

The Industrial Revolution

The Industrial Revolution

Changes in making things at home or in craft workshops to factories

The Agricultural Revolution

Changes in farming

The Transport Revolution

Trains, Canals,
Roads etc..

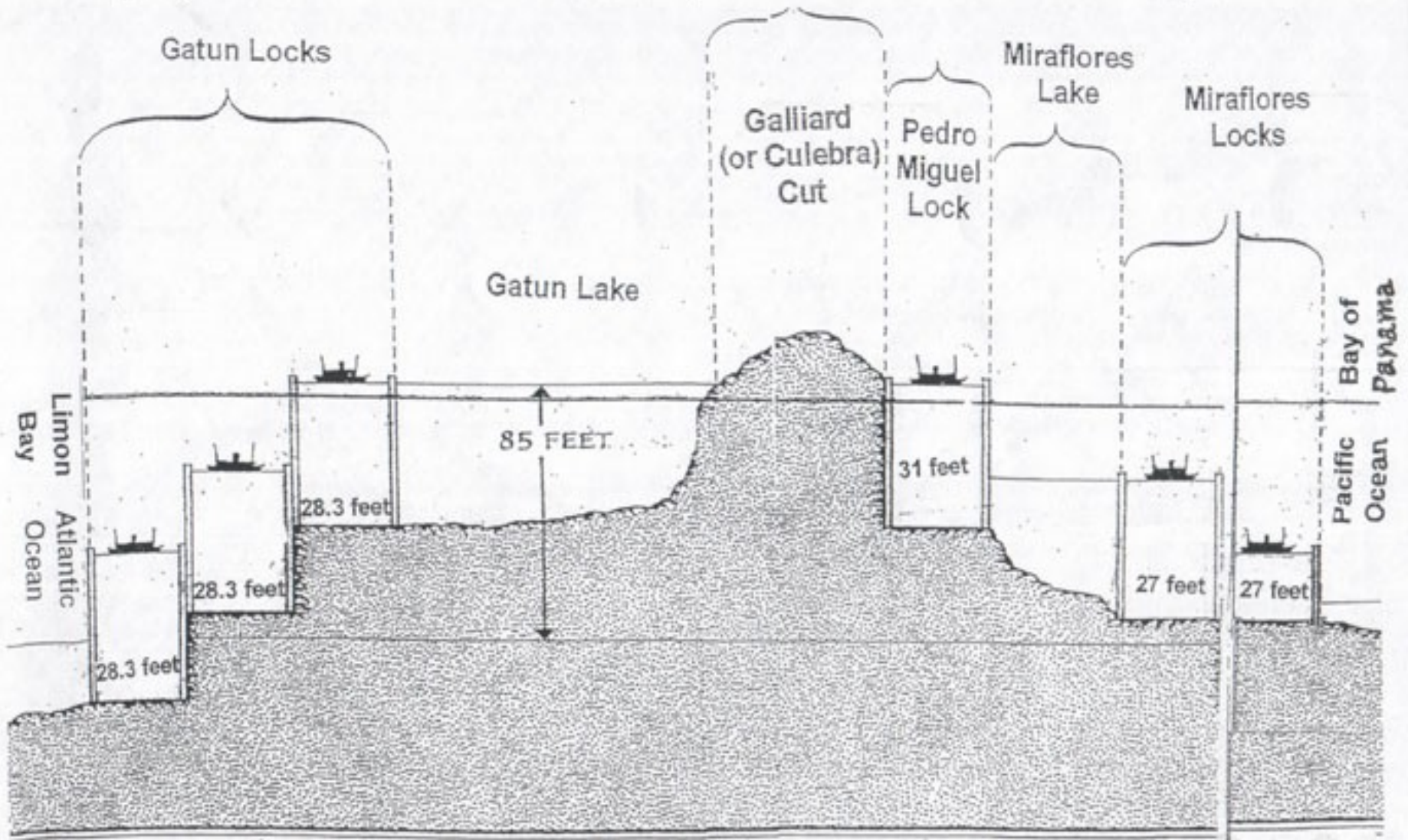
ADVANCES IN TRANSPORT

CANALS

SHIPS

RAILWAYS

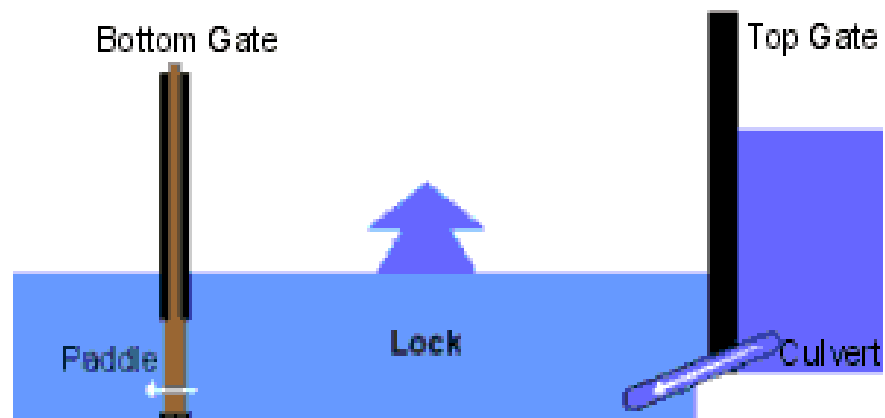
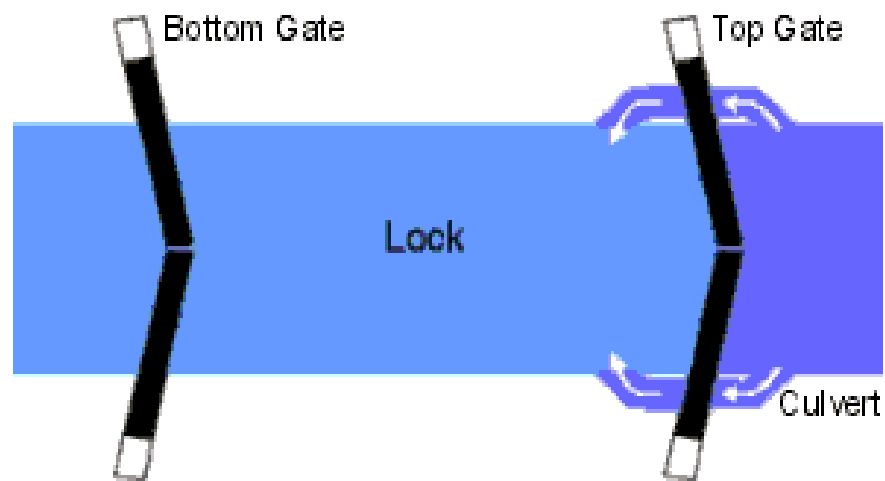
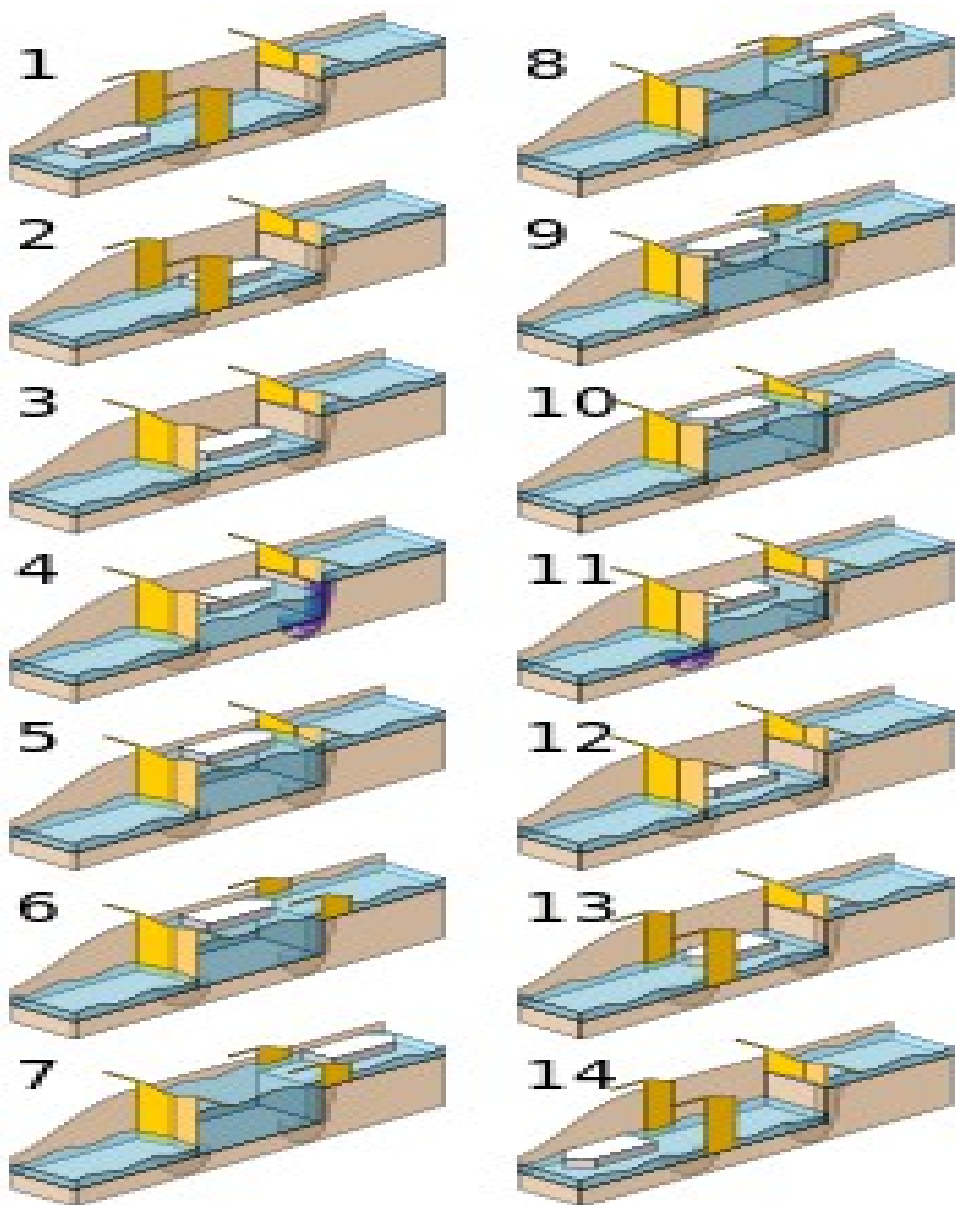
ROADS IMPROVED



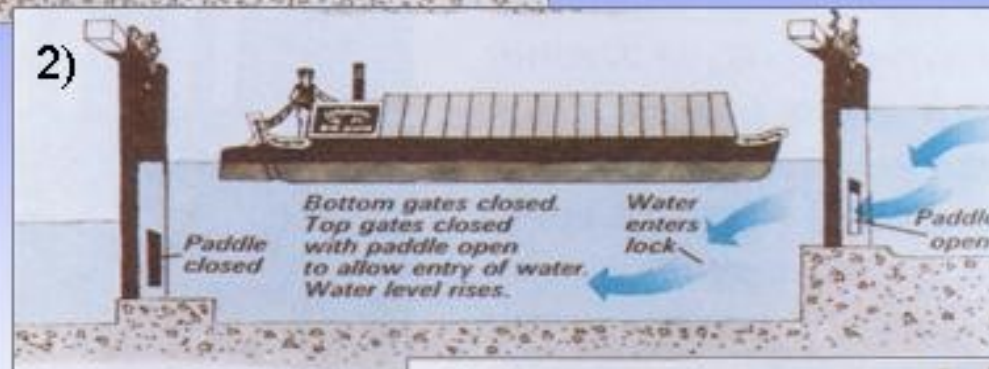
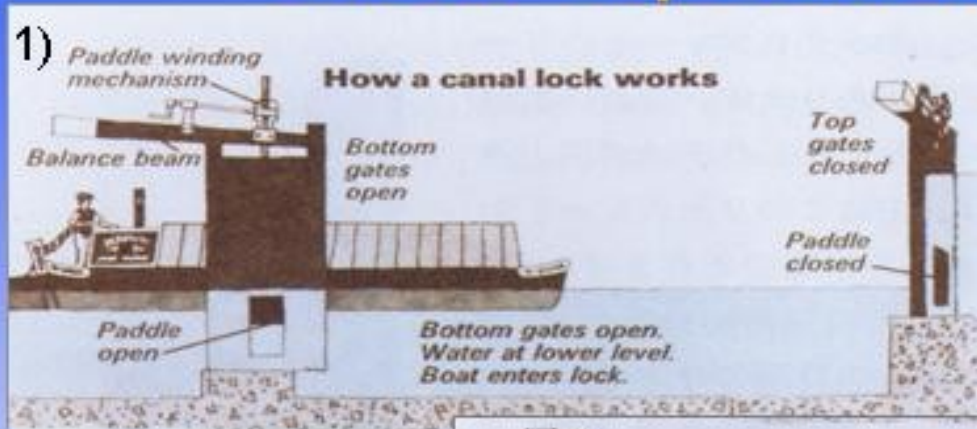
Cross section of the Panama Canal

Each lock is 74 feet tall and 110 feet wide (or 33.5 meters).

how canals work



How a pound lock works



CANALS

- Man made river (with locks on different levels)
- Canals built to carry goods on barges which were either pulled by horses (on towpaths) or powered by engines
- Royal and Grand Canal to bring goods to Dublin



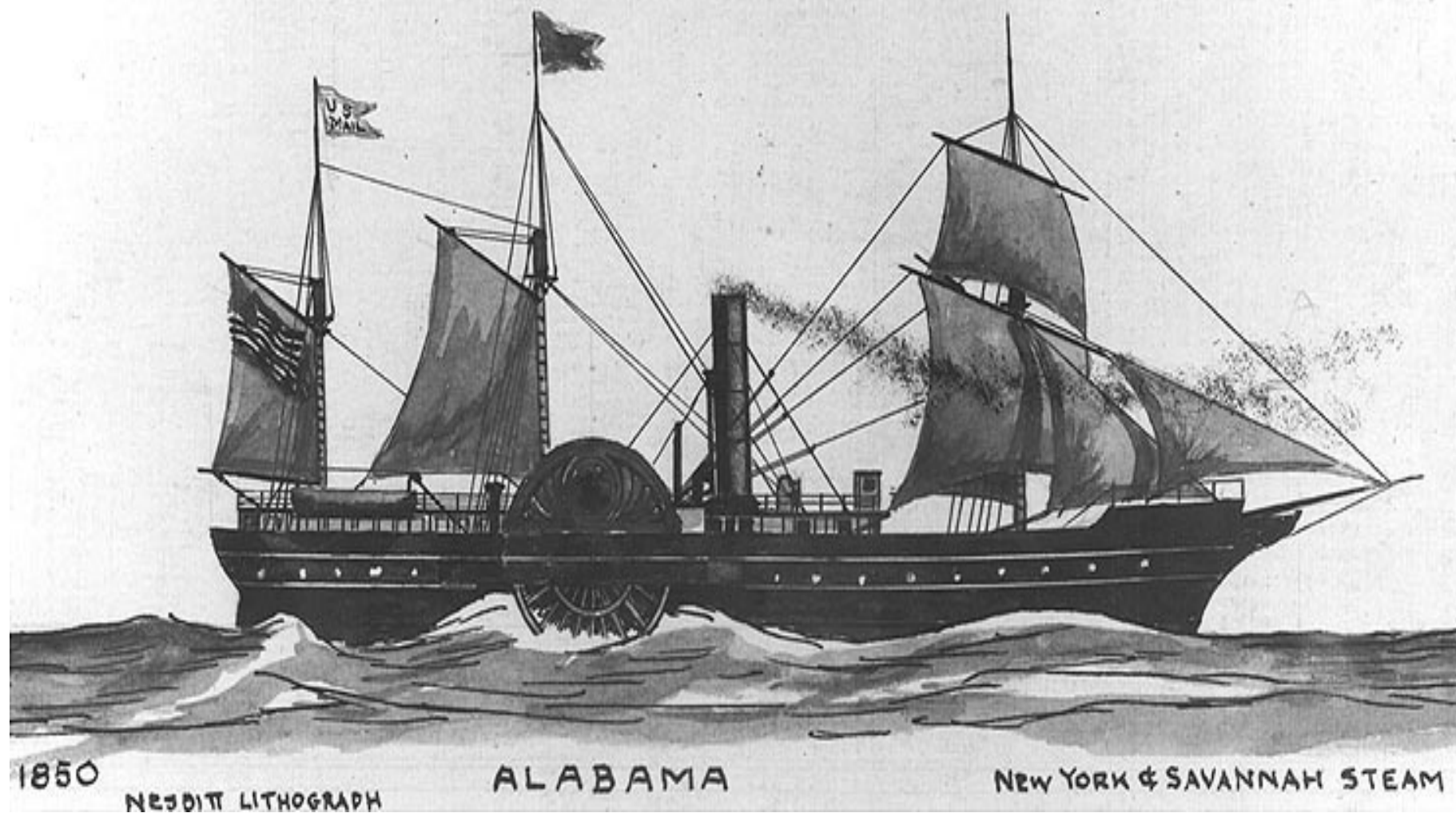
Canals in England



Ships

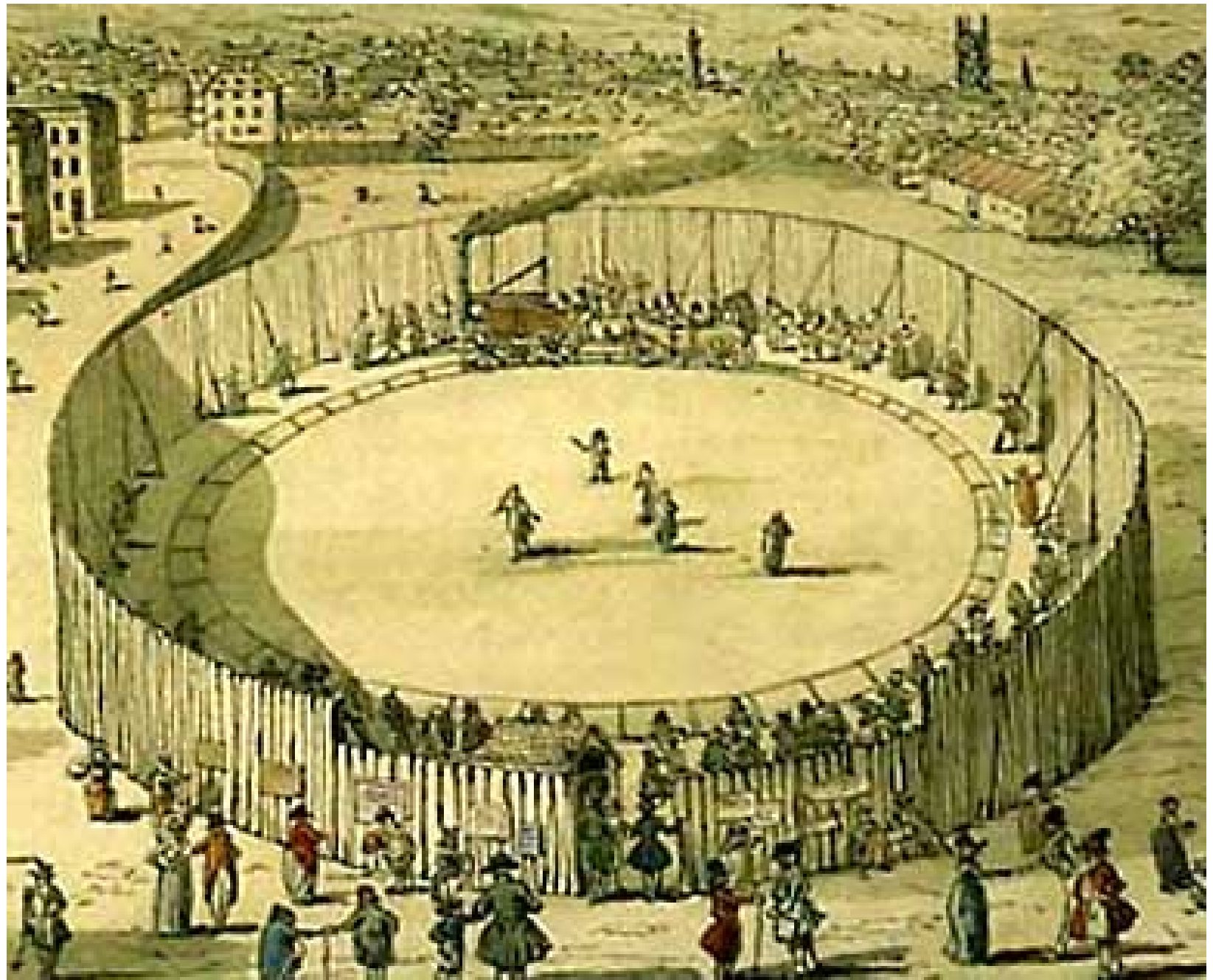
- Up to 1700s sailing ships
- In 1700s steam engines used to power ships
- Crossing Atlantic in 1820 took 42 days
but 10 days in 1870

Photo # NH 63861 Steamship Alabama, which was USS Alabama in 1861-1865. Artwork by Erik Heyl



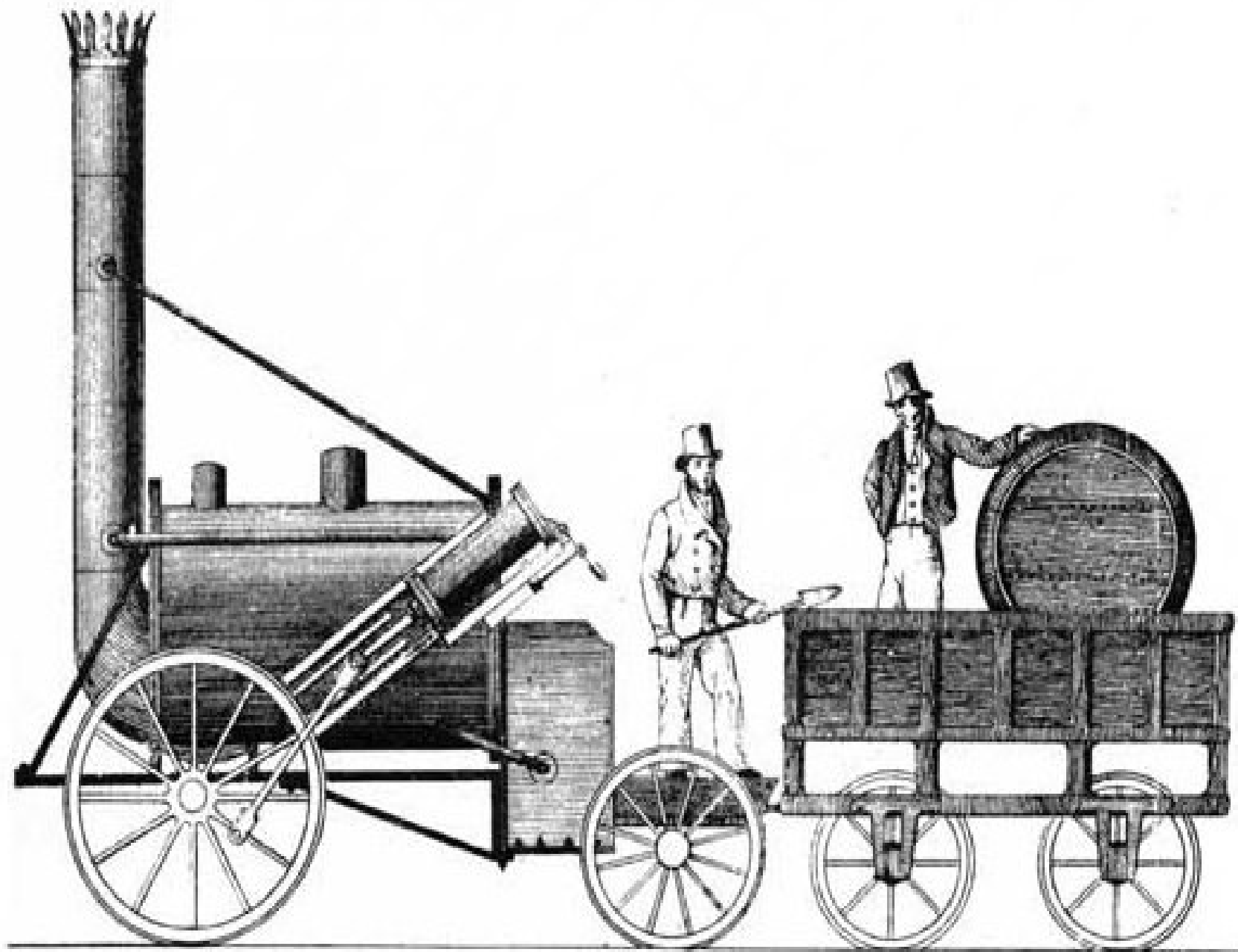
Trains and Railways

- Rails used on muddy ground for coal wagons pulled by people or horses
- Steam engines invented
- Wagon powered by steam engine (locomotive) invented
- 1801 Richard Trevithick combined locomotive and rails
- Started as fairground ride 'Catch-me-who-can'



Trains and Railways 2

- Railway between Darlington and Stockton (1821)
- Wagons pulled by horses or locomotive
- Liverpool to Manchester railway opened (1829)
- Competition to pick best locomotive design (speed, economy of fuel, reliability)
- George Stephenson's Rocket won



Railways in Ireland 1925



- Coach design improved too: stage coaches, mail coaches and Bianconi cars



Changes in road transport

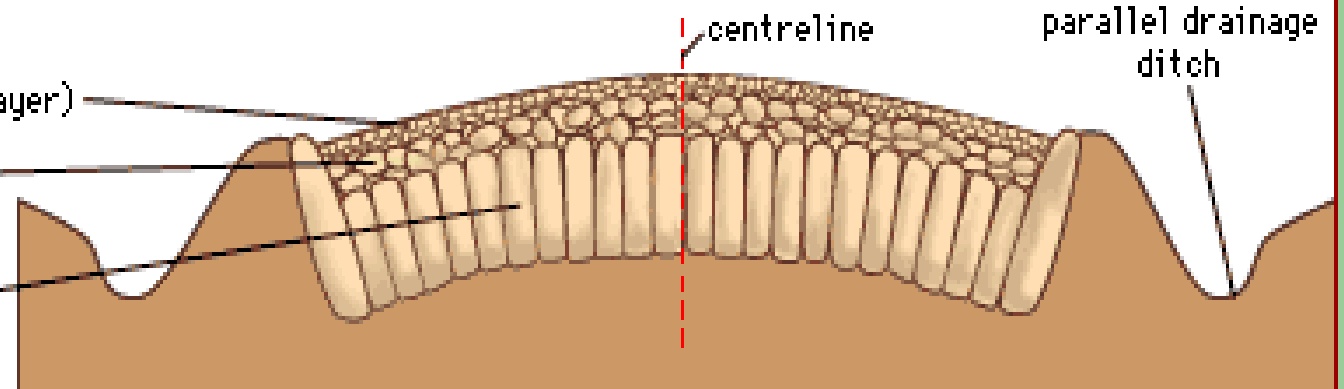
- Many roads of poor quality, muddy in rain, lots of potholes
- Improvements made:
- Better surfaces: stone chippings and tar, slopes at side for drainage, (John McAdam)
Tarmac(adam)
- Layers of rock and stones for better support and drainage (Thomas Telford)
- Turnpike roads: people had to pay a toll to use new improved roads (built by companies called turnpike trusts)

Trésaguet

gravel or broken stone (1-inch layer)

broken stone (2-inch layer)

foundation layer (8 inches)

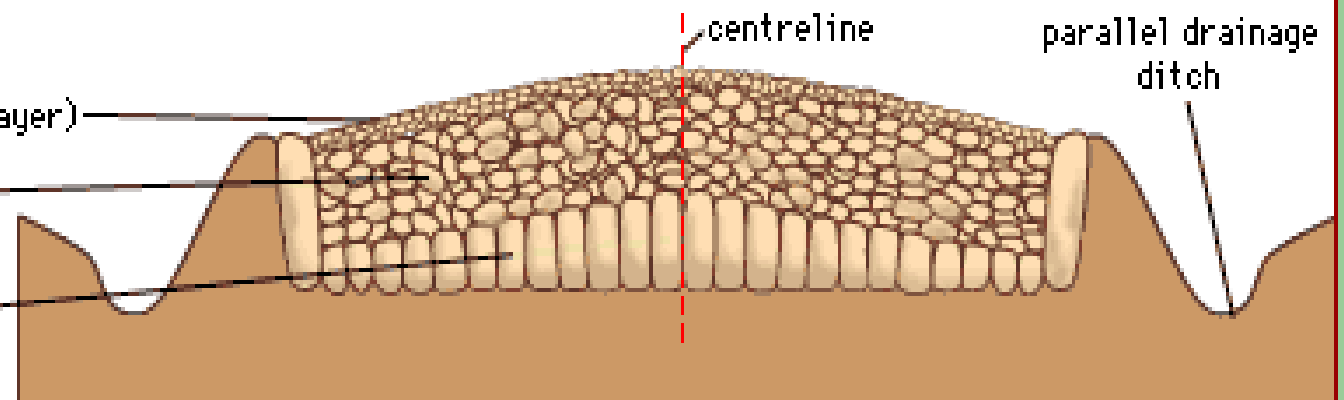


Telford

gravel or broken stone (1-inch layer)

broken stone (7-inch layer)

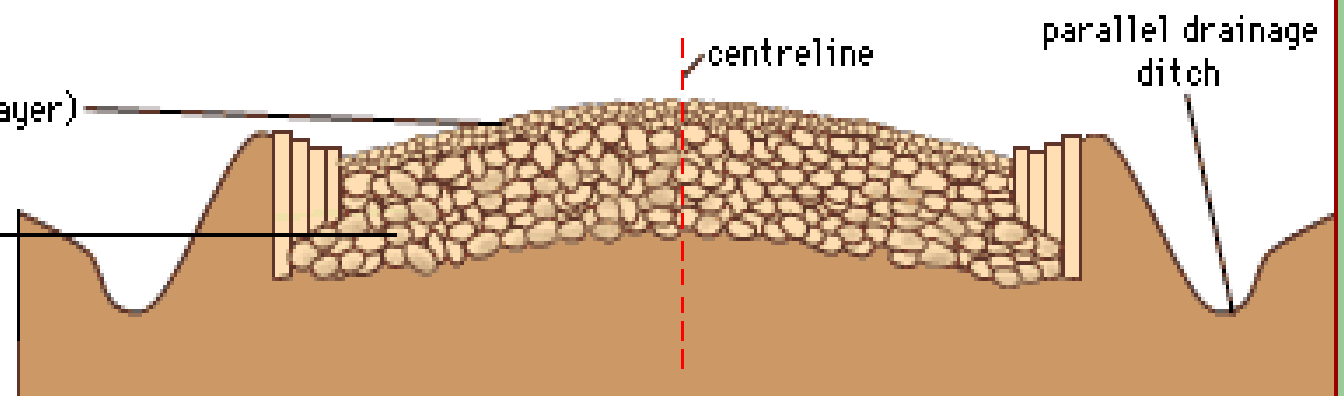
foundation layer (7 inches)



McAdam

gravel or broken stone (1-inch layer)

broken stone (8-inch layer)



Transport Revolution: Key Words

- CANALS
- BARGES
- ROYAL AND GRAND CANALS
- RAILWAYS
- LOCOMOTIVES
- STEAM ENGINE
- STEAM SHIP
- GEORGE STEPHENSON
- THE ROCKET
- THOMAS TELFORD
- JOHN MC ADAM
- ROAD DESIGNERS
- TARMACADAM
- TURNPIKE ROADS

Transport Revolution: Key Personalities

- John McAdam
- James Metcalf
- Thomas Telford
- Charles Bianconi
- James Brindley
- Richard Trevithick
- George Stephenson

- John McAdam: improved road surfaces and drainage with 'tarmacadam' (tar+small stones)
- James Metcalf: built roads with better foundations
- Thomas Telford: improved road drainage with ditches
- Charles Bianconi: designed better coaches to carry people
- James Brindley: built 1st canal in England
- Richard Trevithick: built 1st locomotive (mine and funfair)
- George Stephenson: designed the 'Rocket' locomotive to run between Manchester and Liverpool