

Colonial America**Iron & Milling Technology*****Early Middle Ages***

- Early Middle Ages-New iron mines and smelting sites are established
- The first literature on mining and metallurgy appears.
 - The furnace gains a small chimney of clay and sandstone; gas exit and two openings, one for introduction of the ore and one aperture near the bottom to allow extraction of the “bloom” of iron.
 - The introduction of a draft supplied by a pair of bellows.
 - The hinged flail, although invented in the fourth century, slowly begins to displace the simple stick for threshing grain.
 - Iron use increases (plowshares, harrows, sickles, billhooks, church bells, long swords, battle axes, chain mail).
 - The lathe is diffused more widely (2 types, pole lathe and bow lathe)
 - Swords, axes, agricultural and household implements are sharpened with a rotary grindstone, as opposed to the earlier whetstone. The rotary grindstone employs a crank.
 - The Roman Vitruvian mill and windmill, not generally used in Mediterranean world, are widely disseminated throughout the medieval world and technologically developed, advancing from a mere 3 horsepower yield to 40-60 horsepower.

Colonial America

Iron & Milling Technology

10-12th century

10th century-The shortage of charcoal begins as a result of deforestation; laws limiting its production appear. Efforts to adapt coal for metallurgical purposes are intensified.

-Invention of the drawplate aids blacksmiths in fabricating wire for chain mail, until then painstakingly hammered out at the forge.

11th century-Water-driven bellows and hammers appear in the eastern Alps and Silesia.

Early 12th century-Guilds of craftsmen, including metalworkers, join guilds of merchants.

-The blacksmith's work is in higher demand as building and commerce increase. Carpenters required nails, saws and hammers; masons, mallets, picks, wedges and chisels; carters and wagoners, iron axles and parts; millers, iron components of mill machinery; shipbuilders, nails and fittings.

-Surface deposits of iron ore no longer suffice; pits, trenches and tunnels are driven into the earth.

-The long-handled scythe, developed in the Roman Empire, gains a short bar-handle projecting from its long haft.

1122-23-Theophilus Presbyter writes *De diversis artibus*.

Mid 12th century-The blacksmith moves from the castle as armorer to the village, as the demand for his services to agriculture grow.

1185-The earliest surviving written record of a post-mill is a rental note in Weedly, Yorkshire.

1195-Post-mills become popular enough to have the Pope levy a tithe on them.

Colonial America	Iron & Milling Technology
<p>13th century</p>	<p>Early 13th century-The windmill becomes the prime-mover on the plains of eastern England, the Low Countries and northern Germany. Mid 13th century-Coal is used for the primary stages of iron smelting, although charcoal still predominates. -Water mill construction rapidly increases, as mill function becomes more specialized. -The combination of mills and weirs appears, to measure the flow of water to the millrace. -The technique of raising the carbon-content of iron to produce cast iron is discovered -Threshing begins to be done under cover, far into the winter in great barns, usually on monastic estates. Late 13th century-The use of wheelbarrow reduces the number of necessary laborers by half, particularly for mining ore.</p>
<p>14th century</p>	<p>Early 14th century-Water-powered stamping mills appear in the Saar. c1325-Forged iron firearms appear in Germany. c1350-The first cast iron cannons appear. -The earliest known blast furnace is built in Europe, at Lapphytten, Sweden. 1351-The application of water-power to wire-drawing in Augsburg. Late 14th century-The shortage of labor leads to a severe decline in the production of metals. -The price of iron and charcoal rises. 1370-Iron needles (with no eye but a closed hook) are produced at Nuremberg.</p>

Colonial America	Iron & Milling Technology
<p>15th century</p>	<p>Early 15th century-Casting directly from the furnace into the mould is achieved.</p> <p>1430-The Dutch invent the “wipmolen” or hollow post-mill.</p> <p>Mid 15th century-Eyed iron needles are produced in Low Countries.</p> <ul style="list-style-type: none"> - More attention is paid to the legal aspects of mining, smelting and raw material consumption because the manufacture of bronze and iron contributed powerfully to a state’s warlike potential. Wars subsequently increase the demand for and price of iron. -The scythe replaces the sickle as the primary tool for harvesting grain. -Attempts are made to make milling simpler and more efficient. -Post-mills begin to be built to drive two pairs of stones placed fore-and-aft in the mill, rather than only one pair of stones, as before. <p>c1450-Saigerhuetten are first erected.</p>
<p>1485-1509-Reign of Henry VII in England.</p> <p>1492-Christopher Columbus seeks a western sea route to Asia, funded by Spain.</p> <p>1499-Amerigo Vespucci, an Italian navigator, sights the coast of South America on an exploratory voyage for Spain.</p>	<p>1460-1530-The iron industry booms.</p> <p>Late 15th century-<i>Kriegsbuecher</i> and <i>Ruestungsbuecher</i>, describing metalworking in terms of warfare and armament, and <i>Bergwerkbuechlein</i> and <i>Probierbuechlein</i>, essays on mining and assaying, become widespread with the use of the printing press</p> <ul style="list-style-type: none"> -The most agriculturally advanced region in Europe, Flanders, develops a scythe with a small half-circle of bent withy attached near the base of the handle, to gather together the cut grain stems. <p>1489-94-Duerer’s paints his watercolor of a wire mill.</p>

Colonial America

Iron & Milling Technology

16th century

1507-The New World is first termed "America" by a German mapmaker who falsely credits Amerigo Vespucci with its discovery.
 1509-1547-Reign of Henry VIII.
 1513-Juan Ponce de Leon, sailing for Spain, explores Florida.
 1524-Giovanni da Verrazano, funded by France, lands in the Carolinas, then sails north and discovers the Hudson River, and continues into Narragansett Bay and Nova Scotia.
 1535-Jacques Cartier sails up the St. Lawrence River, the basis of French claims to Canada.
 1539-Hernando de Soto of Spain explores what is today the southeast United States.
 1540-Francisco Vasquez de Coronado of Spain explores what is today the southwest United States.
 1541-Hernando de Soto of Spain discovers the Mississippi River.

1547-1553-Reign of Edward VI.

1553-1558-Reign of Mary I.
 1558-1603-Reign of Elizabeth I.
 1565-The first permanent European colony in North America is founded at St. Augustine (Florida) by the Spanish.
 1585-Sir Walter Raleigh organizes the colonization of Roanoke Island, Virginia (today, North Carolina). The colony lasts for only one year. The second attempt to settle there in 1587 also fails with the colony disappearing sometime before 1590.
 1587-The first English child to be born in the colonies, Virginia Dare, is born in Roanoke.
 1588- Spanish influence in the New World declines and English imperial interests widens.
 1590-Richard Hakluyt publishes an anthology of notable voyages to the New World. A second edition is published 1598, creating English interest in the exploration and colonization of the New World.

1502-Boller proposes using mill-power to shake sieves, thus beginning the mechanization of bolting in milling.
 1530-J.A. Pantheus writes *Voarchadumia contra alchimiam*, a book of alchemical nature, concerned with the metallurgy of the more precious metals and materials.
 1540-Italian metallurgical engineer, Vanoccio Biringuccio, writes about water-powered wire-drawing mills in his *Pirotechnia*.

1550-Wooden box-bellows are invented by Hans Lobsinger of Nuremberg, displacing the older leather ones.
 c1550-Blast furnaces reach sizes of around twelve to sixteen feet high and four-and-a-half feet wide.
 1556-Georgius Agricola (Georg Bauer) writes the *De re metallica*, the great textbook on every aspect of mining.
 Late 16th century-The production of iron by the indirect process, using moulds, or pigs, comes into widespread use, particularly in northern Europe, in the Low Countries, in Sweden and in Britain.
 1574-Lazarus Ecker writes his *Treatise describing the foremost kinds of Metallic Ores and Minerals*, adding to the previous printed knowledge on assaying.
 1588-Giambattista della Porta is the first to mention the use of the trompe bellows, invented in Italy.
 -Agostino Ramelli writes his book on machines, including milling devices, *Le diverse et artificiose machine*, in Paris.
 c1595-Verantius writes *Machinae novae* in Venice.

Colonial America

Iron & Milling Technology

17th century

1603-1625-Reign of James I.

1604-At the Hampton Court Conference, James I refuses to tolerate Puritans.

1606-The London Company sponsors a colonizing expedition to Virginia.

1607-Jamestown is founded by the Virginia Company.

-Captain John Smith is captured by Chief Powhatan and saved from death by the chief's daughter, Pocahontas.

1609-Henry Hudson explores North America, sponsored by the Dutch East India Company.

1612-Tobacco is introduced in the Virginia colony by John Rolfe.

1613-Dutch colonists form settlements in New Amsterdam and by the 1620s, elsewhere in New Netherlands.

1616-Tobacco becomes an export staple for Virginia.

-A smallpox epidemic decimates the Native American population in New England.

1619-The first session of the first colonial legislative assembly, the Virginia House of Burgesses, convenes in Jamestown.

-Slavery begins in the colonies, as twenty Africans are brought by a Dutch ship to Jamestown for sale as indentured servants.

1620-The Mayflower ship lands at Cape Cod, Massachusetts, with 101 colonists.

On November 11, the Mayflower Compact is signed, establishing a form of local government at Plymouth.

-The first public library in the colonies is organized in Virginia with books donated by English landowners.

1621- One of the first peace treaties between colonists and Native Americans, specifically the Plymouth pilgrims and the Wampanoag Tribe, is signed with the aid of Squanto, an English-speaking Native American.

1624-Dutch colonists, sponsored by the Dutch West India Company arrive in New York. The Virginia Company charter is revoked in London and Virginia is declared a Royal colony.

1625-1649-Reign of Charles I.

1626-Peter Minuit, a Dutch colonist, purchases Manhattan island from Native Americans and names the island New Amsterdam.

1628-The Puritans are the first to settle the Massachusetts Bay Colony.

1630s-20,000 immigrate to New England area: mostly yeoman families.

Early 17th century-Massive deforestation provides a pressing incentive to find a means of smelting iron with coal.

1603-Sir Hugh Platt supplies a recipe to the brewing industry for making briquettes of raw coal, known as 'coke;' it would later be applied to metallurgical practices.

1612-1613-Simon Sturtevant and John Rovenzon publish treatises, advocating the adoption of coal-burning blast furnaces.

1617-Georg Engelhard Löhneiss writes on the organization of mining and its employees in the *Bericht von Bergwercken*.

1627-Mathurin Jousse describes the sequence of colors on tempering of steel. He also discusses the recognition of good iron or steel, on the basis of fracture.

Colonial America

1633-The first town government in the colonies is organized in Dorchester, Massachusetts.

1634-Maryland, land granted to Lord Baltimore by Charles I, is first settled.

1635-Boston Latin School, the first public school in the colonies, is established.

1636-Puritan clergyman Thomas Hooker and others leave Massachusetts and found Hartford.

- Harvard College is founded.
- Roger Williams founds Providence and Rhode Island. Providence then becomes a haven for colonists, like Williams, fleeing religious intolerance.

1638-Anne Hutchinson is ex-communicated and banished from Massachusetts for nonconformist religious views. She travels to Rhode Island, where she founds the town of Portsmouth.

- The first colonial printing press is established in Cambridge, Massachusetts.
- Eaton and Davenport establish New Haven.
- Sweden establishes the colony, New Sweden (Delaware).

1639-Puritan settlers, led by John Wheelwright, found New Hampshire.

1646-In Massachusetts, the general court approves a law that makes religious heresy punishable by death.

1647-Massachusetts passes a law, requiring all sizable towns to institute some form of public education.

1649-1653-First period of the Commonwealth of England.

1651-The First Navigation Act is passed by Cromwell's Parliament, prohibiting the shipment of colonial goods to England in non-English ships.

1652-Rhode Island enacts the first colonial law making slavery illegal.

1653-1659-Protectorate under Oliver Cromwell.

1659-1660-Protectorate under Richard Cromwell.

1659-Second period of the Commonwealth of England.

1660-The Navigation Act of 1660 allows the colonies to trade with only English-built ships and crews that are at least three-quarters English. Certain enumerated goods, including indigo, sugar, cotton and tobacco, are allowed to be shipped only to England or other English colonies.

1660-1685-Reign of Charles II.

1663- Charles II establishes the colony of Carolina. Anthony Ashley Cooper establishes a feudal society there.

1664-Sir George Carteret and John, Lord Berkeley, found New Jersey.

- Dutch Governor Peter Stuyvesant surrenders New Netherlands to English forces who rename the colony New York.
- Maryland makes lifelong servitude for black slaves legally mandatory. Similar laws are later passed in New York, New Jersey, the Carolinas and Virginia.

Iron & Milling Technology

1636-Mersenne writes the first serious tests of tensile properties of gold, silver, copper and iron.

1640-In the *Arte de los Metales*, Alvaro Alonzo Barba discusses smelting operations as practiced in the gold and silver mines of the New World, but also contains information on European metallurgy.

1648-Use of the chimney stack to enhance the draught spreads throughout Europe.

1651-Biringuccio mentions a solar furnace, a German mirror capable of melting a gold ducat.

1665-Robert Hooke develops a theory of the hardening of steel based on the colors it turns during tempering and relates it to the hardening of other materials by cold working.

Colonial America

1667-The Virginia House of Burgesses passes a law that binds blacks to servitude, even if they convert to Christianity.

1672-The Royal Africa Company monopolizes the English slave trade.

1673-Dutch military forces retake New York from the British.

- The British Navigation Act of 1673 requires a customs commissioner to collect duties on goods that pass between plantations.
- French explorers, Father Jacques Marquette and Louis Joliet, explore the interior of North America, including the Great Lakes and the Mississippi River.

1674-The Treaty of Westminster returns Dutch colonies to the English.

1675-1676-King Philip's War (the colonists' nickname for Metacomet, chief of the Wampanoags) erupts in New England between colonists and Native Americans, resulting in the end of Native American power there.

1676-Nathaniel Bacon leads a rebellion against Virginia Governor William Berkeley, which results in Bacon's burning of Jamestown. Bacon and his western Virginia rebels also crush the Susquehannock Indians who have been attacking the settlers of western Virginia. The rebellion disintegrates when Bacon dies suddenly that year.

1680-New Hampshire becomes an independent colony, separate from Massachusetts.

1681-Quaker William Penn, is granted a charter from Charles II, making him proprietor of Pennsylvania.

1682-French explorer LaSalle reaches the mouth of the Mississippi and claims the surrounding territory, which he names Louisiana.

Iron & Milling Technology

Late 17th century-Blast furnaces double in size.

- The invention of reverberatory furnace makes it possible to substitute raw coal for charcoal in the process of smelting.

Colonial America

1685-1688-Reign of James II.

1686-James II consolidates the colonies of New England into a Dominion, removing the colonists' local political rights and independence. Sir Edmund Andros is named governor.

1687-Andros orders Boston's Old South Meeting House to be converted into an Anglican Church. The towns of Ipswich and Topsfield, Massachusetts, shunning taxation without representation, protest against Andros' assessments.

1688-Andros limits New England town meetings to one per year. He then places all militias under his control.

-Quakers in Pennsylvania formally protest against slavery in America.

1689-Edmund Andros is jailed and the Dominion of New England dissolves in the colonial response to the Glorious Revolution.

1689-1694-Reign of William III and Mary II.

1689-1691-Governor Nicholson of New York is overthrown during Leisler's Rebellion.

1690-King William's War begins, as French and English hostilities in Europe extend to the colonies. Schenectady, New York is burned by the French and their Native American allies.

1691-The newly appointed Governor of New England, Henry Sloughter, arrives in New York from England and institutes a royally-sanctioned representative government. Massachusetts receives a new royal charter that includes government by a royal governor and a governor's council.

1692-150 people are accused of witchcraft in the village of Salem, Massachusetts. A special court is set up by the governor of Massachusetts, with twenty people being executed.

1693-The College of William and Mary is founded in Williamsburg, Virginia.

1694-1702-Solo reign of William III.

1696-The Royal African Trade Company loses its monopoly on the slave trade, spurring colonists in New England to begin trading slaves.

-The Navigation Act of 1696 is passed, requiring all colonial trade to be done exclusively in English-built ships.

1697-King William's War ends with the Treaty of Ryswick.

1699-The Wool Act is passed, designed to protect England's wool industry by limiting wool production in Ireland and forbidding the export of wool from the colonies.

Iron & Milling Technology

Colonial America

Iron & Milling Technology

18th century

1700-Massachusetts orders all Roman Catholic priests to leave the colony within three months, or suffer penalty of life imprisonment or execution.

New York then passes a similar law.

1701-The French establish a settlement at Detroit.

-Yale College is founded in Connecticut.

1702-1714-Reign of Anne.

1702-Charles II, king of Spain, dies. The War of the Spanish Succession begins, as England declares war on France to stop the union of France and Spain. In the colonies, the war is called Queen Anne's War; English colonists will battle the French, their Native American allies, and the Spanish for the next eleven years.

-The Anglican Church is established as the official church of Maryland.

1703-Delaware, originally called New Sweden by the Swedish settlers, breaks away from Pennsylvania to form a separate government.

1704-The first enduring newspaper in America, The Boston News-Letter, is published.

1705-The Virginia Black Code of 1705 assigns slaves the status of real estate in Virginia. -A law against runaway slaves in New York punishes with the death penalty any slave caught over forty miles north of Albany.

-Massachusetts declares marriage between blacks and whites illegal.

1706-The Anglican Church is established as the official church of South Carolina.

1706-1790-Life of Benjamin Franklin.

Early 18th century-New methods of producing iron and steel are introduced.
-Swedish scientists, Emanuel Swedenborg and Christopher Polhem, improve Swedish metallurgical and mining methods, almost doubling their country's iron production.

1700-The volume of the Stückofen triples in size from that of 1500.

1702-Mathurin Jousse writes the first publication, actually one on carpentry, that included viable instructions for the construction of a windmill.

1709-The first recorded successful experiment in using coke for smelting iron ore, at Bosley, in Shropshire.

Colonial America	Iron & Milling Technology
<p>1710-The Post Office Act establishes a postal system in the colonies, controlled by the postmaster general of London and his deputy in New York City.</p> <p>1711-1713-The Tuscarora Indian War begins with a massacre of settlers in North Carolina by Native Americans.</p> <p>1712-The Carolina colony is officially divided into North Carolina and South Carolina.</p> <p>-The Pennsylvania assembly bans the import of slaves.</p> <p>1713-Queen Anne's War ends with the Treaty of Utrecht.</p> <p>1714-1727-Reign of George I.</p> <p>1714-Tea is introduced for the first time into the colonies.</p> <p>1716-The first black slaves are brought to the Louisiana territory.</p> <p>1717-Scots-Irish immigration increases, with most settling in western Pennsylvania. Many Germans, known as Pennsylvania Dutch, also begin to settle in Pennsylvania.</p> <p>1718-New Orleans is founded by the French.</p>	
<p>1722-1803-Life of Samuel Adams.</p> <p>1725-The population of black slaves in the American colonies reaches 75,000.</p> <p>1726-The poor riot in Philadelphia, tearing down the pillories and stocks and burning them.</p> <p>1727-1760-Reign of George II.</p> <p>1728-The first colonial synagogue is built by Jewish colonists in New York City.</p> <p>1729-Benjamin Franklin begins publishing The Pennsylvania Gazette.</p>	<p>1722-The first reliable treatise on iron metallurgy, Réaumur's essay on the art of converting iron into steel, is written.</p>

Colonial America

1730-Baltimore is founded in the Maryland colony.
 1731-Benjamin Franklin founds the first colonial public in Philadelphia.
 1732-The first colonial mass is celebrated in the only Catholic church, in Philadelphia.
 -Georgia, the 13th English colony, is founded by James Oglethorpe as a haven for those in debtors' prisons.
 1732-1799-Life of George Washington.
 1732-1757-Benjamin Franklin publishes Poor Richard's Almanac.
 1733-The Molasses Act imposes heavy duties on molasses, rum and sugar imported from non-British islands in the Caribbean.
 1734-John Peter Zenger, a New York newspaper publisher, is accused of seditious libel by the Governor. He is acquitted after his lawyer successfully convinces the jury that truth is a defense against libel.
 -The Great Awakening religious revival movement begins with Jonathan Edwards, a Congregationalist clergyman, preaching a series of sermons in Northampton, Massachusetts. Over the next ten years the revival, led by Edwards and George Whitefield, will sweep all of the American colonies.
 1734-1820-Life of Daniel Boone.
 1735-1818-Life of Paul Revere.
 1735-1826-Life of John Adams.
 1737-The first colonial copper coins are minted in Connecticut.

1739-England declares war on Spain. As a result, hostilities break out between Spaniards in Florida and colonists in Georgia and South Carolina. Three separate violent uprisings by black slaves occur in South Carolina.

Iron & Milling Technology

1732-By this time, there are six blast-furnaces and nineteen hammer-forges, besides numerous bloomeries, in the British colonies of North America.
 Mid 18th century-The first known round-house post-mills are constructed.
 -By employing a continuous process of feeding ore and fuel into the furnace as the pig iron is tapped, furnaces are producing twice the amount of pig iron per day as the first blast furnaces of 1500, while consuming less fuel.
 -Cast iron is applied to uses where stone, wood and other metals had formerly served.
 -Cast iron gears are used in the mill, allowing for improvements in turning.
 1738-Schlüter's metallurgical handbook is written.

Colonial America	Iron & Milling Technology
<p>1740-Fifty black slaves are hanged in Charleston, South Carolina, after their plans for revolt are revealed.</p> <p>1740-1748-In Europe, the War of the Austrian Succession, known as King George's War in the colonies, begins after the death of Emperor Charles VI and results in France and Spain allying against England.</p> <p>1741-Russian Tsar, Peter the Great, sponsors Danish navigator, Vitus Bering, to explore the coast of Alaska.</p> <p>1743-Benjamin Franklin and his associates found the American Philosophical Society in Philadelphia.</p> <p>1743-1826-Life of Thomas Jefferson.</p> <p>1745-Colonial forces capture the French fort of Louisbourg.</p> <p>1747-The New York Bar Association is founded in New York City.</p> <p>1748-The Treaty of Aix-la-Chapelle ends King George's War. Louisbourg is returned to the French.</p>	<p>1745-Edmund Lee patents the automatic fantail, keeping a windmill facing directly into the eye of the wind.</p>
<p>1750-The Iron Act bans the construction of iron mills and steel furnaces in the colonies.</p> <p>1751-The Currency Act bans the issuing of paper money by the New England colonies.</p> <p>1752-The first general hospital is founded in Philadelphia.</p> <p>1752-1836-Life of Betsy Ross.</p> <p>1753-Benjamin Franklin and William Hunter are appointed as postmasters general for the colonies.</p> <p>1754-The French and Indian War, known in Europe as the Seven Years' War, begins as a result of disputes over land in the Ohio River Valley.</p> <p>1755-English General Edward Braddock and George Washington battle the French in the Ohio territory, only to be defeated by a force of French and Indians. Braddock is mortally wounded and is replaced by Massachusetts Governor William Shirley as the new commander in chief.</p> <p>-The U.S. postal service is established.</p> <p>1755-1804-Life of Alexander Hamilton.</p> <p>1757-William Pitt, England's Secretary of State, establishes a policy of unlimited warfare.</p> <p>1758-English forces are defeated in Lake George, New York by French forces at Fort Ticonderoga.</p> <p>-The first Indian reservation in America is founded, in New Jersey.</p> <p>1759-French Fort Niagara is captured by the English.</p> <p>-War erupts between Cherokee Indians and southern colonists.</p>	<p>c1750-Good sheet iron is produced by rolling- and slitting-mills.</p> <p>1759-John Smeaton presents to the Royal Society the first scientific study of windmill sails.</p>

Colonial America

1760-1801-Reign of George III.
1760-Much of Boston is destroyed by a raging fire.
-Quebec surrenders to the English.
1763-The Treaty of Paris ends the French and Indian War.
-The Ottawa Native Americans under Chief Pontiac begin warfare against the British west of Niagara. His forces are eventually defeated near Pittsburgh.
-The Proclamation of 1763 forbids settlement west of the Appalachian Mountains.
1764-The Sugar Act is passed as a means of raising revenue from the colonists.
-A committee of correspondence is formed by Massachusetts House of Representatives to foster discussion of common grievances with other colonies.
1765-The Stamp Act imposes a direct tax on all printed material in the colonies. Colonists protest through mob action, boycotts of British goods, and the Stamp Act Congress.
-The Quartering Act requires the colonists to house British troops.
1766-The Stamp Act is repealed on the same day the Declaratory Act is passed.
-The Declaratory Act declares total Parliamentary supremacy over the colonies.
1767-The Townshend Acts place duties on colonial importation of glass, lead, paints, paper and tea, leading to widespread boycotts of British goods.

Iron & Milling Technology

Late 18th century-The role of carbon is finally recognized as the essential difference between wrought and cast iron and steel.

Colonial America

- 1770- The Boston Massacre occurs when British troops fire on a Boston mob, killing three colonists and injuring eight.
- The Townshend Acts are repealed except for the tax on tea.
- 1773-The Tea Act repeals the export tax on English tea heading for the colonies, but maintains a three-penny import tax on the colonists. The East India Company is granted monopoly of the tea trade. The Boston Tea Party results with Boston colonists dumping East India Company tea into the Boston Harbor.
- 1774-The Coercive (Intolerable) Acts are passed to quell the rebelliousness of the Massachusetts Colony. The Boston Port Act prevents any trade ships from entering or leaving the Boston harbor until the East India Company is reimbursed for its stolen tea. The Administration of Justice Act allows British officials accused of crimes in Massachusetts to be tried in British, rather than colonial courts. The Government Act dissolves the Massachusetts Assembly, making all Massachusetts officials appointed by the King or the royal governor. The First Continental Congress meets in Philadelphia with representatives from all of the colonies except Georgia. The Congress issues a Declaration and Resolves, which oppose the Coercive Acts and assert the rights of colonists and colonial assemblies.
- 1775-The Battles of Lexington and Concord are the result of British troops marching to Concord to destroy an arms depot there. The Massachusetts militia retaliates, beginning the Revolutionary War. The second Continental Congress meets in Philadelphia, appointing George Washington as commander of the Continental Army but still rejecting a declaration of independence.
- 1776-Thomas Paine's "Common Sense" is published and is widely read.
- A declaration of independence is adopted by the Second Continental Congress.
- The British defeat Washington's Continental Army at several battles in the New York area.
- 1777-Revolutionaries win the Battle of Saratoga, forcing British General Burgoyne to surrender. France officially recognizes the independence of the United States.
- 1778-The U.S. and French sign a treaty of alliance and a treaty of amity and commerce which stated that in the case of a war between the British and French, the French would not make peace until U.S. independence was assured. France declares war on Britain. Spain and the Netherlands later join France in the war.

Iron & Milling Technology

- 1772-In England, Andrew Meikle invents the spring-sail for windmills, solving the problem of setting and shortening the sail-cloths in poor weather.

Colonial America

1780-Pennsylvania mandates the gradual abolition of slavery. Massachusetts adopts a bill of rights that applies to blacks and whites equally.
-The British defeat the revolutionaries at the Battle of Charles Town.
1781-British General Cornwallis surrenders to revolutionary and French troops.
1782-Many British loyalists leave the United States for Canada and elsewhere.
1783-The Treaty of Paris ends the Revolutionary War.
1789-1797-Presidency of George Washington.
1797-1801-Presidency of John Adams.
1798-The U.S. Navy Department is established.

Iron & Milling Technology

c1784-Henry Cort invents the puddling process, in which the evolved heat of coal fuel was transmitted by reverberation to make pig iron into bar iron, ensuring the triumph of coal in iron metallurgy.
1789-Stephen Hooper invents the roller-reefing sail, allowing all blinds in the windmill sails to be opened and closed simultaneously without stopping the mill.
1795-American, Oliver Evans, designs the first automatic mill for the mass-production of flour, using power-driven roller-mills and cylindrical bolters.