

Mr. Eads' Bridge

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CHAPTER FOUR

The Bends

Laura's final words made Becky remember that, for herself, 1873 was a long time ago. She glanced around without success, searching for the strange, glowing beetle that had apparently brought her here and changed her appearance. *I guess I'm still supposed to learn some more, she thought.*

"Gee." Becky sighed. "That's a shame. The way you described the caisson, I really wanted to see it."

"You may change your mind when I tell you the rest," Laura said, frowning. "We still don't understand what caused it, but many of the workmen became sick after working in the caissons. Their joints ached, and their stomachs hurt. Because of the way that many walked in a bent over position to ease the pain, some people jokingly said that they had 'the bends.' It wasn't funny at all, however. Fifteen workers died from the affliction."

"Why didn't you get the bends?" Becky asked.

"I probably wasn't down there long enough. I only went on one tour. We're hearing that they have similar problems building the bridge between Manhattan and Brooklyn in New York City. They are also using caissons, and their workers are similarly experiencing what their physician has named 'caisson disease.' Their chief engineer, Washington Roebling, became incapacitated himself from too much time in the caisson."

"How horrible! Did they have to stop building the bridge?"

"His wife, Emily Warren Roebling, took over his tasks, learning both engineering and politics to carry on. She's done a wonderful job, especially since we women are generally bypassed for such roles."

"I sure hope that women will be able to do anything they want to in the future," Becky agreed.

"Well, one bridge at a time," said Laura. "Another first for the St. Louis and Illinois bridge is that the spans are being raised without using any falsework."

"Falsework?" Becky asked.

"That's another word for temporary supports, usually wood in this case, that would prop up the partial spans until they can join them together. Once that connection is made, the arch is able to hold itself up."

"Why aren't they using falsework, then? It sounds reasonable to me."



"That's an interesting story. As you know, St. Louis is a river town. We have lots and lots of steamship captains that make their living moving goods up and down and across the river. The steamship industry saw a bridge as a threat to their business, so they lobbied the United States Congress to pass a law regulating river bridges. Their hidden intent, of course, was to make the rules so restrictive that *no* bridge could be built."

"That must have been some set of rules," Becky said.

"Henry Flad, Mr. Eads' first assistant, recommended using cantilever construction sitting on top of the piers and abutments to support the spans. Falsework would block boats from traveling on the river, but the cantilever supports the spans from high above, leaving plenty of room to navigate. Speaking of Mr. Eads, here he comes now!"

Newspaper Connections:

Look through the newspaper about on-the-job injuries or illnesses. Do you see any patterns in the risks?