



ELIZABETH I. SAMUEL

THE STORY OF
IRON

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by

ELIZABETH I. SAMUEL



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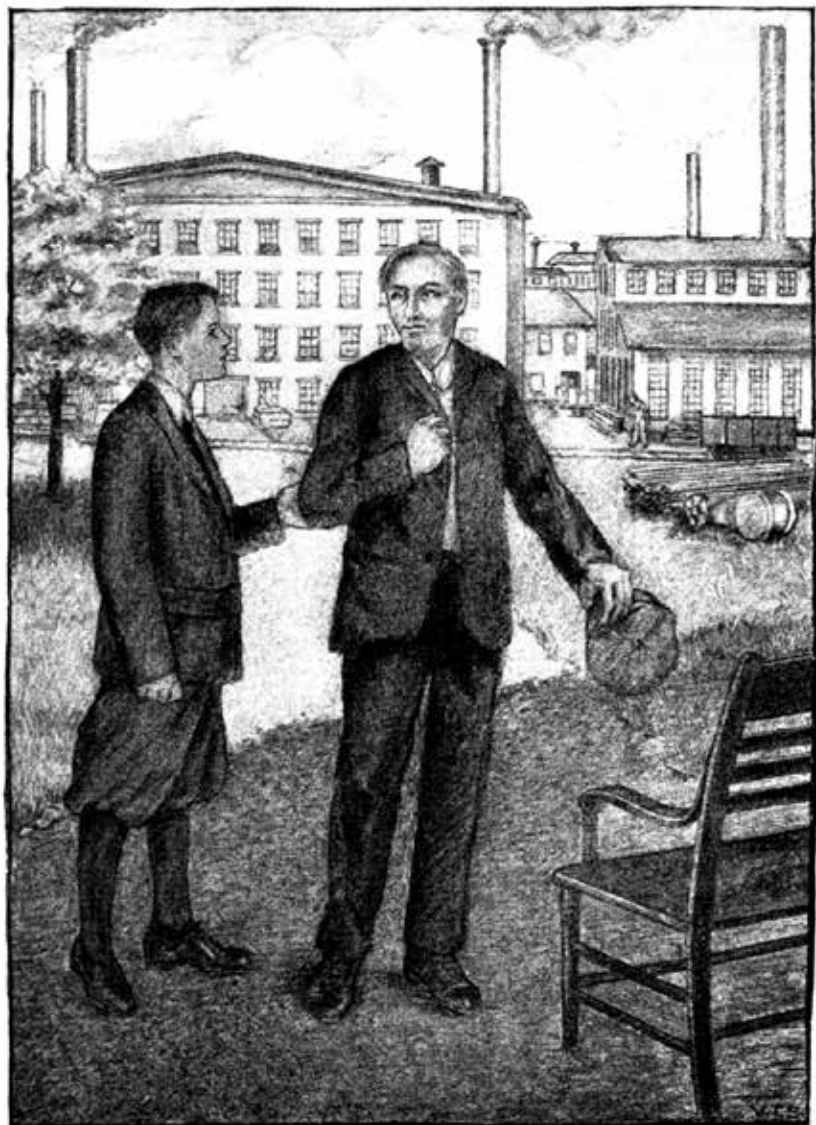
These books were written about 100 years ago and show the way people talked, thought, and acted back then. They tell the story of how resources like cotton, lumber, leather, and gold were developed—a process that depended on the hard work of many people. Sometimes the work was done by those who made the profits, and other times it was done by people who were not free, including enslaved individuals.

We know that some parts of these stories include ideas that we now understand to be hurtful and unfair. Our aim in republishing these books is not to support those old views but to share our history so we can all learn from it. By looking at the past, including its mistakes, we hope to learn important lessons that will help us create a kinder and fairer future.

We invite you to read these stories with an awareness of their time and to think about how far we have come—and how much work there is still to do.

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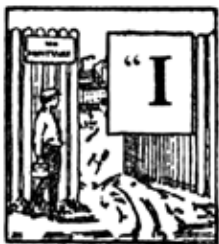
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CHAPTER I

BILLY BRADFORD



wisht,” said Billy Bradford, standing, hands thrust deep in his trousers pockets, in the middle of the path, and looking across the broad river at the mountains beyond, “I wisht—”

“William Wallace, come here,” called a voice from the door where the path ended. “It’s time for you to start with your uncle’s dinner.”

Billy turned quickly, drew his hands out of his pockets, and in a moment was at the door.

Billy Bradford might stand still, looking away off at the mountains, and wish, but William Wallace was quite another boy. There had been a time when Billy hadn’t felt that there were two of him. Then he had lived in the country. That was before the day that his father, hand on Billy’s head, had smiled at him for the last time, saying, “Billy, my little man.”

Then Uncle John had drawn him gently away, and Aunt Mary had kissed him, and they had brought him to the little house by the river.

That was two long years ago. Now, William Wallace had to carry dinners, six dinners a week, to the big foundry, a whole mile away. That was why there seemed to be two of him, one to do errands, and another to think.

“You must be very careful not to fall,” said Aunt Mary, as she gave him the bottle of soup, wrapped in two newspapers to keep it hot. Then she gave him the pail, saying, “Uncle John will work better all the afternoon because you are carrying him a hot dinner.”

“I shall be glad of that,” said Billy, looking up at her and smiling, as he always did, when he was doing anything for Uncle John.

Aunt Mary herself liked to do things for Uncle John, so she smiled back, at least she thought she did; but she didn’t know so much about smiles as Billy did. He had been used to the kind that go all over a face and end in wrinkles everywhere.

Billy’s smile lasted till Aunt Mary said, “Now hurry, William Wallace.”

That stopped his smile, but he settled the bundle a little more carefully under his arm and started on his way.

The day was warm, even for June. Part of the way there wasn’t any pavement, and, where there was, it was very rough; so, while he was walking along, Billy had plenty of time to think. He had a great many things to think about, too, for his birthday was coming the very next day, and then he would be thirteen years old.

The thing that was most on his mind was what he could do to earn some money. He was thinking especially about that, because, the night before, when they had supposed that he was asleep in the little corner room, he had heard Aunt

Mary say that the money in the bank was getting very low. Then Uncle John had said, "Sh! Sh! Billy may hear."

June made Billy want to be out in the country. Things were so mixed up that he couldn't seem to straighten them out at all, but he trudged steadily on, because the William Wallace part of him always kept at things. Finally he gave up thinking and whistled hard, just to help his legs along.

At last he turned the corner, and there was the great mill with the square tower almost in the middle; and, at the right, the long, low building with the tall smoke-stack. That was the foundry where Uncle John worked.

Billy went through the wide gate just as the whistle blew; and, in a minute, he could see Uncle John come to the door. He didn't look as if he had been working all the morning in damp, black sand. The men in the foundry said that dirt never stuck to John Bradford. "Clean John Bradford," they called him. Clean and good he looked to Billy, as he stood there in his bright blue overalls and the gray cap that was almost the color of his hair.

"Hot soup, sir," said Billy, handing him the bundle.

"Sure to be hot, if you bring it," said Uncle John, his blue eyes smiling down at Billy. "Might burn a boy, if he fell and broke the bottle, eh, Billy, my lad?"

"Pail, sir," said Billy, his eyes growing bright, until he smiled so hard that he forgot all about his troubles.

Somehow Uncle John seemed to understand a great many things. Even if it was only the risk that a boy took in carrying a bottle of hot soup, it made Billy feel comfortable to have him understand.

"Now," said Uncle John, "we'll go out back of the mill, and have a good talk. Been doing anything this morning, Billy?"

Then Billy told him about the errands that he had done for Aunt Mary and about his hoeing the two rows of potatoes out by the fence.

“Well done, Billy,” said Uncle John. “Here’s a bench waiting for us. Had your own dinner?”

Billy nodded. Then he said, “Uncle John, do you like to work in the foundry?”

“As to that,” answered Uncle John, taking a sandwich from the pail, “I do. It’s hard work, and it doesn’t make a man rich; but there’s something about making things that keeps a man interested. It takes a pretty good eye and a steady hand to make the molds come out just right. They have to be right, you see for, if they weren’t, things wouldn’t fit together. I like to think that I’m helping things in the world to go right.

“Just why are you asking me that? Can it be that you’re thinking of being a man, Billy?”

“Something’s going to happen to-morrow,” he continued, looking very wise. “I’ve been thinking we’d better celebrate.”

“Celebrate!” exclaimed Billy.

“Yes,” said Uncle John, nodding his head emphatically. “Just as soon as I’ve finished this good dinner, we’ll go to the office to get permission for you to come to see me work, and to wait until we pour.”

“Honest?” said Billy, for he had wanted and wanted to see how iron could ever be poured out of a ladle. “Honest and true?”

“Honest and true,” said Uncle John, as he handed Billy one of the molasses cookies that Aunt Mary always put in the bottom of the pail.

“Ready,” said Uncle John, putting the cover on his pail.

Back they went to the foundry, then across the yard, and

past lame Tom, the timekeeper, down the narrow corridor to the office where they found the young superintendent at his desk.

“Why, Bradford,” he said rising, and looking at Billy so hard that it made his cheeks feel hot, “why, Bradford, I didn’t know that you had a son.”

“I haven’t a son, sir,” said John Bradford. “This is my nephew, William Wallace Bradford.”

Billy’s cheeks cooled off very fast, and his heart seemed to move down in his side; for it was the very first time that Uncle John had ever called him by his whole name.

“You couldn’t deny that he belongs to you, even if you wanted to,” said the superintendent, “for his eyes are a real Bradford blue. Anything like you except his eyes?” he added quizzically.

“I’m glad that he belongs to me, Mr. Prescott,” answered John Bradford, putting his hand on Billy’s shoulder. “He’s a good boy, too. Can’t say just what I was, when I was thirteen.”

“There’s some difference between a boy and a man, I’ll admit,” said the superintendent; “but what I’m driving at is that I need an office boy, this very minute, and I should like a Bradford boy. What do you say, Bradford?”

“Eh, Billy, my lad?” said Uncle John.

Even in the moment that they had been standing there, something in the tall, broad-shouldered man, who looked earnestly down at him, had touched Billy’s hero-spring. As soon as he heard the question, he knew that he wanted to be Mr. Prescott’s office boy. So, forgetting all about his birthday and everything else, he said, with his William Wallace promptness, “I’ll begin right away, sir.”

“Well then, William,” said the superintendent, in his firm, business tone, “as my office boy, you must keep your eyes and your ears open, and your lips shut. Understand?”

Then, before Billy could answer, Mr. Prescott gave him a letter, saying, “Post that on the train.”

Billy darted through the door, and the superintendent sat down at his desk.

“Thank you, sir,” said John Bradford; and, just then, the whistle blew.

Billy did more errands that afternoon than he had ever done in a whole day; several times he had to put on extra whistle power to keep his legs going. But he was proud and happy that night when they told Aunt Mary the news. He saw the look of relief that came into her face; and, though that made him glad, it made him a little sorry, too.

After supper he went out in the path to look once more at the mountains growing dim and blue in the summer twilight. He knew, now, what he had not known in the morning; and that was, how he was going to help to take care of himself.

He stood there until his aunt called, “William Wallace, it’s time to come in.”

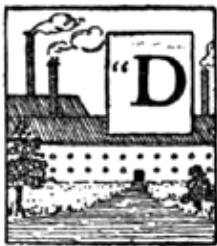
Then his wish of the morning—the wish of his heart—asserted itself once more; and, as he turned to go into the house, he said, half in a whisper:

“I wisht she’d call me Billy.”



CHAPTER II

OLD IRON



AYS don't always come out as we expect they will," said Uncle John, as he and Billy started out together the next morning. "But it's your birthday, just the same. Shut your eyes and hold out your hand. Ready."

Billy, opening his eyes, saw his uncle holding a jack-knife, which dangled from a chain.

"Just what I wanted," exclaimed Billy, taking the knife.

"Thought it would be handy for an office boy," said Uncle John, beaming with satisfaction. "I'm going," said he, as Billy put his dinner pail down on the sidewalk and opened both blades, "to give you something else, something to carry around in your head, instead of in your pocket. It's an office boy motto: Whatever you do, do it right, just as right as you can."

"That isn't any new news," said Billy, looking rather disappointed. "You told me that a long time ago."

"Come to think of it, I did," said Uncle John. "It's good for any boy, any time; but it's specially good for an office boy. I should like to talk it over, but we shall have to hurry now."

Together they went through the gate, and stood in line, while lame Tom, the timekeeper, made marks against their names. Then Uncle John said cheerily, "Meet me behind the mill when the noon whistle blows."

"Sure, sir," said Billy.

Billy went on, through the great door, down the narrow corridor, and had a "good-morning" all ready to say when he opened the office door.

Of course, he didn't find anybody there. The office didn't seem to be in very good order; but nobody had told him what he was expected to do.

So he looked around for a moment. Then he put his pail on a stool in the corner, and picked up a pencil that lay on the floor under Mr. Prescott's desk. The point was broken. That made him think of his knife. Then he looked for a waste-basket, for Aunt Mary was very particular about not having shavings and lead on the floor. On the top of the waste-basket he found a duster. Billy knew a duster when he saw it, for dusting was one of the things that Aunt Mary had taught him to do.

When the pencil was done—it was very well done, for he used both blades of his knife to do it—he put it on top of Mr. Prescott's desk, and began to dust in good earnest.

When the postman came in, he looked a little surprised, but all he said was:

"New boy, are you?"

"Yes, sir," answered Billy.

Then he put the letters in one pile and the papers in another, and was putting a finishing touch with his duster on the rungs of Mr. Prescott's chair when he came in.

Billy was so busy that he didn't hear him till he said, "Good-morning, William."

"Good-morning, sir. Where shall I empty the waste-basket?"

"Really," said Mr. Prescott, "unexpected pleasure, I am sure—barrel outside."

Billy had hoped that Mr. Prescott would notice how well he had sharpened the pencil; but he put it into his pocket without saying a word.

Perhaps he did see more than he seemed to, for, when the expressman came in with a package, Mr. Prescott said, "William, cut the string."

When Billy took out his knife, Mr. Prescott glanced up from his papers, saying, "Unexpected pleasure, really."

Billy was beginning to feel that being an office boy wasn't a bit social, when Mr. Prescott said:

"William, why is a jack-knife called a jack-knife?"

"I don't know, sir."

"Frenchman named Jacques first made them," said Mr. Prescott.

Billy wanted very much to tell him where his knife came from; but he didn't feel sure that office boys were supposed to have birthdays.

Then the stenographer came; and, before Billy knew it, it was noon, and he went to meet Uncle John behind the mill.

"Birthday coming on pretty well, Billy?" asked Uncle John, as they both opened their pails.

"Sure," answered Billy, who was so hungry that he couldn't stop to talk.

"Sorry we couldn't celebrate," said Uncle John. "Mustn't

give up the idea though, Billy. As you go around on errands, you'll see a good many things. Some day we'll piece them together. Watch for a chance and it'll come some day."

Billy, fast nearing the bottom of his pail, paused a moment to say, "Uncle John, were you ever an office boy?"

"Not just that," answered Uncle John.

"There's a lot to it," said Billy.

"I suppose there is," said Uncle John, gravely. "There is to almost anything, if you do it right."

After that, Billy's days went on, one very like another. It seemed to him that there was no end to the things he had to learn. He had very little time to spend in wishing, though every night he went out for a good look at the mountains. But he was beginning to think about the kind of man that he would like to be; and every day he was a little more sure that he wanted to be like the young superintendent.

He was so short himself that he was afraid that he would never be as tall as Mr. Prescott. So he began to stand as tall as he could, especially when he was in the office. Then he tried to remember to breathe deep, the way that the teacher at school had told the boys to do. But he wondered, sometimes, when he looked at Mr. Prescott's broad shoulders, whether he had ever been as small as most boys.

The day that Billy had his first little brown envelope with three dollars and fifty cents in it, he stood very tall indeed. That night, at supper, he handed it to Aunt Mary, saying:

"That's for you to put in the bank."

"For Billy," said Uncle John, looking up quickly and speaking almost sternly. "I'm the one to give Aunt Mary money."

Then he said gently: "It's a good plan, Billy, to put your first money in the bank. You'll never have any more just like that."

The thing that first excited Billy's curiosity, as he went about on errands, was the big pile of old iron in the mill yard. There were pieces of old stoves, and seats from schoolhouses that had been burned, and engines that had been smashed in wrecks, and old ploughs, and nobody knew what else—all piled up in a great heap.

One day, when he carried an order to the man that tended the furnace in the cupola where they melted the iron, he saw them putting pieces of old iron on the scales; and he heard the man say to his helper: "We shall have to put in fifty pounds extra to-day."

It seemed to Billy that it wasn't quite fair to put in old iron, when they were making new machinery. So, one noon, he asked Uncle John about it.

"Using your eyes, are you, Billy? That's quite likely to set your mind to working.

"I suppose you've heard them talking around here about testing machinery. That isn't the first testing. They test iron all the way along, from the ore in the mine to the sticks of pig iron piled up in our yard."

"Some of it is in cakes," said Billy.

"Is that so?" asked Uncle John, as he took another sandwich out of his pail. "Now I think of it, they did tell me that cakes are the new style in pig iron.

"Well," continued Uncle John, "there are men testing and experimenting all the time; and some of them found out that old iron and pig iron together make better new iron

than they can make from pig iron alone. Since they found that out, scrap iron has kept on going up in price.

“Did you happen, Billy, to see any other heaps lying around?”

“I saw a pile of coke, over in the corner,” answered Billy.

“Somewhere,” said Uncle John, “there must have been a heap of limestone. They use that for what they call a flux. That unites with the waste things, the ashes of the coke and any sand that may have stuck to the pig iron. Those things together make slag. The slag is so much lighter than the iron that it floats on top, and there are tap holes in the cupola where they draw it off. Limestone helps the iron to melt, that’s another reason why they use it.”

“I saw some scales,” said Billy.

“Those,” said Uncle John, “are to weigh the things that they put into the cupola. There are rules for making cast iron. It all depends on what kind of machinery we want to make.

“First, in the bottom of the cupola, they make a fire of shavings and wood, with a little coal; then they put in coke, pig iron, scrap iron, and limestone, according to the rule for the kind of iron that they want to make.

“Those heaps all pieced together, Billy.”

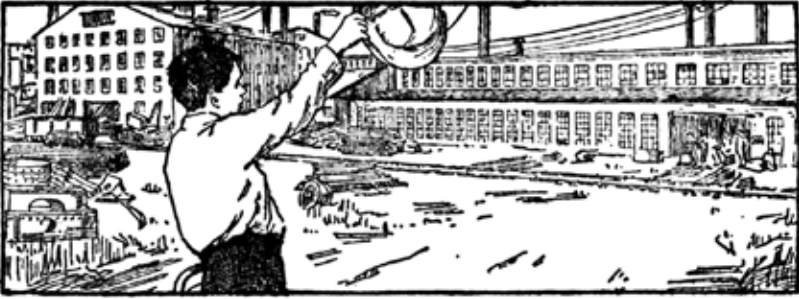
“Sure,” answered Billy; and, then, the whistle blew.

Deep down in his heart, Billy didn’t like that whistle. He didn’t tell Uncle John, because William Wallace scorned anybody who felt like that. William Wallace said that being on time—on time to the minute—was only just business. Nevertheless, Billy missed being free. Aunt Mary’s errands hadn’t been timed by the clock.

There was another reason why he didn't tell Uncle John how he felt.

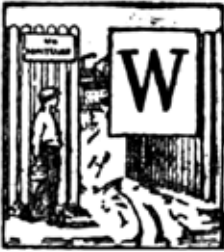
"Stand by your job, every minute that you belong on it," was one of the things that Uncle John had said so many times that it almost worried Billy.

But, before the summer was over, Billy was glad that he had kept that on his mind.



CHAPTER III

A MOUNTAIN OF IRON



HETHER, if it hadn't been for Billy's new jack-knife, he and Thomas Murphy would have become friends, no one can say. It seems very probable that something would have made them like each other.

Sitting on a high stool to check time or in a chair to watch the great door had grown so monotonous that Tom really needed to have somebody to talk to.

Then there wasn't any boy in the mill for Billy to get acquainted with; and Billy saw Tom oftener than he saw any of the other men. So it seems very natural that Billy and Tom should have become friends.

If they hadn't, things wouldn't have turned out just as they did; and whatever else might have happened, it was really the jack-knife that brought them together.

Billy had been in the mill about two weeks when, one morning, just as Tom was finishing making a mark after Uncle John's name, snap went the point of his pencil.

Billy heard it break, and saw Tom put his hand into his

pocket. Billy knew, from Tom's face, before he drew his hand out, that there wasn't any knife in his pocket.

So Billy put his dinner pail down, and pulling his knife out by the chain, said quickly:

"I'll sharpen your pencil, Mr. Murphy."

Billy had been practicing on sharpening pencils. He worked so fast that the men behind had hardly begun to grumble before the pencil was in working order, and the line began to move on again.

Though he did not know it, Billy had done something more than merely to sharpen Tom's pencil. When he said, "Mr. Murphy," he waked up something in Tom that Tom himself had almost forgotten about.

He had been called "Tom Murphy" so long, sometimes only "lame Tom," that Billy's saying "Mr. Murphy" had made him sit up very straight, while he was waiting for Billy to sharpen the pencil.

Mr. Prescott thought that he really appreciated Tom. He always said, "Tom Murphy is as faithful as the day is long"; but even Mr. Prescott didn't know so much about Tom as he thought he did. If Billy and Tom hadn't become friends, Mr. Prescott would probably never have learned anything about the "Mr. Murphy" side of Tom.

After that morning, Billy and Tom kept on getting acquainted, until one day when Uncle John had to go out one noon to see about some new window screens for Aunt Mary, Billy went to the door to see Tom.

Tom, having just sat down in his chair, was trying to get his lame leg into a position where it would be more comfortable.

"Does your leg hurt, Mr. Murphy?" asked Billy.

"Pretty bad to-day, William," answered Thomas Murphy with a groan. "If it wasn't so dry, I should think, from the way my leg aches, that it was going to rain, but there's no hope of that."

"It's rheumatism, isn't it?" asked Billy, sympathetically.

"Part of it is," answered Tom, "but before that it was crush. I hope you don't think I've never done anything but mark time at Prescott mill. I suppose that you think you've seen considerable iron in this yard and in this mill; but you don't know half so much about iron as I did when my legs were as good as yours.

"Out West, where I was born, there are acres and acres and acres of iron almost on top of the ground; and, besides that, a whole mountain of iron."

Tom paused a moment to move his leg again.

"Was there an iron mine in the ground, too?" asked Billy, sitting down on the threshold of the door.

"Yes, there was," answered Tom. "If I had stayed on top of the ground, perhaps I shouldn't have been hurt. Might have been blown up in a gopher hole, though, the way my brother was."

"O-oh!" said Billy.

"Never heard of a gopher hole, I suppose," continued Tom, settling back in his chair, as though he intended to improve his opportunity to talk.

"That's one way that they get iron out of a mountain. They make holes straight into a bank. Then they put in sacks of powder, and fire it with a fuse. That loosens the ore so that they can use a steam shovel. Sometimes the men go in too soon."

"I wish," said Billy with a little shiver, "that you would tell me about the mine."

"That'll be quite a contract," said Thomas Murphy, clasp-

ing his hands across his chest, "but I was in one long enough to know.

"You'll think there was a mine down in the ground when I tell you that I've been down a thousand feet in one myself. I went down that one in a cage; but in the mine where I worked I used to go down on ladders at the side of the shaft."

"Was it something like a coal mine?" asked Billy.

"I've heard miners say," answered Tom, "that some iron is so hard that it has to be worked with a pick and a shovel; but the iron in our mine was so soft that we caved it down. If I had been working with a pick, perhaps I shouldn't have been hurt.

"When you cave iron, you go down to the bottom of the shaft and work under the iron. You cut out a place, and put in some big timbers to hold up the roof. Then you cut some more, and keep on till you think the roof may fall.

"Then you board that place in, and knock out some pillars, or blow them out, and down comes the iron. Then you put it in a car and push it to a chute, and that loads it on an elevator to be brought up. Sometimes they use electric trams; we used to have to push the cars."

"It must be very hard work," said Billy.

"Work, William, usually is hard," said Thomas Murphy. "Work, underground or above ground, is work, William."

"But you haven't told me, Mr. Murphy," said Billy, "how you hurt your knee."

"The quickest way to tell you that, William, is to tell you that the cave, that time, caved too soon. I got caught on the edge of it.

"After I got out of the hospital, I tried to work above ground; but the noise of the steam shovels and the blasting wore me out.

So, one day, I took an ore train, and went to the boat and came up the river. Finally, I drifted to Prescott mill, some seasons before you were born, William.”

“Have you ever wanted to go back?” asked Billy.

“No, William, I haven’t. There’s nobody left out there that belongs to me, anyway. My lame knee wasn’t the only reason why I left, William. I heard something about the country that I didn’t like at all; I didn’t like it at all.”

“Weren’t the people good?” asked Billy.

“Very good people,” answered Thomas Murphy firmly. “’Twas something about the mountain that I heard.

“There were always men around examining the mines. I never paid much attention to ‘em till one day I heard a man—they said he came from some college—a-talking about volcanoes. He said that iron mountain was thrown up by a volcano, said he was sure of it.

“I never told anybody, William, but I cleared out the very next day. You’ve never heard anything about volcanoes round here, have you, William?”

“No, Mr. Murphy,” answered Billy.

“If you ever should, William,” said Thomas Murphy, leaning anxiously forward.

“If I ever do hear, Mr. Murphy,” said Billy, feeling that he was making a promise, “I’ll tell you right away.”

“Thank you, William,” said Tom. “You won’t mention it, will you?”

“No, Mr. Murphy,” answered Billy.

That was really the day when Billy and Thomas Murphy sealed their compact as friends.



CHAPTER IV

THE FOUNDRY



Y friend, Mr. Murphy," said Billy, one night after supper, when he and Uncle John were sitting side by side on the steps.

"Did I understand?" interrupted Uncle John, "Mr. Murphy?"

"Yes," answered Billy, "Mr. Thomas Murphy the timekeeper."

"Exactly," said Uncle John.

"Mr. Murphy," Billy went on, "says that iron moves the world."

"I should say," said Uncle John, deliberately, "that power generally has to be put into an iron harness before anything can move; but Mr. Murphy evidently knows what he is talking about."

"He says," continued Billy, "that iron mills are very important places; and that, for his part, he's glad that he works in an iron mill."

"That's the way every man ought to feel about his work," said Uncle John; "all the work in the world has to be done by somebody."