

DIRECTIONS: Read the story carefully. Then read each question and fill in the bubble next to the correct answer.

Stuck on the Ground Floor: Otis Elevators

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In Elisha Otis's time, the average person was not interested in riding an elevator. They thought elevators were too dangerous. Otis improved elevators. He worked hard to overcome people's fears by showing that his elevator was safe. Before he died, Otis was slowly winning over the public. He paved the way for modern skyscrapers.

Otis was born in 1811. He grew up on a farm, but he had no interest in raising crops. Otis tried many different jobs. He built a gristmill in Vermont but did not earn enough money to keep it going. After building carriages for several years, he tried operating a sawmill. Business was no better for Otis than it had been in the old days. So he gave up milling for good.

After working briefly as an inventor and a mechanic, Otis opened a shop in Albany, New York. He intended to build small machines. He had barely begun his business, using water from a stream for power, when the city claimed the stream for its water supply.

Otis was still looking for a way to use his talents. In 1852, a company hired him as a master mechanic. It was expanding its business into New Jersey. Heavy, bulky equipment had to be hauled up to the second floor. Otis had to build an elevator that could move the freight safely.

A tinkerer by nature, Otis tried to improve the elevator designs then in use. He noticed that elevators depended too much on a single cable. If that cable snapped, nothing could prevent the whole works from crashing down. Otis thought the system was too risky to lift thousands of pounds of machinery. He looked for a backup system. He wanted to prevent disaster if the rope should break.

The device he came up with used a simple wagon spring. The ends of the spring were attached to the top of the elevator platform. The middle of the spring was connected to the overhead lifting cable. If the cable broke, the tension on the spring would disappear, and the spring would straighten out. Its ends would then catch in ratchets on the side rails of the elevator shaft. The platform would be held in place. Then a new cable could be attached.

Now answer the questions about this part of the selection.