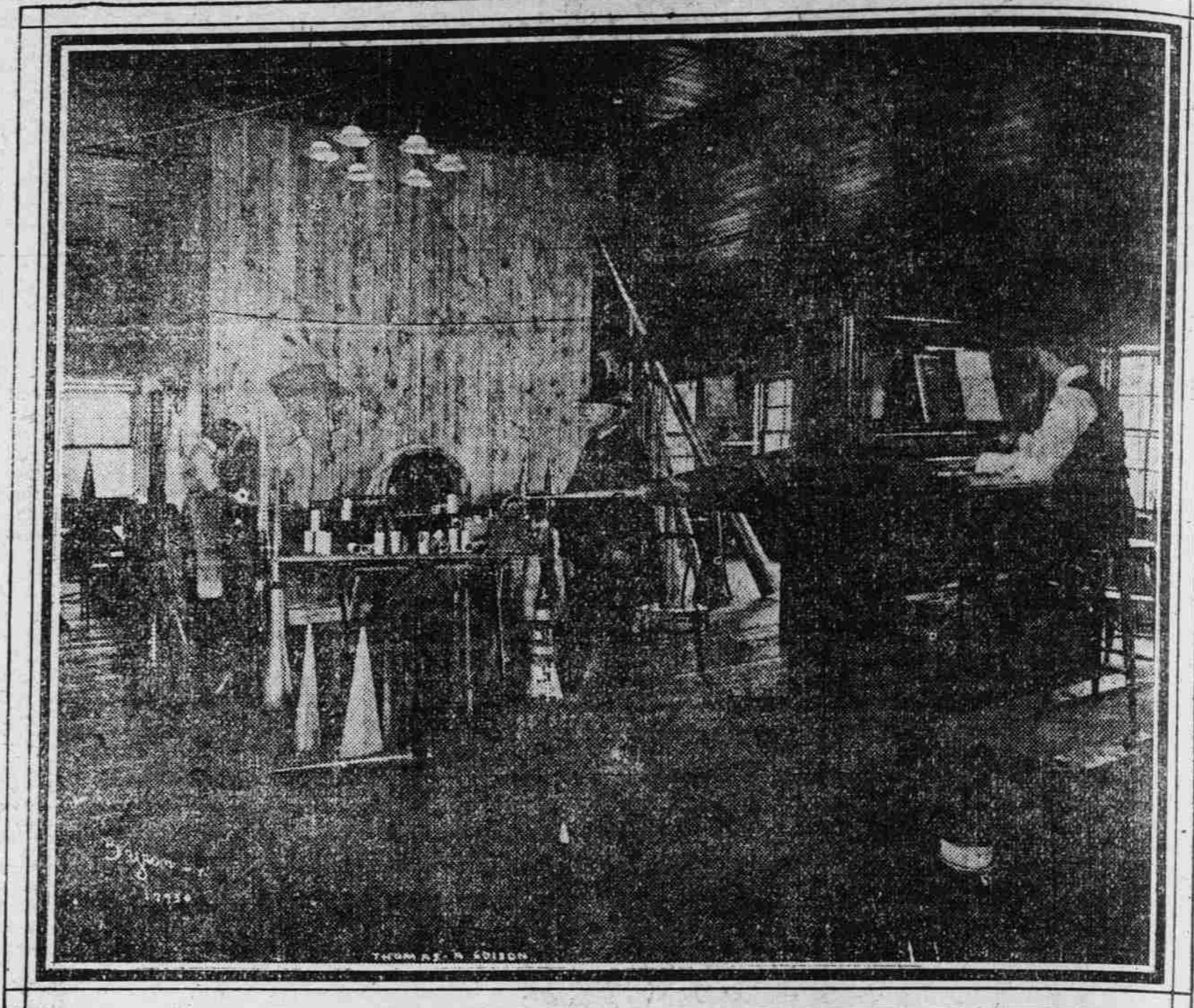


A Study of EDISON The Man



THOMAS EDISON IN HIS LABORATORY



MAKING A NEW RECORD IN THE PHONOGRAPH DEPARTMENT

This is to be a logical study, briefly related, of Edison the man, as spatter will allow. I desire to trace the combination of strategy, inspiration and human shrewdness that have been neglected in any general survey of the inventor who has placed America in the foremost rank of the scientific world, among such men as Roentgen, Koch, Haeckel, Loeb and others—searching and achieving brains of the world. Known to the entire world as a great inventor, there has been a tendency among the few writers who have met him personally to flavor their description of him with a literary touch that is as fictitious as the stage picture of Shakespeare's apothecary. Through all the information which has been given to the public of Edison's personality I seem to have traced this literary inaccuracy—an emphasis of the stooping shoulders, the negligent attire, the abstract manner, the untrimmed hair, the sudden flash of genius in the eye, the inroad of mysterious acids on his clothes. He has been pushed to the center of the world's stage as a dramatic character, the wizard of that most incomprehensible chamber of magic to the scientific eye, a laboratory.

I confess that I approached Edison with something akin to the feeling a child has for a conjurer.

Would he be so enraged at an interruption of his communications with a fluid secret in a tiny bottle before him, and accidentally hurl explosive chemicals at us, or would he be in some pleasant experimental mood that would induce him to exhibit a few harmless laboratory tricks for our amusement?

Or would he wave us aside and send us away with only a deeper reverence for the mysterious secrets of his soul. I am not ashamed to confess to this wondering timidity, adult though I am.

Isn't anything to approach imaginative idlers like great painters, or great novelists, or great statesmen, but when it comes to tracing an imagination that has made ghostly traditions, commercial commonplace facts there is no telling what such a man may do at any moment. Say what you will, Edison has harnessed his imagination to supernatural lamps, and driving them in through one door of his laboratory has sent them out again at the other end literally reformed and even amazing demons.

No doubt there are scientists and chemists, mechanics and mathematicians in the Edison works that by the very force of their uncompromising training consider the great inventor as a dreamer, but that is exactly the amazing wonder of him which no knowledge of exact science can explain.

Take the dreamer out of man and you destroy the divining instinct of a that unseen, unknown land between man and his maker. The miracles of Edison's discoveries are to the scientist desperately reasonable, and to label his exact experiments as mere vaporings from dreamland mingles him. Still say what he will the inception of almost any new invention has appeared first to the inventor in a most visionary stage of development.

Take Edison's own story of the new storage battery which he has just completed, and of which he told me much in detail, it was based upon the inventor's high esteem for the prolific promises there in nature, for as he said, he could not believe that nature so generous in all her favors had been mean enough to limit

him, fall into an outward semblance of the fictional scientist, the man of abstraction and silent mystery, but get him among old friends, and he will tell better stories and listen to old ones as generously and with as keen a pleasure as ordinary hearty human beings.

Because Edison is a prophet, chosen to advance the power of his fellow men over hindering exactitudes, scarcely warrants that we picture him with any theatrical exaggerations. However, this dramatic flavor has been so liberally mixed with the solid commercial results of the Edison factory at Orange, N. J., that it is as a pretty tinsel veil adorning the business aspect of everything there. Literally, perhaps, it is inevitable, because the main force, the impelling power, the indefinite magic of definite outcomes and incomes at the Edison works, takes source in the prophetic imagination of Thomas A. Edison, the inventor of its marvels.

It is a place of magical things, achieved by imaginative prescience.

In spite of the many clever assistants I met at the works, in spite of their exact reasoning, their scientific experience and even their experimental caution, take Edison away and there would be no more wonderwork forthcoming there.

Edison himself expressed the idea this way: "No man of a mathematical habit of mind ever invented anything that amounted to much. He hasn't the imagination to do it. I don't know anything about mathematics—can't even do proportion—but I can hire all the good mathematicians I need." And he might have

added, "but I can't hire men with logical imagination."

Edison will be exactly 59 years old next February; he is still a young man, in spite of the pressure at which he has played his life.

In the laboratory buildings, where all experimental labor is done exclusively, there are only a little over a hundred men employed; in the adjoining factory, where the phonograph and the moving picture machines are made, there are over 2,500 employees in the season.

It is in the laboratory that the spell of Edison's imagination is over all, and yet the secrets are open to any technical observer, because there is really no scientific question about them. Edison would not fearfully answer, since it is not the natural evolution of experimental changes that counts, so much as it is the character and a certain audacity of imagination in the mind of the inventor who is conducting them.

Edison works with no apparent executive system. You may hunt almost anywhere for him in the various departments of his laboratory at any time.

One knows how many secrets are fermenting in his brain, nor the sequence of their development. Odd corners, enclosed works in the plain brick buildings of the laboratory, were shown to me as places where he snatched a little sleep when too absorbed to go home.

His head mechanic, Fred Ott, probably the man who is closer to the magic of Edison's achievements than any other technical man, spoke of the period when the phonograph was evolving. "We never left this room, night or day, for weeks,

until it was done," he said. "Our meals were sent in and we slept here."

"Afraid the whole thing would go up in smoke?" I asked.

"No. We were sure enough, but we wanted to get through—to do it."

Now Fred Ott voted the germ that Edison had introduced right there. To do it!

To nail the dream together so that it would never fall apart again. Yes, and the virus of newly applied discoveries year in and year out, so that it should be not merely a bit of still life, but progressive energy, alive every minute. Edison himself carried all the weight of constantly impending failures to a triumphant practical value.

He is as tenacious as a bulldog once he gets a hold of an idea, and you can't scold him or coax him to let go. Before he reaches for a thing he "smells around" thoroughly to see if it's worth while, and, whenever he fails to get the intended result, he does not blame natural causes or bad workmanship; he just says: "It isn't nature that's wrong; it's me. I'll keep at it till I know more."

There is an experimenting room in the laboratory devoted to the improvement of the phonograph. A. F. E. Wageman, who bears a striking resemblance to Edison himself, is master of ceremonies here. He has surprises to show, if he wishes, that are not yet on the market. I heard one of them under definite about sound. "We know nothing definite about sound," he said. "It evades reason at times and tumbles upon

problem solved is this: We have the traffic for vehicles in crowded streets because we cut their length in two when we do away with the horse; then we have it again by greater speed, which prevents congestion."

"I don't usually talk much. I prefer to produce, and when I do so my work will hold good. Why, I've been experimenting and perfecting this, just as I have any invention intended for the market. Mind you, an inventor can make a beautiful thing to show much quicker than he can perfect a thing that must work. We're very commercial around here," he added, with a shrewd glint of pride and satisfaction in his blue eye, as he stamped his two feet squarely on the ground in emphatic assurance of this fact.

Once Edison has transformed a dream into a tangible reality he is all business, for he added: "What we wanted this battery to do is now doing in the New York streets—that is, a minimum space, reduced weight, a 40-mile run with a truck capacity of one ton and one charge at a little more than one-half its cost to keep a horse vehicle running now. I've done it, and next spring our factory here will be making them."

Then he returned to the impatience of the public again: "They cannot expect me to finish a job like this as if it were a bit of machinery. Why, even a locomotive has contrary streaks, and that is plain steam, not a complicated chemical action like a battery. That's why it has taken time to make sure." And he was sure. There was no mistake in the shake of his head, the nervous clasp of the hands stretched at arms' length behind it. Confident that it was done, he felt at liberty to recall the dream stage of this, his latest invention.

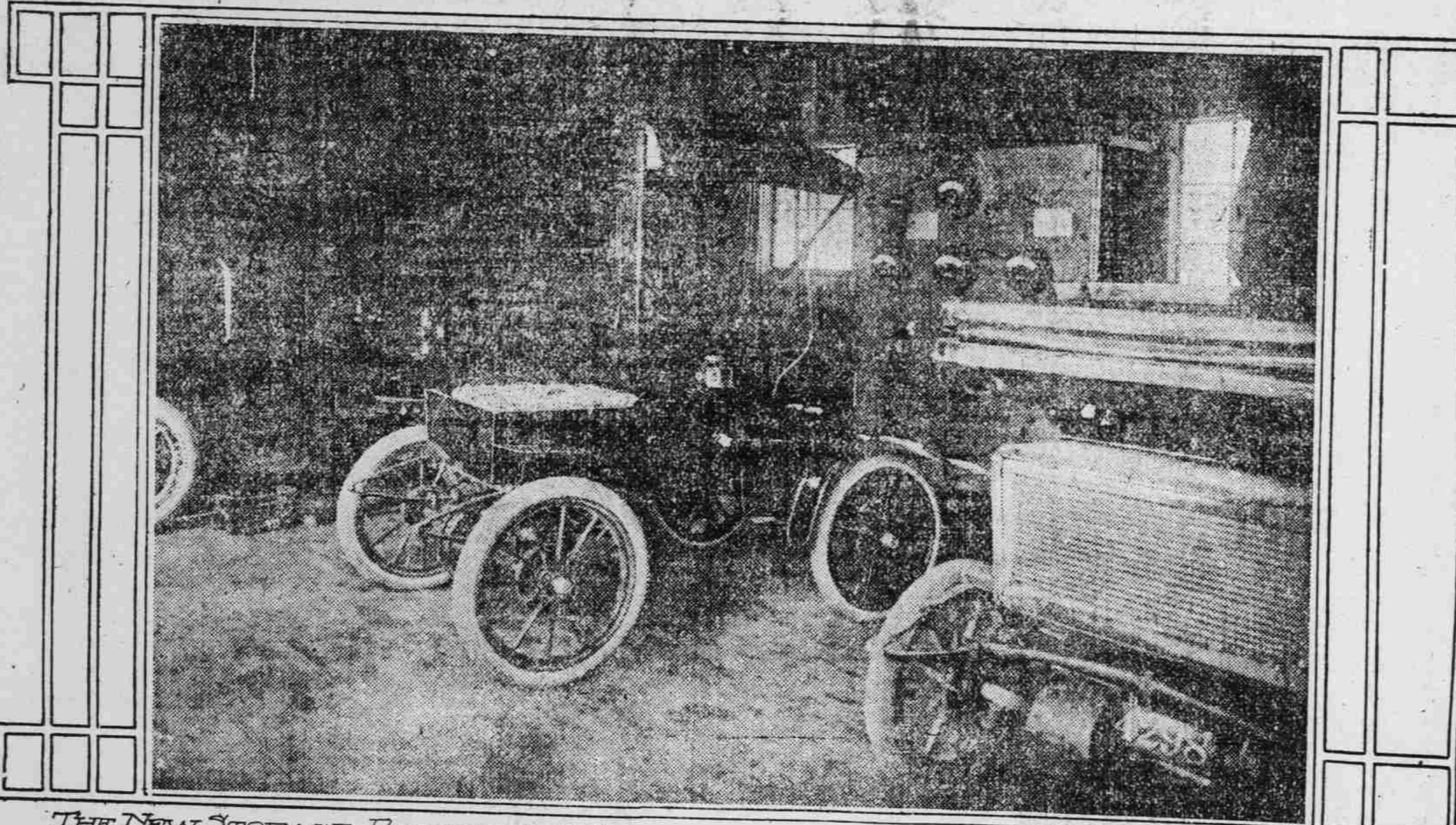
"You know, it happens sometimes when things get slow around here that I suffer from ennui," he said, with a semi-comic regret in his voice, which set us all laughing, because Edison is an inexhaustible working battery himself. "Well, when I get one of these spells I generally go into things pretty thoroughly, and although I was sure that a storage battery could be made (because I didn't think that Nature could be so mean as to confine herself to a lead battery), the important question in my mind was to know just exactly what was required of that battery. So I had a complete census of vehicles taken in New York, a report of the congestion and the average speed. I saw at once that if a storage battery could be made there would be use for it," and he paused with a whimsical smile. "Of course, the question of reducing weight disposed of the lead battery. I knew that some new combination of chemistry eliminating lead must be found. So I began experimenting for a long time with no result. Then one day there came just a nibble, just a little bit of something; then that disappeared, and for a long time I got nothing. Still I kept at it, little by little, coaxing it along, but no result. I felt that Nature held the secret, and that it wasn't her fault. It's me, I said to myself, 'Not Nature that's wrong.' And so it was, for I last I got it. But after that so positive, without lead, is chemical action that conditions and alter and make everything unreliable. We had some trouble with them after we first put them out in New York. Couldn't understand it. Till we found out that, instead of using distilled water, the distributors, unable to find any, had gone to drug stores and purchased carbonated water, the gases of which partly destroyed the action of the rest. There is no doubt what I can do with it. I've no doubt I can reduce it to half its present size, but it's small enough now for all purposes."

"The phonograph, at least, is complete," I suggested.

"Oh, no! The phonograph is a useful thing, and it's wonderful to see what pleasure it has given; it is the poor man's music, but we are experimenting, improving, discovering new things all the time in it."

And that is just the secret of Edison's success; he never reaches the final word of discovery. His imagination is always luring him into bypaths that no one else patents granted in connection with the development of the electric lamp, the telegraph, telephone, the ore-milling machines include vote recorders, typewriting machines, methods of preserving fruit, cast-iron manufacture, wire drawing, electric locomotives, moving-picture machines, the making of plate glass, compressed-air apparatus and many others.

All this shows clearly that it is not so much the result of wizard's magic as it is a plain, consistent genius for work, the imaginative audacity of a post and hard-headed business which combine to make the man Edison.



THE NEW STORAGE BATTERY WILL DRIVE AN AUTOMOBILE ONE HUNDRED MILES