

STS.007 Fall 2010

The Industrial Revolution

Eric Hobsbawm, *The Age of Revolution, 1789-1848* (first ed. 1962)

“What does the phrase ‘the Industrial Revolution broke out’ mean? It means that some time in the 1780s, and for the first time in human history, the shackles were taken off the productive power of human societies, which henceforth became capable of the constant, rapid and up to the present limitless multiplication of men, goods and services.” (p. 28)

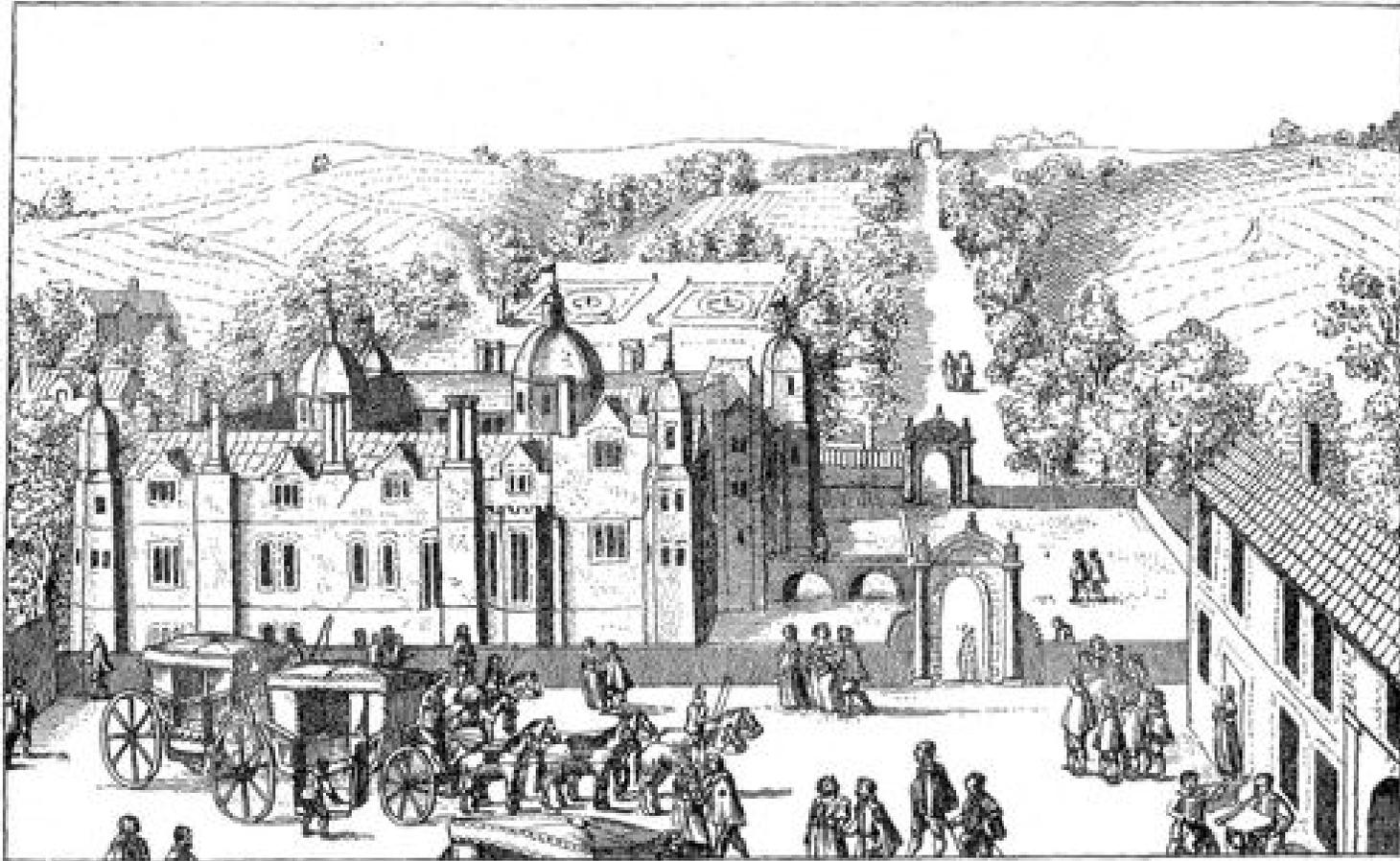
Edward P. Thompson, *The Making of the English Working Class* (1963)

- Planting the Liberty Tree
- Exploitation
- The Field Labourers, Artisans, Weavers
- Goods, Homes, Life, Childhood
- The transforming power of the Cross
- Community: rituals of mutuality
- Laws against combination
- Demagogues and martyrs
- Peterloo (Manchester, 1819)
- Class Consciousness, where radicalism and Romanticism meet

Thompson, *Making*, p. 832

“They fought, not the machine, but the exploitive and oppressive relationships intrinsic to industrial capitalism.”

New Sixteenth Century Manor House with Fields still Open, Gidea Hall, Essex.
Nichols: *Progresses of Queen Elizabeth*.



Partially enclosed Fields of Cuxham, Oxfordshire, 1767.
(Facsimile map, published by the University of Oxford.)



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The Caribbean

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See: <http://caribbean4kids.wikispaces.com/file/view/caribbean-map.jpg/126554361/caribbean-map.jpg>

Planting Sugar Cane in Haiti



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'Ten Views in the Island of Antigua', 1823



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Slaves refining sugar



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Ruins of sugar refinery, Virgin Islands

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See: <http://cruises.about.com/library/graphics/virgins/stcx01.jpg>

Windmill and chimney, remains of sugar refinery, St. Kitts

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See: http://image30.webshots.com/30/5/46/79/267354679Hbhauy_ph.jpg

Sugar cane in Costa Rica



Image courtesy of [Linkzilla](#) on Flickr.

Elements of industrialization: from pillars to feedback loops

Mechanization of production

Organization of production

Business practices

Landless labor

Energy (fossil fuel)

Materials (iron)

National and international economy

Relation to non-human nature

The energy crisis and new iron age of the 18th century: Ironmaking around Coalbrookdale

- “reverse salient” of fuel shortage especially for iron-making
- Abraham Darby, 1709, use of coke (charred coal) rather than charcoal (charred wood) at blast furnaces in Coalbrookdale
- Darby II producing bar iron as well as pig or cast iron (“puddling”)
- Darby III using iron for bridge building (1770s)

Coalbrookdale at night 1801

Philipp Jakob Louthenbourg the Younger



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Iron bridge over the Severn River



Image courtesy of [John Clift](#) on Flickr.

Iron Bridge over the Severn River

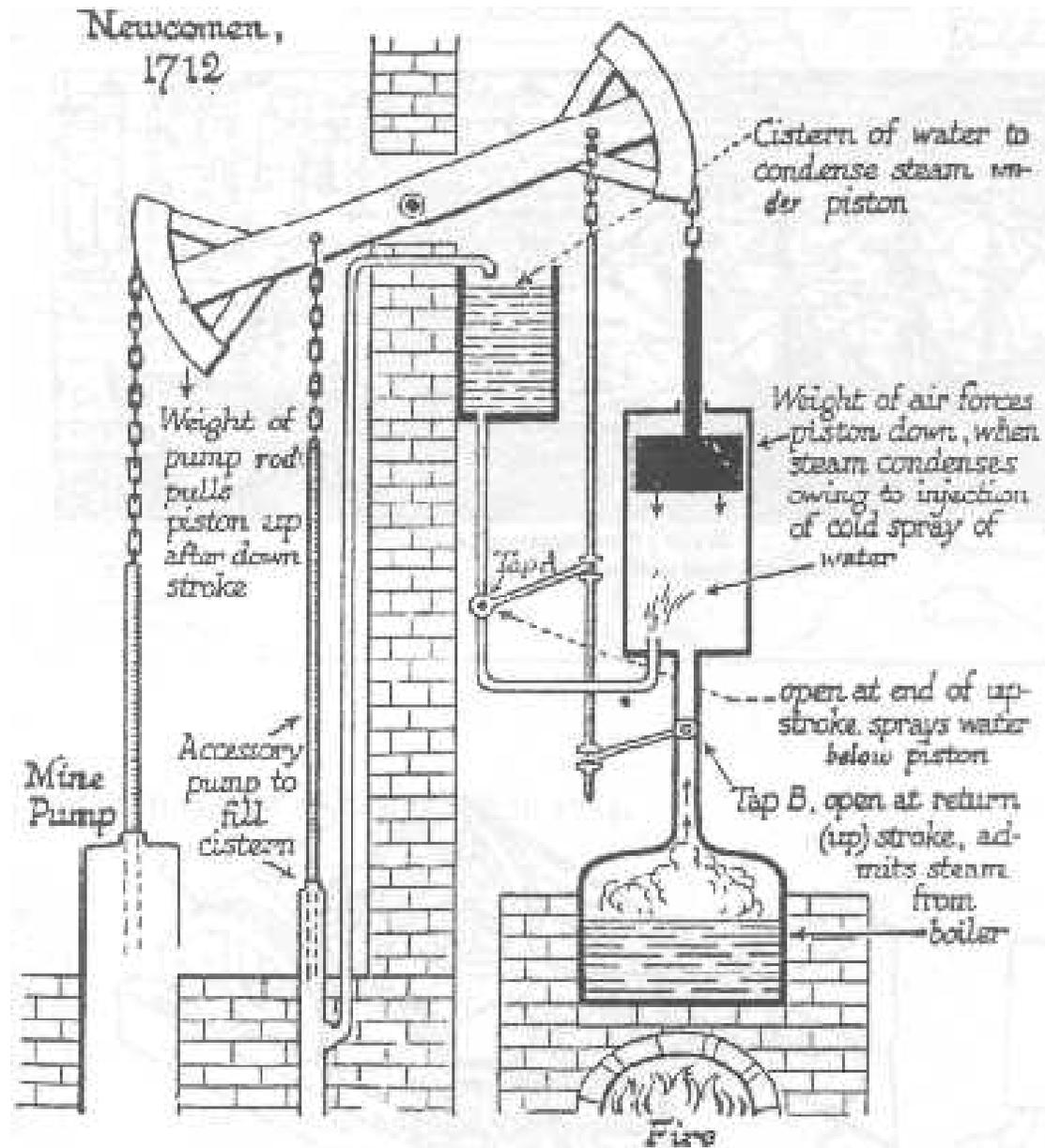
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See: <http://www.columbia.edu/cu/gsap/BT/BSI/ARCH/img0041.jpg>

Iron bridge over the Severn River

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See: <http://www.rps.psu.edu/0309/graphics/industrial02.jpg>



DIAGRAMMATIC VIEW OF NEWCOMEN'S ATMOSPHERIC OR FIRE ENGINE (1712)

Newcomen's Steam Engine

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See: http://www.amnh.org/exhibitions/climatechange/images/lg/how-rock_newcomen.jpg

Newcomen Engine

Black Country Living Museum

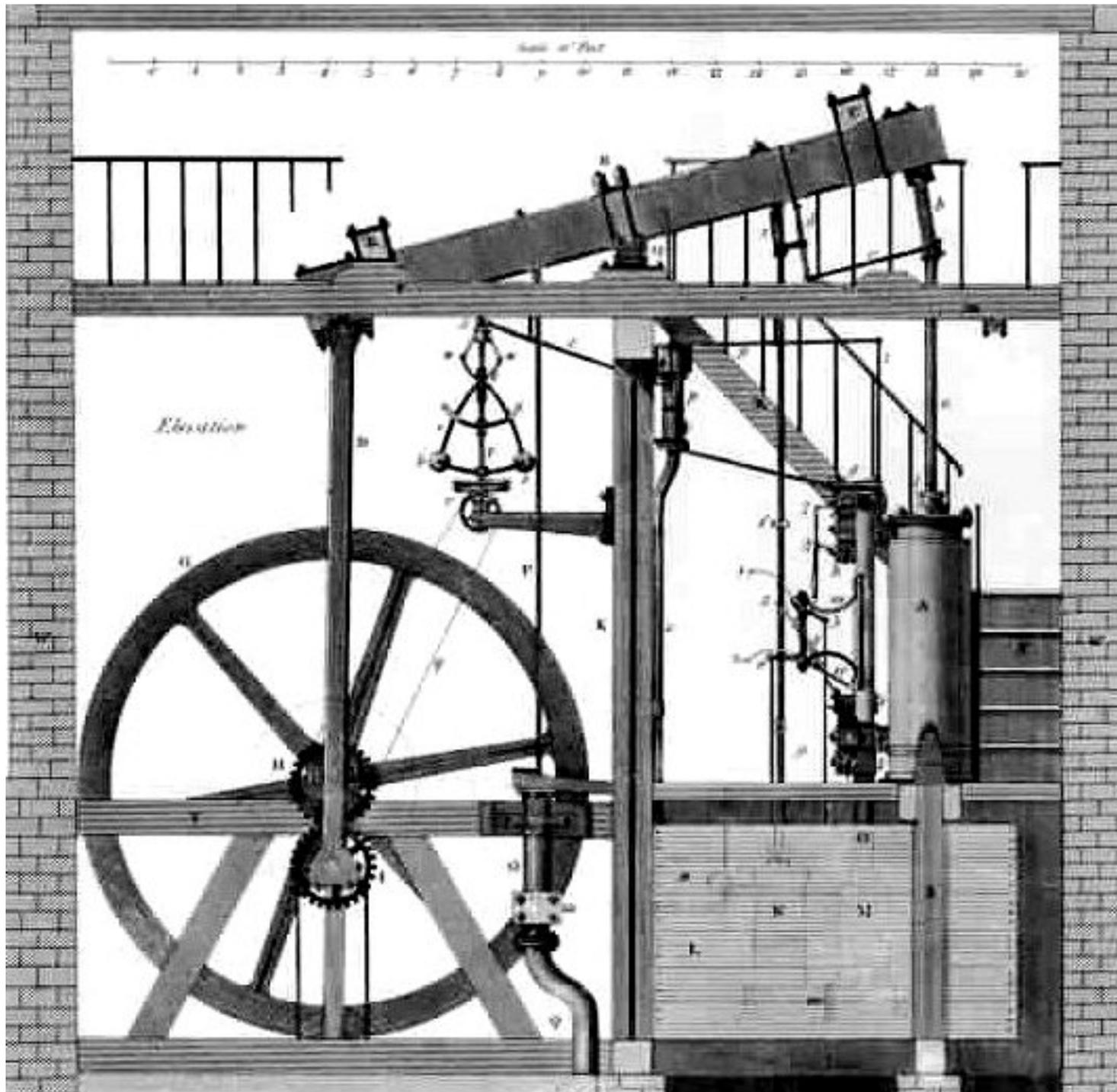
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See: <http://www.bclm.co.uk/images/newcomen.jpg>

Newcomen Engine Black Country Living Museum

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See: <http://bbc.in/iHTlqz>



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Wyatt's Flyball Governor

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See: <http://www.uh.edu/engines/flyball.jpg>

Steam engines, London Science Museum



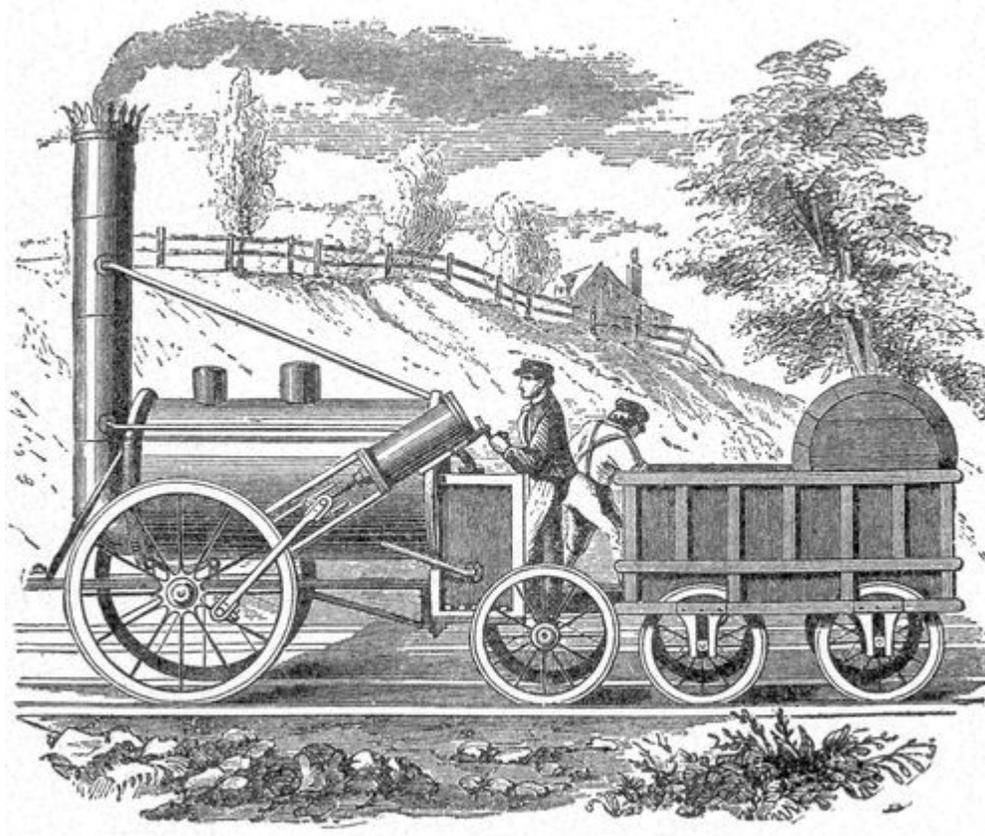
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Watt Steam Engine Madrid

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See: http://commons.wikimedia.org/wiki/File:Maquina_vapor_Watt_ETSIIIM.jpg

“The Rocket,” George Stephenson, 1825
(from Samuel Smiles, Lives of the Engineers)



Lancashire Rail Lines

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Near Liverpool, looking towards Manchester
Plate 11 from "Coloured view of the Liverpool & Manchester Railway".
(London, 1832-1833).



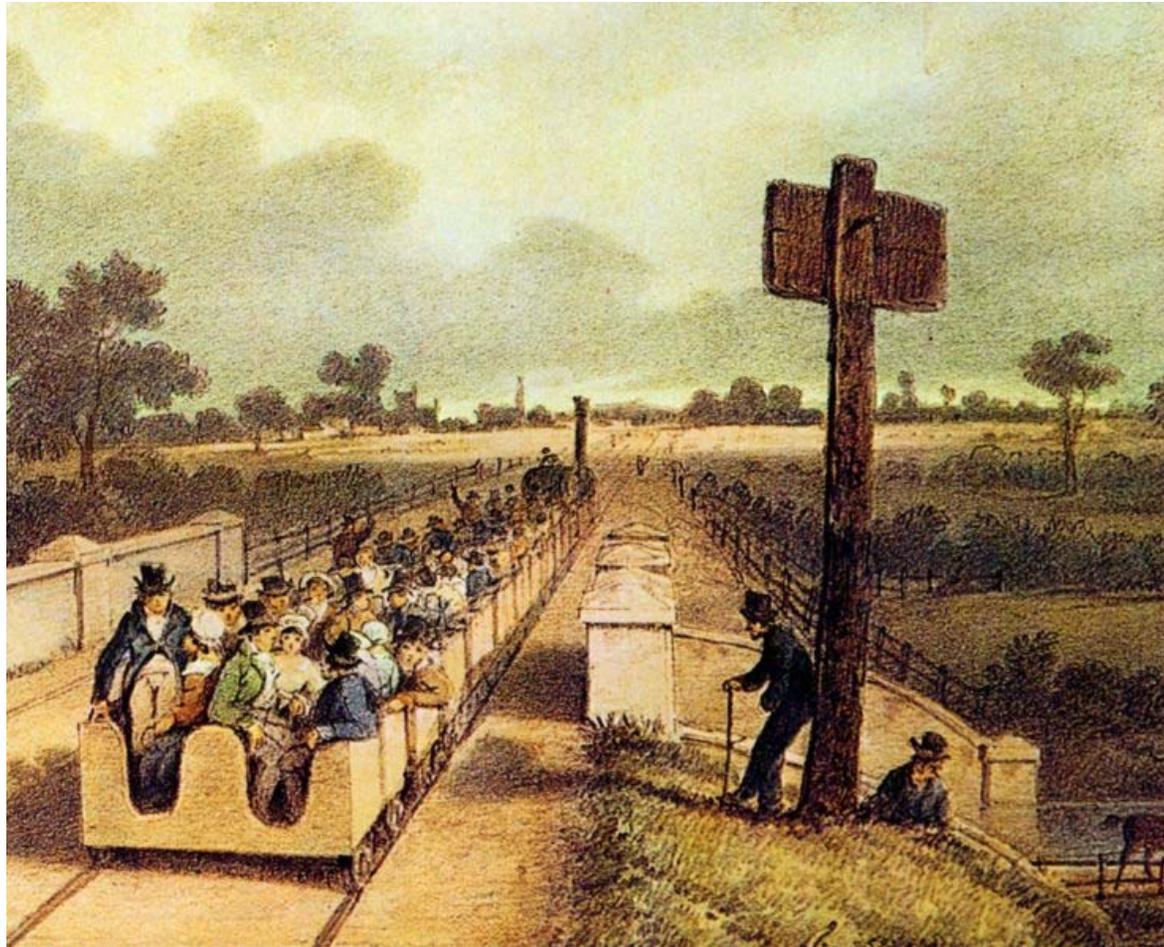
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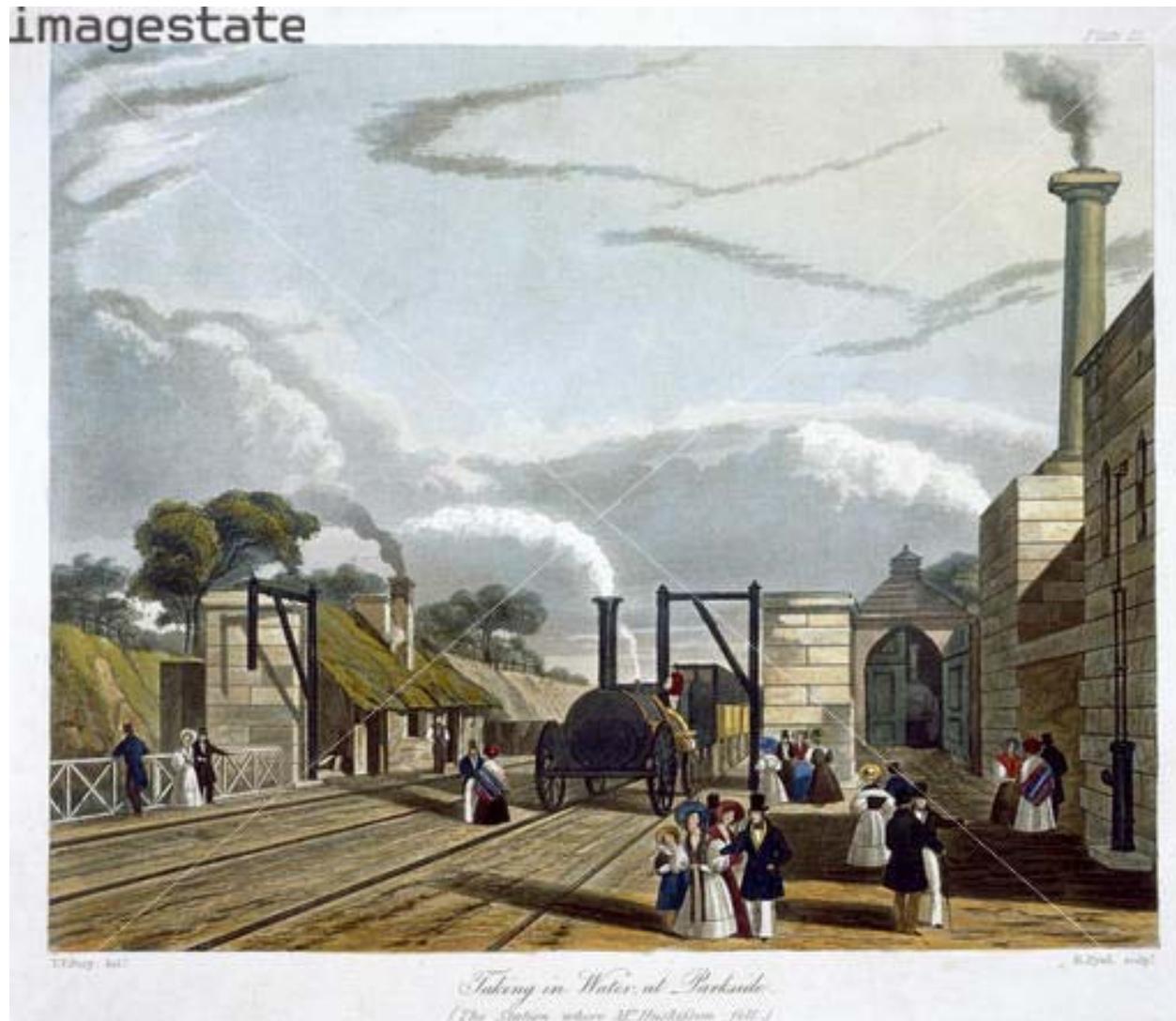
Olive Mount, on the Liverpool
and Manchester Railway

From T. T. Bury,
Coloured Views..., 1831

Inaugural journey of the Liverpool and Manchester Railway,
Painting by A.B. Clayton, 1830



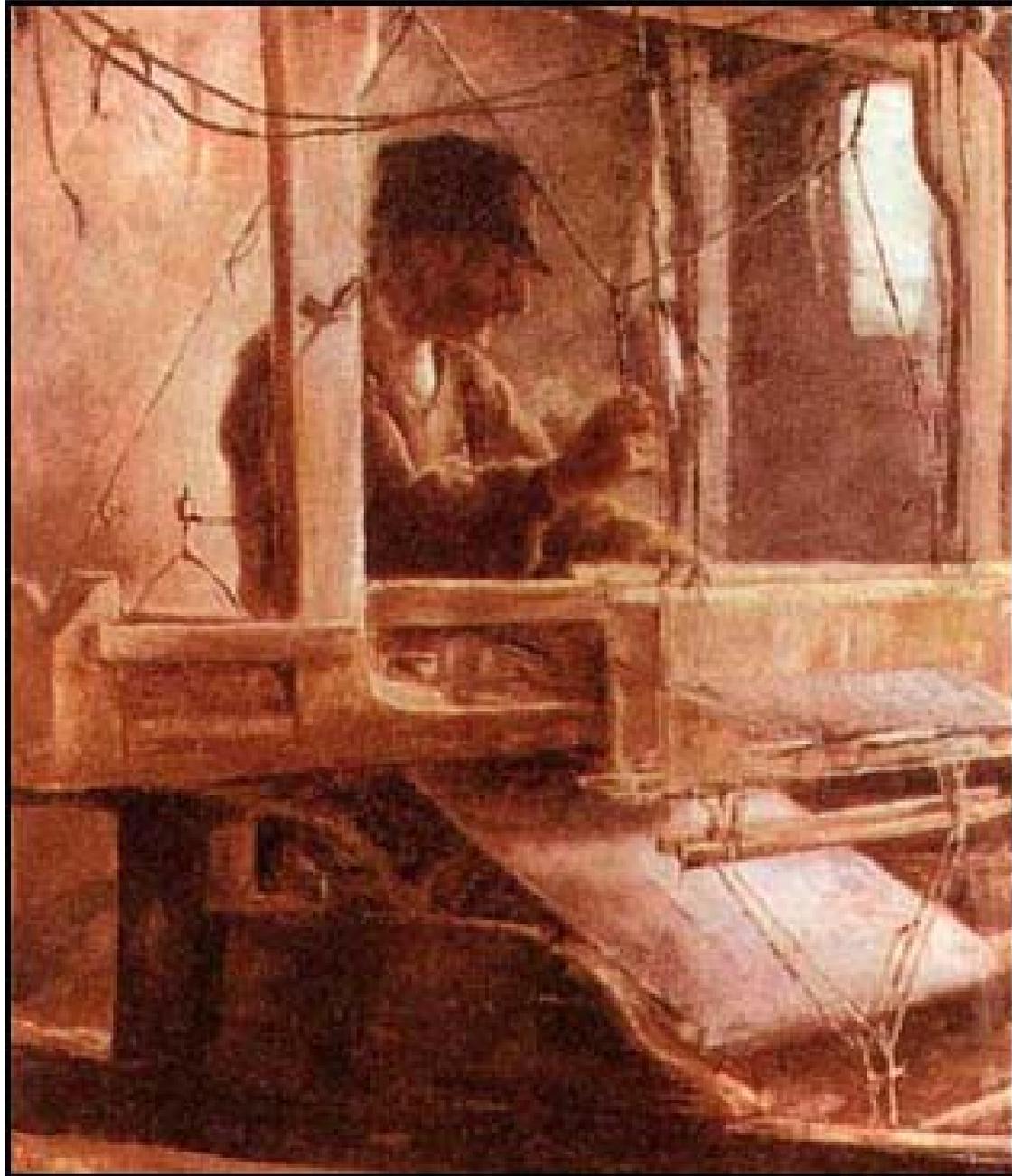
'Taking in Water at Parkside', Plate 13 from "Coloured view of the Liverpool & Manchester Railway". (London, 1832-1833).



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Irish Spinning Wheel

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See: <http://www.old-picture.com/europe/Spinning-Spinner-Irish-Wheel>

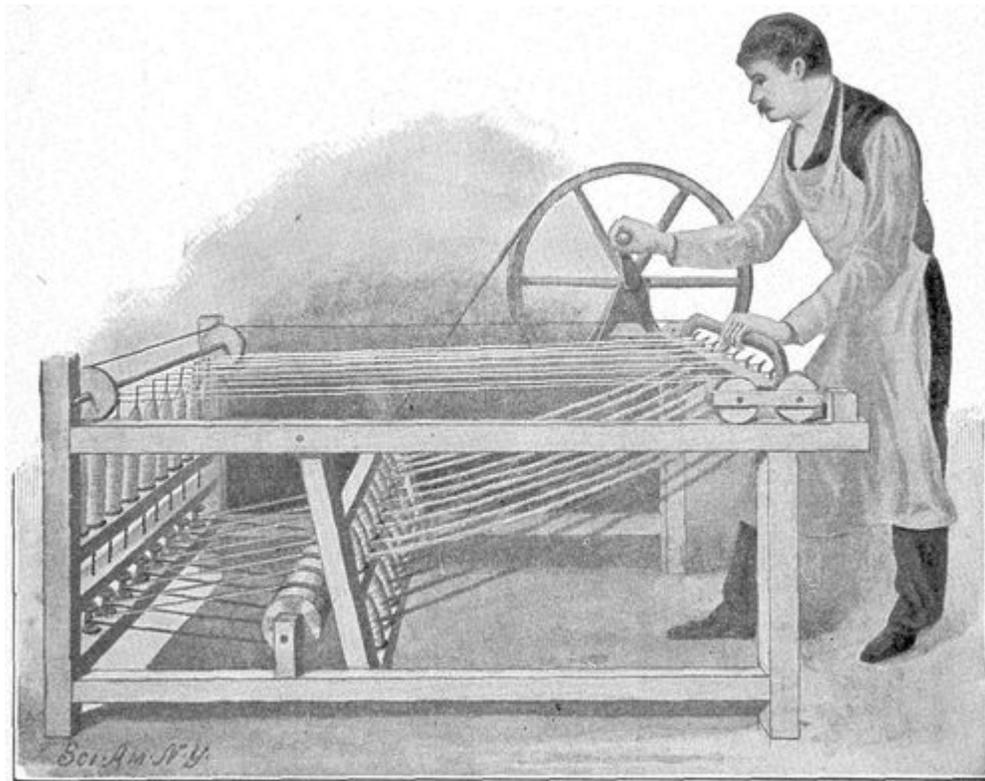
Spinning Wheel

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see: <http://www.joyofhandspinning.com/wheel-parts.shtml>

Arkwright's Water Frame, c 1775

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See: <http://www.sciencemuseum.org.uk/images/I009/10226391.aspx>



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Crompton spinning mule

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See: <http://www.cottontown.org/Nimoi/sites/CT/resources/jb05127.jpg>

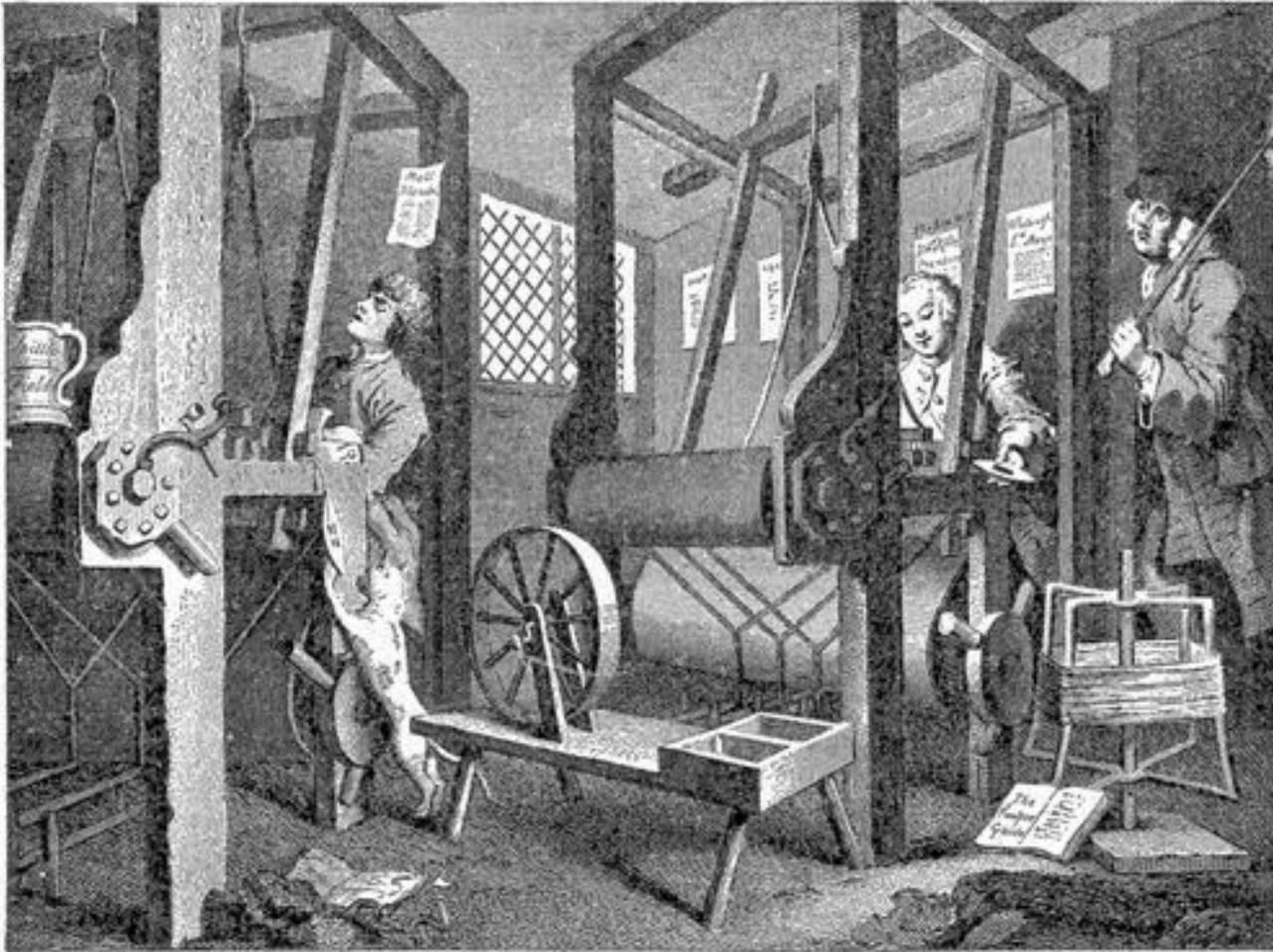
Spinning Mule

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See: http://en.wikipedia.org/wiki/Spinning_mule

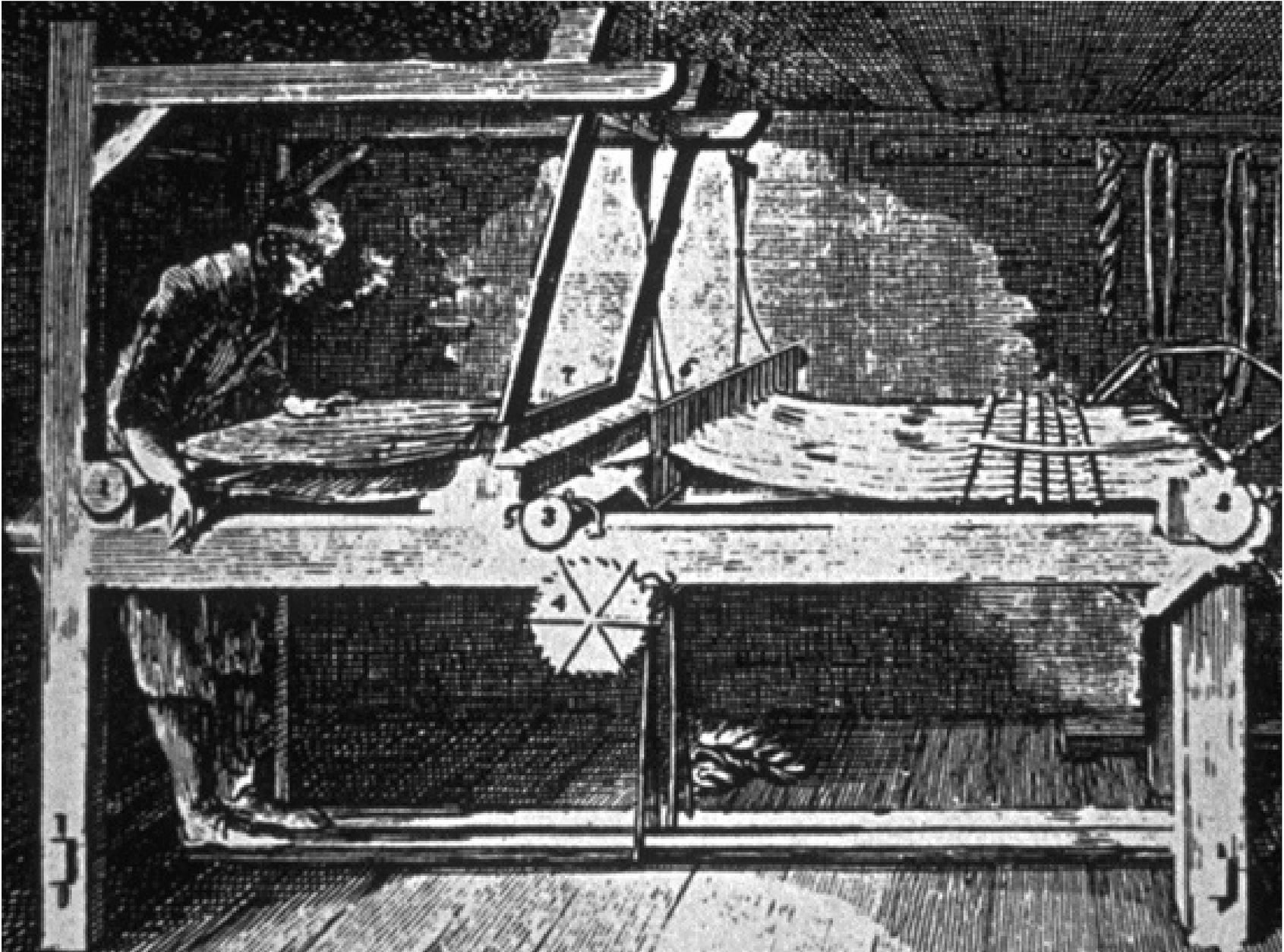
<http://www.spartacus.schoolnet.co.uk/TEXmule1.jpg>

Hand-loom Weaving.
(Hogarth: *The Industrious and the Lazy
Apprentice.*)



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- E.P. Thompson, “Time, Work-Discipline, and Industrial Capitalism,” *Past and Present* (1967)



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Cotton mills, Manchester

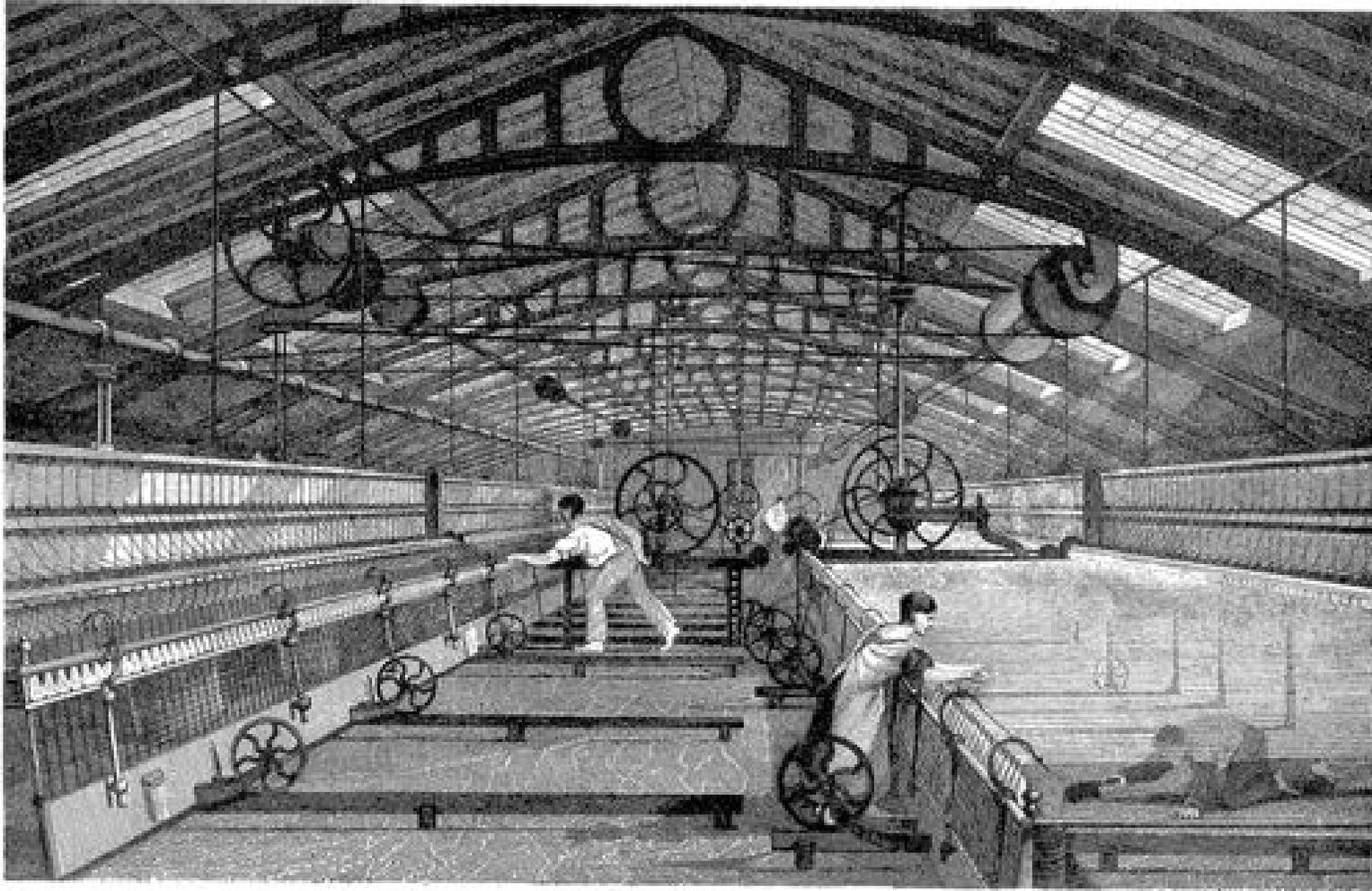


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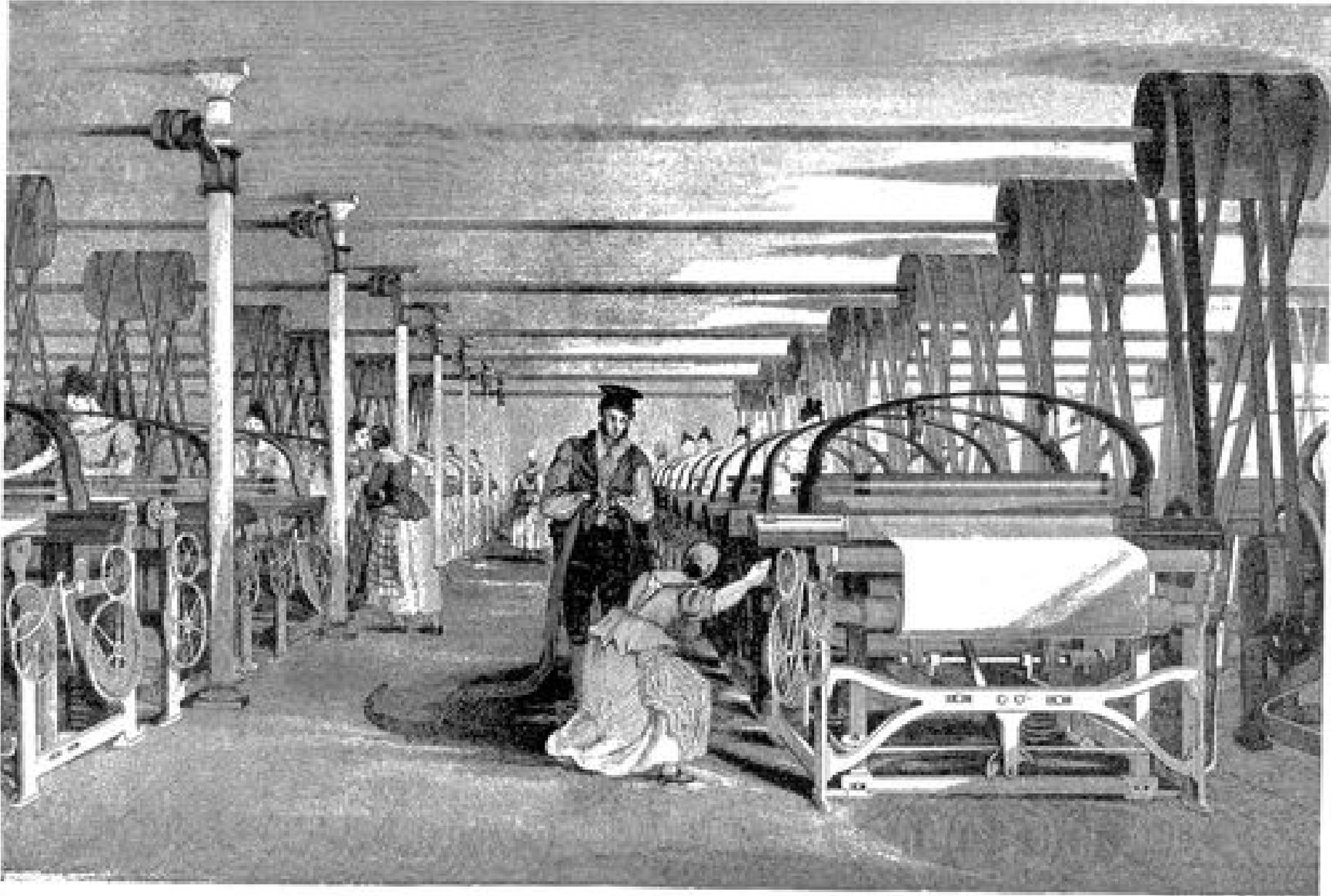
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Mule spinning 1835



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Power loom weaving, 1835



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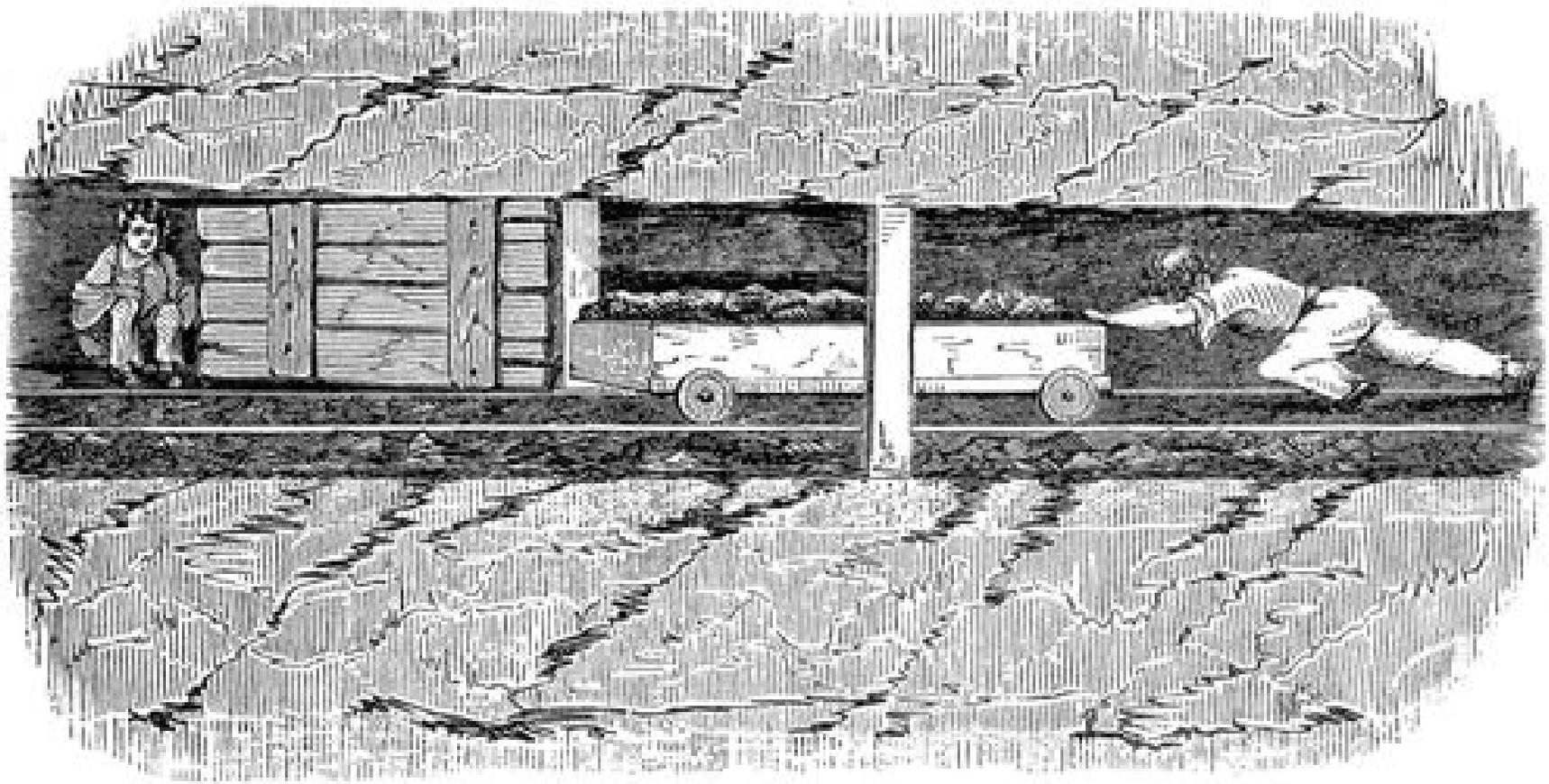


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Cornish Coal Mining

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Canadian buffalo herd

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Canadian buffalo bones

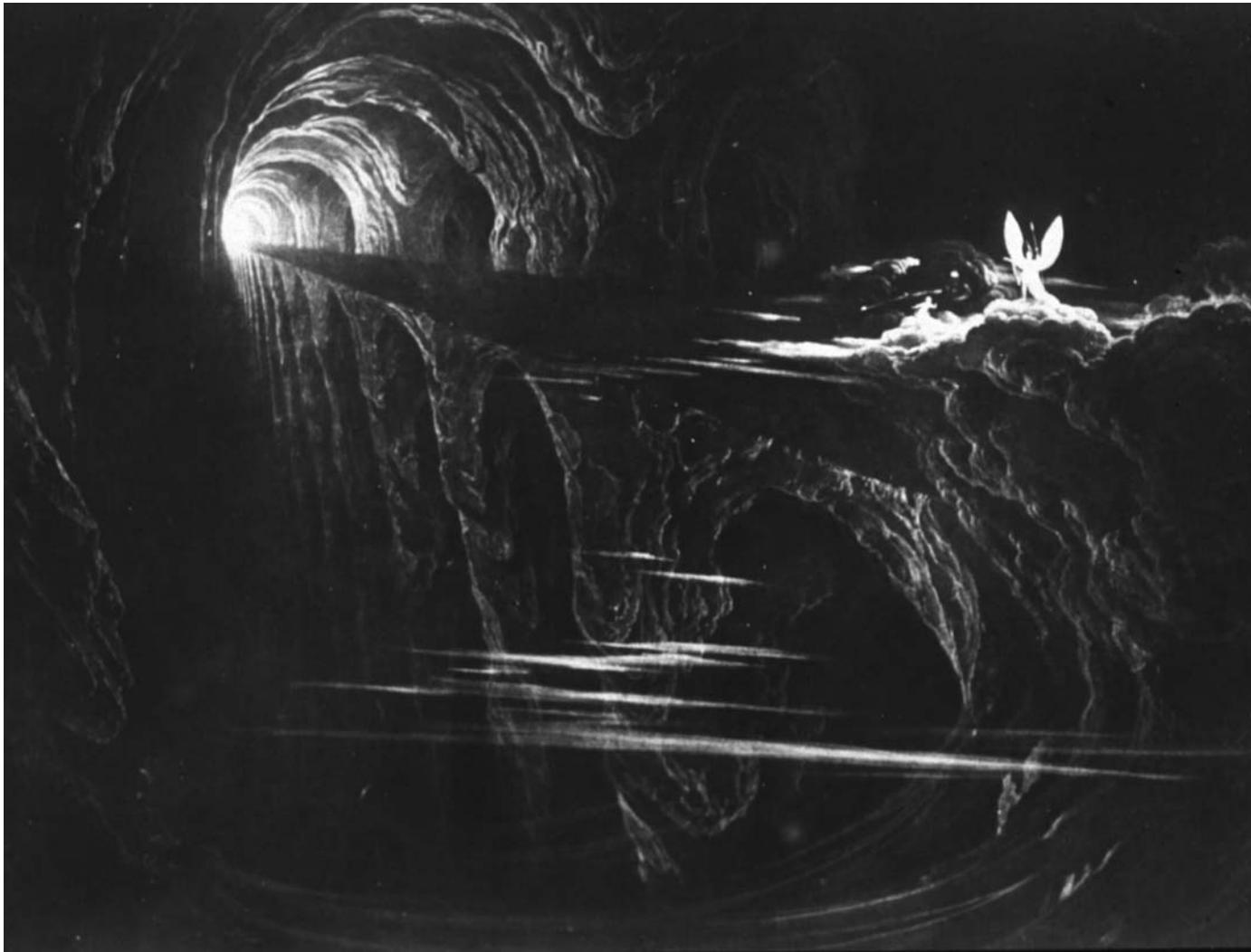
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http://firstpeoplesofcanada.com/fp_metis/fp_metis8.html

“The Bridge over Chaos,” illustration for Milton’s *Paradise Lost*,
by John Martin (1827)

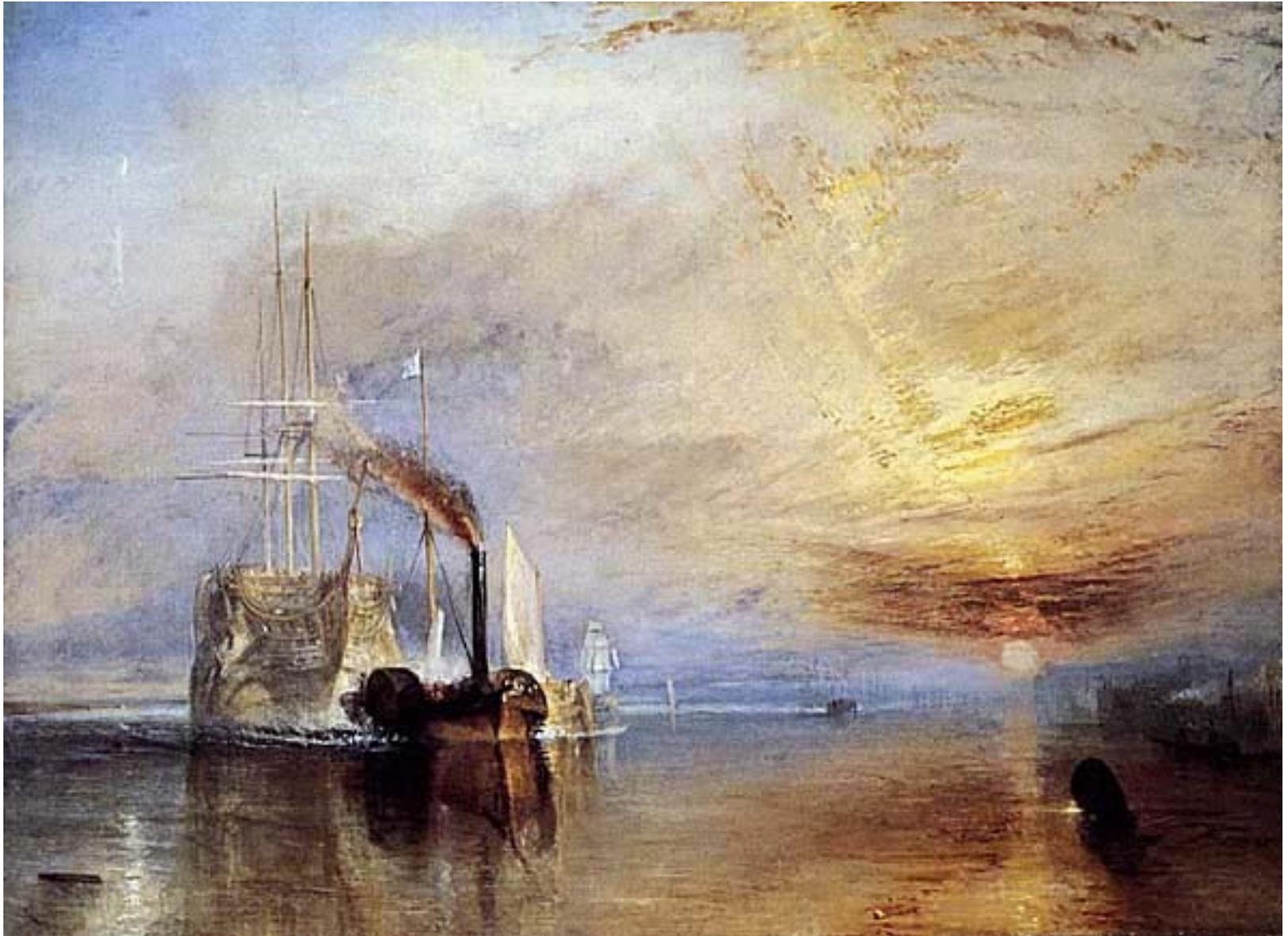
Courtesy Board of Trustees, Victoria and Albert Museum



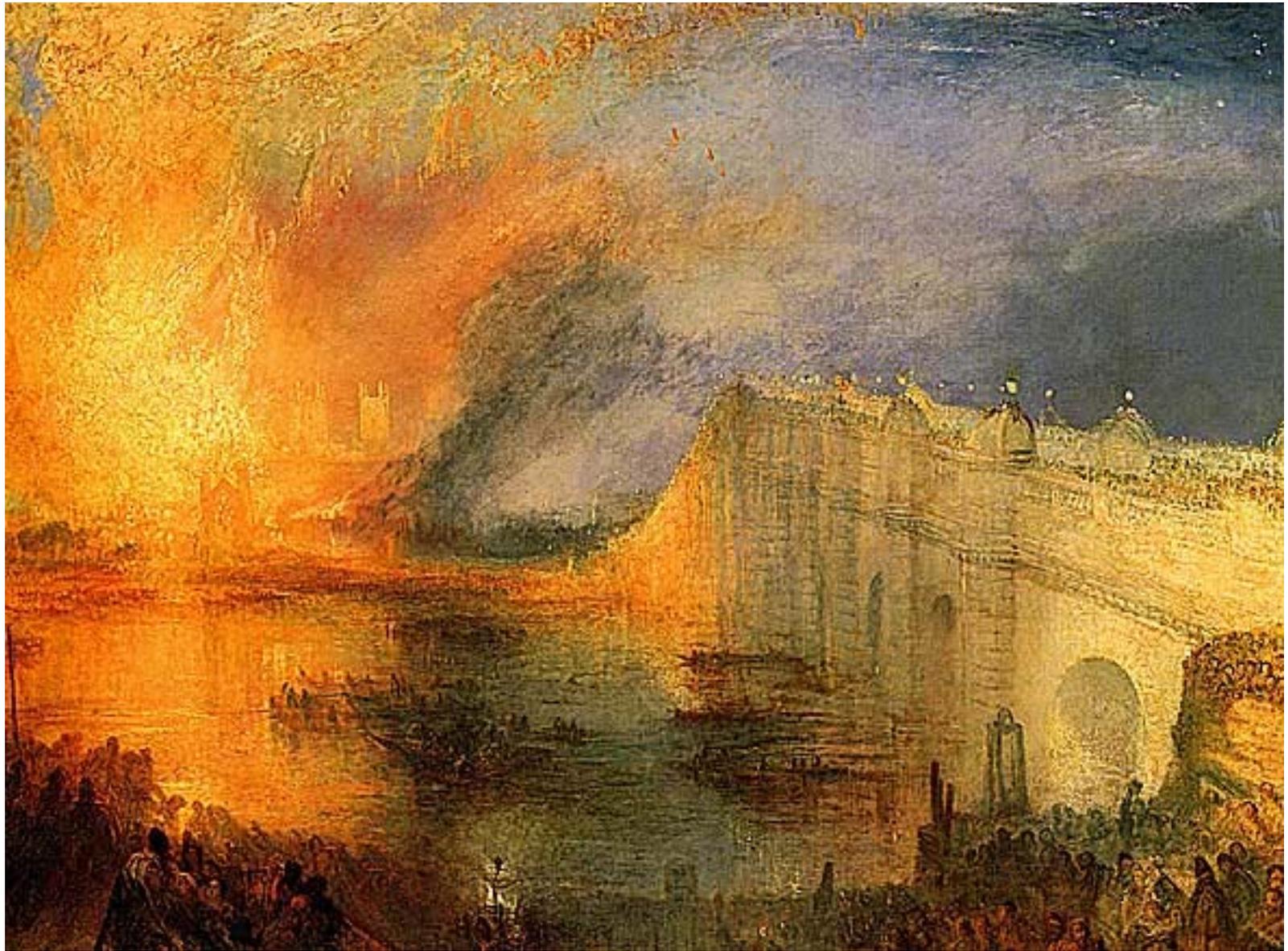
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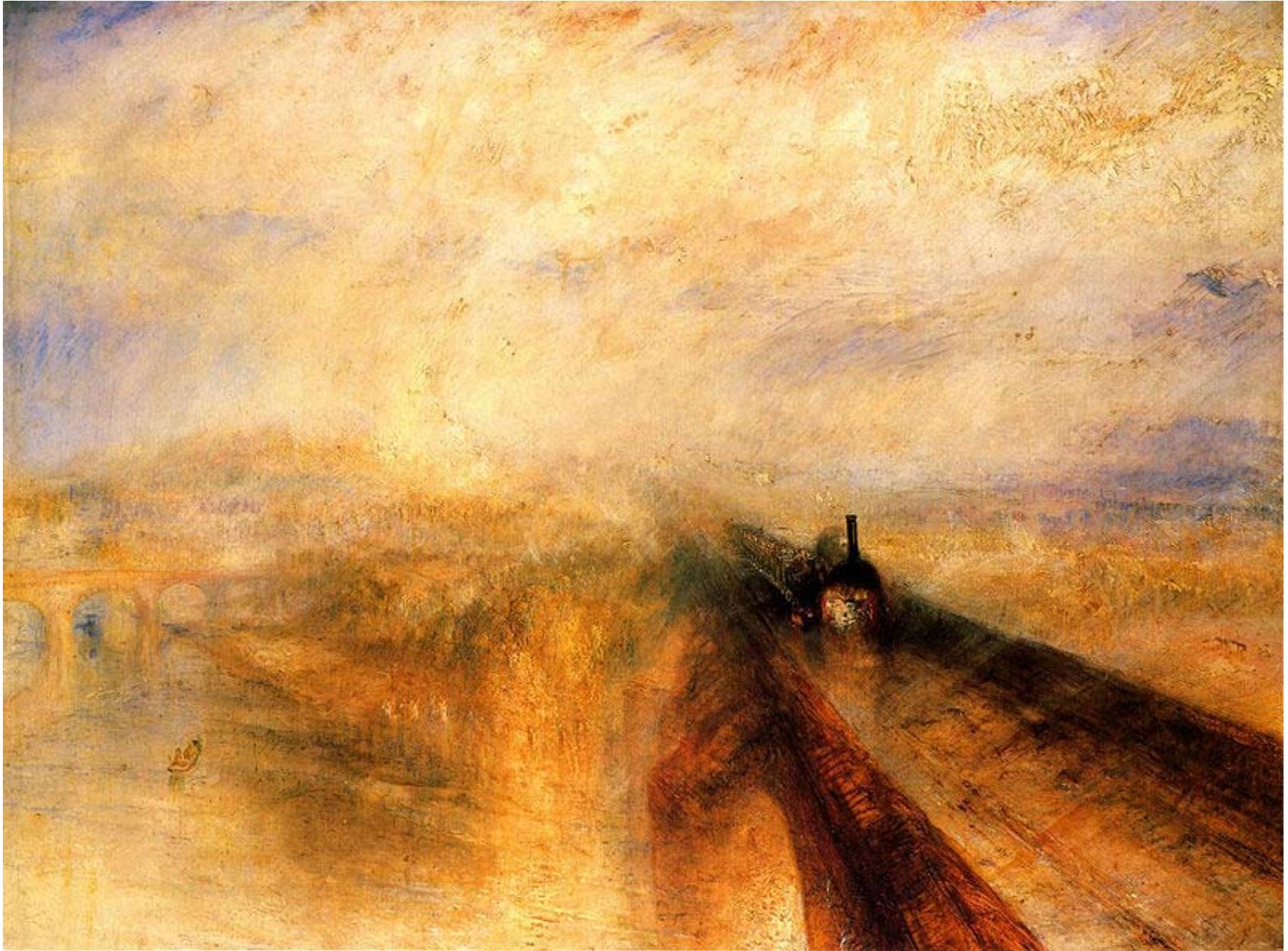
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Hobsbawm, *The Age of Revolution*

“The Industrial Revolution was not indeed an episode with a beginning and an end. ..its essence was that henceforth revolutionary change become the norm. It is still going on...(p. 29)

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STS.007 Technology in History
Fall 2010

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