

*Meet Higgston Rainbird, who
invented steamboating and
the nuclear pile—remember?*

RAINBIRD

By R. A. LAFFERTY

Illustrated by WALKER

WERE scientific firsts truly tabulated the name of the Yankee inventor, Higgston Rainbird, would surely be without peer. Yet today he is known (and only to a few specialists, at that) for an improved blacksmith's bellows in the year 1785, for a certain modification (not fundamental) in the moldboard plow about 1805, for a better (but not good) method of reefing the lateen sail, for a chestnut roaster, for the Devil's Claw Wedge for splitting logs, and for a nutmeg grater embodying a



new safety feature; this last was either in the year 1816 or 1817. He is known for such, and for no more.

Were this all that he had achieved his name would still be secure. And it *is* secure, in a limited way, and to those who hobby in technological history.

But the glory of which history has cheated him, or of which he cheated himself, is otherwise. In a different sense, it is without parallel, absolutely unique.

For he pioneered the dynamo, the steam automobile, the steel industry, ferro-concrete construction, the internal combustion engine, electric illumination and power, the wireless, the televox, the petroleum and petro-chemical industries, monorail transportation, air travel, world-wide monitoring, fissionable power, space travel, group telepathy, political and economic balance; he built a retrogressor; and he made great advances towards corporeal immortality and the apotheosis of mankind. It would seem unfair that all this is unknown of him.

Even the once-solid facts—that he wired Philadelphia for light and power in 1799, Boston the following year and New York two years later—are no longer solid. In a sense they are no longer facts.

For all this there must be an

explanation; and if not that, then an account at least; and if not that, well—something anyhow.

HIGGSTON RAINBIRD
H made a certain decision on a June afternoon in 1779 when he was quite a young man, and by this decision he confirmed his inventive bent.

He was hawking from the top of Devil's Head Mountain. He flew his falcon (actually a tercel hawk) down through the white clouds, and to him it was the highest sport in the world. The bird came back, climbing the blue air, and brought a passenger pigeon from below the clouds. And Higgston was almost perfectly happy as he hooded the hawk.

He could stay there all day and hawk from above the clouds. Or he could go down the mountain and work on his sparker in his shed. He sighed as he made the decision, for no man can have everything. There was a fascination about hawking. But there was also a fascination about the copper-strip sparker. And he went down the mountain to work on it.

Thereafter he hawked less. After several years he was forced to give it up altogether. He had chosen his life, the dedicated career of an inventor, and he stayed with it for sixty-five years.

His sparker was not a success. It would be expensive, its spark was uncertain and it had almost no advantage over flint. People could always start a fire. If not, they could borrow a brand from a neighbor. There was no market for the sparker. But it was a nice machine, hammered copper strips wrapped around iron teased with lodestone, and the thing turned with a hand crank. He never gave it up entirely. He based other things upon it; and the retrogressor of his last years could not have been built without it.

But the main thing was steam, iron, and tools. He made the finest lathes. He revolutionized smelting and mining. He brought new things to power, and started the smoke to rolling. He made mistakes, he ran into dead ends, he wasted whole decades. But one man can only do so much.

He married a shrew, Audrey, knowing that a man cannot achieve without a goad as well as a goal. But he was without issue or disciple, and this worried him.

He built steamboat and steam-train. His was the first steam thresher. He cleared the forests with wood-burning giants, and designed towns. He destroyed southern slavery with a steam-powered cotton picker, and power and wealth followed him.

For better or worse he brought the country up a long road, so there was hardly a custom of his boyhood that still continued. Probably no one man had ever changed a country so much in his lifetime.

He fathered a true machine-tool industry, and brought rubber from the tropics and plastic from the laboratory. He pumped petroleum, and used natural gas for illumination and steam power. He was honored and enriched; and, looking back, he had no reason to regard his life as wasted.

"Yet I've missed so much. I tar-heeled and wasted a lot of time. If only I could have avoided the blind alleys, I could have done many times as much. I brought machine-tooling to its apex. But I neglected the finest tool of all, the mind. I used it as it is, but I had no time to study it, much less modify it. Others after me will do it all. But I rather wanted to do it all myself. Now it is too late."

HE went back and worked with his old sparker and its descendants, now that he was old. He built toys along the line of it that need not always have remained toys. He made a televox, but the only practical application was that now Audrey could rail at him over a greater distance.

He fired up a little steam dynamo in his house, ran wires and made it burn lights in his barn.

And he built a retrogressor.

"I would do much more along this line had I the time. But I'm pepper-bellied pretty near the end of the road. It is like finally coming to a gate and seeing a whole greater world beyond it, and being too old and too feeble to enter."

He kicked a chair and broke it.

"I never even made a better chair. Never got around to it. There are so clod-hopping many things I meant to do. I have maybe pushed the country ahead a couple of decades faster than it would otherwise have gone. But what couldn't I have done if it weren't for the blind alleys! Ten years lost in one of them, twelve in one. If only there had been a way to tell the true from the false, and to leave to others what they could do, and to do myself only what nobody else could do. To see a link (however unlikely) and go out and get it and set it in its place. O the waste, the wilderness that a talent can wander in! If I had only had a mentor! If I had had a map, a clue, a hatful of clues. I was born shrewd, and I shrewdly cut a path and went a grand ways. But always there was a clearer path and a faster way that I did not see

till later. As my name is Rainbird, if I had it to do over, I'd do it infinitely better."

He began to write a list of the things that he'd have done better. Then he stopped and threw away his pen in disgust.

"Never did even invent a decent ink-pen. Never got around to it. Dog-eared damnation, there's so much I didn't do!"

He poured himself a jolt, but he made a face as he drank it.

"Never got around to distilling a really better whisky. Had some good ideas along that line too. So many things I never did do. Well, I can't improve things by talking to myself here about it."

Then he sat and thought.

"But I burr-tailed *can*-improve things by talking to myself *there* about it."

He turned on his retrogressor, and went back sixty-five years and up two thousand feet.

HIGGSTON Rainbird was hawking from the top of Devil's Head Mountain one June afternoon in 1779. He flew his bird down through the white-fleece clouds, and to him it was sport indeed. Then it came back, climbing the shimmering air, and brought a pigeon to him.

"It's fun," said the old man, "but the bird is tough, and you have a lot to do. Sit down and listen, Higgston."

"How do you know the bird is tough? Who are you, and how did an old man like you climb up here without my seeing you. And how in hellpepper did you know that my name was Higgston?"

"I ate the bird and I remember that it was tough. I am just an old man who would tell you a few things to avoid in your life, and I came up here by means of an invention of my own. And I know your name is Higgston, as it is also my name; you being named after me, or I after you, I forget which. Which one of us is the oldest anyhow?"

"I had thought that you were, old man. I am a little interested in inventions myself. How does the one that carried you up here work?"

"It begins, well it begins with something like your sparker, Higgston. And as the years go by you adapt and add. But it is all tinkering with a force field till you are able to warp it a little. Now then, you are an ewer-eared galoot and not as handsome as I remembered you; but I happen to know that you have the makings of a fine man. Listen now as hard as ever you listened in your life. I doubt that I will be able to repeat. I will save you years and decades; I will tell you the best road to take over a journey which it was once said that a man could travel but

once. Man, I'll pave a path for you over the hard places and strew palms before your feet."

"Talk, you addle-pated old gaff. No man ever listened so hard before."

THE old man talked to the young one for five hours. Not a word was wasted: they were neither of them given to wasting words. He told him that steam wasn't everything — this before he knew that it was anything. It was a giant power, but it was limited. Other powers, perhaps, were not. He instructed him to explore the possibilities of amplification and feedback, and to use always the lightest medium of transmission of power: wire rather than mule-drawn coal cart, air rather than wire, ether rather than air. He warned against time wasted in shoring up the obsolete, and of the bottomless quicksand of cliché, both of word and of thought.

He admonished him not to waste precious months in trying to devise the perfect apple-corer; there will never be a perfect apple-corer. He begged him not to build a better bob-sled. There would be things far swifter than the bob-sled.

Let others make the new hide-scrapers and tanning salts. Let others aid the carter and the candle-molder and the cooper in

their arts. There was need for a better halm, a better horse-block, a better stile, a better whetstone. Well, let others fill those needs. If our button-hooks, our fire-dogs, our whiffle-trees, our boot-jacks, our cheese-presses are all badly designed and a disgrace, then let someone else remove that disgrace. Let others aid the cord-wainer and the cobbler. Let Higgston do only the high work that nobody else would be able to do.

There would come a time when the farrier himself would disappear, as the fletcher had all but disappeared. But new trades would open for a man with an open mind.

Then the old man got specific. He showed young Higgston a design for a lathe-dog that would save time. He told him how to draw, rather than hammer wire; and advised him of the virtues of mica as insulator until better materials should come to hand.

"And here there are some things that you will have to take on faith," said the old man, "things of which we learn the 'what' before we fathom the 'why.'"

He explained to him the shuttle armature and the self-exciting field and commutation; and the possibilities that alternation carried to its ultimate might open up. He told him a bejammed lot

of things about a confounded huge variety of subjects.

"And a little mathematics never hurt a practical man," said the old gaffer. "I was self-taught, and it slowed me down."

They hunkered down there, and the old man cyphered it all out in the dust on the top of Devil's Head Mountain. He showed him natural logarithms and rotating vectors and the calculi and such; but he didn't push it too far, as even a smart boy can learn only so much in a few minutes. He then gave him a little advice on the treatment of Audrey, knowing it would be useless, for the art of living with a shrew is a thing that cannot be explained to another.

"Now hood your hawk and go down the mountain and go to work," the old man said. And that is what young Higgston Rainbird did.

THE career of the Yankee inventor, Higgston Rainbird, was meteoric. The wise men of Greece were little boys to him, the Renaissance giants had only knocked at the door but had not tried the knob. And it was unlocked all the time.

The milestones that Higgston left are breathtaking. He built a short high dam on the flank of Devil's Head Mountain, and had hydroelectric power for his own

shop in that same year (1779). He had an arc light burning in Horse-Head Lighthouse in 1781. He read by true incandescent light in 1783, and lighted his native village, Knobknocker, three years later. He drove a charcoal-fueled automobile in 1787, switched to a distillate of whale oil in 1789, and used true rock-oil in 1790. His gasoline powered combination reaper-thresher was in commercial production in 1793, the same year that he wired Centerville for light and power. His first diesel locomotive made its trial run in 1796, in which year he also converted one of his earlier coal-burning steam ships to liquid fuel.

In 1799 he had wired Philadelphia for light and power, a major breakthrough, for the big cities had manfully resisted the innovations. On the night of the turn of the century he unhooded a whole clutch of new things, wireless telegraphy, the televox, radio transmission and reception, motile and audible theatrical productions, a machine to transmit the human voice into print, and a method of sterilizing and wrapping meat to permit its indefinite preservation at any temperature.

And in the spring of that new year he first flew a heavier-than-air vehicle.

"He has made all the basic inventions," said the many-tongued people. "Now there remains only their refinement and proper utilization."

"Horse hockey," said Higgston Rainbird. He made a rocket that could carry freight to England in thirteen minutes at seven cents a hundredweight. This was in 1805. He had fissionable power in 1813, and within four years had the price down where it could be used for desalting seawater to the eventual irrigation of five million square miles of remarkably dry land.

He built a Think Machine to work out the problems that he was too busy to solve, and a Prediction Machine to pose him new problems and new areas of breakthrough.

In 1821, on his birthday, he hit the moon with a marker. He bet a crony that he would be able to go up personally one year later and retrieve it. And he won the bet.

In 1830 he first put on the market his Red Ball Pipe Tobacco, an aromatic and expensive crimp cut made of Martian lichen.

In 1836 he founded the Institute for the Atmospheric Rehabilitation of Venus, for he found that place to be worse than a smoke-house. It was there that he developed that hacking cough

that stayed with him till the end of his days.

He synthesized a man of his own age and disreputude who would sit drinking with him in the after-midnight hours and say, "You're so right, Higgston, so incontestably right."

His plan for the Simplification and Eventual Elimination of Government was adopted (in modified form) in 1840, a fruit of his Political and Economic Balance Institute.

Yet, for all his seemingly successful penetration of the field, he realized that man was the one truly cantankerous animal, and that Human Engineering would remain one of the never-completely-resolved fields.

He made a partial breakthrough in telepathy, starting with the personal knowledge that shrews are always able to read the minds of their spouses. He knew that the secret was not in sympathetic reception, but in arrogant break-in. With the polite it is forever impossible, but he disguised this discovery as politely as he could.

And he worked toward corporeal immortality and the apotheosis of mankind, that cantankerous animal.

He designed a fabric that would embulk itself on a temperature drop, and thin to an airy sheen in summery weather. The

weather itself he disdained to modify, but he did evolve infallible prediction of exact daily rainfall and temperature for decades in advance.

And he built a retrogressor.

ONE day he looked in the mirror and frowned.

"I never did get around to making a better mirror. This one is hideous. However (to consider every possibility) let us weigh the thesis that it is the image and not the mirror that is hideous."

He called up an acquaintance.

"Say, Ulois, what year is this anyhow?"

"1844."

"Are you sure?"

"Reasonably sure."

"How old am I?"

"Eighty-five, I think, Higgston."

"How long have I been an old man?"

"Quite a while, Higgston, quite a while."

Higgston Rainbird hung up rudely.

"I wonder how I ever let a thing like that slip up on me?" he said to himself. "I should have gone on corporeal immortality a little earlier. I've bungled the whole business now."

He fiddled with his Prediction Machine and saw that he was to die that very year. He did not seek a finer reading.

"What a saddle-galled splay-footed situation to find myself in! I never got around to a tenth of the things I really wanted to do. O, I was smart enough; I just ran up too many blind alleys. Never found the answers to half the old riddles. Should have built the Prediction Machine at the beginning instead of the end. But I didn't know how to build it at the beginning. There ought to be a way to get more done. Never got any advice in my life worth taking except from that nutty old man on the mountain when I was a young man. There's a lot of things I've only started on. Well, every man doesn't hang, but every man does come to the end of his rope. I never did get around to making that rope extensible. And I can't improve things by talking to myself here about it."

He filled his pipe with Red Ball crimpcut and thought a while.

"But I hill-hopping can improve things talking to myself *there* about it."

Then he turned on his retrogressor and went back and up.

YOUNG Higgston Rainbird was hawking from the top of Devil's Head Mountain on a June afternoon in 1779. He flew his hawk down through the white clouds, and decided that he was

the finest fellow in the world and master of the finest sport. If there was earth below the clouds it was far away and unimportant.

The hunting bird came back, climbing the tall air, with a pigeon from the lower regions.

"Forget the bird," said the old man, "and give a listen with those outsized ears of yours. I have a lot to tell you in a very little while, and then you must devote yourself to a concentrated life of work. Hood the bird and clip him to the stake. Is that bridle-clip of your own invention? Ah yes, I remember now that it is."

"I'll just fly him down once more, old man, and then I'll have a look at what you're selling."

"No, no. Hood him at once. This is your moment of decision. That is a boyishness that you must give up. Listen to me, Higgston, and I will orient your life for you."

"I rather intended to orient it myself. How did you get up here, old man, without me seeing you? How, in fact, did you get up here at all? It's a hard climb."

"Yes, I remember that it is. I came up here on the wings of an invention of my own. Now pay attention for a few hours. It will take all your considerable wit."

"A few hours and a perfect hawking afternoon will be gone. This may be the finest day ever made."

"I also once felt that it was, but I manfully gave it up. So must you."

"Let me fly the hawk down again and I will listen to you while it is gone."

"But you will only be listening with half a mind, and the rest will be with the hawk."

But young Higgston flew the bird down through the shining white clouds, and the old man began his rigmarole sadly. Yet it was a rang-dang-do of a spiel, a mummywhammy of admonition and exposition, and young Higgston listened entranced and almost forgot his hawk. The old man told him that he must stride half a dozen roads at once, and yet never take a wrong one; that he must do some things earlier that on the alternative had been done quite late; that he must point his technique at the Think Machine and the Prediction Machine, and at the unsolved problem of corporeal immortality.

"In no other way can you really acquire elbow-room, ample working time. Time runs out and life is too short if you let it take its natural course. Are you listening to me, Higgston?"

But the hawk came back, climbing the steep air, and it had a gray dove. The old man sighed at the interruption, for he knew that his project was in peril.

"Hood the hawk. It's a sport for boys. Now listen to me, you spraddling jack. I am telling you things that nobody else would ever be able to tell you! I will show you how to fly falcons to the stars, not just down to the meadows and birch groves at the foot of this mountain."

"There is no prey up there," said young Higgston.

"There *is*. Gamier prey than you ever dreamed of. Hood the bird and snaffle him."

"I'll just fly him down one more time and listen to you till he comes back."

The hawk went down through the clouds like a golden bolt of summer lightning.

THEN the old man, taking the cosmos, peeled it open layer by layer like an onion, and told young Higgston how it worked. Afterwards he returned to the technological beginning and he lined out the workings of steam and petro and electro-magnetism, and explained that these simple powers must be used for a short interval in the invention of greater power. He told him of waves and resonance and airy transmission, and fission and flight and over-flight. And that none of the doors required keys, only a resolute man to turn the knob and push them open. Young Higgston was impressed.

Then the hawk came back, climbing the towering air, and it had a mainbird.

The old man had lively eyes, but now they took on a new light.

"Nobody ever gives up pleasure willingly," he said, "and there is always the sneaking feeling that the bargain may not have been perfect. This is one of the things I have missed. I haven't hawked for sixty-five years. Let me fly him this time, Higgston."

"You know how?"

"I am an adept. And I once intended to make a better gauntlet for hawkers. This hasn't been improved since Nimrod's time."

"I have an idea for a better gauntlet myself, old man."

"Yes. I know what your idea is. Go ahead with it. It's practical."

"Fly him if you want to, old man."

And old Higgston flew the tercel hawk down through the gleaming clouds, and he and young Higgston watched from the top of the world. And then young Higgston Rainbird was standing alone on the top of Devil's Head Mountain, and the old man was gone.

"I wonder where he went? And where in apple-knockers' heaven did he come from? Or was he ever here at all? That's a danged funny machine he came in, if he did come in it. All the

wheels are on the inside. But I can use the gears from it, and the clock, and the copper wire. It must have taken weeks to hammer that much wire out that fine. I wish I'd paid more attention to what he was saying, but he poured it on a little thick. I'd have gone along with him on it if only he'd have found a good stopping place a little sooner, and hadn't been so insistent on giving up hawking. Well, I'll just hawk here till dark, and if it dawns clear I'll be up again in the morning. And Sunday, if I have a little time, I may work on my sparker or my chestnut roaster."

HIGGSTON Rainbird lived a long and successful life. Locally he was known best as a hawker and horse racer. But as an inventor he was recognized as far as Boston.

He is still known, in a limited way, to specialists in the field and the period: known as contributor to the development of the moldboard plow, as the designer of the Nonpareil Nutmeg Grater with the safety feature, for a bellows, for a sparker for starting fires (little used) and for the Devil's Claw Wedge for splitting logs.

He is known for such, and for no more.

— R. A. LAFFERTY