

A black and white image of a handwritten signature, "Thomas E. Murray", in a cursive script. The signature is white and set against a solid black rectangular background.

rediscovering the forgotten inventor

Sean MacGuire  
Science, Industry and Business Library  
8 April 2008

# Friends of TEM

*Thomas E. Murray*



Sean MacGuire

- Great-Grandson of TE Murray
- Entrepreneur with 10 patents pending
- Thought Murray's story was exaggerated
- Wanted to uncover the truth

Joe Cunningham (pictured with Robert Lobenstein)

- Engineering Historian
- Author of the definitive work on the New York City subways
- Expert on the history and electrical Infrastructure of NYC



# Summary

*Thomas E. Murray*



Born: 21 October 1860, Albany, NY  
Died: 21 July 1929, Wickapogue, NY

- Partners with Anthony N. Brady
- Contemporary of Edison
- 462 US Patents “everything from the powerplant to the light socket”
- A good Irish Catholic, he left many descendents
- Descendents were more fun
- But they lost it all...



# Early Years in Albany

*Thomas E. Murray*

The son of a carpenter and one of 12 children, he started work when his father and 2 siblings died when he was 9.

- Held 3 jobs at 10 years old
- 1875: apprentice at the Albany Iron & Machine Works where he built this steam engine by hand
- 1881: at 21 was chief engineer of the Albany Waterworks
- 1887: Brady hires Murray for the power station of the Albany Municipal Gas Co
- 1887: Married Catherine Brady





# Anthony N. Brady

*Thomas E. Murray*



Born: 22 August 1841

Died: 22 July 1913

- “Politically astute” Irish Catholic traction magnate
- Built Albany’s first sewer system
- Built a gas cartel in Albany
- Continued with streetcars, electricity and gas holdings across the northeast
- Partner of Thomas Edison
- Estate valued at \$100MM
- Richest man in the US
- 60th richest American ever

# In 1900...

*Thomas E. Murray*



855,900 telephones

4192 vehicles manufactured

10 miles of paved road

Cars have top speed of 8 mph

US Population 76,094,000

Average income \$637/yr

Quart of milk cost 7 cents

Electricity mainly for trolleys and street lighting

Distributed by small central stations serving a few blocks

Expensive, about 18c per kWh

Owned by lots of little companies

# Arrival in New York

*Thomas E. Murray*

Starting with Brady's purchase of the North River Company which powered Harlem, 25 separate electric companies and at least as many gas companies were bought.

- By 1900 Brady supplied all the power and light to Brooklyn.
- By 1901 Brady had the largest electric and gas monopoly in the world.
- Murray moved to Brooklyn
- In charge of consolidating the diverse generating systems
- Murray faced a 32% increase in electricity demand between 1899 and 1901





# His Power Plants

*Thomas E. Murray*



Murray designed the power stations that would serve New York for the next 50 years and would eventually be in complete charge of all the allied Edison companies in New York, Brooklyn and Westchester.

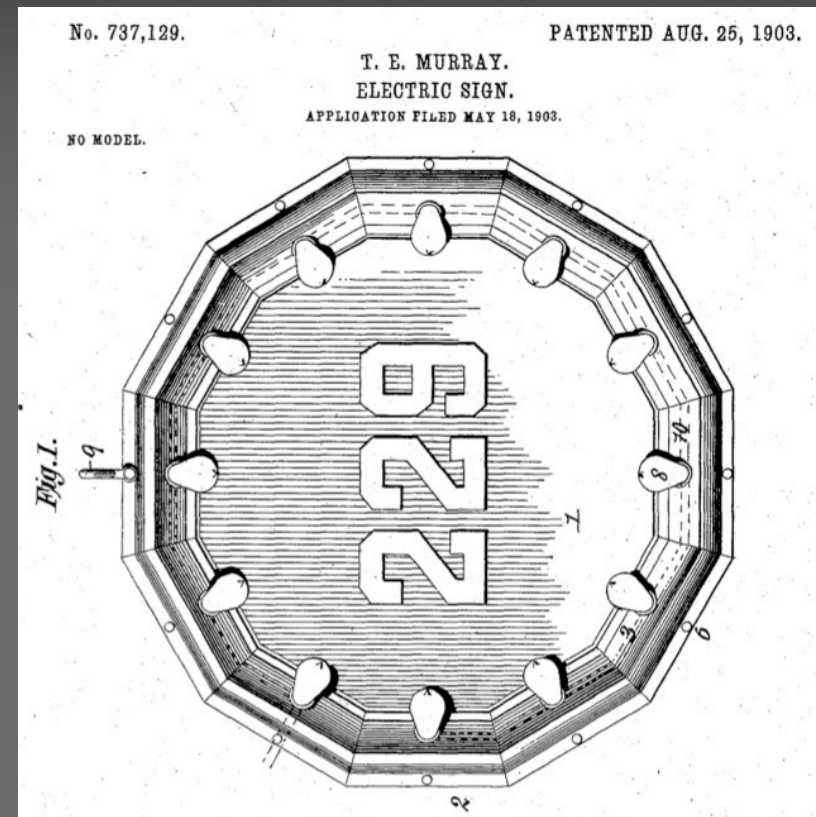
- 1898: Gold St in Brooklyn
- 1899: Waterside I and II (1906)
- 1913: Sherman Creek @ 201 St
- 1921: Hell Gate in the So. Bronx
- 1924: Hudson Avenue
- 1926: E 14th st Station
- Many in upstate NY / out of state
- Brooklyn Transit System
- Wrote 3 books on power plants

# Inventing begins...

*Thomas E. Murray*

Murray focused on the emerging market for electrical devices, especially in the safety and metering areas.

- 1904 – Metropolitan Engineering formed with capital from Brady
- 1905 – Metropolitan sold or rented electric signs along Broadway and elsewhere
- 1908 – 11 patents granted – electrical manufacturing begins
- Worked with Domingo Anthony Usina, his patent lawyer for 20 years.
- Received 462 patents, almost all after the age of 40.



# Murray & Edison

*Thomas E. Murray*



*Arthur Williams, Thomas Edison, John W. Lieb, Nicholas F. Brady, and Thomas E. Murray in Murray's office (1908)*



# Murray & Edison

*Thomas E. Murray*

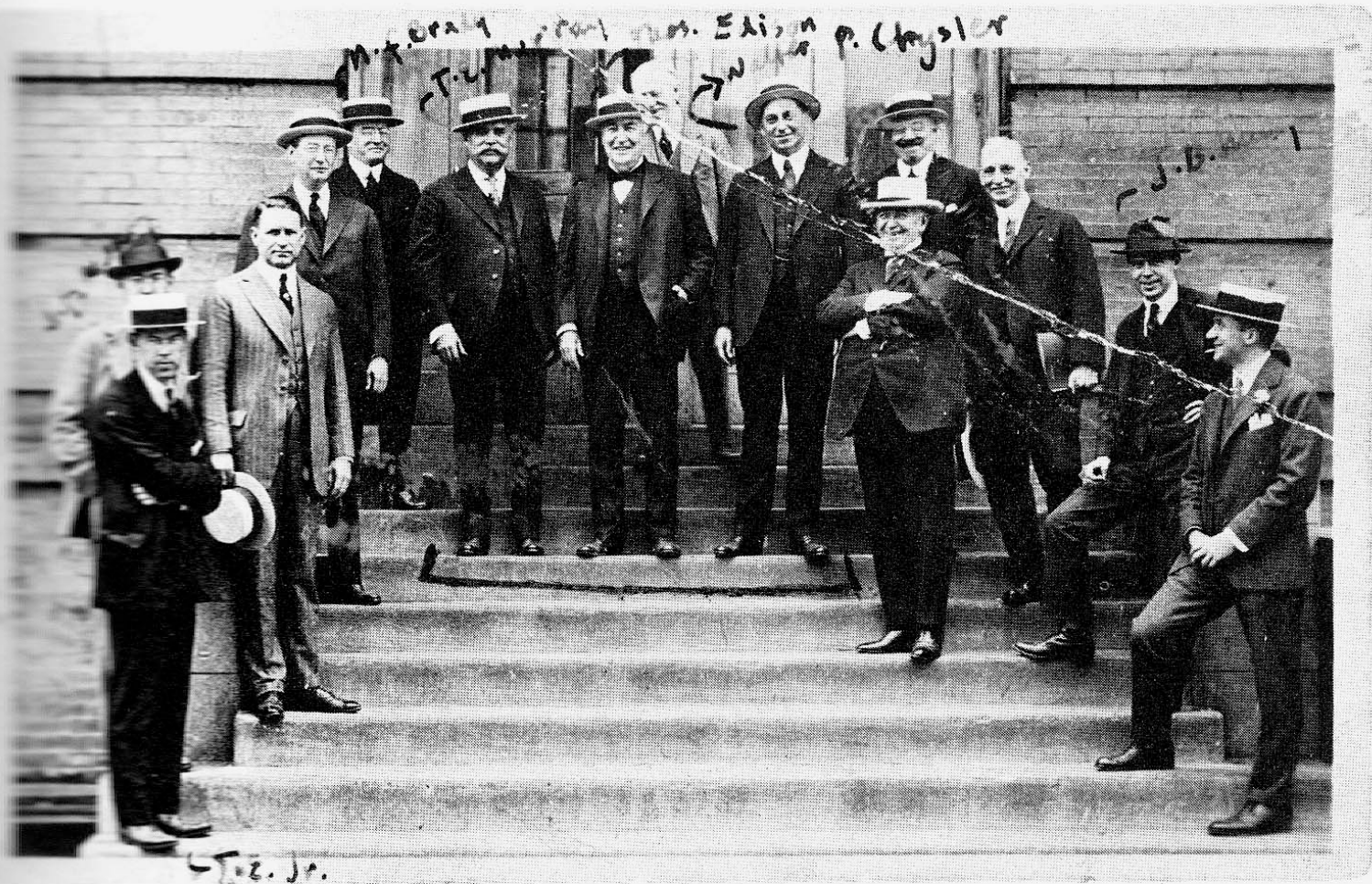


*Arthur Williams - N.F. Brady - Thomas A. Edison - Thomas E. Murray*



# Murray & Edison

Thomas E. Murray



Thomas A. Edison (*center*), with Grandpa Murray (*to his right*), Walter P. Chrysler (*to his left*), and friends and relations. (John Murray Cuddihy)

# Residential Electricity

*Thomas E. Murray*

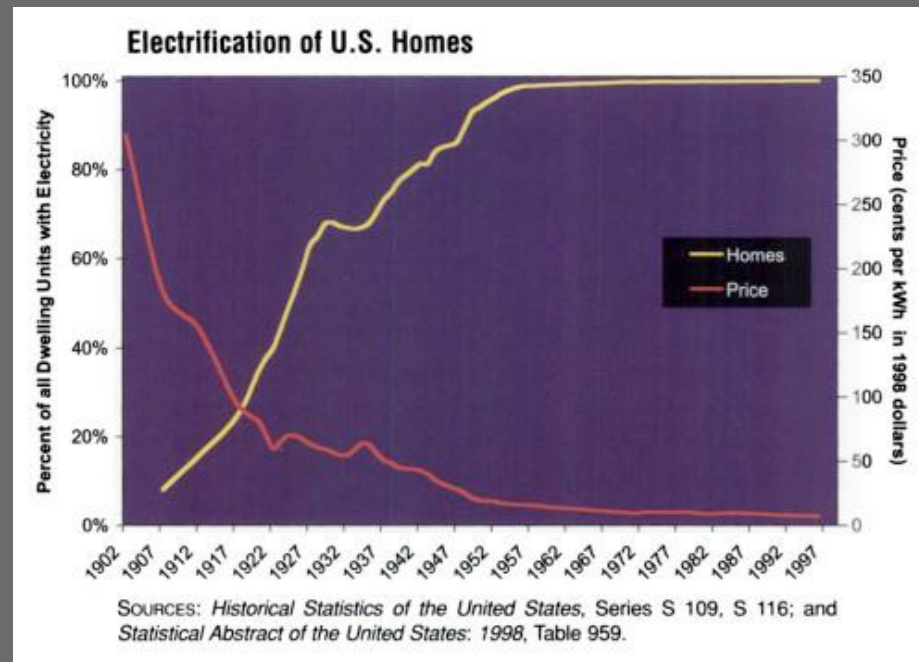


Murray was awarded the Edward Longstreth Medal of Merit from the Franklin Institute

- “To Thomas E. Murray for his System of Safety Devices and Protective Appliances for Interior Electric Wiring 1910”

Murray’s inventions helped standardize consumer electrical devices and increased safety

- Switches
- Fuses
- Insulated Wiring
- Meters





# The Family

*Thomas E. Murray*



Grandpa and Grandma Thomas E. Murray and their children. Boys (from left): Tom, Joe, Dan, Jack. Girls (from left): Julia, Marie, Katherine, Anna (Mrs. James Butler MacGuire)

# NYT Obituary

Thomas E. Murray

## T. E. MURRAY DIES; FAMOUS INVENTOR

He Held 1,100 Patents, Second  
to Edison in Nation—Lauded  
for War Device.

### MEDAL FOR SAFETY AIDS

He Was Associated With the Late  
A. N. Brady in Mergers in  
Electric Power Field.

*Special to The New York Times*  
SOUTHAMPTON, L. I., July 21.—  
Thomas E. Murray, to whom, next  
to Thomas A. Edison, have been  
granted more patents than any in-  
ventor in the United States, and who  
was for many years in charge of all  
the allied Edison companies in New  
York and Brooklyn and of subsi-  
diaries in Westchester County, died  
at his Summer home, Wickapogue,  
Southampton, this morning, after an  
illness of several months. Mr. Mur-  
ray's city home was at 783 St. Marks  
Avenue, Brooklyn. He was sixty-  
nine years old.

The American flag flew at half-mast  
at Waterside upon news of the  
death of Murray on July 21, 1929

- “Let me tackle the job  
which the other fellow  
says cannot be done.”
- “When charity is  
accompanied by publicity  
it is not charity; it is  
advertising”
- Left 8 children and 38  
grandchildren
- Estate valued at \$10MM

## T. E. MURRAY ESTATE PUT AT \$10,044,070

Appraisal Shows Wide Gap in  
Valuations Set by Family and  
Those of the State.

VARY BY NEARLY \$4,000,000

Tax Bureau's Estimate of Utility  
Man's Fortune Is Based on  
Pre-Depression Prices.

A black and white image of a handwritten signature, "Thomas E. Murray", in a cursive script. The signature is written on a dark background, making the white ink stand out. The letters are fluid and connected, with a prominent 'T' and 'M'.

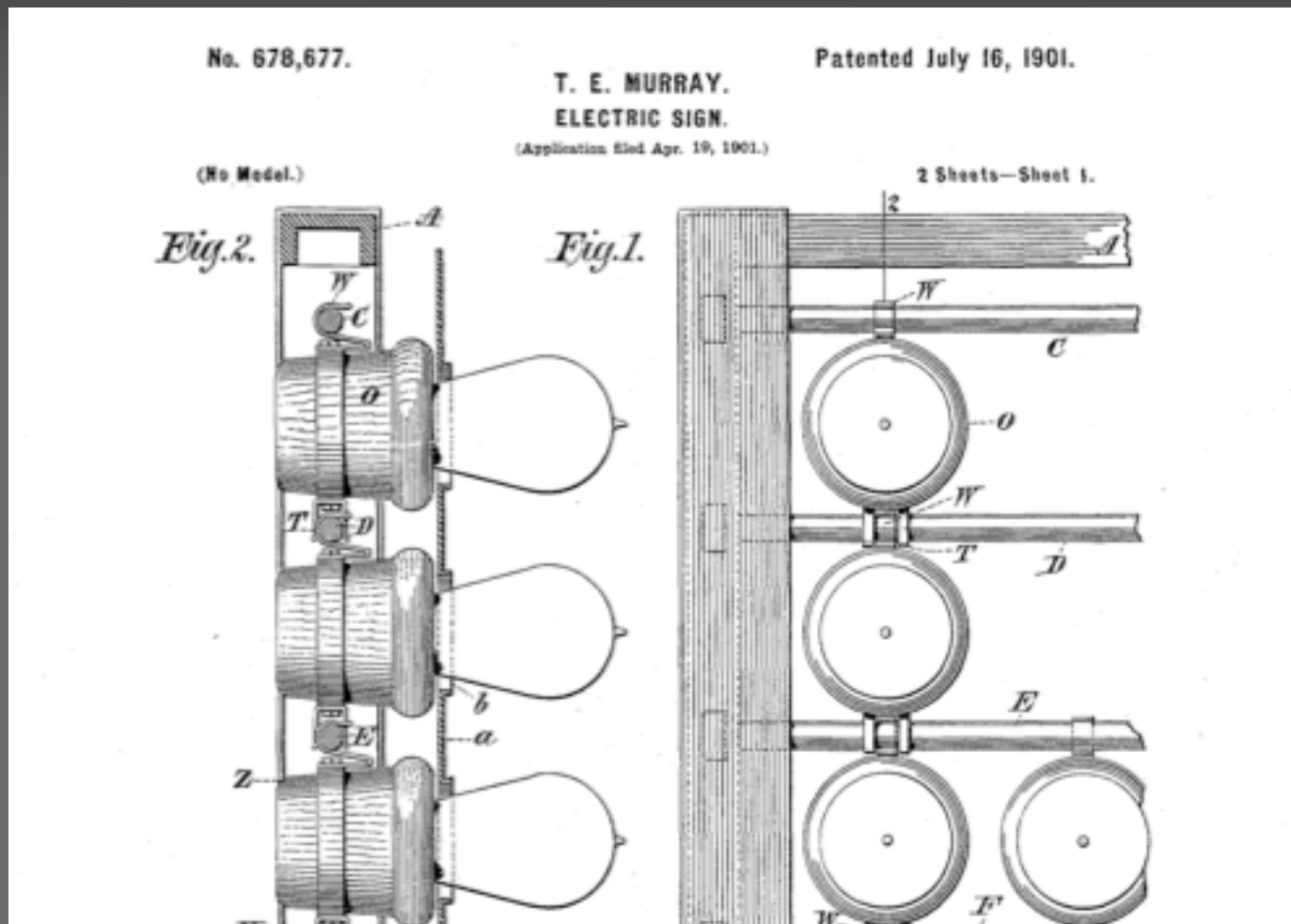
### Sample patents

"My invention aims to provide a certain improved type of apparatus of great simplicity and efficiency."



# Electric Sign

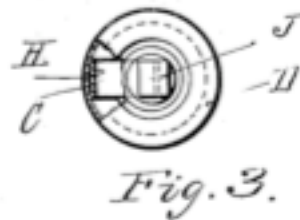
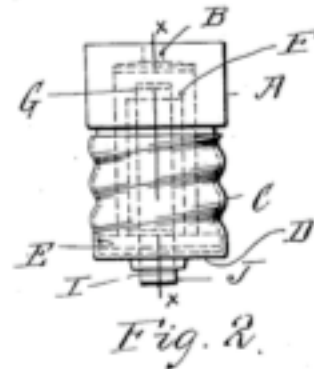
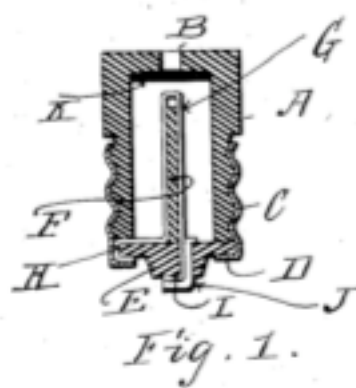
*Thomas E. Murray*



# Screw-in fuse

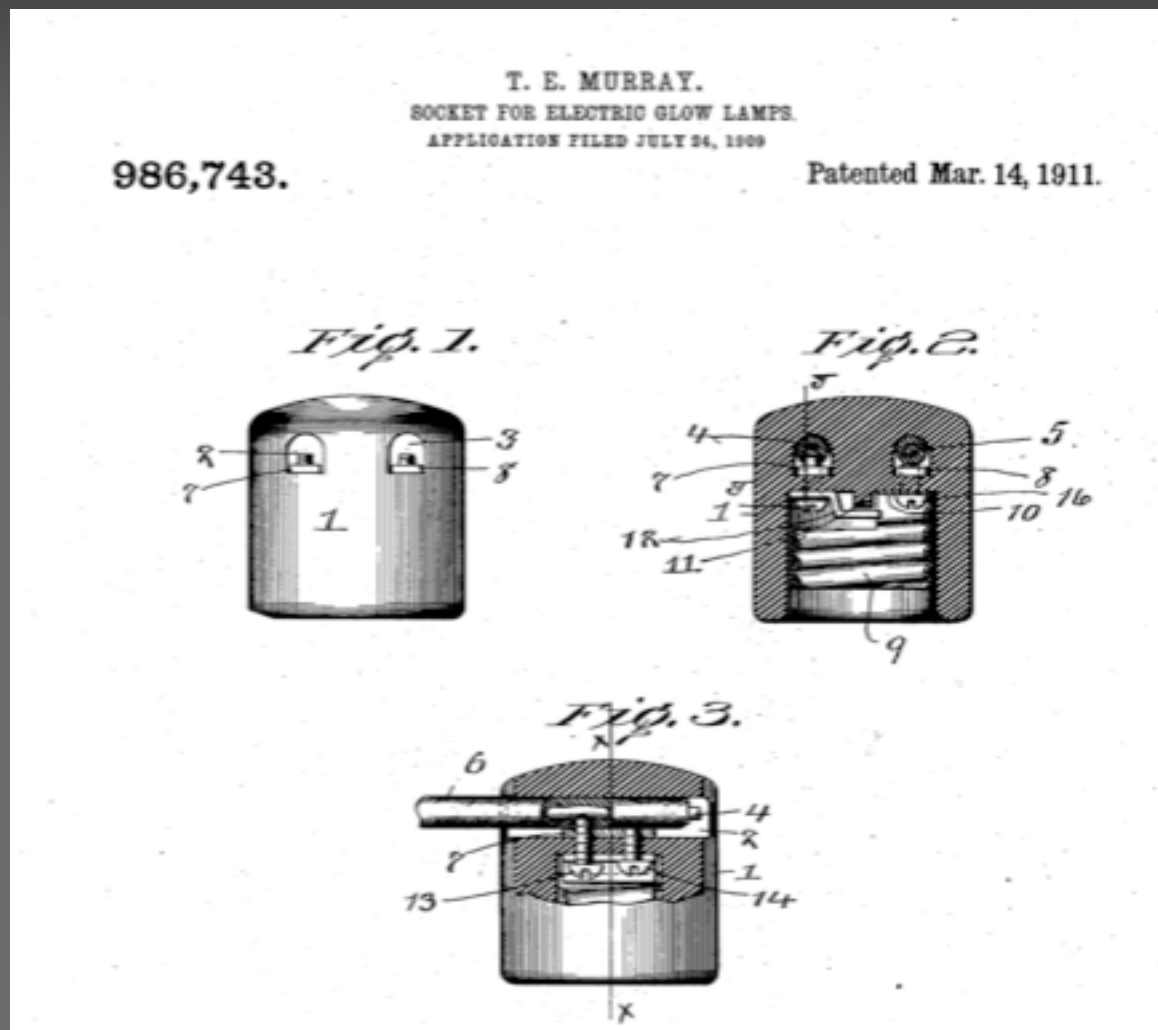
*Thomas E. Murray*

T. E. MURRAY.  
FUSE PLUG.  
APPLICATION FILED JULY 24, 1913.  
1,079,948. Patented Dec. 2, 1913.



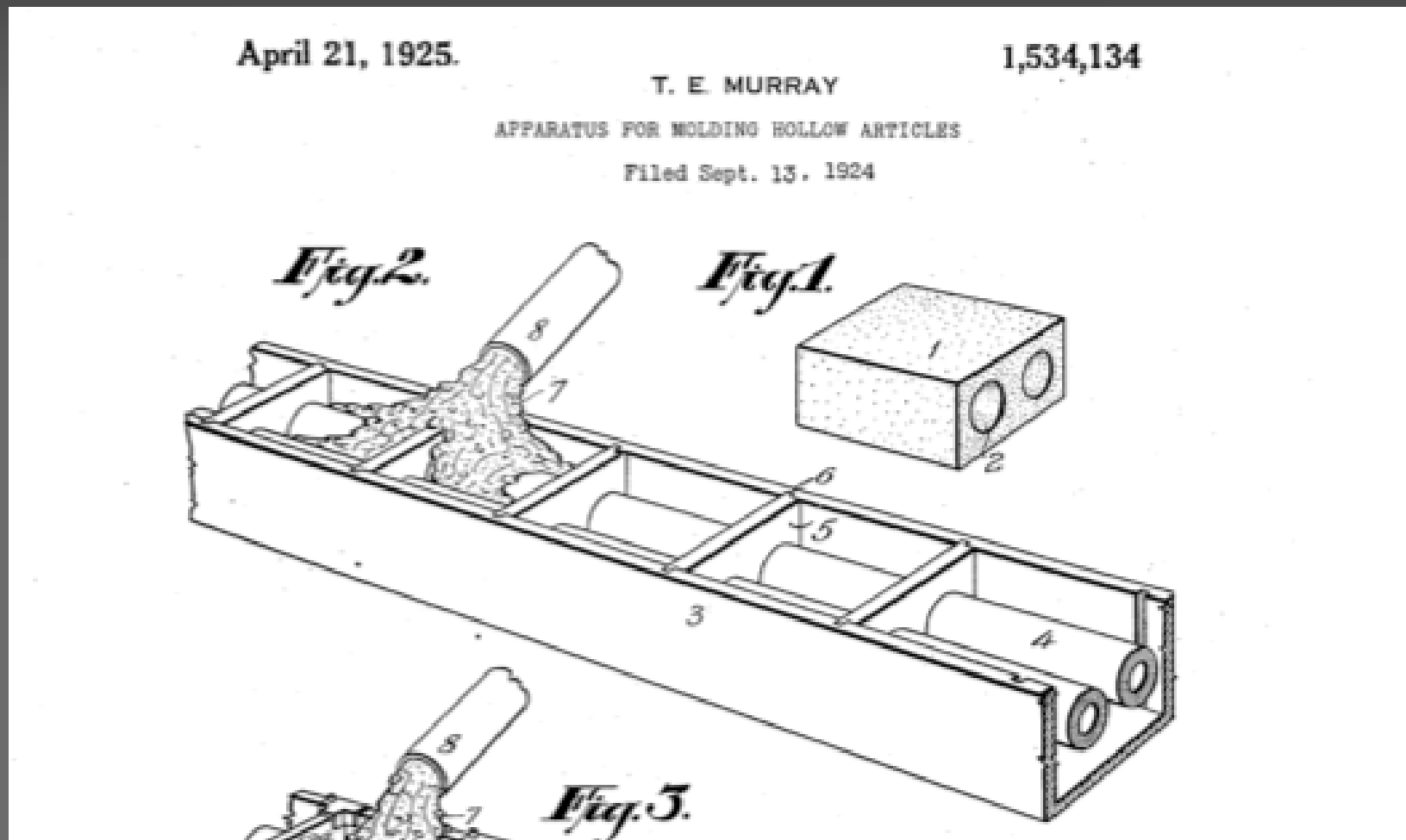
# Light socket

Thomas E. Murray



# Conduits

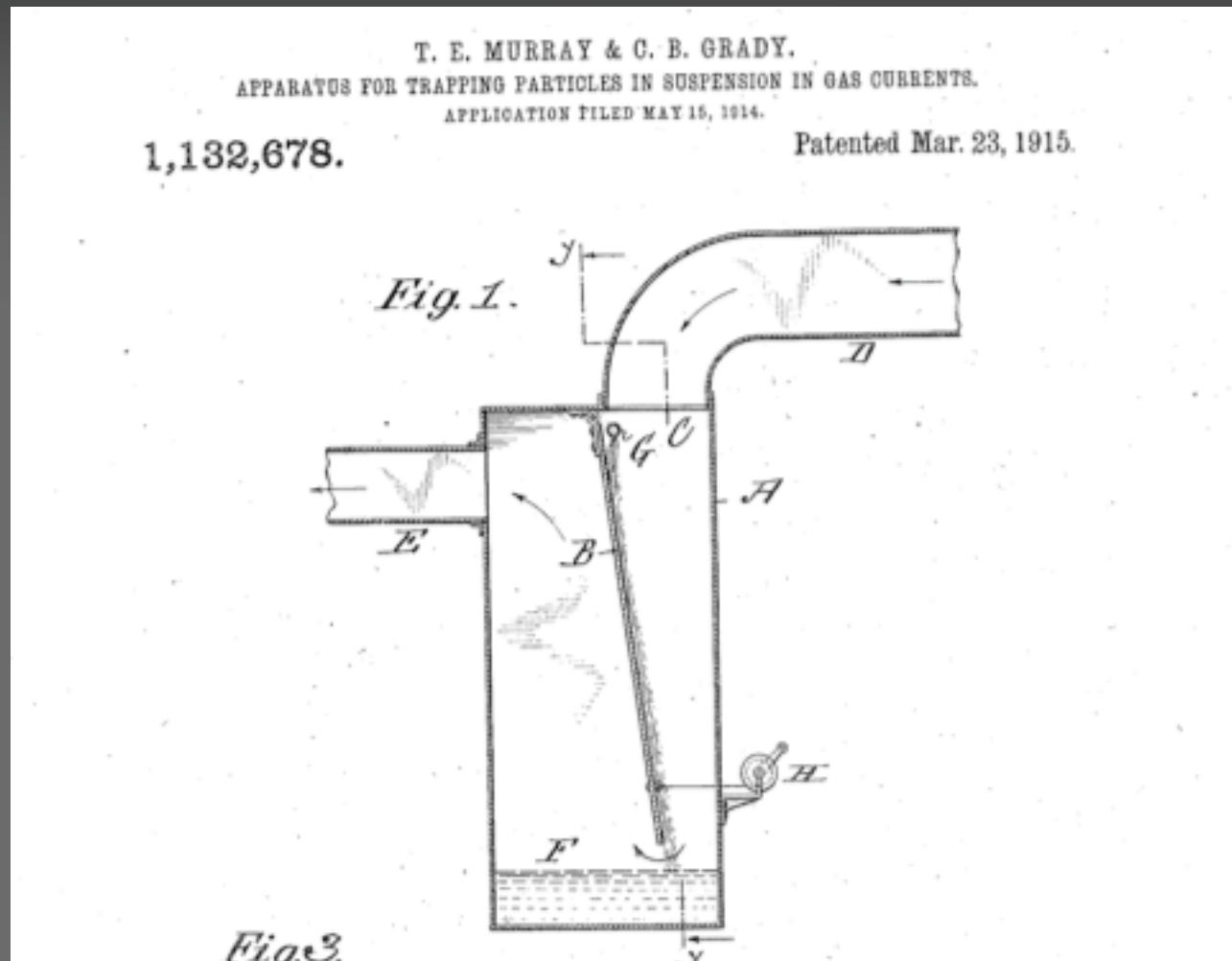
*Thomas E. Murray*





# Trapping particles

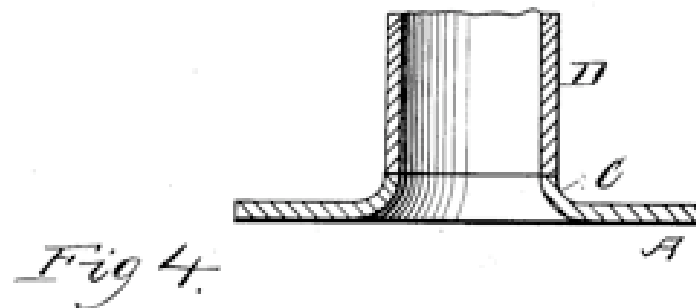
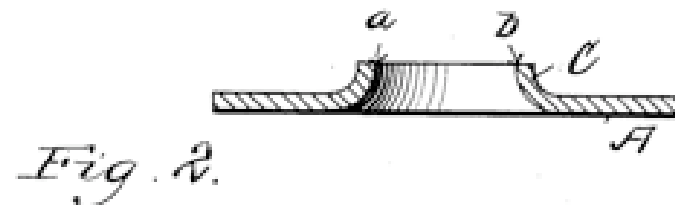
Thomas E. Murray



# Flanging a metal tube

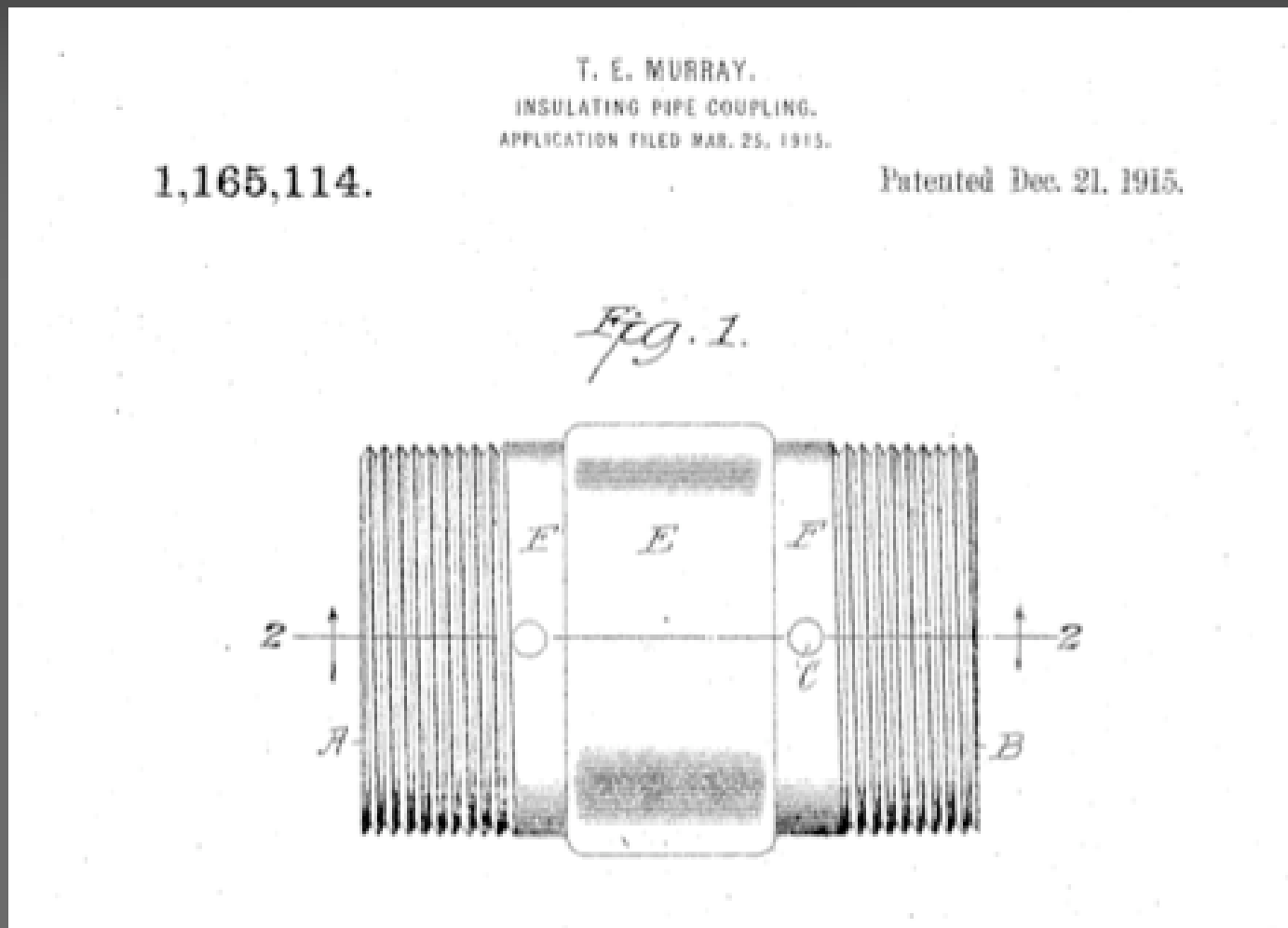
*Thomas E. Murray*

T. E. MURRAY.  
METHOD OF FLANGING THE END OF A METAL TUBE.  
APPLICATION FILED NOV. 29, 1916.  
1,219,135. Patented Mar. 13, 1917.



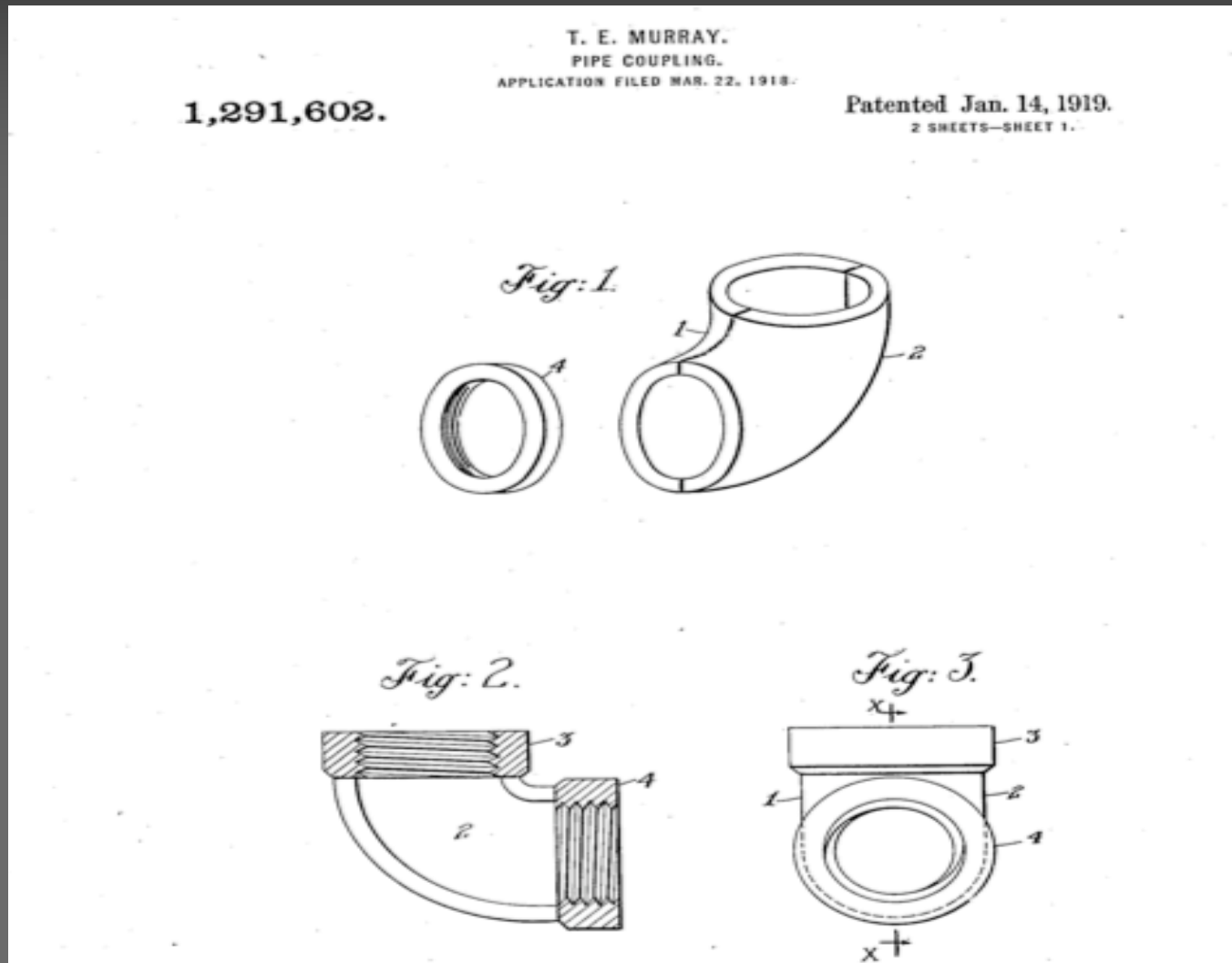
# Pipe coupling

*Thomas E. Murray*



# Pipe coupling

*Thomas E. Murray*





# Valve

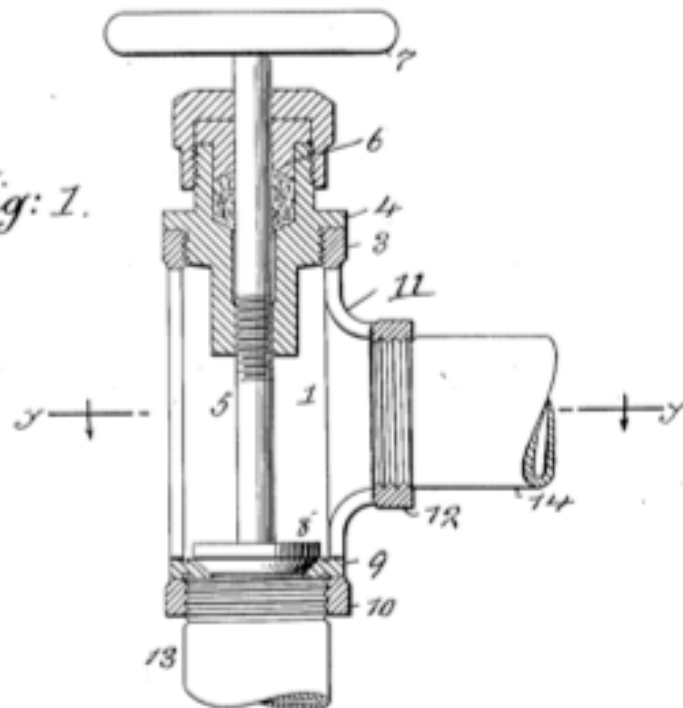
*Thomas E. Murray*

1,270,050.

T. E. MURRAY.  
VALVE.  
APPLICATION FILED FEB. 16, 1918.

Patented June 18, 1918.

*Fig: 1.*



# Radiator

Thomas E. Murray

Jan. 21, 1930.

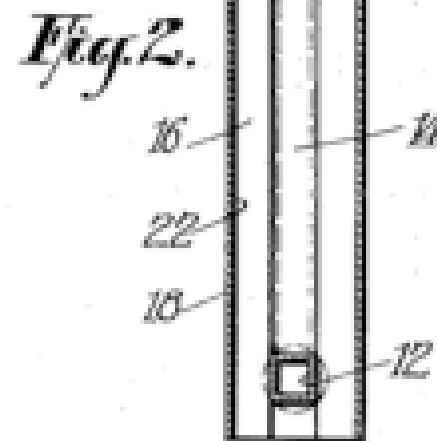
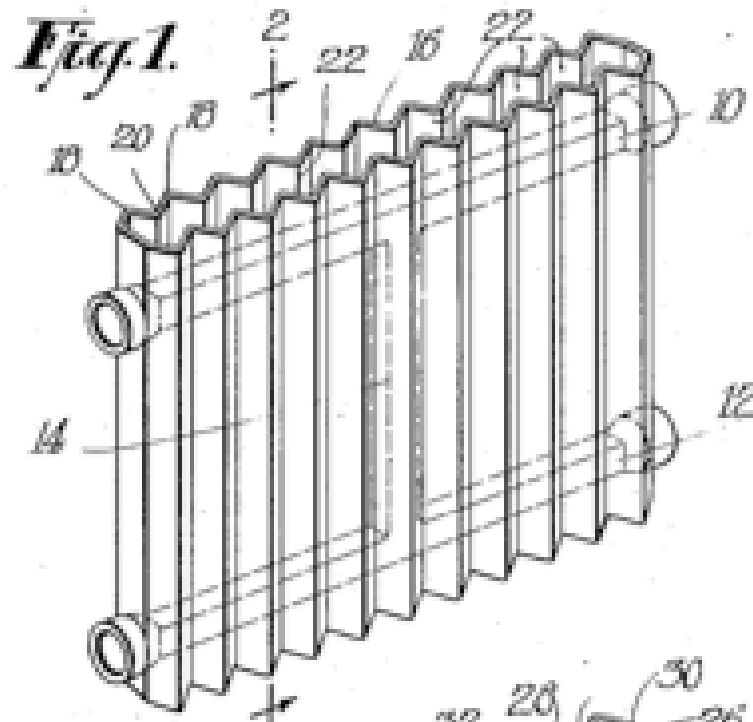
T. E. MURRAY

1,744,078

RADIATOR

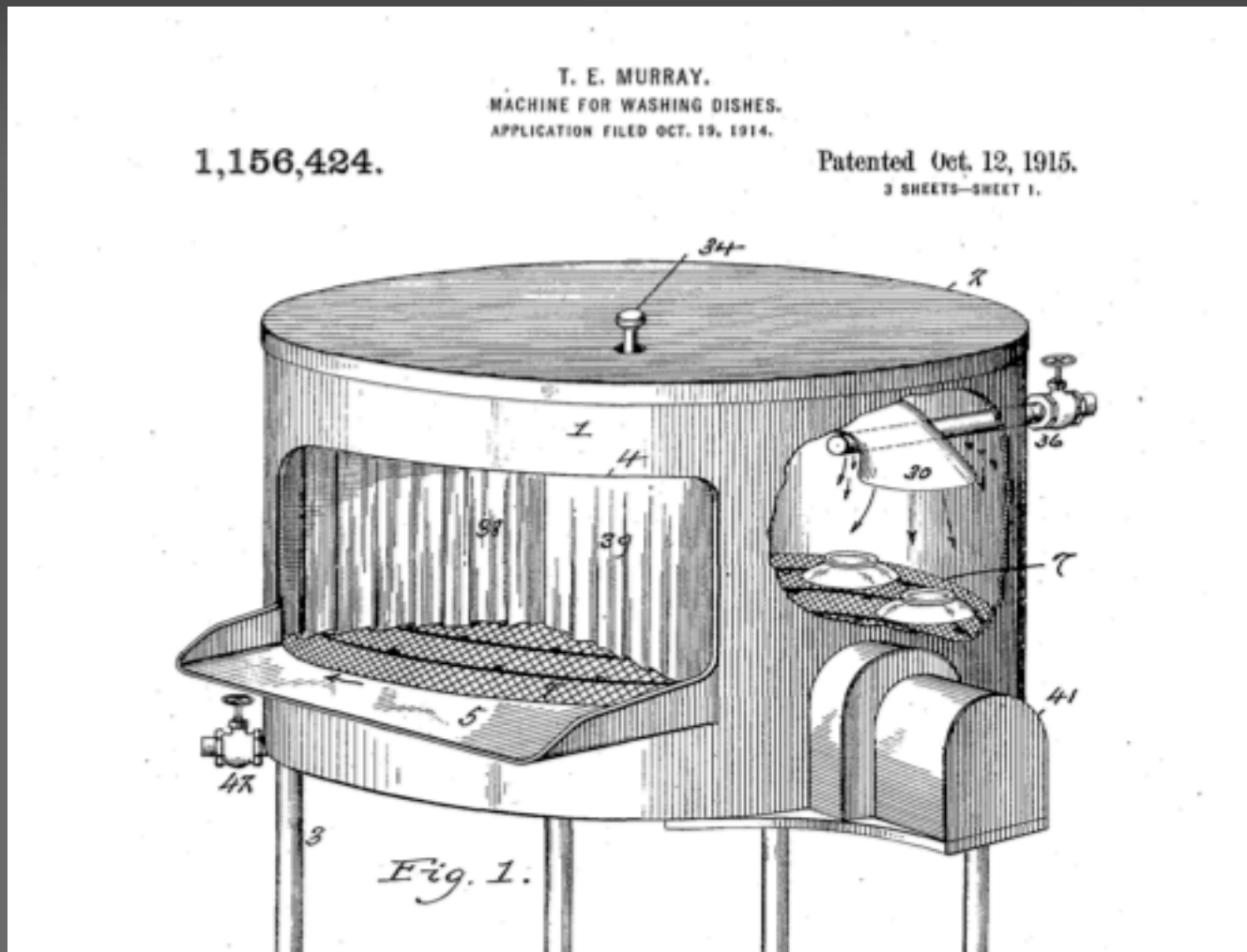
Filed April 26, 1924

3 Sheets-Sheet 1



# Dishwasher

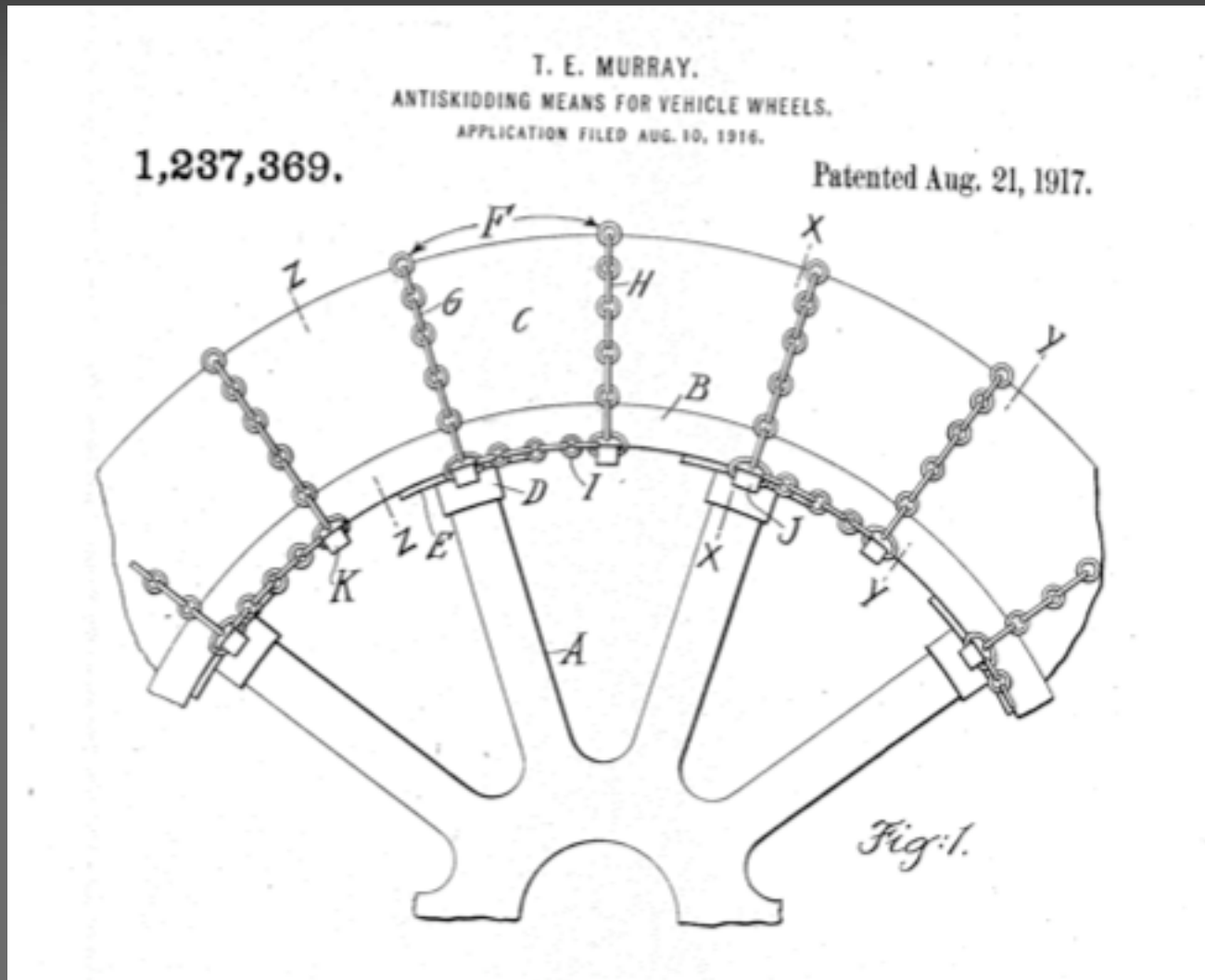
*Thomas E. Murray*





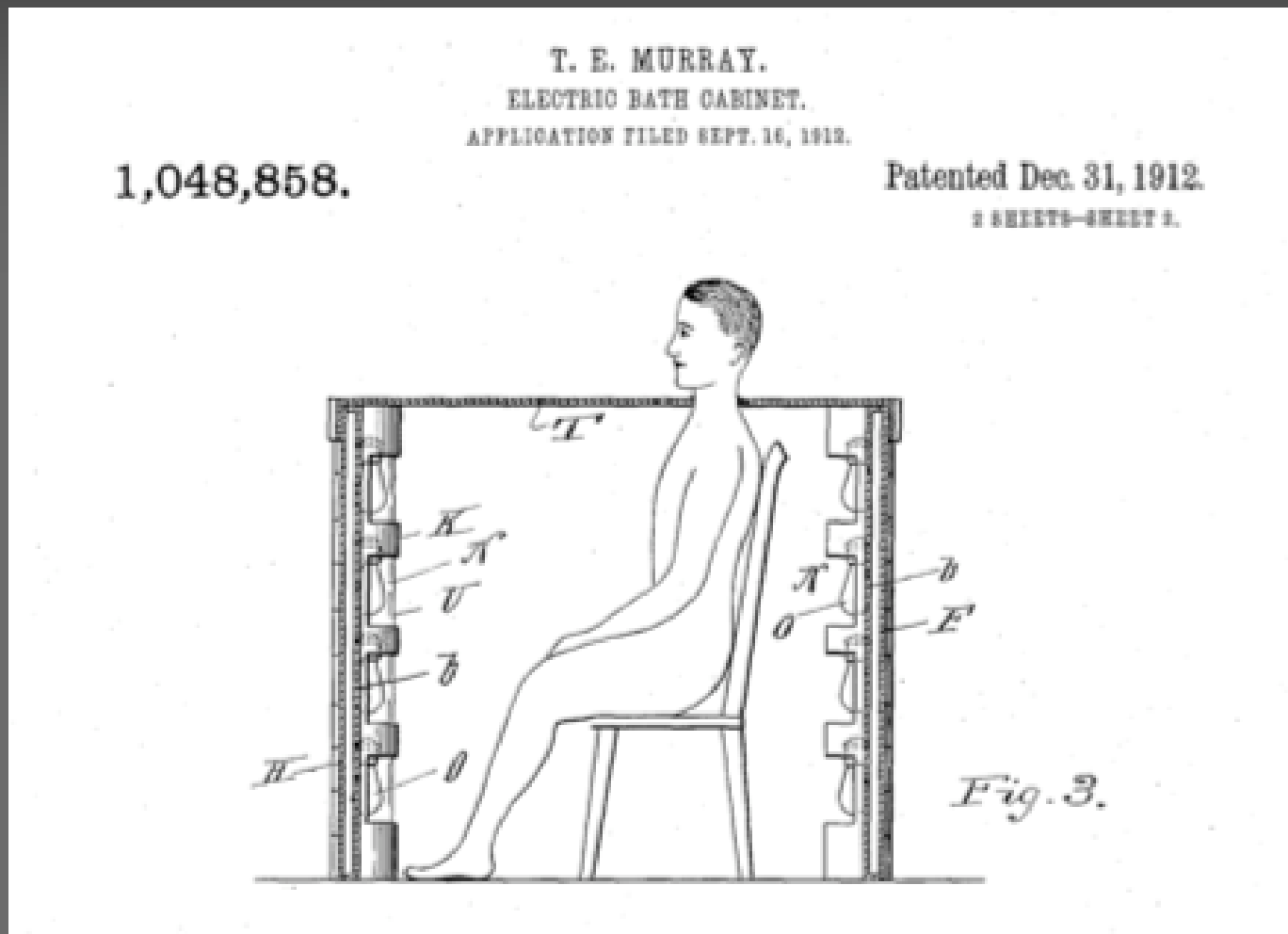
# Tire chains

*Thomas E. Murray*



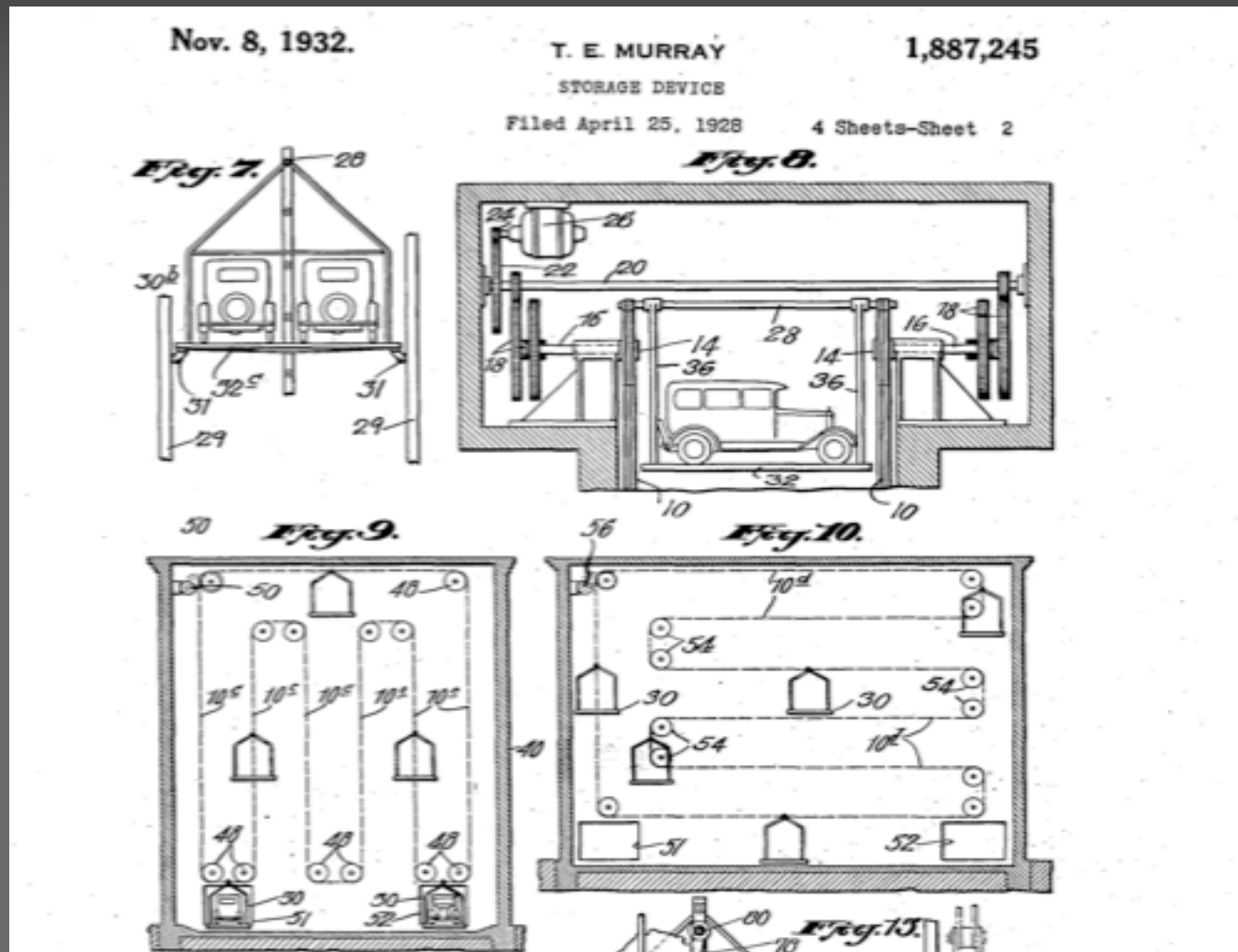
# Light bath

*Thomas E. Murray*



# Vertical parking

*Thomas E. Murray*





# But why so quiet?

*Thomas E. Murray*



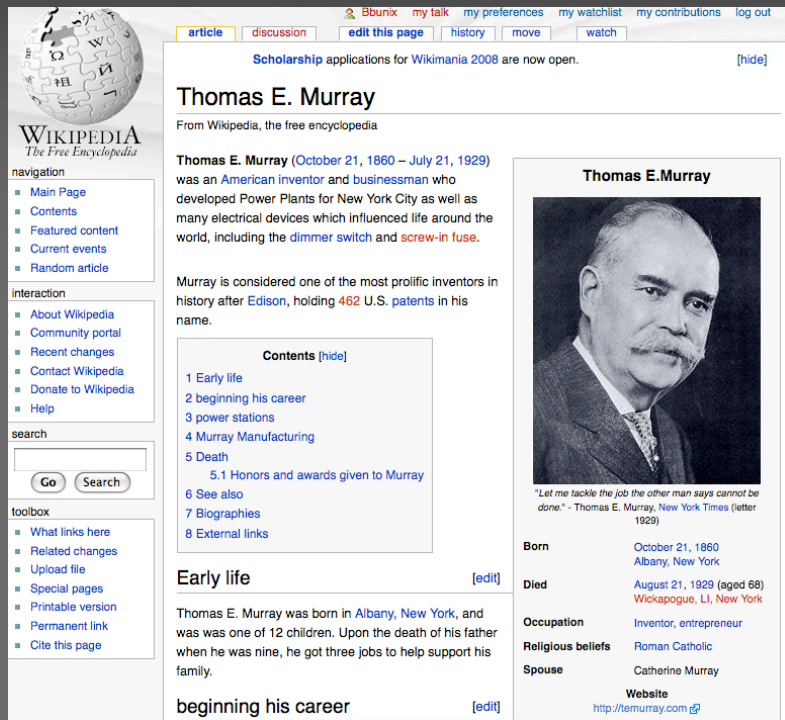
The picture that went around the world: Mary Jane Cuddihy dancing barefoot at the old El Morocco.  
(Jerome Zerbe)

A Google search today reveals almost nothing about Thomas E Murray. The New York Times archives weren't much better with 4 references, 2 about his death.

- **Humility:** refused to be classified as an inventor or a genius.
- Didn't need to make noise to raise money (like Edison did)
- Followed Brady's lead, there's not a lot about him either...
- Given the politics of Brady's deals, the last thing he'd want would be to be scrutinized.
- The family was more fun...

# Preserving History

*Thomas E. Murray*



The screenshot shows the Wikipedia article for Thomas E. Murray. The article text states: "Thomas E. Murray (October 21, 1860 – July 21, 1929) was an American inventor and businessman who developed Power Plants for New York City as well as many electrical devices which influenced life around the world, including the dimmer switch and screw-in fuse." It also mentions that Murray is considered one of the most prolific inventors in history after Edison, holding 462 U.S. patents. The article includes a table of contents with links to sections like "Early life", "beginning his career", "power stations", "Murray Manufacturing", "Death", "Honors and awards", "See also", "Biographies", and "External links". A sidebar on the right contains biographical details: Born October 21, 1860, Albany, New York; Died August 21, 1929 (aged 68), Wickapogue, LI, New York; Occupation: Inventor, entrepreneur; Religious beliefs: Roman Catholic; Spouse: Catherine Murray; Website: http://temurray.com. The left sidebar shows the Wikipedia navigation menu.

At the 100 year mark, there is a real danger of being lost to the sands of time.

- Albany Historical Society has a permanent T.E. Murray exhibit
- Publishing the T. E. Murray website <http://temurray.com>
- Wikipedia entry
- National Inventor's Hall of Fame
- Education & Outreach

# Thanks to



Jackie Gold & the Science Industry & Business Library  
*“Architect of Power”* (manuscript) – Joe Cunningham  
Tom Murray, photos & original IHoF application  
Tim Murray , thesis on TEM  
H Lester Cuddihy III, patent copies  
Mary Jane MacGuire, photos  
*“Real Lace”* – Stephen Birmingham  
*“It’s Getting Better all the Time”* – Stephen Moore  
Smithsonian Institution – Edison archives