

LEVELED Book • L

Big Machines



Written by Brian Roberts

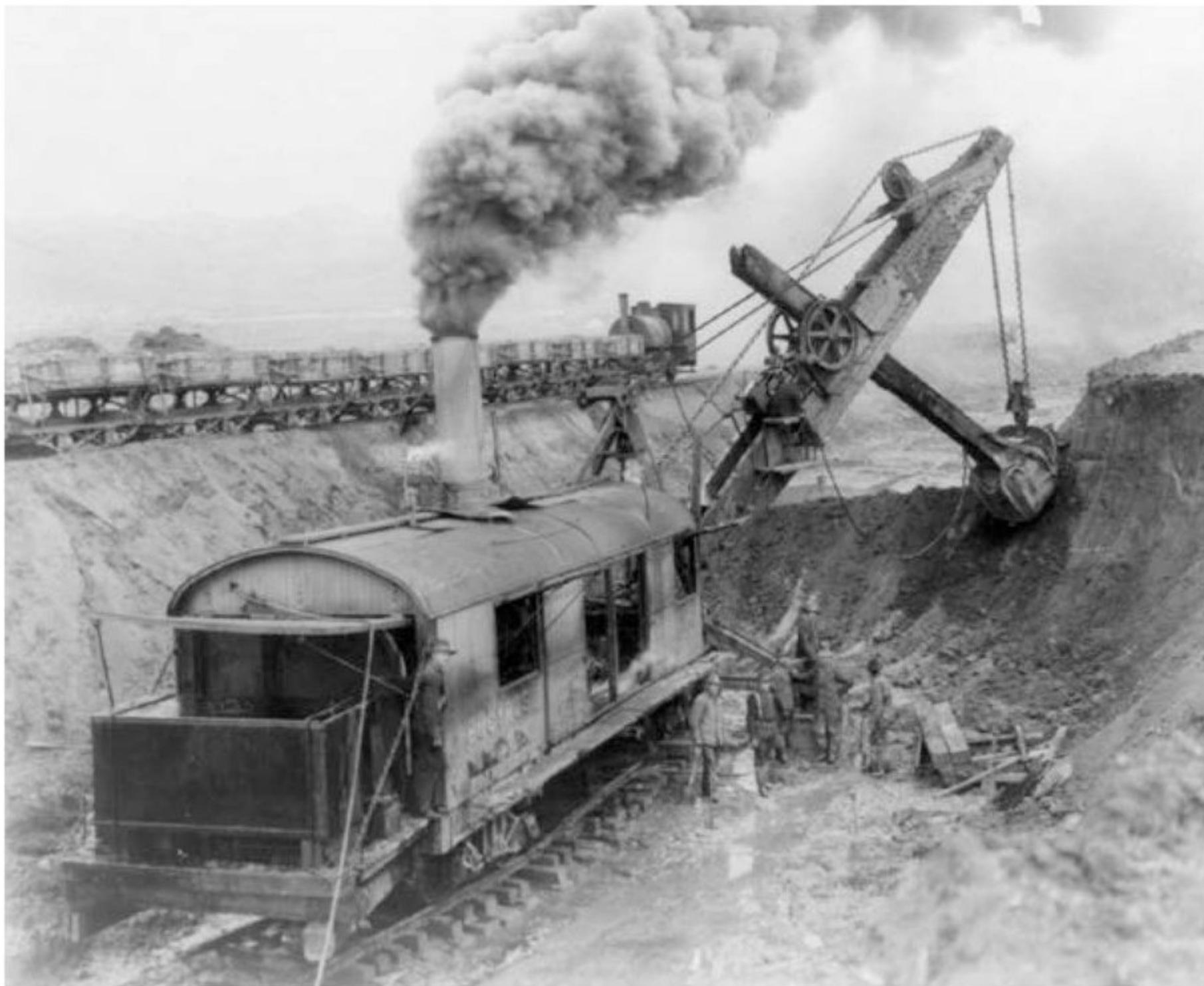
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This is the kind of machine used 100 years ago to move earth. The machine was driven by steam. It had a water tank and a coal tank. The coal was used to heat up the water to produce the steam.

Introduction

Work is done when something is moved from one place to another. Machines are used to do the work. They move things from one place to another. Some things are easy to move. Other things are not.



Small machines are used for smaller jobs. Things like shovels are simple machines. They do not have many moving parts.

Big machines are used to move heavy things. They are used to build tall buildings. They are used to build roads and bridges. They are used to take resources from the earth.





Excavators

Building Tall Buildings

It takes many big machines to build a tall building. Large power shovels called *excavators* dig deep holes in the ground. Some power shovels have huge buckets that can scoop a swimming pool-sized pile of dirt in one scoop. Others have clamlike buckets that take big bites out of the earth.

Do You Know?

A bulldozer can move more dirt in fifteen minutes than a person can shovel in five days.



Bulldozers are machines that move the dirt around. Giant dump trucks carry the dirt away. Concrete trucks carry concrete to the work site. Flatbed trucks carry steel beams and rods to the work site. Large cranes lift steel beams into place. They also carry buckets of concrete to workers high above ground.

Building Roads

It takes many kinds of large machines to build a road. Large scrapers are used to get rid of trees and brush. They also are used to get rid of small hills. Loaders are used to dig up dirt and rocks. They put dirt and rocks into giant dump trucks that carry it away. Some dump trucks are so big that they can carry enough dirt to equal the weight of twenty elephants.



Graders smooth out the roadway, and pavers lay the road surface onto the roadway. A roller following behind the paver presses down on the new road surface to make it smooth and flat.





Taking Resources from the Earth

There are many resources we need that are buried deep inside the Earth. We need big machines to get resources out. Oil drilling rigs are set up to remove oil.

Large drills are used to get coal out of mines. Very large excavators dig up the earth in search of resources. Huge dump trucks then carry the resources to where they can be used to make products.

Coal excavating machine





Tugboat

Big Machines on Water

There are big machines that move things on the water. Tugboats are machines that move other things over water by pulling and pushing. They pull barges. They push and pull large ships.

Ocean liners are large ships that move people. Oil tankers are huge ships that carry massive amounts of oil. And container ships are stacked high with containers that carry things from place to place.





Big Machines in the Air

Large airplanes carry people and cargo. A 747 is a giant passenger jet that can carry 400 to 450 people. The C-5 is a huge cargo plane. It is almost as long as a football field. Helicopters are flying machines too. The skycrane is a helicopter that is used to lift heavy objects. It can lift 15,000 pounds. It is used to carry things like bulldozers and power line towers into hard-to-reach places.

Big rig



Do You Know?

Most big rigs have eighteen wheels or more. Can you imagine running over a bed of nails? That's a lot of tires to change!

You can see that many large machines are at work moving things from place to place. But probably the most common is the big rig. The big rig is made of two parts—the tractor and the trailer. Big rigs carry goods over roads that wind around the world.

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