

THIRTEEN SLAVES



YOU thought slavery was abolished long ago. You look back with a twinge of envy to Mount Vernon, and lament that the ease and splendor of that graceful period of American life are vanished forever.

Don't feel sorry for yourself. You're a bigger slaveowner than George Washington. True, the master of Mount Vernon did not have to pay wages to the scores of negroes, men, women and children, who tilled his fields and cooked his meals, hewed his firelogs and tended loom and spinning wheel, washhouse and stable. But he had to clothe them, house them, to deal out daily rations to them all.

Washington's slaves cost plenty more than yours. You do have to pay yours, but you don't feed nor clothe them, nor build them living quarters. And you probably pay less than two-fifths of a cent for every hard hour's work put in by any one of your husky, versatile and willing slaves. You really can't complain.

Your slaves are kilowatts. Put a kilowatt to work for one hour and it does the work of thirteen strong men. Flick the switch of your thousand-watt electric iron, use it to press clothes for sixty minutes and you have hired the labor of thirteen men for a nickel or less.



Compare the back-breaking old way of ironing with modern way at top. Bottom, getting electrical slaves to work in a much-proceerious treatment of furniture

for a NICKEL



Meals at Mount Vernon come from separate cookstoves. You can prepare breakfast right on the table with electric toaster, griddle and coffee pot. Drawings contrast old and new way of doing household chores.

George Washington, living in the height of eighteenth-century fashion, kept sixty-six slaves on his beautiful Mount Vernon estate. The average American family today has the equivalent of more than 400 slaves at its call. And, too, these slaves of yours are on duty night and day, without sick leave or vacation, uncomplaining, never slamming a door or gossiping with the next door help or talking back to you.

Of Washington's sixty-six, some were children, some were poor workers, and many were assigned to work in the fields and stables and other outside tasks that do

not concern you at all. Mount Vernon was really an independent economic unit, as much so as any medieval manor. It raised its own livestock, grain, gardenstuffs, and tobacco. One man and four slave girls were busy at the spinning wheels constantly. In a year the Mount Vernon spinning wheels and looms turned out 815 yards of linen, 363 yards of woolens, 144 yards of linsey, forty yards of cotton.

Other slaves spent day after day in the washhouse—your own electric washer and ironer are busy perhaps two or three hours every week and cost you about thirty-five



cents a month in current; others were employed in the dairy at milking, skimming, churning, cheese-making; in the mills, the brick kilns, the carpenter shop, the smokehouse, the woods, the distillery. That left a relatively small number of the sixty-six to do the household tasks. And those are the very tasks to which your entire available staff of 400 servants is devoted. Of course, you can never use all that help. In an all-electric home you might use an average of twelve kilowatt-hours a day, the equivalent of thirteen hard-working servants putting in a twelve-hour day and charging you about 284 cents each for his day's work.

Let's take apart the average bill of an average family living in an all-electric home for the last year.

This householder actually averaged twelve kilowatt-hours a day throughout the year and paid \$105 for the year's electricity. He lived in an average city, where home electric rates started at six and one-fourth cents a kilowatt-hour and ranged down to one and one-half cents according to the amount used. He didn't have to think about assigning duties to his electrical slaves, but if he had, the twelve kilowatt-hours of 156 servant-hours a day would have been organized something like this:

Night shift: 11 p.m. to 6 a.m. Three man servants



Top, the 1929 kitchen with electric refrigerator, dishwasher, garbage disposal unit, food mixer and range. Center, old-time basement laundry. Below, up-to-date basement with automatic heating air-conditioning plant, and washing machine in kitchen



At left and above, old and modern methods of scrubbing and polishing floor. The bicyclist, pedaling a "bike" furnished to watt meter, at his best would "generate" only 240 watts for an instant and in six full days could generate fifteen kilowatts.



Electricity is moving to the farm. Here is a portable two-horsepower motor used to grind feed, shell corn and haul hay on a Pennsylvania poultry farm.

tend the motor of the automatic furnace all night, keeping the house temperature at the desired level; they keep the tank full of hot water; they keep the refrigerator down to forty degrees; they keep fourteen small lights burning indoors and out to discourage burglars; they keep seven electric clocks running, one of them the alarm clock that wakes the head of the house at six; and they are on guard to sound alarms if fire breaks out or intruders break in.

Day shift: 6 a.m. to 7 p.m. Three more man servants take over the furnace, refrigerator and clocks, and provide ultraviolet sun baths, electric shaves and light. Meanwhile six maid servants are cooking breakfast, lunch and dinner on the electric range; they mix and grind food, polish the floors, vacuum rugs and furniture, and on washday an extra crew comes in to run the washer and ironer and to dry the clothes when weather requires it.

Evening shift: 7 p.m. to 11 p.m. Two maids spend just ten minutes washing the entire day's dishes in the electric washer and disposing of garbage. Four man servants operate the radio, lights, furnace, refrigerator and clocks.

It all adds up close to 156 servant-hours a day, and all for about thirty cents!

Whether they turned a fruit juicer or pumped oil into a furnace or rang the

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Thirteen Slaves for a Nickel

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doorbell chimes or boiled the breakfast eggs, these electrical servants toiled at the same "muscular" rate. But they didn't all draw the same pay. This householder, living in a small city in New York state, hired the equivalent of 4,797 servants for one hour each month; the first 156 servants cost him one-half cent each; the next 585 worked an hour for one-third of a cent; the next 1,850 for one-fourth cent, and the remaining 2,206 collected one-ninth cent each. The more you hire, the more you get for your money; the biggest crew of your kilowatt coolies work for the lowest wage, at a discount of sixty-six per cent from the pay rate of the highest salaried group.

You wouldn't—you couldn't work at the pace you set for your electrical help.

Engineers will tell you that a 143-pound man can raise his own weight up a stair or ladder—leg muscles are the strongest, most tireless—at a speed of one-half foot per second and keep it up for eight hours. In eight hours, then, he could climb 14,400 feet, about the height of Pikes Peak, and credit himself with 2,059,000 foot-pounds of work when he reached the top.

The same man could walk on level ground at five feet per second, carrying only his own weight, and keep it up for ten hours. He would have covered thirty-four miles in that time.

A 100-watt lamp burning for ten hours uses a kilowatt-hour of electricity, which the engineers will tell you is equal to 2,655,200 foot-pounds of work. So the work of keeping that lamp lighted ten hours is greater than the effort of climbing Pikes Peak or walking thirty-four miles. Would you climb Pikes Peak for a nickel, or whatever a kilowatt-hour sells for in your home town?

If your wife weighs 100 pounds, she would climb 26,552 feet before her work would turn a meter to the kilowatt-hour mark. That's about the same as walking up the Washington monument forty-seven times, or 2,655 trips upstairs to make the beds, or a climb to pretty near the peak of Mt. Everest, the world's highest mountain. Ask her if she'd do it for a nickel some day.

This New York householder, who is a stickler for statistics, figured out one day

that the women of his household walked eighteen miles a year and climbed 3,500 feet—three times the height of the Empire State building—between the garbage can and the kitchen. Since everything else in his home was already electric, he talked himself right into an electric garbage crusher which sends the waste down the sink drain for five cents worth of watts every month.

There is where George Washington had the advantage of modern home owners. He probably fed the remnants from his kitchen to the livestock. Nevertheless the great general would have been the first to install such a labor-saving device as this garbage disposer at Mt. Vernon. He was intensely interested in mechanical inventions and improvements. The icehouse he built at the mansion was something new to Virginia; previously the Washingtons had kept their meat, butter and vegetables cool in a large dry-well under the summerhouse. General Washington, too, was one of the first to have a "smoke-jack," a flywheel built into the kitchen chimney to turn the spit on which his meat was cooking. In 1787 he mentioned in his diary a trip to Philadelphia during which he "visited a machine at Dr. Franklin's for pressing, in place of ironing clothes from the wash."

Washington would have liked to be rid of his slaves. Of course, he could not dream that the lightning with which his friend Benjamin Franklin was experimenting would one day furnish homes throughout America with more slaves than ever served Mount Vernon. But he was pointing in the right direction when he wrote:

"We must encourage introduction of new and useful inventions from abroad as well as exertion of skill and genius in producing them at home."

Motor Fuel Made of Ammonia for Automobile Engines

Liquefied ammonia mixed with hydrogen has been developed into a fuel for ordinary internal combustion engines in France. Cost of this fuel is much less than that of gasoline produced synthetically from coal and it can be manufactured in small plants adjacent to water power.