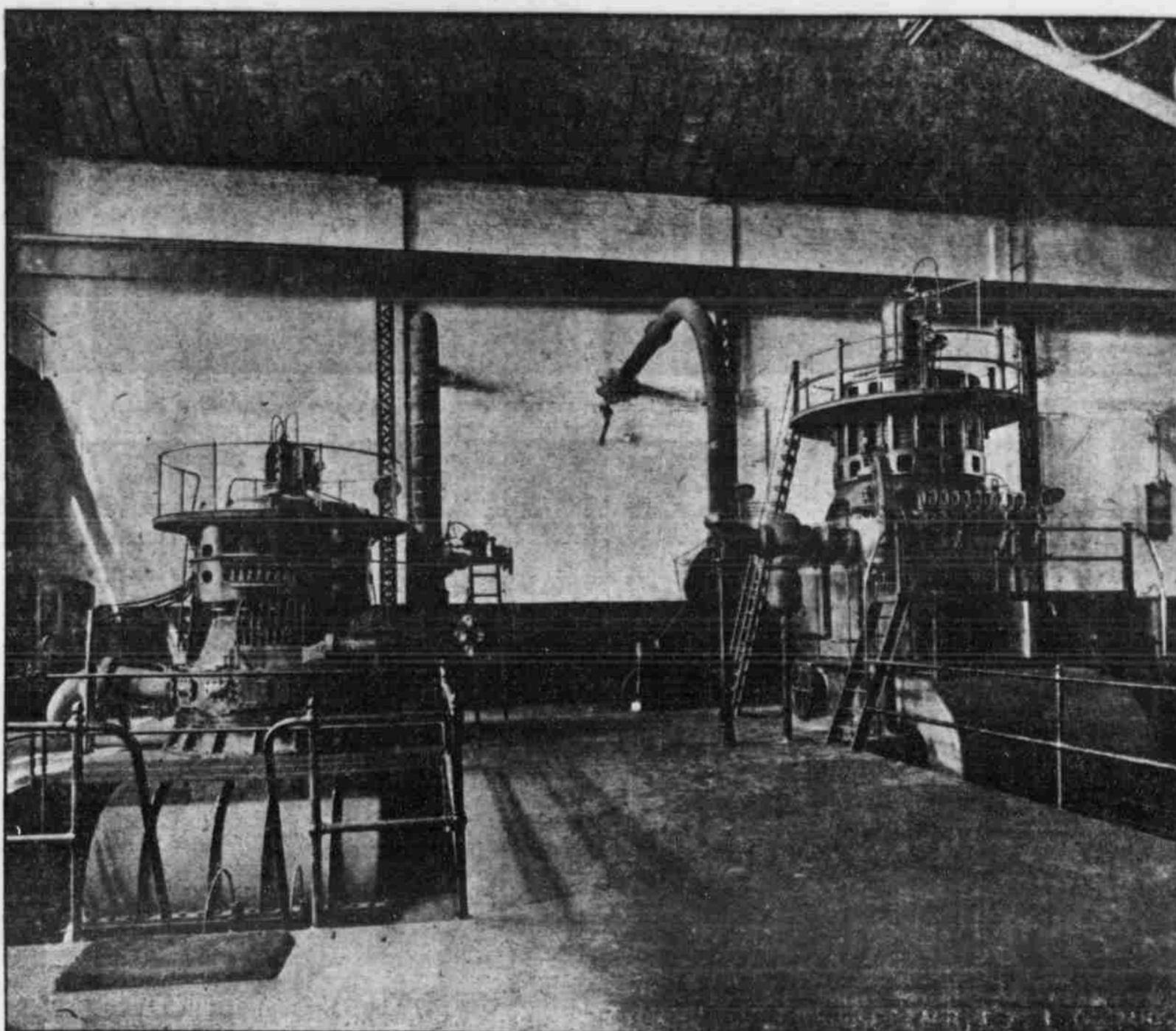
Since that time the good giant Electricity has spread himself all over the world performing for humanity ten thousand services, turning the wheels of a million machines, bearing the burdens of nations, giving power, heat and light. All this he does at low cost and in the most efficient manner possible.

The local manager, so to speak, of the giants is the Omaha Electric Light and Power company. In its big plant at Fourth and Jones streets the two giants work together cheerfully turning out what men designate 7,500 kilowatts of power constantly. This is equal to the work of 10,000 horses.

### What Electricity is Doing

Did you ever think, dear reader, what Omaha would be without electricity? How few are the places where it is not used in some form of its three properties—light, heat and power. Step into this church. Note those incandescent lamps which shed a soft light over congregation and chancel, note the electric cooking devices in the kitchen; the pipe organ is supplied with air for its deep-voiced tones by a motor and the rotary fans are operated by the same force. Now come into the home. Here are incandescent lights, porch lights, portable lamps under deep-colored decorative shades. Here are electric corn poppers, milk warmers, chafing dishes, sterilizers, flatirons, curling iron heaters, heating pads and foot warmers. There are safety gas cocks, electric treatment machines, an automatic piano, dumb waiters, charger for the automobile, automatic door openers, horse clippers and groomers, tire pumps, dish washers, polishing machines, refrigerating machines, fans and pumps.

These are just a few of the thousand and one ways in which electricity makes itself useful. Hardly in one of them could steam be used. Imagine yourself walking down Farnam street some evening before the advent of electricity; it was dark save for a few flickering gas lamps on the corners and the poorly trimmed and smoky kerosene lamps in the store windows. There were no electric signs such as now make the night vie with day in brilliancy. You cannot step into a shop or office without noting some useful device or ar-



TWO OF THE BIG TURBINE GENERATORS AT POWER PLANT OF OMAHA ELECTRIC LIGHT AND POWER COMPANY.

range which would not be there had not electricity come to Omaha.

Down on the banks of the river at Fourth and Jones streets a few skilled men tend the most modern machinery for producing steam. There is no sweating, or hurrying, or bending of backs. Automatic machines stoke the coal into the red-hot furnaces; the men merely turn valves and push levers; the steam is generated in the great towering boilers, runs through the big pipes into the great cylinders of the engines and there pushes back and forth the piston rods which turn the wheels which are attached to the dynamos. Out from this place run the wires, strands upon strands; up to the city they go and spread over twenty-five square miles of densely populated space. Here they run an elevator swiftly from basement to the top of a ten-story office building; there a wire disappears into a house and turns a fan; here a motor buzzes and sets a great printing press whirling; there a smaller power runs a dumb waiter up and down in an apartment house. Always the current stands ready to flash through the carbon wires of an incandescent light and make it glow with light. Instantaneously, noiselessly, neatly, this well-behaved power does its work.

Before electricity came 10,000 housewives trimmed wicks, filled lamps, cleaned and worried and in the end only produced a smoky and greasy illumination. Now a button is turned and the whole house is thrown into the brightness of daylight. Before electricity appeared in Omaha a thousand sweating men worked in grime and soot and dust and heat through the hours of day and night to keep the machinery of factories and business places running. Now a few men with the improved appliances turn valves and push levers in the big establishment down by the river and the giant, Electricity, runs out along a thousand wires to perform his services, great or small, in all the country round about.

### Magnitude of the Omaha Plant

Few people realize what the magnitude of the work of the Omaha Electric Light and Power company is. It has grown immensely in the last few years. Five years ago the plant at Fourth and Jones streets was generating 1,400 kilowatts; today it is generating 7,500 kilowatts. This is a fair criterion of the expansion of the business and indicates the great stride which Omaha has made not only in growth, but in the use of electricity for power, light and heat. The area served by the company is not confined to the twenty-five square miles of Omaha proper. The wires run to South Omaha

and to Fort Crook, twelve miles away. Florence, Benson, Dundee and other surrounding towns are also served with light, heat and power from this same plant.

Down in the heart of the commercial district the current is conveyed in underground mains. In the outlying districts the little copper wires are carried on poles. Many hundreds of miles of wire are required to transmit this great current to the tens of thousands of points where it performs its duties. It hurries into more than 6,000 homes and it blazes through some 200,000 incandescent lights; it glows in 1,000 arc lights on the streets of the city; it buzzes through nearly 1,200 motors varying from 150 horse power down to the little ones of less than one horse power.

### Display of Its Magnificence

Not much the display of this power in the electric signs of the city be forgotten. Omaha is said to be the best equipped with electric business signs of all cities of its size. Visitors to the city remark upon this. Dozens of cities which surpass Omaha in size and business volume cannot compare with it in this respect. There are nearly 300 electric signs lighted up by the power that comes from the plant down on the river. They are of every conceivable shape and design. Some of them wink at you and some gaze in unwinking brightness; some have little "snakes" crawling around their margins and some appear in the refugence of varicolored globes. All attract great attention and make a grand ensemble effect.

Such is Omaha's fortunate condition today. It is being served as perhaps no other city of the same size is being served by the good-natured giant, Electricity. More of this power is being used per thousand people of population than in any other city of similar size in the country. It stands to reason, then, that the price which the giant demands for his services here must be lower than elsewhere; that his services must be better or his method of doing business more fair or reasonable. A study of the facts indicates that Omaha is fortunate in this respect.

In the first place, the charge made by the Omaha Electric Light and Power company for electricity is based entirely on meter reading. In most other cities a fixed price is made for each connected horse power, and in addition to this a charge is made per kilowatt hour. Thus in South Bend, Ind., for example, the fixed charge for each horse power is \$1 a month, and then the variable rate is added to this for the amount of current consumed. In some cities a flat rate of a certain amount per connected horse power is made. This



PART OF EQUIPMENT OF AN OMAHA GRAIN ELEVATOR USING SEVEN SEVENTY-FIVE HORSE POWER MOTORS, EACH CAPABLE OF HANDLING 16,000 BUSHELS OF GRAIN PER HOUR.

flat rate is based on the possible use of the motors twenty-four hours a day. If the motors were used that long the rate would be fairly just, but, of course, in nearly every business the current is used only eight or ten hours a day at most. The system used by the Omaha concern is conceded to be just to all. Of course the wholesale consumer gets a somewhat lower rate per kilowatt hour than the man who uses only a little power, just as the man who buys flour by the carload gets it cheaper per hundred pounds than the man who buys it by the sack. But every consumer can see just what he has used in the month and can figure up his own bill. It is a system which coincides with the American idea of fair play, equal rights to all and special favors to none.

This fact can be put down in black and white, shouted from the housetops and spread abroad through the land, namely, that manufacturers and business houses can buy electric power in Omaha as cheaply as they can anywhere else in the country. The figures prove it.

### Cost of Power to Grain Elevator

The Nye-Schneider-Fowler Elevator company, a 1,000,000 bushel house, draws its power entirely from the Omaha Electric Light and Power company. Here is a good example of the advantage even to a big consumer of the Omaha concern's method of measuring the power used and making its charge. The Nye-Schneider-Fowler company has a connected motor load of 1,180 horse power. This is distributed with thirty-three motors varying in size from five to seventy-five horse power each. Whenever a certain machine is to be operated the turning of a switch sets it going in a moment. One motor of five horse power, or thirty-three motors of a combined horse power of 1,180, can be used simultaneously, and the house pays for just what power it uses, no more and no less. This plant is operated at an average cost for power of \$1.250 a month, or \$15,000 a year. Suppose this concern were buying its power at a flat rate of \$30 per year per horse power. It could not possibly get along with a motor of less than 750 horse power, connecting all machines by means of shafting and belting. At \$30 a year this 750 horse power would cost \$22,500 a year. Here, at an added cost of \$7,500 a year, the company would have a possible power of only 750 horse power instead of 1,180, as it has at present. Under the flat rate system the consumer always feels uncomfortable and fears that perhaps he isn't using as much power as his neighbor, though he is paying the same. He feels that perhaps he is paying for the power consumed by his competitor. Under the meter system he feels perfectly safe, knowing that he will pay for only what he consumes. The Nye-Schneider-Fowler company estimates its saving in cost of power at \$7,500 a year over a flat rate-charging system and at \$3,600 a year over steam.

### How a Manufacturing Plant Fares

The Omaha Boiler works buys electricity for two motors of forty horse power combined. During the year 1905 their bill amounted to 71 cents a month per horse power; during 1906 the bill was \$1.25 a month per horse power. If this concern had been operating under the flat rate given in many other cities at, say, \$30 a year per horse power, it is interesting to note that the bill would have been \$2.50 a month. A flat rate of \$30 a year on a water power basis is the lowest published rate with the single exception of Niagara Falls, that ideal and exceptional location in the world for producing electricity, where the flat rate is \$20 a year, and this only the gigantic concerns there which consume the power by the wholesale.

The electrically-equipped shirt and overall factories of the M. E. Smith Dry Goods company and the Byrne-Hammer Dry Goods company are two of the big industries of Omaha. They are large users of power and employ hundreds of people. Representatives of these concerns declare that they get the maximum results at the minimum cost combined, with an efficient power, and one which can always be relied upon. Both of these firms have removed recently to new and greatly enlarged quarters and, although their new quarters are located on trackage where it would be easy to get coal for steam, both have installed the electric power in their new plants on a much larger scale than in the old houses. They are enthusiastic over the efficiency and economy of the electric power available to the manufacturer in Omaha.

The Larsen-Parker Ice Machine company used seventy horse power of electric current during the year 1906 at an average cost of 86 cents a month per horse power.

### Used for Freight Lifting

A study of the freight elevators of the city is interesting. Of these fifty-three are operated by electricity, with a total "motor load" of 593 horse power. The average rate paid by these consumers last year was \$1.08 a month per horse power. If these consumers had had a flat rate of \$30 (which is low) their bill would have been \$1,750 a year. The power cost them \$7,655. Their saving in a single year on this one item was \$10,105.

The history of the upbuilding of the Omaha Electric Light and Power company is the history of every concern whose methods of doing business are fair. Such a concern which gives the people "what they want when they want it," and at a price which makes any other power out of the question must necessarily build up such a business as will require every foresight and great energy to care for.

Comparisons are odious, but steam having admitted its inferiority in the drama which appeared at the beginning of this story, it cannot be out of the way to point out some of the respects in which electricity excels even in places where it would be possible to install a complete steam plant. The power is flexible. It is there when you want it, and when you do not want it you can shut it off immediately and completely. You do not need to bank a fire or put out glowing coals. You just turn a switch and leave the place, locking the door behind you, before the whirl of the wheels has stopped.

The labor question is of no interest to the consumer so far as his power is concerned. The company from which he buys the power has to see to that. Strikes and demands for higher wages, sickness and hindred troubles are of no concern. He can even snap his fingers under the very noses of the coal dealers.

### Beauties of the Service

Another beauty of the electric current is the absence of belting and shafting. A motor can be set down at each and every piece of machinery to be operated. This is the most economical method of running machines. If you have a dozen and only want to run one of them you merely turn on the motor that controls that particular one. Thus you draw a fine line on your power consumption and never waste any through belting and shafting. With a steam engine the whole power would have to be operated, thus making it as expensive to run one machine as the whole plant.

Also, when it is desired to increase the power of the plant it is not necessary to tear out engines and boilers, belting and shafting and install new equipment. You merely add another motor and connect it with another wire. Electric motors have, moreover, the reputation of being very well-behaved pieces of machinery. They are not liable to get out of order like steam engines.

Such, then, is the mighty power which has done so much to build up Omaha, which is bringing new manufactures to the city, which is supplying the comforts of electricity to the people here at the lowest rate. There can be no doubt that Omaha must attract great manufacturing houses, adding, as it does, to its unrivalled railroad facilities, its central location, its rapidly growing surrounding country, its marvellously increasing wealth, its vastly expanding jobbing and retail businesses of various descriptions, adding to all this the blessings of cheap power.