

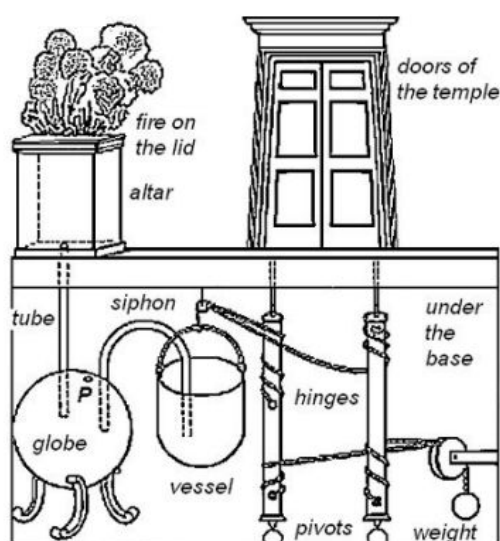


## The Amazing Steam Engines Of The First Century

An online translation of an ancient text reveals some engineering marvels from antiquity.

KFC 01/20/2011

3 COMMENTS



Ask a person in the street who invented the steam engine and you're more than likely to hear the names of various Renaissance inventors such as Denis Papin or James Watt.

Less well known is the fact that steam engines were in use at least 2000 years ago. Our knowledge of these devices is largely the result of a text called *Pneumatica* written in the first century by the Greek mathematician, engineer and inventor Hero of Alexandria.

Today, Amelia Carolina Sparavigna, at the Politecnico di Torino in Italy, talks us through some of these devices as they are described in [an online translation of Hero's work](#).

Hero was clearly aware of some remarkable machines. Sparavigna describes, in particular, a steam-powered device for levitating a ball, a steam-powered rotating ball and an engine for opening and closing temple doors (see above). These are just a small fraction of the machines that Hero describes in this and other work.

It's probable that Hero wasn't the inventor of all of them--he's almost certainly describing the work of others as well as himself.

But it is clear that Hero is one of the great engineers in history. And somebody who will now get greater, well-deserved exposure thanks to the online availability of his writing.

Ref: [arxiv.org/abs/1101.3470](http://arxiv.org/abs/1101.3470): Water, Air And Fire At Work In Hero's Machines

**Astronomers Crowdfund the Definition of a Galaxy**

**'Flasher Detection' Algorithm Aims to Clean Up Video Chat**

To comment, please sign in or [register](#)

[CLOSE COMMENTS](#)

username || .....  [Forgot my password](#)

Advertisement

Introducing **BUSINESS IMPACT**

Each month, *Technology Review* publishes a special report on how technology is changing business.

technology review  
Find out what impacts you, and your business now

### BIO

The Physics arXiv Blog produces daily coverage of the best new ideas from an online forum called the **Physics arXiv** on which scientists post early versions of their latest ideas. Contact me at [KentuckyFC@arxivblog.com](mailto:KentuckyFC@arxivblog.com)

[Subscribe to the arXiv blog RSS Feed](#)

Advertisement

A special report on how scenario planning and forecasting tools can help organizations prepare for the worst—or seize entirely new opportunities.

>BUY NOW<

this month's special report:  
**PREDICTIVE MODELING**

technology review | BUSINESS IMPACT

### RECENT POSTS FROM ARXIV BLOG

[The Fantastical Promise of Reversible Computing](#)

[The Nuclear Camera Designed to Spot Hidden Radiation Sources](#)

[Groups 'n' Crowds](#)

[Astronomers Crowdfund the Definition of a Galaxy](#)

[MORE](#)

Advertisement

valuable resourceful emerging engaged humanistic innovative authoritative impactful exclusive insightful influential futuristic

technology review

THE MYSTERY OF THE GENOME: REVEALING THE SECRETS OF LIFE

Searching for TV's Future

Can the Net swallow another mass medium?

Electric Car Winners and Losers

Hacking Microsoft's Kinect

>> SUBSCRIBE



5 DAYS AGO | 01/20/2011

**Renaissance**

Babayaga

2 Comments

>> Renaissance inventors such as Denis Papin or James Watt  
Really? If we consider the time line certainly James Watt does not belong to the Renaissance, and it could be disputed for Denis Papin.  
If we consider the place, the Renaissance is supposed to have happened mainly in Italy, only marginally in France and not at all in Scotland as Gauls or early Scots didn't match the impressive achievements of early Greeks or Latins).  
:-)

[REPLY](#)

4 DAYS AGO | 01/21/2011

**kfc challenge**

walt

41 Comments

Come on kfc, where is the rotating ball? The globe has feet, not bearings. They must have been terrible at cooking if they put the fire on top of object being heated.

[REPLY](#)

4 DAYS AGO | 01/21/2011

**Re: kfc challenge**

rkomatsu

47 Comments

I believe the rotating ball is another invention, not the one depicted in the figure. If I understood correctly, the altar's fire heats the air in the box bellow, which expands and forces the water through the siphon to the bucket, which gets heavier and opens the door. When the fire is extinguished, the air cools and contracts, sucking the water back through the siphon, the bucket gets lighter and the counterweight closes the door.

[REPLY](#)

Advertisement

**Wind Power in Spain**➔ See how Spain leads the global wind market. [Click here.](#)© 2011 MIT  
Technology Review

ABOUT US  
ADVERTISE  
EVENTS  
REPRINTS & PERMISSIONS  
PRESS  
JOBS  
RESOURCES  
STAFF

HELP  
CUSTOMER SERVICE  
CONTACT US  
PRIVACY  
TERMS OF USE  
SITE MAP  
WEBSITE FEEDBACK

SUBSCRIPTIONS  
SUBSCRIBE  
GIFT SUBSCRIPTION  
FREE NEWSLETTERS  
RENEW  
BACK ISSUES  
CUSTOMER SERVICE  
APPS

**FOLLOW US**

On Twitter

Become a Fan on Facebook

Subscribe to the Feed