

PRACTICE/UNIT 2. The Industrial Revolution.

(2478) Economic History.



Suggested citation

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- CONVOCATORIA PARA EL IMPULSO Y LA CONSOLIDACIÓN DE PROYECTOS DE DOCENCIA BILINGÜE DURANTE EL CURSO 2021/2022 (Resolución R-1000/2021)

- **Technology and the Industrial Revolution.**
Relevant cases in the textile sector:

Basic ideas:

SPINNING: the process of making thread out of raw fiber (wool, cotton, silk)



- **Technology and the Industrial Revolution.**
Relevant cases in the textile sector:

Basic ideas:

WEAVING: the process of taking threads and making them to cloth



- **Technology and the Industrial Revolution. Relevant cases in the textile sector:**
- In 1733, John Kay patented the 'Flying Shuttle'. This invention allowed wider cloth to be woven at a faster speed than before. Kay used his knowledge as a weaver to develop this item.
- Christian Shively. "John Kay Flying Shuttle". URL: <https://www.youtube.com/watch?v=kNqHgY4TQwM>

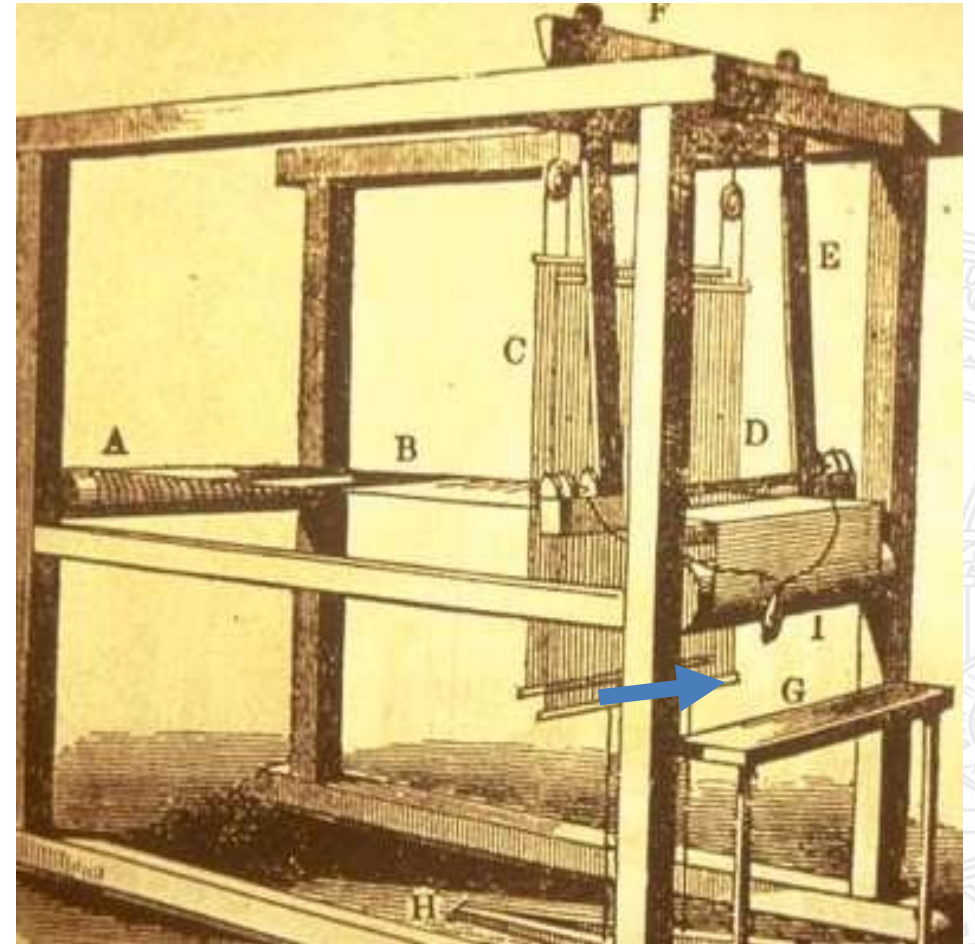


Source: Flying shuttle-
Greater Manchester
Museum Group
[http://www.gmmg.org.uk/
our-connected-
history/item/flying-
shuttle/](http://www.gmmg.org.uk/our-connected-history/item/flying-shuttle/)

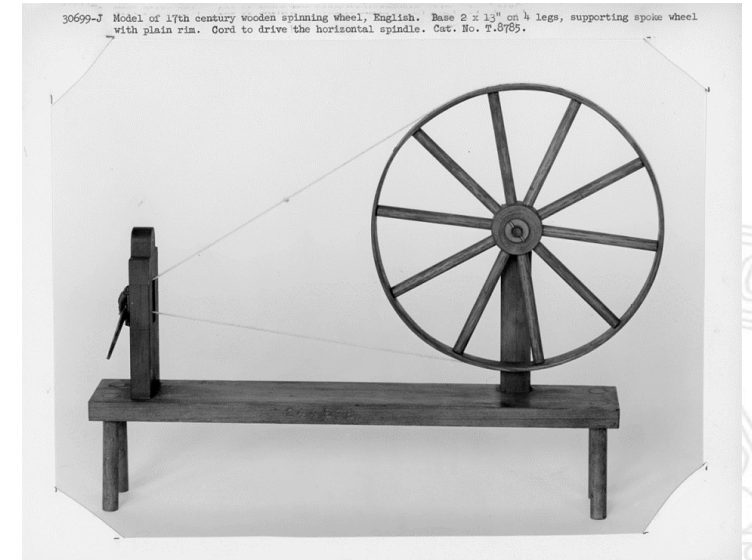
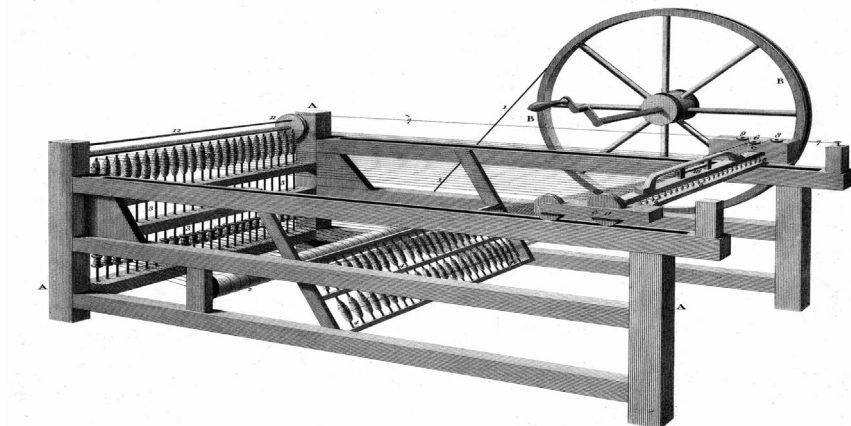
- Flying shuttle instrument represented an important step towards automatic weaving.
- With the flying shuttle, one weaver could weave fabrics of any width more quickly than two could before.

Source: Industrial Revolution. Pictures from the Industrial Revolution

http://f.tqn.com/y/inventors/1/S/d/T/flyingshuttle_big.jpg



- **Technology and the Industrial Revolution.**
Relevant cases in the textile sector:
- In 1770, James Hargreaves patented the 'Spinning Jenny'. In the patented model, by turning a single wheel, the operator could now spin eight threads at once.

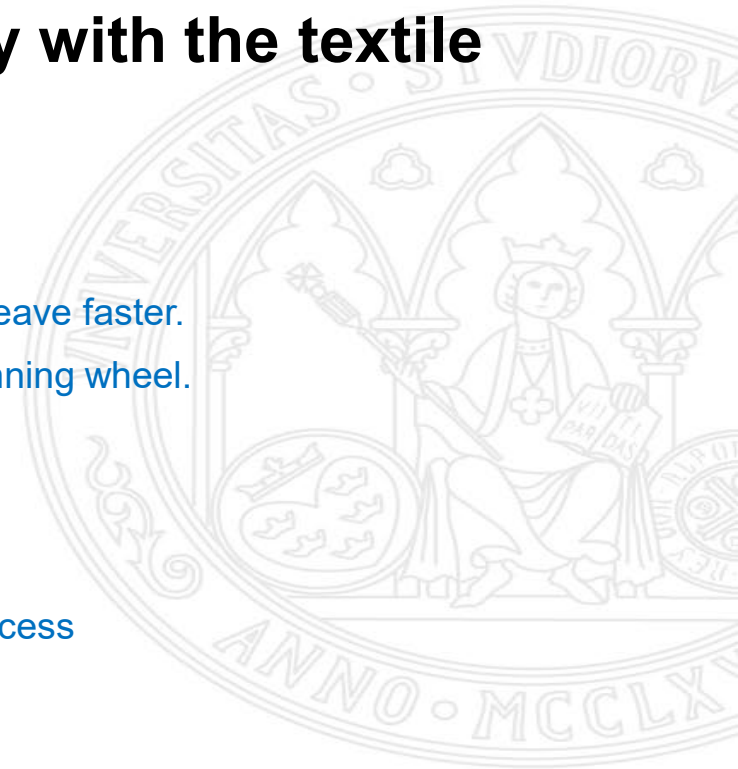


[[Wooden model 16 inches high 11 inches wide, 20 inches long--it has 12 spindles operated by hand crank. This is a model of the spinning jenny invented by James Hargreaves, June 22, 1770. This model was accessioned in 1906]]

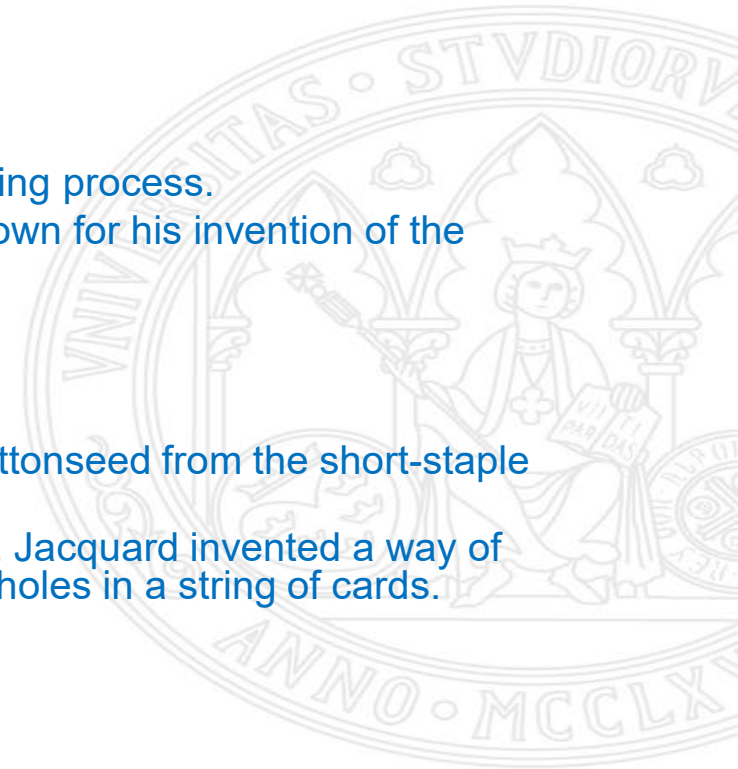
Task:

- **Search the web looking for two examples of technological innovations associated with the Industrial Revolution, particularly with the textile industry.**

- 1733 - Flying shuttle invented by John Kay - an improvement to looms that enabled weavers to weave faster.
- 1764 - Spinning jenny invented by James Hargreaves - the first machine to improve upon the spinning wheel.
- 1764 - Water frame invented by Richard Arkwright - the first powered textile machine.
- 1769 - Arkwright patented the water frame.
- 1770 - Hargreaves patented the Spinning Jenny.
- 1779 - Crompton invented the spinning mule that allowed for greater control over the weaving process



- 1733 - Flying shuttle invented by John Kay - an improvement to looms that enabled weavers to weave faster.
- 1742 - Cotton mills were first opened in England.
- 1764 - Spinning jenny invented by James Hargreaves - the first machine to improve upon the spinning wheel.
- 1764 - Water frame invented by Richard Arkwright - the first powered textile machine.
- 1769 - Arkwright patented the water frame.
- 1770 - Hargreaves patented the Spinning Jenny.
- 1773 - The first all-cotton textiles were produced in factories.
- 1779 - Crompton invented the spinning mule that allowed for greater control over the weaving process.
- 1785 - Cartwright patented the power loom. It was improved upon by William Horrocks, known for his invention of the variable speed batton in 1813.
- 1787 - Cotton goods production had increased 10 fold since 1770.
- 1789 - Samuel Slater brought textile machinery design to the US.
- 1790 - Arkwright built the first steam powered textile factory in Nottingham, England.
- 1792 - Eli Whitney invented the cotton gin - a machine that automated the separation of cottonseed from the short-staple cotton fibre.
- 1804 - Joseph Marie Jacquard invented the Jacquard Loom that weaved complex designs. Jacquard invented a way of automatically controlling the warp and weft threads on a silk loom by recording patterns of holes in a string of cards.
- 1813 - William Horrocks invented the variable speed batton (for an improved power loom).
- 1856 - William Perkin invented the first synthetic dye

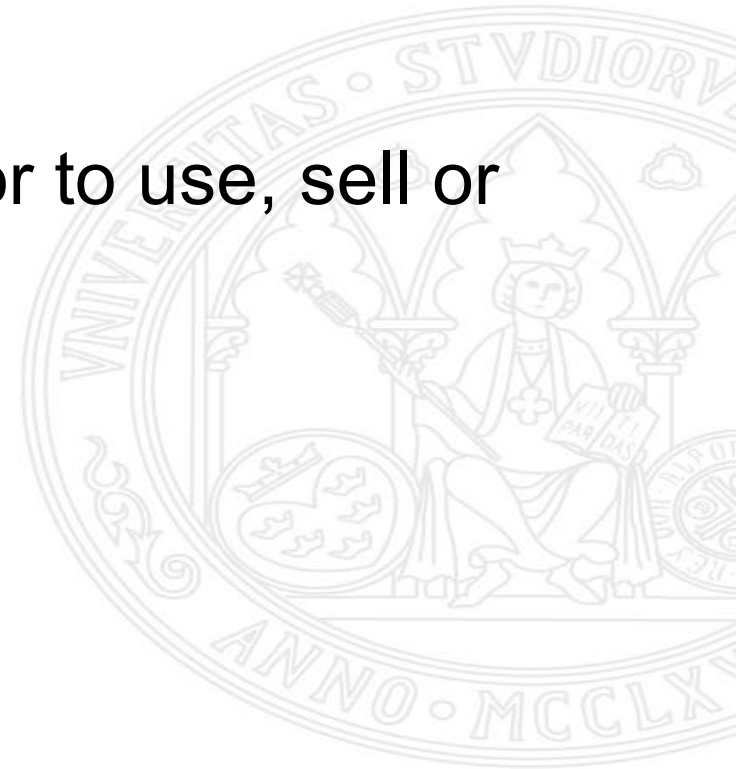




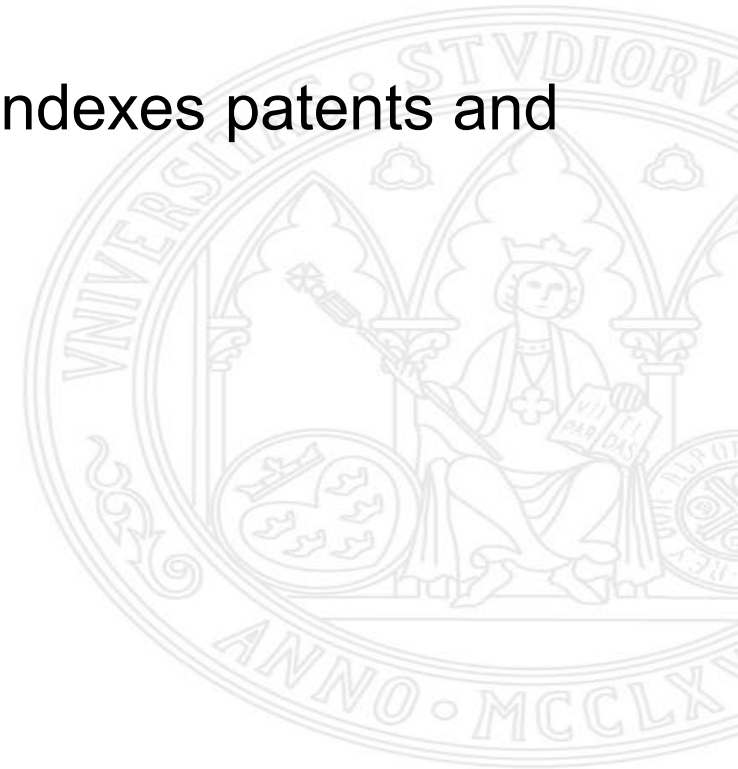
- **What is a patent?**



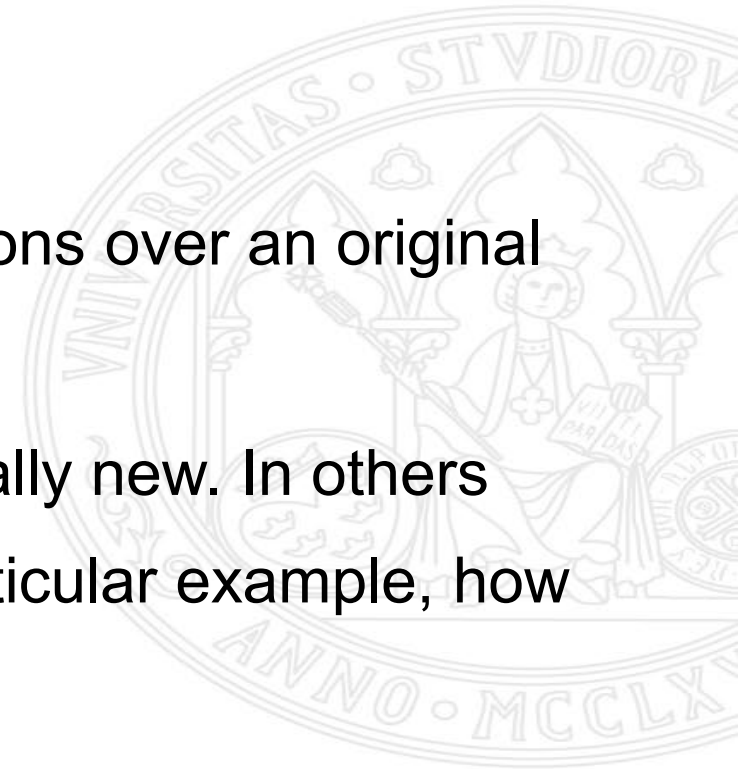
- Definition:
- The right granted by a Government to an inventor to use, sell or manufacture an invention for a **certain time**.



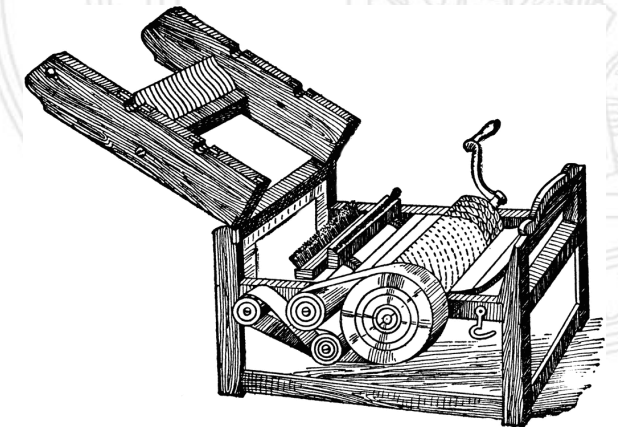
- **Task**
- <https://patents.google.com/>
- **Google Patents** is a search engine from GOOGLE that indexes patents and applications from several countries and organizations



- Please **select a particular patent linked to the Industrial Revolution** and answer the following questions
 - Why do you select that specific patent?
 - Could you track more than one alterations or innovations over an original invention?
 - Sometimes technological changes are abrupt and totally new. In others the nature of the innovation is cumulative. In your particular example, how is the nature of the innovation?



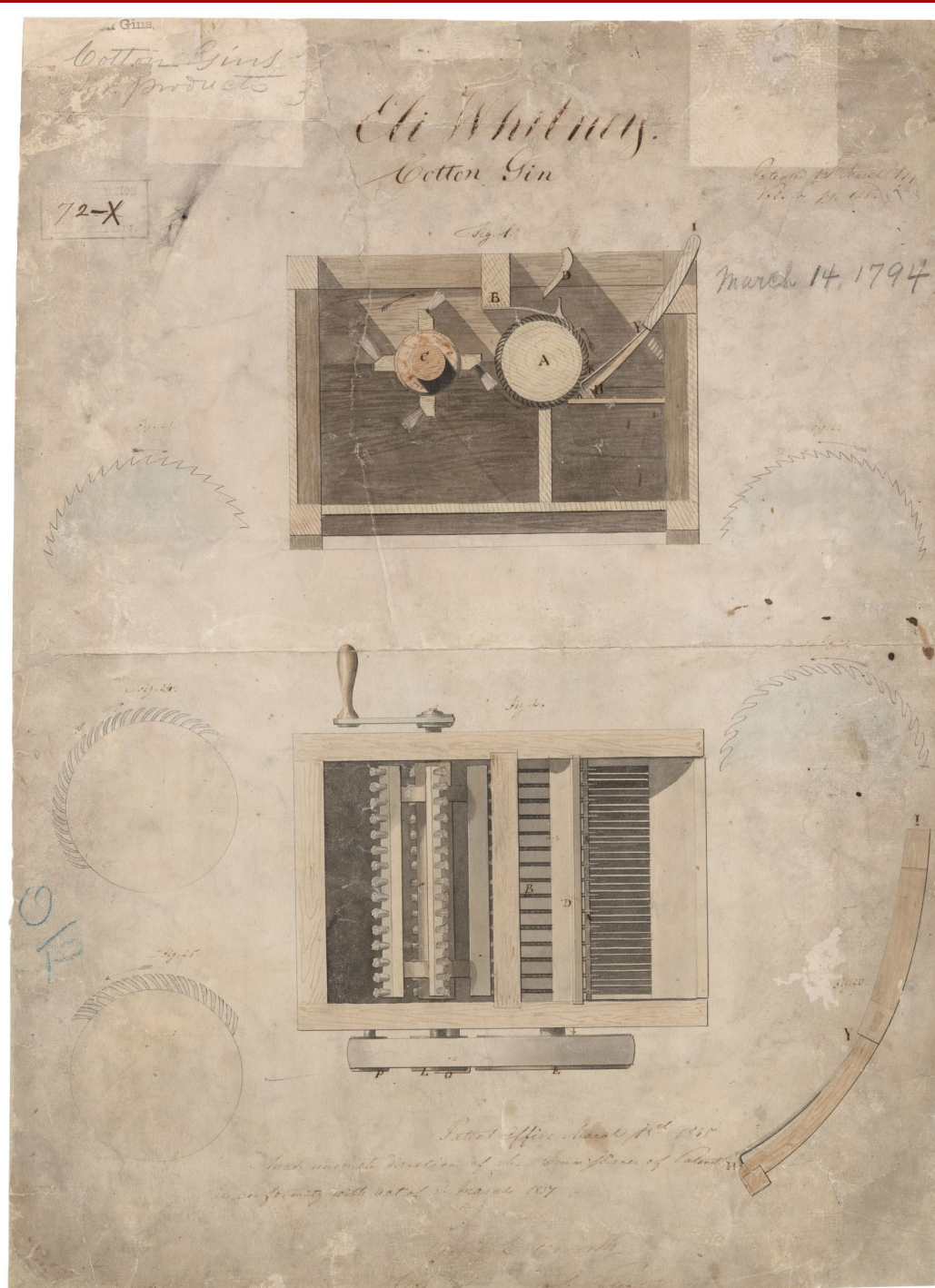
- Example:
- The **cotton gin** is a simple device that separates cotton fibers from their seeds
- Consequence: allowing greater productivity than manual cotton separation.
- Impact: cotton agriculture & industry in the United States.
- Inventor: Eli Whitney
- Cumulative changes.
 - Handler rollers (India)



Eli Whitney's cotton gin – for which he received a patent on March 14, 1794 – introduced a new, profitable technology to agricultural production in America.

Source:

<https://www.docsteach.org/documents/document/whitney-cotton-gin-patent>



319
1
To the Honourable the Senate and House of
Representatives in Congress assembled,

The Memorial of Eli Whitney.

Respectfully sheweth,

That your memorialist is the inventor of
the machine with which the principal part of
the Cotton raised in the United States is cleaned &
prepared for market. — That being in the State
of Georgia in the year 1793, he was informed
by the planters, that the agriculture of that State
was unproductive, especially in the interior, where
it produced little or nothing for exportation. —

That attempts had been made to cultivate
cotton; but that the prospect of success was
not flattering. — That of the various kinds
which ^{had} been tried in the interior, none of
them were productive, except the Green
seed Cotton, which was so extremely dif-

Eli Whitney's Request to Renew his
Cotton Gin Patent
4/16/1812

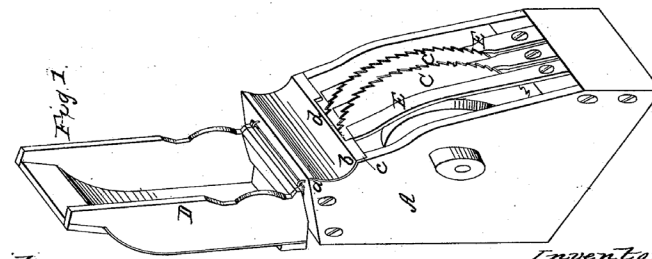
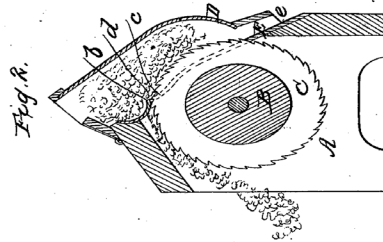
[https://www.docsteach.org/documen
ts/document/patent-renewal-cotton-
gin](https://www.docsteach.org/documents/document/patent-renewal-cotton-gin)



A. H. BURDINE.
Cotton Gin.

No. 29,765.

Patented Aug. 28, 1860.



Witnesses:
Wm. B. Allen
Charles Peterson

Inventor:
A. H. Burdine.
By Allen & Co
attys



910,653.
C. C. EPFS.
COTTON GIN.
APPLICATION FILED APR. 10, 1907.
Patented Jan. 26, 1909.

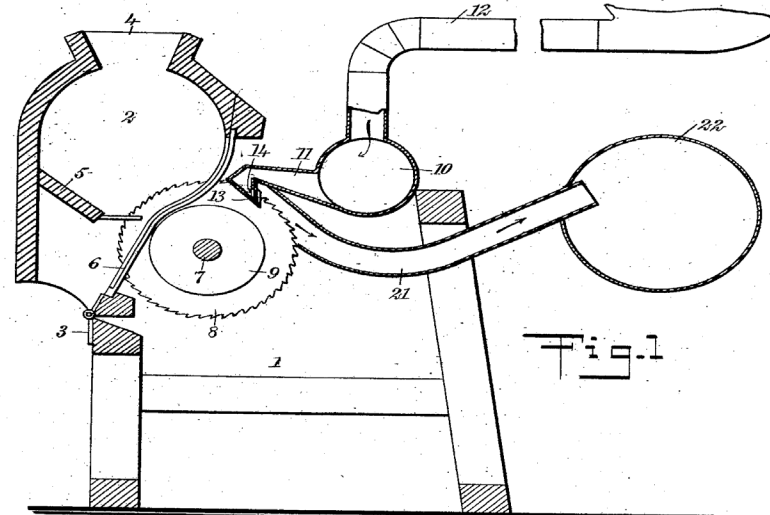


Fig. 2

Fig. 3

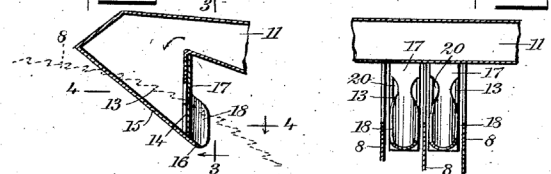
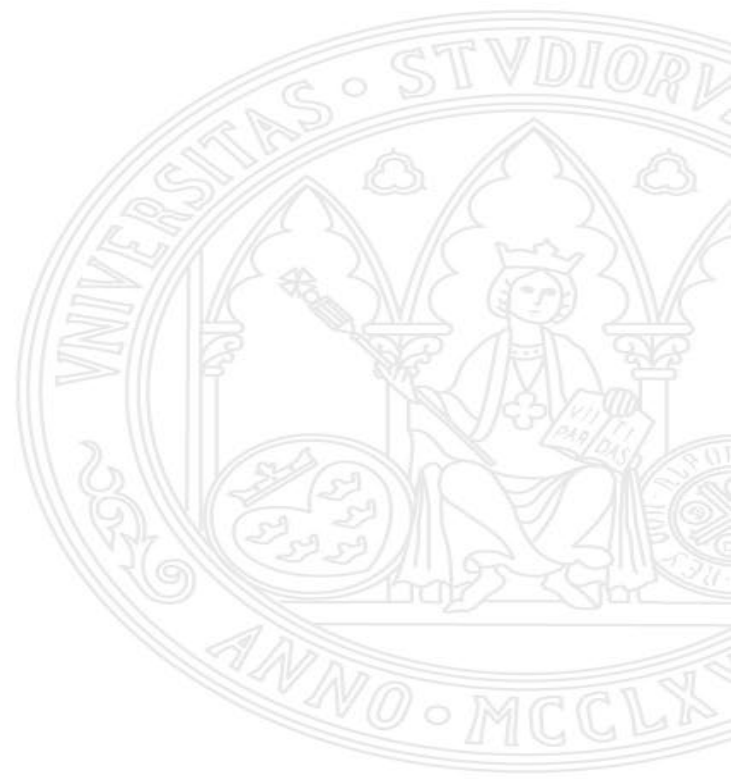


Fig. 4

WITNESSES
John A. Bergstrom
John K. Beachwood

INVENTOR
Clinton C. Epfs
BY *Mum Co*
ATTORNEYS.



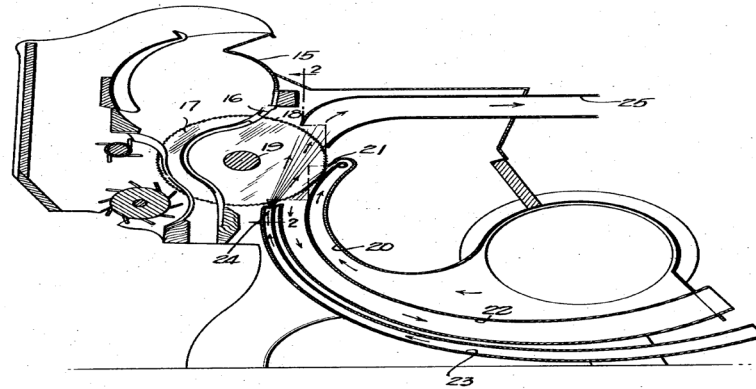
Sept. 20, 1927.

R. L. WILLIS
COTTON GIN
Filed April 29, 1926

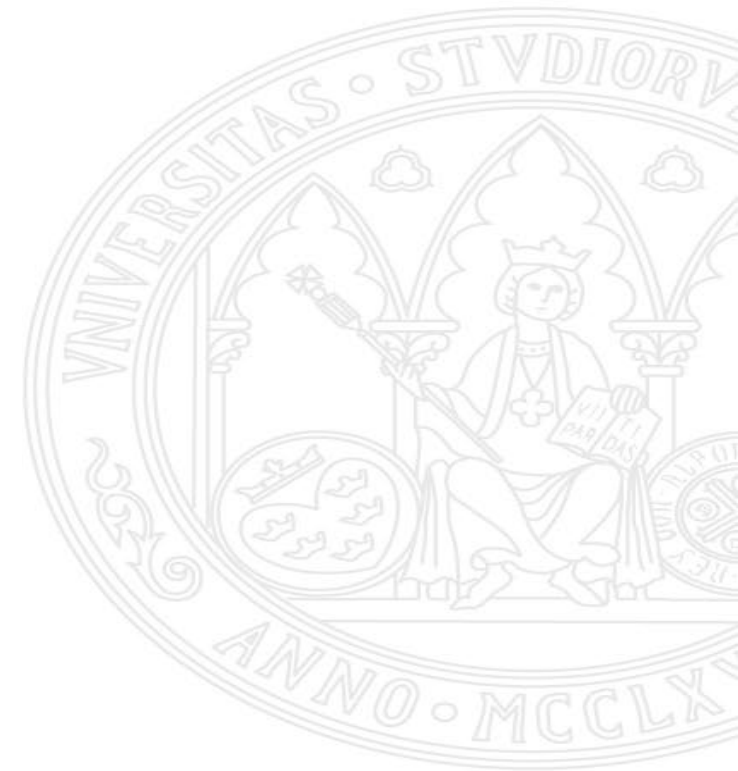
1,642,982

2 Sheets-Sheet 1

Fig. 1.



Inventor
RAY L. WILLIS
By *Munn & Co.*
Attorney



Patents and Asymmetric Information

- Lamoreaux, N. “Patents and Asymmetric Information”. The Radio Institute. URL <https://www.youtube.com/watch?v=gbte5rbvBzA&t=321s>

