

Something New in Steam

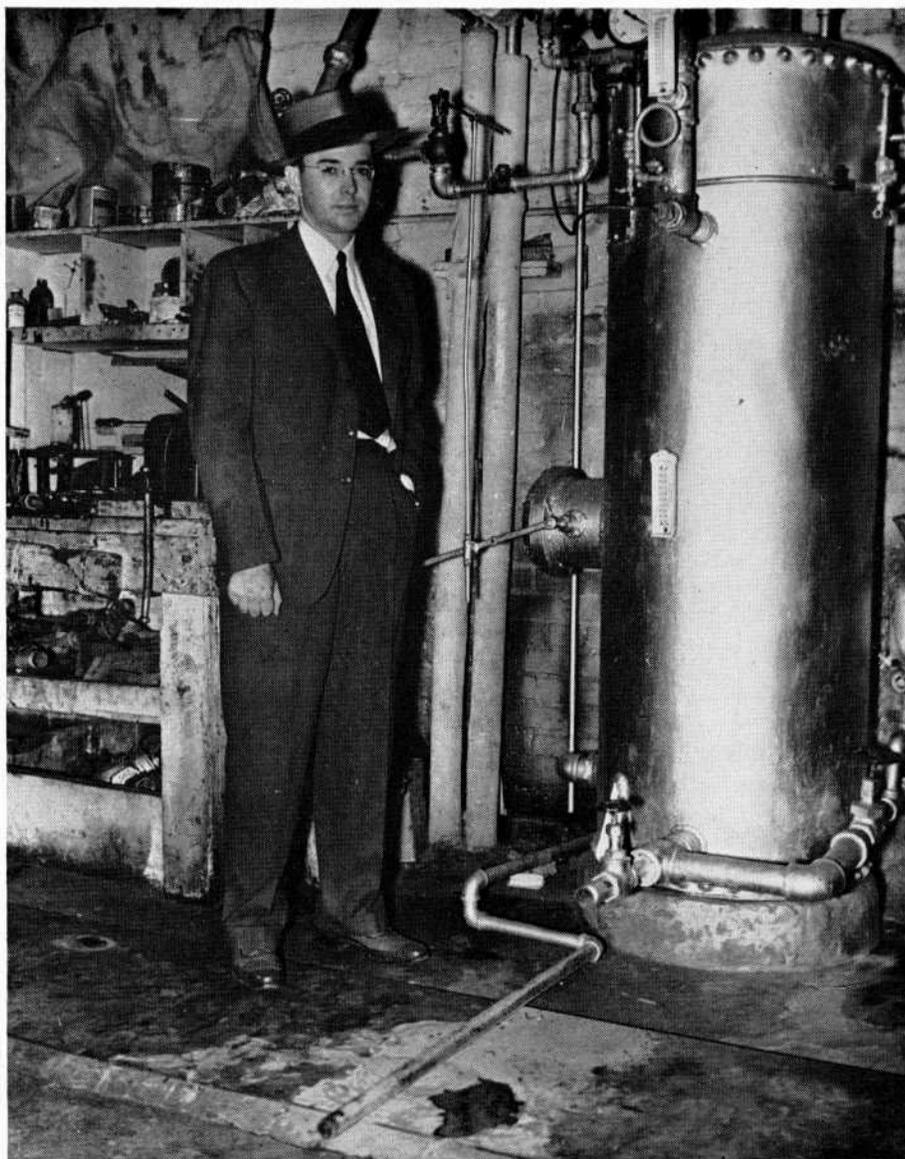
This Salesman-Inventor Has
Confounded the Experts With
His Revolutionary Idea That
Makes Steam Work Harder

BACK about the time the American colonies were fighting England for their independence, a Scottish inventor named James Watt patented the basic principles used in the steam engine. Improvements were made from time to time, but engineers generally agreed a long time ago that there wasn't much more to be done about steam.

It took a young Oklahoma City engineer, Paul Harrison, only five years out of the University of Oklahoma, to discover a new basic principle in the industrial use of steam. Only a few years ago Harrison was working his way through O. U., entirely on his own, and barely making the grade financially. Within recent months he has refused offers of \$50,000 for a half interest in his patent rights.

He has perfected an invention that competent industrialists say will revolutionize all kinds of mechanical equipment that utilize steam for either heating or drying. The possibilities are breath-taking, because the invention virtually guarantees economies in operating costs of all kinds of steam heating and drying equipment ranging from ordinary steam radiators to heavy laundry ironers and rubber tire vulcanizers and the huge presses of the vital new plastic industry.

Harrison is cautious about making claims for his discovery, both because an engineer is naturally careful about the accuracy of his statements, and because he is the quiet sort of person who doesn't want to be suspected of tooting his own horn. He isn't interested in talking about his invention for promotion purposes, either, because his financing is well taken care of. Arrangements for the manufacture and sale of his product have been made with the Kling Brothers Engineering Company of Chicago, an old estab-



Paul Harrison, '36eng, standing beside the first unit of his velocity steam device

lished firm with nation-wide industrial contacts.

On July 1 Harrison terminated a twelve-year period as employe of the Oklahoma Gas and Electric Company (he worked his way through O. U. on a night job with the company), and is now devoting full time to "Velocity Steam Systems," dividing his time for the present between his Oklahoma City office and the Kling Brothers plant in Chicago. New possibilities for application of his discovery to various lines of industries—some involved in national defense work—are opening up so fast that he has no idea where the future will take him.

Unless some very competent and serious-minded men who rank high in industry are badly mistaken, Paul Harrison has hit the jackpot that occasionally rewards a lucky inventor. It's about time he received a lucky break, because he's had plenty of the other kind in the past. His success—however big or little it may turn out to be—has been earned the hard way.

In Fort Smith, Arkansas, about a dozen years ago, a youngster graduated from high school. He was already running a small dairy in the early morning hours, milking eight cows and delivering the milk; and working nights as an usher in a theater. Now, relieved of his school work, he started looking for a job from 8 a. m. to 5 p. m. to fill in the daytime hours!

Up and down the main streets he went, searching vainly for work. At the O. G. and E. office he was given a sympathetic hearing. Finally they found a place for him in the meter department doing clerical work.

After a short time young Paul Harrison found that there is a limit to physical endurance, no matter how much ambition and determination you have, so he had to give up trying to carry on all three jobs at the same time. But he stayed on the O. G. and E. job and after a short time he became interested in the work done by the "trouble shooters." He found that

(PLEASE TURN TO PAGE 34)

Something New in Steam

(CONTINUED FROM PAGE 9)

the company had to keep a man on call during the night, in case any trouble developed, and it occurred to him that if he could get a job like that in a college town, he might earn his way through college. So he spent his spare time around the substation and helping the trouble shooters, and soon picked up a knowledge of how they worked.

His earnestness and willingness made such an impression on company officials that when he applied for the night substation job in Norman, Ted Wiedman, the Norman manager, selected him from a large number of applicants.

So young Harrison enrolled in the College of Engineering at Norman. He had to sleep at the substation and to be on call for any necessary duty from 5 p. m. to 8 o'clock the next morning, seven nights a week. It wasn't easy to combine that job with a full-time engineering course. After a couple of years of constant work, and little time to enjoy campus activities or make friendships, he was about ready to quit. But Wiedman liked the hard-working young man and gave him the encouragement he needed to stick it out.

They had some long sessions on philosophy, and it seems quite likely that those talks are partly responsible for the level-headed way Harrison has met the startling events that have changed his whole life in the last year. Much of his philosophy, too, comes from his parents. His father, B. A. Harrison, was a mining man in the Oklahoma-Arkansas coal fields. His mother, Mrs. Maud Harrison, is now chief probation officer in Fort Smith and is widely known as a social and civic worker.

College days didn't have much glamour for Paul Harrison. He had no time for the usual campus activities. His scholastic record was not outstanding, but his teachers on the engineering faculty remember him for his interest in inventions and new ideas. He had an inquiring mind.

When he graduated from the University of Oklahoma in 1936, Harrison was given a job as power sales assistant in the Oklahoma City office of the O. G. and E. This resulted largely from the recommendations of Ted Wiedman, who believed he saw in Harrison an unusual combination of engineering and sales abilities. Glenn Kiley, Oklahoma City division manager, also saw possibilities in Harrison's creative mind, and encouraged him to develop his ideas.

After an unproductive period spent in trying to get oriented in his new job, Harrison was assigned to the tough problem of trying to sell more electric power to Oklahoma laundries. This was about like sending a plumber's new helper for a left-handed monkey wrench, because

laundries required so much steam and hot water that it had become customary to hitch on a generator and produce their own electric power.

Harrison made call after call, without making any progress. To the average salesman, it would have been an extremely discouraging experience. The natural thing to do was to say it couldn't be done, and give up. But Harrison decided that maybe he could get some results if he knew more about the mechanical processes in a laundry. He began to study the plants he visited, to ask questions, and to collect data.

As a trained engineer, it seemed unreasonable to him that laundries should require so much steam. They had huge boilers, burned up tremendous amounts of costly fuel, and even then complained that the steam wouldn't keep the dryers and ironers hot enough and the wash-water hot enough.

Maybe the steam wasn't being utilized efficiently, Harrison mused. His restless, creative mind kept playing with the problem. He began to make sketches of various possibilities for a new kind of steam circulating system. One day he hit upon something that seemed to have possibilities. It was an idea for a closed system which would keep the steam moving through the machine steadily and under automatic control.

HE talked with some friends about it—and endured their good natured razzing. In fact, he had to admit that the idea was contrary to generally accepted engineering principles and practice. But he believed it would work, and he isn't the kind who will give up easily.

The next step was to try to interest a laundryman in the invention, and to put in an experimental unit. Most of them were skeptical, but Harrison finally persuaded an Oklahoma City laundry operator to let him try out the idea. And it worked! Beyond doubt, it worked. Less fuel was required, and the production of an ironing machine was increased as much as 70 per cent! This particular laundry owner didn't need any more persuading.

Visioning the possible application of his basic idea to other machinery installations utilizing steam, Harrison obtained the services of some patent attorneys, and secured basic patents. It proved to be an entirely new field and a number of patents were required to cover the wide-open possibilities.

The idea was so new and revolutionary, in fact, that when an engineering professor at a prominent eastern university, who was consulting engineer for the laundry industry, was asked by some interested parties to investigate Harrison's invention, the professor looked over the plans

and replied, "Don't waste your time on that—it couldn't possibly work."

(Unfortunately the professor died a short time later and Harrison won't have the pleasure of showing him a unit in operation.)

Using his own time and money, Harrison went ahead with experiments to perfect his invention. There were many occasions when the money was exceedingly scarce. He recalls once when he wrote a check for \$100 to a man who had performed some services for him.

The man took the check, then tore it into pieces. "Paul, I know you need that money. You're going to have plenty later on. I'll just wait until then for payment."

The patent attorneys, who have had wide experience in their field and have known plenty of screwball inventors, became so sold on the Harrison discovery that they decided to close up their other business and devote full time to "Velocity Steam Systems."

When a layman tries to describe just what the invention is, it doesn't sound very impressive. Actually, the ingenuity in the invention lies in the hookup of ordinary valves and steam pipes and a thermostatic valve and other stock accessories. It's the system that has been patented, rather than any one single mechanical device.

The Velocity Steam System is unique in that it eliminates the usual trap (that thing that makes a steam radiator hammer and knock under certain conditions). The system has only three regularly moving controls or pieces not including the electric pump and standard boiler controls, all of which require a minimum of attention.

As applied to laundry machinery, steam is handled contrary to any method ever employed before in that a controlled flow of steam is circulated through all of the laundry processing equipment in whatever quantity is necessary to dry the clothes as well as to heat and deaerate the boiler feed-water, while maintaining the wash-water at a constant temperature.

The controlled flow of steam makes possible a much more rapid rate of heat replacement at the machine surface than has ever been possible before in the laundry industry.

The deaerator in this system is an ingenious piece of equipment which is likely to replace a much more complicated and expensive machine used in the past. The deaerator has often cost more than the boiler itself in an average laundry. Its purpose is to remove the dissolved gases from the feed-water in order to prevent corrosion in the boiler and in the steam-using equipment.

Even with this explanation, most per-

sons would say, "Well, what's so wonderful about that?"

The answer lies in what the invention will do. Harrison took a 45-year-old ironing machine in an Oklahoma City laundry, used to dry pillow cases and heavy hotel bedspreads. He installed his new steam system, and the tests showed the ironer was doing its drying work 70 per cent faster than it was originally designed to do!

Another laundry with the new system installed reported 35 per cent greater ironer capacity. The drying time of the tumblers in one laundry was cut down 45 per cent, enabling one large dryer to be shut down entirely.

In another laundry, an 11 per cent saving in productive labor was reported. This laundry dropped the price of shirts 2½ cents and the price of wearing apparel 5 cents a pound—and still handled its business at a greater profit than when prices were higher!

When an invention starts bringing down the cost of good laundry work and improving the quality of it at the same time, the average man begins to appreciate it.

And the ordinary citizen can see if the Harrison steam system can obtain similar gains in efficiency in the fast growing new plastic industry, there will be a tremendous future for it. Not much can be said about that yet, but it is a fact that representatives of the plastic industry are already trying to find out all they can about velocity steam.

Instead of getting excited about his good fortune, and planning a luxurious vacation trip to Florida or California, Harrison is quietly thinking about a remarkable plan to spread his good fortune among persons less fortunate. He has had to work hard and he hasn't had much time to play. He is young, unmarried, has a pleasant smile and is a good conversationalist, and it would be a natural, human impulse for him to take full advantage of the profits from the invention he has developed and take some time off to enjoy life.

But that's not the way it is. Harrison is thinking more about certain constructive ways he can use his unexpected income, than he is about spending it on his own pleasures.

"I feel that the purpose of life is to make the world a better place to live in," he says. He doesn't say it lightly, either. It's something he has thought about, something that he feels deeply.

Already he and his lawyers are studying plans for a trust fund which is to receive a considerable share of the profits of his invention, the funds to be used to help men and women with talent and creative ideas who otherwise might never see their ideas developed.

"I've known of many cases where a man had an idea with great possibilities,

but had to stay on his routine job in order to take care of his family," Harrison explains. "A man in a position like that can't afford to take a risk. A little financial help might make it possible for him to go ahead and work out an idea with great benefits to humanity.

"And another thing. Sometimes a man has a good idea, but because he doesn't have adequate backing someone else is able to take his idea and exploit it and the real inventor never gets anything for his ability and ingenuity."

That's Paul Harrison—always exploring ahead, seeking a new solution for an old problem. He's got the steam problem pretty well licked, and so he's tackling the next thing that presents itself. If a creative mind, and a sound philosophy and the profits from velocity steam will do it, he'll get the job done!

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Good Will Builder

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community regardless of how much money he might make."

He wants to do everything possible to get students to catch a vision of the real importance of the University as a whole while they are in school. Then, he believes, they will be certain to be good ambassadors for the institution when they are alumni.

"The organized alumni take justifiable pride in the fact that the Board of Regents selected Joseph A. Brandt for president, John Hervey for law dean, Jap Haskell for athletic director, and Snorter Luster for football coach," Mr. Muldrow says. "But it should be clear that the regents selected these alumni on their merits. The organized alumni have no desire to engage in personalities, and will continue to avoid personalities while working to help the University maintain and improve its policies and standards."

That's a typical statement. It combines Fish Muldrow's enthusiasm for O. U., and his determination to stick to his principles. Two good platform planks for any alumni president!

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Killed in Panama

William Alfred Benson, '40, who was sent to the Panama Canal Zone March 1, 1941, with the U. S. Army Air Corps, was killed June 9 when a plane in which he was riding crashed near Quarry Heights in Panama.

Mr. Benson was a member of a searching party sent out to look for a lost plane. Four were killed in the crash and three others, left in the jungle, were rescued several days later.

The former University student spent the greater part of his life at Bartlesville, and attended Oklahoma A. and M. College before coming to O. U. Memorial service for Mr. Benson was held June 22 in Bartlesville.

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