

Economic history workshop: Usable systems for diverse data

Systems that curate, visualize, interact with,
and enable data science for economic history

World Economic History Congress
Session 020210, August 2, 2018

Speakers: Guillaume Daudin ; Paul Girard ; Keti Lelo ; Aleksandra Dul ;
Patrick Manning ; Ruben Schalk ; Peter Meyer ; then a break around 3

Speakers (2nd half): Rodrigo Dominguez ; Veronica Canal Fernandez ;
Sam Williamson ; Leigh Shaw-Taylor

then discussion, plans/breakouts

then maybe the pub

Linking records of early aeronautics and aviation across data sets

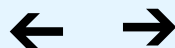
Peter B. Meyer (U.S. Bureau of Labor Statistics)

Views and findings in this work represent only the author, not the BLS

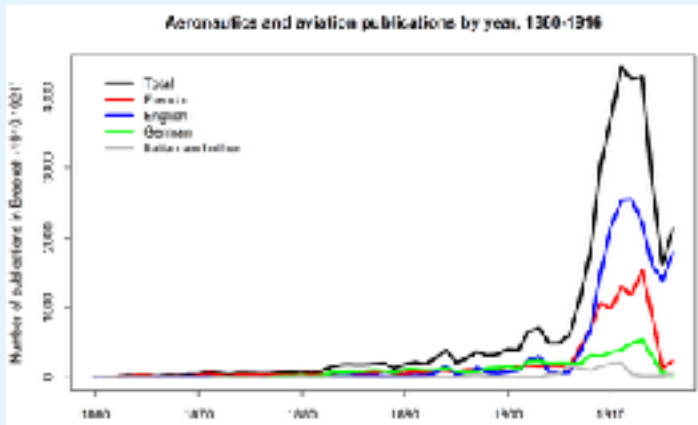
World Economic History Congress

Session on Interactive usable systems for diverse data

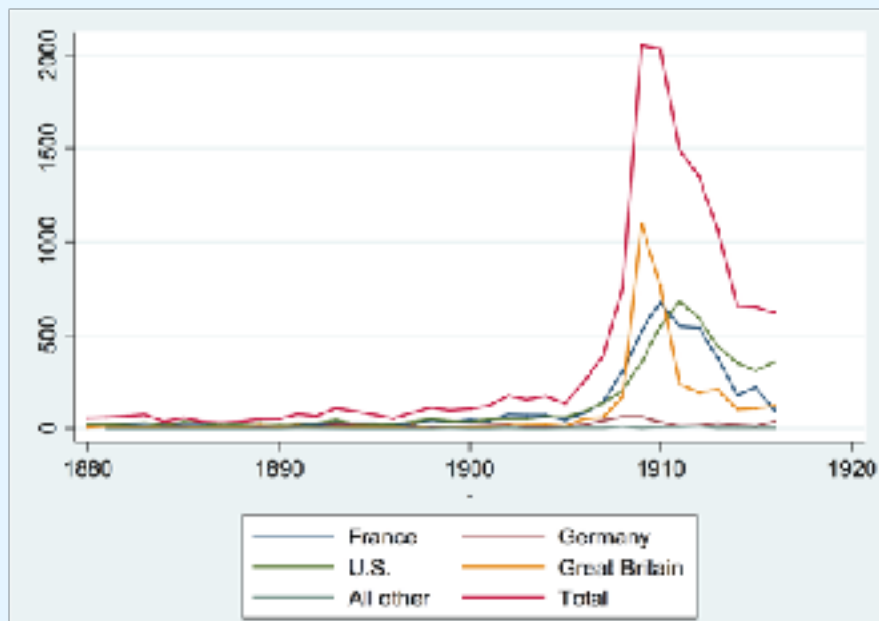
Aug 2, 2018



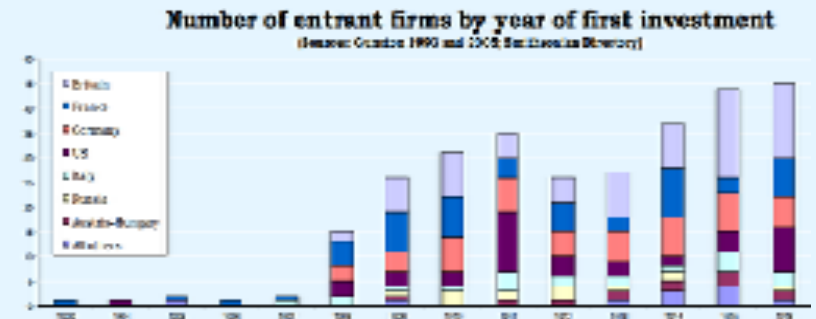
How did airplane and its industry appear? 1880-1916 in summary



Aero publications and patents



- Airplanes have a long pre-history
- 1809: first design
- 1870 and on: clubs and journals,
- 1890s: it becomes a “field”
- 1903: key prototype, first airplane
- 1908: wave of new companies



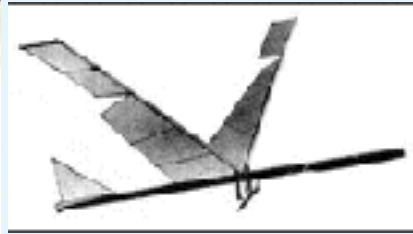
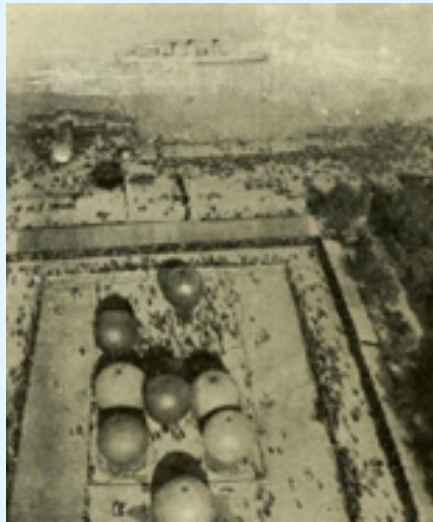
These charts incorporate judgments, estimates, exclusions, approximations

Can't dig in with new questions

No breakouts by technology

There are errors and minor cases missing

Balloons, bird-like, fixed wing designs and more



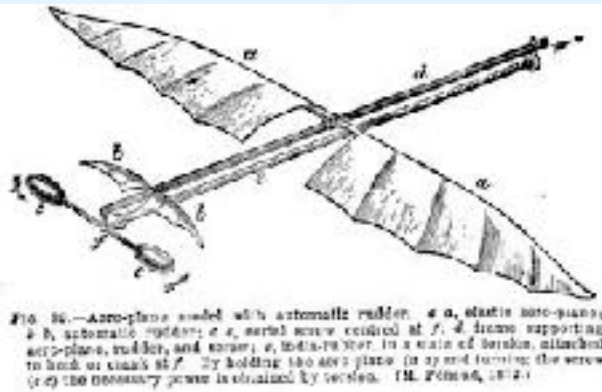
Balloon contest 1895

Santos-Dumont
1901 dirigible

Hargrave 1891
model
ornithopter

Hargrave box
kites 1893

Lilienthal airfoil tests
1870s-1880s



Penaud, ~1872
Wind-up model with tail

Lilienthal glider 1890s

Chanute-Herring
glider, 1896

Wright 1902
wind tunnel

Many data sources just for patents

Patents before 1900 are not all collected in one place / data set

And, each one's relevance to aeronautics/aviation is not always clear

Some but not all are categorized by technology

Some have just abstracts, or a list entry

We have to choose among them and add value to them

Most comes from European Patent Office & World Intellectual Property Organization

- Patstat / Espacenet data covers back to ~1890-1910, varying by country
- US: Google patents, USPTO web site; Simine's Aviation Patents list
- France: Online INPI.fr historic patent database; *Catalogue des brevets d'invention*, 1880s, USPTO's *Subject-Matter Index of Patents for Invention, France* (1883); *Bulletin Officiel de la Propriété Industrielle* (1880s); *L'Aéroplane* issues 1898-1905; *Aéro-Manuel*, 1914
- Britain: Brewer and Alexander's *Aeronautics*, 1893; *Aeronautical Journal* issues
- Germany: Otto-Lilienthal museum site; Alexander-Katz, 1912; DPMA site
- Norway: *Norske Patenter Register*, various years
- Overall we have most patents from the before 1900 period — more than 13,000



What processes and institutions led to airplane invention and industry?

There is vast documentation, from dozens/hundreds of sources.

We have data on many categories of relevant items from 1809-1916.

Need to classify, count, correct, and make notes on the sources.

The wiki can be an intermediate platform between our source data and our counts of anything.

Each of these can have a wiki page:

- Each patent
- Published articles
- Inventors
- Authors
- Letters they wrote
- Ballooning and aero clubs
- Exhibitions and conferences
- Startup firms
- Journals (primary sources)
- Patent technical classification
- Definitions of terms
- Secondary sources: histories

Patent data on the wiki

[page](#) [discussion](#) [edit with form](#) [edit](#) [history](#) [delete](#) [move](#) [protect](#) [unwatch](#) [page info](#)

Patent GB-1897-15221

This invention is a triplane with an engine, as well as a biplane, with two or three stacked wings; two propellers, one in front and one in rear, rotating in opposite directions, according to Gimine Short and Steve Spicer at Spicerweb, which says the patent application filed 31 May 1897 through Thomas Moy as the agent for O. Chanute and A.M. Herring, British Patent No. 15,221 (G.P.L.)

The main source for this record is Spicerweb.^[1] Nelson refers to it as relevant to aviation.^[2] Espacenet does not have this patent online.

References [edit]

- ↑ An Extended Bibliography on Octave Chanute & at Spicerweb
- ↑ Nelson, 1910, Aeroplane Patents, p24, p73

Year filed	1897
Year granted	1897
Office	GB
Patent number	15221
Inventors	Octave Chanute, Augustus M. Herring
Inventor country	US
Applicant person	
Applicant firm	
Applicant type	
Applicant is inventor?	Yes
Original title	Improvements in or relating to means and appliances for effecting Aerial Navigation
English title	Improvements to means and appliances for effecting Aerial Navigation
Tech fields	airplane
Filing date	May 31, 1897
Full specification filed date	
Application number	
Grant date	June 20, 1897
Granted?	Yes
Publication date	
Supplementary to patent	
Related to aircraft?	1
Serial number	
Patent agent	Thomas Moy

- “Semantic wiki” holding structured data
- Page title is our unambiguous name for a patent
- Paragraphs discuss the patent or data about it, including ambiguities
- Footnotes, like on Wikipedia
- On this page text in blue is a hyperlink, usually to another page in the wiki
- Red text links to a potential wiki page
- The table below is **structured data**, which is **one row in a table of patents**

Page for each publication

- Can include diagrams
- Link to author & technology terms

Cabot, 1896, Screw Propulsion by Foot-Power

"Screw Propulsion by Foot Power" is cited online published in the 1940 *Aeronautical Journal* (pp. 141-142) by Barton Aeronautical Society member Samuel Cabot.

Control propellers of light aircraft are propelled vertically and powered independently by the human pilot using left and right as a solution to the equilibrium problems arising for human-powered vessels with only one propeller.

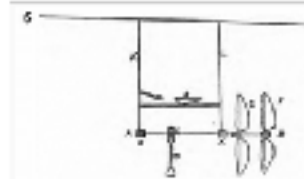


Illustration of Samuel Cabot's 1896 experiment for an airplane, connected by gears C to the control hand and propeller system.

The pilot can be made to feel in most parts of an aircraft the shaft and under one of these propellers, while the other continues to move in the opposite direction until its momentum from the last stroke of the opposite foot is exhausted. This exhaustion of the momentum, however, need not occur before the stroke of the opposite foot, and again suitable momentum. The result is thus a variable, or nearly constant, motion of the propellers in opposite directions."

Category: Aeronautics

Home | Aeronautics | History | Models | News | Contact | About | Search | Help

Chenute, 1891, Aerial navigation

Octave Chenute, Aerial navigation. A lecture delivered to the students of Orléans College, Cornell University, (May 8, 1891) *Airline and Engineering Journal* 1891.

Premise [edit]

Distinction between *propulsion* and *control* (p. 8):

[...] James now the students of the problem are divided into two camps or schools, each of which expects flight to be accomplished by somewhat different apparatus. There are:

1. **THE SCHOOL OF AIR RESISTANCE** success is to come through some form of attachment and that the apparatus must be adapted to the air which it displaces.
2. **THE SCHOOL OF AIR FORCE** who point to the birds, believe that the apparatus must be heavier than the air, and look for success by purely mechanical means.

Curiously enough, there seems to be very little contact of study between these two schools. Each believes the other is wrong as to have no chance of ultimate success.

There are, a few, who compare their own systems to those of the birds, and to those of the insects.

1. **THE SCHOOL OF AIR RESISTANCE** history of such means is as follows:

Aeronautics

HE DECIDES AERONAUTICS NOT MONUMENTAL "IF IT SHOULD BE DONE AS UNDERSTOOD TO DATE FROM A SCHOOL OF AIR FORCE, AND THAT THE SCHOOL OF AIR FORCE SHOULD BE THE FIRST TO GO BACK TO ITS STARTING POINT." THE SOMEONE SHOULD SHOW THAT CONTAINING GAS ARE SOME INDICTION IN SURROUNDING RESISTANCE

- 1802 - **Samuel Pierpont Langley** - "The elongated balloon filled with ordinary coal gas, driven by aerial screw propeller actuated by a steam engine of his own designing. [...] It was in shape a symmetrical spindle, 18 1/2 ft. long and 30 ft. in diameter. The screws were three. Mounted on 1 1/2 ft. in diameter. The steam engine was of 3 H.P. anti-weighed with the empty boiler 500 lb., or 1 1/2 lbs. per H.P."
- 1808 - **Clifford** - "Clifford's second trial, with more elongated balloon (200" long, 32" diameter). Chenute considered both attempts dangerous due to insufficient pressurization with the and inflammable gas. "Dr Clifford went up with a lighted steam furnace until the gas bag opened the air through its lower valve and he came down safely not once only but twice; and yet other aeronauts believe the practice so dangerous that not one thus far has repeated the experiment" (p. 18)
- 1832 - **Goobler** - "From Dupuy on balloons constructed navigable balloons with goal of returning to origin — in response to the siege of Paris, but not finished in time. 180 1/2 feet long, 48 1/2 feet diameter 130,000 cubic feet of hydrogen, lifting power 5,200 lbs. "The principal features of novelty were a system of triangular suspension, by which all weights were concentrated at a single point a short distance above the car, and the introduction inside of the gas bag of small pocket or bag, one one-fourth in cubic displacement of the balloon, so as to keep it inflated and rigid in stillness, by blowing in or letting out air" [Link: [Balloon within balloon](#)] [Speed 4.76 mph (with 1000 cubic feet of gas) and enough to sustain a man in air]
- 1833 - **Darwin** - "Darwin's balloon, a brother constructed 'medical balloon' 92" long, 36" diameter, 27,400 cubic feet of hydrogen; lifting power 2700 lb., 99-lb. Siemens engine powered by 1-7 ft. battery of galvanized batteries some 3.18 ft. diameter two arms, 180 gm. "The sailing in this case was confined to flat ridges across to longitudinal girths, which arrangement was found materially to diminish the air resistance to the ordinary sailing method." Trial @ Colver 1893, just able to overcome 67 mph wind. Trial @ Newport 1894, possible speed of 6 mph, return inside in return in origin.
- 1845 - **Edouard Belloc** - "Edouard Belloc and Arthur Koenig constructed balloon for French War Department at Gisors. 145' length, 21.5' diameter, asymmetrical, with large bulge towards front "for stability in the case of lines and fishes" - gas in front instead of behind (as had been done) internal air bag as in the late Lema balloon which vessel enclosed in shell before trial 65,000 cub feet hydrogen, 1,700 lb. lifting power, some 22' diameter
- 1864 - August 2 - First trial, travelled at 18.02 mph, went 4.5 miles away, and returned to starting point.
- 1864 - September 10 - In France travelled at 12 mph but had to land suddenly and could not return to start.
- 1864 - November 0 - Two successful voyages; top speed 10-12 mph.
- 1865 - August 10 - 13.42 mph, return to Gisors
- 1865 - November 22 - 12.46 mph, return to Gisors

Letters

[page](#) [discussion](#) [edit with form](#) [edit](#) [history](#) [delete](#) [more](#) [protect](#) [watch](#) [purge](#)

Orville Wright to Griffith Brewer 4-Aug-1913

The Wrights (Orville and Katherine) look forward to a visit from Brewer and [Alexander Ogilvie](#) in the fall. However, Orville may be too busy to get a machine ready for 'the 'soaring' trip south'. They're still recovering from the recent flood in Dayton.

Orville is working on a vessel which takes off from water:

Since I last saw you I have been doing some experimenting with pontoons. We have a very good one for smooth water but it would not be suitable for rough water. With our 60-60 h. p. motor we rise from the water with four persons aboard in a distance of four or five hundred feet about 20 seconds in time. We got off in a calm in ten or twelve seconds with two persons aboard.

We have not as yet had the chance to test the new automatic machine although tests of it on our training machine give us good hope of its success.

Sources [\[edit\]](#)

- [Riddle and Sinnott, 2003, Letters of the Wright Brothers, pp. 96-98.](#)

Sender	Orville Wright
Recipient	Griffith Brewer
Date sent	4-Aug-1913
From location	Dayton, Ohio
To location	
Communication type	
Language	English
Refers to flight?	1
Tech fields	airplane , marine , takeoff
Length (in characters)	
Notes and sources	

[\[Mark this page as protected\]](#)

Category: [Letters](#)

- Hundreds of letters between experimenters are known
- These are one-to-one communications, not broad publications
- We could analyze these as communications between nodes of a “social” network, whereas publications and patents are more open broadcasts

Wiki page intermediates between sources and conclusions

- **Incomplete or incorrect sources**
 - Missing given names
 - Missing patent numbers in references between patents
 - We see FOUR spellings for Barouir Hovanes Balassanian on official patent documents ; alternate spellings can point to the same page
- **Which patents were relevant to aeronautics and aviation?**
 - Patent categories changed over time, and the inventive context changed.
 - E.g., were marine propellers relevant? car engines?
 - Which ones were new/original, and which were supplementary/additions?

The wiki page is where we resolve ambiguity and uncertainty in this data

Charts: Patent counts in the wiki

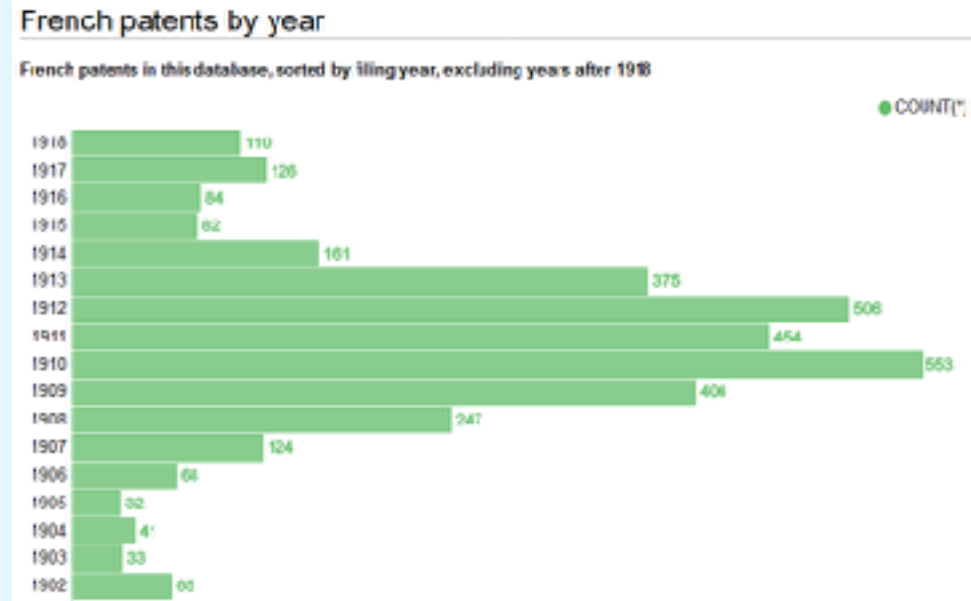
Here, by filing year.

Charts and reports on patents and letters are generated automatically by a query statement in the underlying wikitext that will be translated to SQL and run on the database

The report (query) is run and shown in the browser when the user loads the page. The underlying software is MediaWiki with the extension Cargo.

Below: a query and the resulting chart.

```
{{#cargo_query:
tables=Patents
|fields=Inventor_country,COUNT(*)
|group by=Patents.Inventor_country
|having=COUNT(*) > 1
|order by=COUNT(*) DESC
|format=bar chart
}}
```



CPC B64C35/00

IPC Class. B64C35/00 is a patent classification for **Seaplanes and flying boats** ^[1]

Category tree^[1]

- CPC B64C35/00 Flying-boat: Seaplanes (including gear CPC B64C35/00)
 - CPC B64C35/00 with means for increasing stability on the water
 - CPC B64C35/002 using adjustable auxiliary feet
 - CPC B64C35/004 using auxiliary foils at the wing tips
 - CPC B64C35/006 with propellers, rudders or devices acting in the water
 - CPC B64C35/008 with lift generating devices
 - CPC B64C35/010 devices acting turbulently thereby
 - CPC B64C35/012 using air cushions or air planes

References [edit]

- ↑ 1 2 3 CPC B64C35/00 element IP at Espacenet web site
- ↑ CPC B64C35/00 element IP at USPTO

Enclosing categories	CPC B64C
Subcategories	CPC B64C35/001, CPC B64C35/002, CPC B64C35/003, CPC B64C35/004, CPC B64C35/005, CPC B64C35/006, CPC B64C35/007, CPC B64C35/008
Affiliated concepts	CPC B64F27006233, CPC B64F27006232, CPC B64F27006231, USPC 244/105, Hydroplane

Patents in category CPC B64C35/00

- Patent US-1218-10593 (inventor: Louis Lanot)
- Patent US-1075-0225
- Patent US-1090-01105
- Patent US-1085-00106 (English title: *Appareil pour diriger l'aéroplane, inventeur: RABERT*)
- Patent US-1008-07180 (inventor: Sidney Lee SYDNEY)

USPC 244/105

<USPC 244

US patent classification 244/105 was for **Water landing gear**^[1]

Related categories:

- For float and pontoon construction see **USPC 114/692** (ship)^[1]

References [edit]

- ↑ 1 2 3 Definition of USPC 244/105 at uspto.gov

Patents in category USPC 244/105

- Patent US-1913-1073140 (inventor: Charles Demitson (Eurew))
- Patent US-1913-1023607 (inventor: Charles Denniston Durney)
- Patent US-1913-1082341 (inventor: William J Boyd)
- Patent US-1914-1118451 (inventor: Thomas Sloper)
- Patent US-1914-1109891 (inventor: Leobard H Cyle)
- Patent US-1915-105770 (inventor: Eason P Galsworthy)
- Patent US-1915-1092116 (English title: *Hovering air flying machine*, inventor: Glenn Hammond Curtiss)
- Patent US-1915-107091 (inventor: Erville A Felix Whitely)
- Patent US-1916-109061 (inventor: Paul Sperry)
- Patent US-1916-1107746 (inventor: Barry Stalker)
- Patent US-1916-1120300 (inventor: Glenn Hammond Curtiss)

Enclosing categories	USPC 244/100
Subcategories	USPC 244/106, USPC 244/107
Affiliated concepts	CPC B64C35/06, landing, hydroplane

Patent classifications on the wiki — official ones, and our own

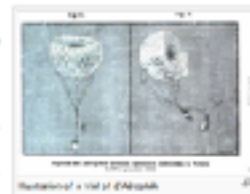
- Page for each patent category, in any category system
 - CPC=cooperative patent classification
 - USPC=US patent classification
 - Historic ones of the 19th century (FR 6.4)
 - Our simple terminology, e.g. “hydroplane”
- Show list of patents in this category from other pages in the wiki with an automatically generated report
- Links relate to other patent categories and concepts

balloon

Balloon (pronounced /bəˈloʊn/) is the international name for vessels inflated by meteorological balloons for the atmosphere. There would be balloons, with the air inside expanding under pressure, so they float, and if not they would fall, and their movement would be random.

Balloon is not to be confused with *ballooning*, which is the act of flying in a balloon. In 1783 *Balloon* was used to mean a hot air balloon, which was the first type of balloon. The word *balloon* was first used in the 18th century by the French physician and chemist, Joseph Black, in his 1772 paper on the expansion of air.

Balloon is also used to mean a hot air balloon, which is the most common type of balloon. The word *balloon* was first used in the 18th century by the French physician and chemist, Joseph Black, in his 1772 paper on the expansion of air.



In Europe the type of free balloons used were hydrogen, which is a light gas, or air, or even a small balloon of hydrogen. In the United States, the word *balloon* was first used in the 18th century by the French physician and chemist, Joseph Black, in his 1772 paper on the expansion of air. The word *balloon* was first used in the 18th century by the French physician and chemist, Joseph Black, in his 1772 paper on the expansion of air.

In the United States, a *balloon* was used to mean a hot air balloon, which is the most common type of balloon. The word *balloon* was first used in the 18th century by the French physician and chemist, Joseph Black, in his 1772 paper on the expansion of air.

References

- ↑ Michael J. French, *Uncommon Sense: The Story of the Balloon*, p. 14, New York: 1987
- ↑ Eason P. Galsworthy, *The Balloon*, p. 14, New York: 1915
- ↑ Joseph Black, *On the Expansion of Air*, *Proceedings of the Edinburgh Academy of Arts and Sciences*, Vol. 41, Pt. 14
- ↑ Joseph Black, *On the Expansion of Air*, *Proceedings of the Edinburgh Academy of Arts and Sciences*, Vol. 41, Pt. 14

Enclosing categories	balloon
Subcategories	
Affiliated concepts	hot air balloon

Clubs and scientific organizations

- “Open source” technology-developing institutions
- There were ballooning clubs starting in the late 1700s
- People interested in “aerial navigation” and “flying machines” connected there.
- Through them experimenters, scientists, authors, journalists etc. shared info, resources, publicity
- They helped create the invention of the airplane, but are often left out of R&D models.

Aero Club of Italy

In 1911, the *Società Aeronautica Italiana* (SAI) or Aeronautical Society of Italy was dissolved and reconstituted as the Aero Club d'Italia (AeCI) with the members passing from the one to the other. The Aero Club d'Italia retained the SAI's affiliates at Rome, Milan, and Turin. The SAI Sezione di Roma immediately became the **Aero Club di Roma**. The AeCI continued to publish the *Revista Tecnica d'Aeronautica* published by its predecessor. The AeCI's first volume, that of 1911, was Vol. 1. Publication was suspended in 1912 and 1913. In 1914, the AeCI began publication of the *Revista italiana di Aeronautica* as the official journal of the AeCI and its affiliates. The 1914 volume was numbered Vol. 9 to indicate that it was the direct successor of the *Revista Tecnica d'Aeronautica*. In Vols. 9 through 13, No. 9 (1914-Sept. 1915), the affiliates of the AeCI were listed as the *Società Aeronautica Italiana Sezione di Milano*, the *Società Aviazione Torino*, and the *Sam Club di Roma*. This would seem to indicate that at least until 1915, the Milan affiliate was still known as the *RSAI Sezione di Milano*, while of some time between 1915 and 1916, the *RSAI Sezione di Torino* had somehow been replaced by the *Società Aviazione Torino*, which had been founded in 1909.

His Majesty Victor Emmanuel III was the high patron of the AeCI and latter presidents was the **Former Italian Prime Minister**. In 1911 there were nearly 200 members, including 50 founding members. The first *"La Navigazione Aerea"* for Italian aeronautics was published by the AeCI Oct-Nov 1912. Regulations per the *Commissione Sportiva Centrale* were approved December 1912. It operated under the authority of the supreme Army Command, the *AVIAZIONE MILITARE AEREA* (Army Aviation) in April 1914. In 1914, the club's name was changed to *MASS Aero Club d'Italia* or **Royal Aero Club of Italy**.

Affiliated with FAI, 1905, predecessor

SOURCES

- 1911, 1912 *Annuario dell'Aviazione ITALIANA* (Paris 1911); 1915 *Aviazione Militare* (Paris 1915); *SAI Conference (Statistica Periodica)* (1912); FAI Conference (Statistica Periodica) (1912); FAI Conference Extraordinaria, 19-21 May 1919; Sommeire, FAI Reunion, 23-24 Oct 1919, in 51 *Bulletin Officiel de la FAI* (Jan. 1920); 1921 *Statistique* 1:99; 1:1 *Bulletin Officiel de la FAI* (Jan. 1920); National Aeronautics Administration Impulse 1:107, 1921.
- WorldCat.org and WorldCat-OLC: [O11920](#)

Organization names	Aero Club of Italy ; Aero Club d'Italia (AeCI)
Entity type	
Country	Italy
City	Roma
Affiliated with	FAI
Scope	National
Started aers	1911 (predecessor organization founded 1904)
Ended aers	1992 or later
Key people	
Address	VIALE Mazzini, 6 - 00186 ROMA (IT) (1911-1915); VIALE Mazzini, 6 - 00186 ROMA (IT) (1915-); VIALE Mazzini, 6 - 00186 ROMA (IT) (1915-1919); VIALE Mazzini, 6 - 00186 ROMA (IT) (1919-)

page discussion edit with form edit history delete more protect unwatch

International Commission for Scientific Aeronautics

The **International Commission for Scientific Aeronautics** was founded in Paris, France, in December 1896 at the **International Meteorological Congress**. Members included directors of meteorological institutes in all countries. Its objective was to investigate conditions holding in the atmosphere up to the highest limit attainable by kites and balloons. Observations were published in the *Veröffentlichungen der Internationalen Kommission für wissenschaftliche Luftschifffahrt*. Met ever since from 1896-1962.

Meetings:

- Strasbourg, 1909
- Paris, 1906
- Berlin, 1902
- St. Petersburg, 1904
- Milan, 1905
- Kharkov, 1909
- Vienna, 1912

President 1896-1912 was Professor **Hugo Hergesell** of Strasbourg, who also edited the *Veröffentlichungen*.

Sources: *Pocket-Book of Aeronautics* 435-437 (Eng. ed., Jan. 1907); *LA Aeronautica* (NYQ) 42 (1907); *LA Aeronautica* (NYC) 37 (1907); 1911 *Aero-Massuel* 270 (1 Oct. 1910)

Organization names	International Commission for Scientific Aeronautics
Entity type	
Country	Germany
City	Strasbourg (Strasburg, Strassburg), Alsace-Lorraine
Affiliated with	
Scope	International Scientific
Started aers	1896
Ended aers	

Aircraft companies, patent agents

August Riedinger Ballonfabrik Augsburg G.m.b.H.

Seems likely it's the same company advertised as Ateliers Auguste Riedinger, Augsburg (Bavière)

Making balloons and rubber fabrics.

Locations in Mannheim, Liège, Brussels, and St. Louis

Claim responsibility for the balloon *Hohentwiel* piloted by Col. **Theodor Schacht** to win the 3rd Gordon Bennett International Balloon Race.

Hidebrandt, 1908, Airships Past and Present (p. 174 [\[?\]](#))



It will herefore be sees that almost every civilized nation is developing its ballooning capacities, and lately there has been a tendency towards the adoption of German models, evidence of which is to be found in the fact that within the last nine years the firm of Riedinger, in Augsburg, has supplied more than 500 spherical and kite balloons.

Patents associated with firm August Riedinger Ballonfabrik Augsburg G.m.b.H.

- Patent FR-1907-376972 (English title: valve for balloons)

Patents associated with firm Ballonfabrik Augsburg A.G.

- Patent DE 1018 330426 (English title: Balloon valve)

Organization names	August Riedinger Ballonfabrik Augsburg G.m.b.H.; Ateliers Auguste Riedinger; Ballonfabrik Augsburg A.G.
Entity type	1
Country	DE

Category: British patent agents

Pages in category "British patent agents"

The following 10 pages are in this category, out of 1 total.

A	<ul style="list-style-type: none"> A. J. Doot Arnold Rowland Arthur Charles Henderson Arthur Wetherley Lake 	<ul style="list-style-type: none"> J. F. Lee J. S. Lemell, M.A., M.Sc., M.I.C.E. J. L. Johnston John Latta Johnson & Wilcock John Martin
B	<ul style="list-style-type: none"> Benjamin E. King Bernard John Chisholm Boss, Wain and Tinnan Boyer Brewer & Son Temple's British patent agent list 	L
C	<ul style="list-style-type: none"> Caulbank & Reinhardt, Esq. 	M
D	<ul style="list-style-type: none"> Dickie & Pultik 	<ul style="list-style-type: none"> McIntosh & Clark Melburn, Ellis & Perry
F	<ul style="list-style-type: none"> F. W. Sulby F. W. La Tou 	N
		<ul style="list-style-type: none"> Norton S. Day
		P
		<ul style="list-style-type: none"> P. Jensen Pegg & Pugh (201)
		S
		<ul style="list-style-type: none"> Stylianou, Watkins, Ross and Co. (201)
		T

Information about sources


Bulletin Officiel de la propriété industrielle & commerciale

The *Bulletin Officiel de la propriété industrielle & commerciale* (BOPI) was a periodical published by the French government with information about 19th century French patents. Some editions are available at the [ICGTC library](#).


Published by the French Ministère du Commerce et de l'Industrie in 1881-1800 or perhaps 1881-1891. Or perhaps to 1890.

For historiography on this wiki

- BOPI was published in some years that also have a *GdB*. For our purposes the BOPI entries are usually more informative than *GdB* ones, e.g. they include the year right in each entry, and it will be explicit if the entry is a *carte d'addition*.
- A *GdB* entry will have *—* on each side of the number, whereas a BOPI one will not.
- Editors of this wiki had some access to the BOPI publications at the U.S. Patent Office library in Alexandria, Virginia, and to many more at INPI in France.



1881-1800 or perhaps 1881-1891. Or perhaps to 1890.



—243381.— 4 décembre 1894.
BONNET, rep. par Chassevent,
rue. Magenta, 11, Paris. — Perfectionnements dans les appareils destinés à la navigation aérienne.

Sample patent entry from INPI 14-18814

References

- [↑](#) *Bulletin Officiel de la propriété industrielle & commerciale* entry in *WorldCat*
- [↑](#) *BOPI* on *INI* tracking

- 1881 edition on [google books](#)
- 1881 edition on [google books](#)
- 1884 edition on [google books](#)
- more info from the [Bibliothèque de Marseilles](#)

Categories: Sources about patents · Periodicals · Sources in French

Category:Books

Pages in category "Books"

The following 182 pages are in this category, out of 102 total.

<p>A</p> <ul style="list-style-type: none"> Abbot, 1916, Aircraft and Submarines Ader 1907, La Première Étape de l'aviation militaire française Ader 1908, L'Aviation militaire Aeronautical Annual Allaz, 1998 Antone, 2016, Dans le ciel de Feims-Bétheny Armengaud jeune, 1909, Le Probleme de l'Aviation Astro Castor Aéro-Manuel 1914 <p>B</p> <ul style="list-style-type: none"> Baldvin, 1796, Airpaida Bane-Rivet 1898, L'Aéronautique Banner, 2008 Barak, 2011, Deady Metal Rain Basman, 1913, Aviation Black, 1943 Boutneaux, 1899 Boutieaux, 1909, La navigation aérienne par ballons dirigeables Bowers, 1919, Curtiss Aircraft Brady, 2000 Brewer and Alexander, 1893, Aeronautics <p>C</p>	<p>K</p> <ul style="list-style-type: none"> Kelly, 1943, The Wright Brothers Kirk, 1995 <p>L</p> <ul style="list-style-type: none"> L'Aéronautique, 1922 Labrousse, 1891, Navigation Aérienne en 1889 Lafon, 1916, Les armées aériennes modernes Lanchester, 1916, Aircraft in Warfare Lissarague, 1990, Cément Ader <p>M</p> <ul style="list-style-type: none"> Mac Sweeny, 1844, Essay on Aerial Navigation Marck, 2009, Passionnés de l'air Moulin-Sourme, 1997 <p>N</p> <ul style="list-style-type: none"> Nansouty, 1911, Aérstation, Aviation Nedalkov, 2001 Nelson, 1910, Aeropane Patents Nicolaou, 1997, Santos-Dumont <p>P</p> <ul style="list-style-type: none"> Paris, 1902 Peyrey 1908 Peyrey, 1909, Au Fil du Vert Planavergne, 1872, Les Mystères du vol des
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Sources of the time

Secondary sources including indexes of them

History of edits to the wiki

Each page has a usable “history” and can be compared to earlier versions (show live)

14108	Patent FR-1875-106274 (diff hist) .. (+532) .. AvicunHerbert (Talk contribs block) (Created page with "<center>Info from Cdb 1875 </center> This is a patent of 15 years. Inventor location: Châtauu-Gontiar (Mayenne)...")
13133	USPC 244/54 (3 changes history) .. (+332) .. [Econterms (3x)]
13130	Patent FR-1908-393976 (3 changes history) .. (+462) .. [LTA; Econterms (2x)]
13125	Patent US-1913-1064132 (3 changes history) .. (-480) .. [Econterms (3x)]
13111	WIPO (2 changes history) .. (+348) .. [Econterms (2x)]
10102	Hiram Stevens Maxins (diff his) .. (+793) .. LTA (Talk contribs block) (add) [rollback 3 edits]
09155	Balloon (diff hist) .. (+21) .. LTA (Talk contribs block) (Redirected page to balloon)
09155	Nulli Secundus (diff hist) .. (+579) .. LTA (Talk contribs block) (spider story)
09143	birds (diff hist) .. (+272) .. LTA (Talk contribs block)
09141	(Upload log) .. [LTA (5x)]
09137	Patent US-1887-361855 (8 changes history) .. (+1,949) .. [LTA (1x)]
09100	Patent US-1874-154654 (2 changes history) .. (+611) .. [LTA (2x)]
08152	Patent US-1875-165881 (8 changes history) .. (+2,462) .. [LTA (1x)]
08149	Template:Patent (2 changes history) .. (+32) .. [LTA (2x)]
08121	US PTO (diff hist) .. (+41) .. LTA (Talk contribs block) (Redirected page to United States Patent Office)
08115	USPC 244/28 (diff hist) .. (+1,345) .. LTA (Talk contribs block) (expand, modeling off 244/25)
07158	Glossary (diff hist) .. (+73) .. LTA (Talk contribs block) (add "voilure" in comment)
04151	Patent US-1908-892580 (diff hist) .. (+4) .. Econterms (Talk contribs block) (Text replacement - "s=B64" to "s=CPC B64") [rollback 7 edits]
04131	Patent US-1900-000090 (diff hist) .. (+5) .. Econterms (Talk contribs block) (Text replacement - "~416" to "~USPC 416") [rollback 7 edits]
04149	Patent US-1907-849671 (diff hist) .. (+4) .. Econterms (Talk contribs block) (Text replacement - "s=B64" to "s=CPC B64") [rollback 8 edits]
04149	French patent classifications (diff hist) .. (-4,359) .. Econterms (Talk contribs block) (→Classifications of French patents, 1904-1958: break this table out to a new page)
04147	Patent US-1915-1124917 (diff hist) .. (+4) .. Econterms (Talk contribs block) (Text replacement - "s=B64" to "s=CPC B64") [rollback 5 edits]
03155	Patent US-1909-922756 (diff hist) .. (+5) .. Econterms (Talk contribs block) (Text replacement - "~416" to "~USPC 416") [rollback 8 edits]

Wikidata – a shared platform

Wikipedia draws some facts from Wikidata for translations and infoboxes

- ❑ It is a structured wiki with millions of records on any topic with facts, from existing articles across many languages, and uploaded information e.g. scientific abstracts
- ❑ Offers linked data and RDF triples
- ❑ And cooperative crowdsourcing in various ways
- ❑ Wikipedia could offer lists of patents by inventor or topic
- ❑ In an associated project I've launched a “WikiProject” to organize how early (pre-1920) patent data can be organized on Wikidata and used in Wikipedia.

Conclusions

The aero wiki will help make accurate counts and

- ❑ Patents by inventor, country, year, technology
- ❑ Nonprofit organizations and new firms
- ❑ Contributions by authors and inventors – letters, publications, patents, membership in organizations, employment

The wiki tracks uncertain record linkages, but does not fix them

- ❑ Historical research is required; wiki records this conveniently
- ❑ The resulting databases remember provenance, links, and context
- ❑ Category systems and underlying tables evolve
- ❑ This method suits projects with slow investigation of historical detail — involving biographies, texts, multiple languages, complex citations
- ❑ Wikidata would let us share benefits across research projects