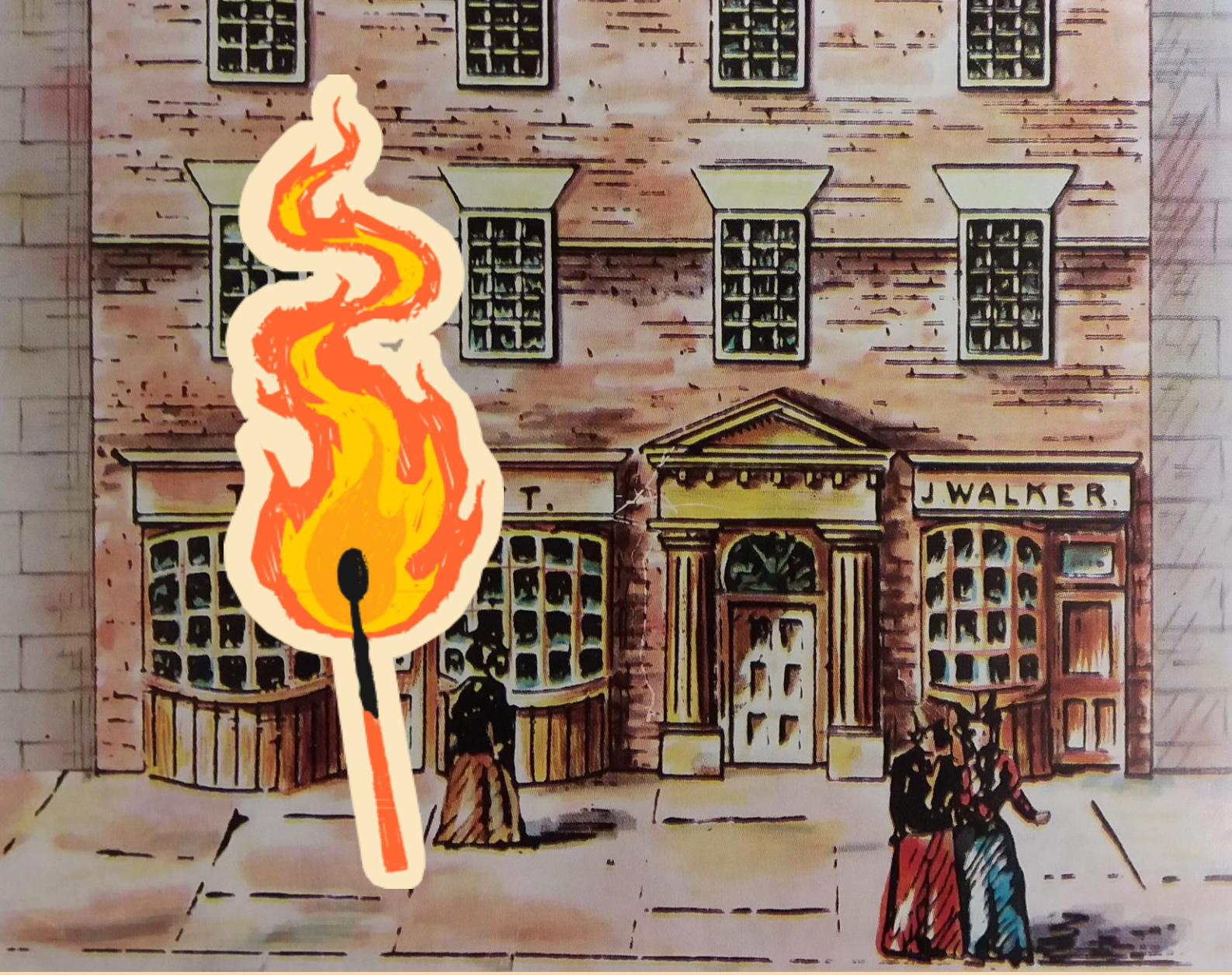


Talking Tees Valley Activity Pack

John Walker and the Friction Match

Tees Valley Museums

Supported using public funding by ARTS COUNCIL ENGLAND

Kirkleatham Museum · Captain Cook Birthplace Museum · Dorman Museum · Hopetown Darlington · Preston Park · Museum of Hartlepool · Hartlepool Art Gallery · Teesside Dementia Link Services

Tees Valley Museums

Welcome to another edition of the Talking Tees Valley Activity Pack

Each month we use objects and photos from our museums in the Tees Valley to take a closer look at the lives and stories from people in our area.

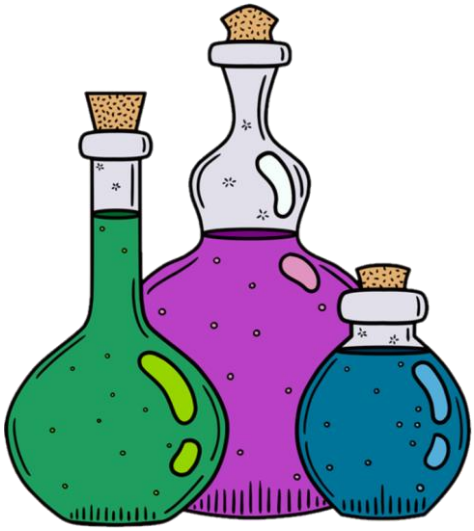
This month we look at the life of John Walker, one of the most prolific people who lived in Stockton and inventor of the friction match in 1826. John's invention paved the way for making light and heat on-the-go, all from his humble chemists' shop on Stockton High Street.

Who was John Walker?

John Walker was born in 1791 in Stockton-on-Tees. Walker trained as a chemist and pharmacist, meaning he mixed and prepared medicines and remedies for people and animals. He owned a chemist's shop, where he experimented with different chemical mixtures, carefully observing how substances reacted.

A photograph of John Walker's home (marked with an X).

Walker worked independently, testing the ideas himself and learning through trial and error. At that time, chemistry was still developing, and safety rules were very different from today. Chemists often discovered things by experimenting.



Scales – apothecary scales and weights that are thought to have been used by John Walker.

1826

In 1826, while stirring a mixture of chemicals with a wooden stick, Walker noticed something surprising. When the mixture dried and he scraped it against a rough surface, it suddenly burst into flame. This accidental discovery led to the first practical friction match.

Walker called his invention "Friction Lights." Each small box contained treated wooden sticks and a piece of sandpaper for striking them.

These matches and tin are very similar in design to those he made.

Transforming Fire-Making

Before Walker's invention, making fire was slow and difficult. People struck flint against steel to create sparks. Those sparks had to land on dry tinder before a flame could be carefully built. This required skill, patience, and dry weather. In damp conditions, it could be frustrating and even dangerous.

Walker's discovery changed everything. His match could be ignited simply by striking it against a rough surface. His chemical mixture included potassium chlorate, antimony sulfide, sulfur and gum. The friction created heat, which triggered a small, controlled flame.

For the first time, fire became portable and reliable. Families could light fires quickly for cooking and heating.

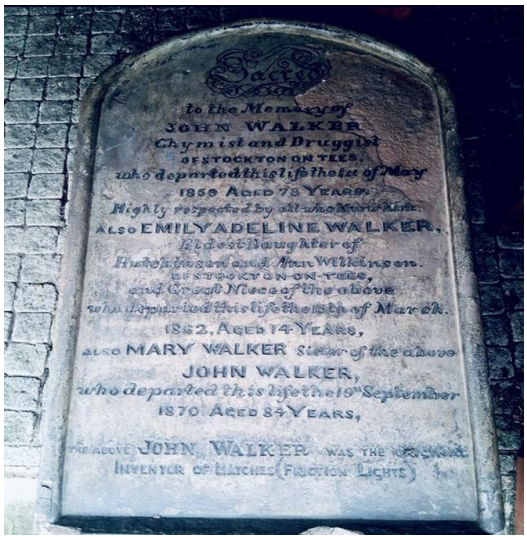
Industry, Railways and Innovation

The timing of Walker's invention was important. In 1825, just one year before his discovery, the Stockton & Darlington Railway had opened the world's first passenger steam railway. Travellers could carry fire with them.

Railway workers needed reliable fire for cooking, heating water and maintaining equipment. Walker's matches were perfect for this new industrial world. They were small, portable and quick to use and could be taken anywhere.

At this time, the Tees Valley was becoming a centre of innovation. Ironworks, shipbuilding and engineering industries were growing rapidly. Simple inventions like this that saved time and reduced risk were extremely valuable. Walker's matches quickly became popular in Stockton and beyond. The invention spread across Britain, inspiring others to improve safety and efficiency in match design.

Gravestone – John Walker's original gravestone from where he was buried at St. Mary's Church in Norton. It was replaced in the 1970s.



Did You Know?

John Walker never patented his invention. A patent is a legal protection that prevents other people from copying an idea without permission.

Walker very kindly believed that fire-lighting should be simple and affordable for everyone. If he had patented the match, only people who paid him would have been allowed to make them. That could have made matches more expensive and harder to buy.

Instead, he chose not to restrict his invention. He believed ordinary families and workers should benefit from it. His decision meant that other inventors could improve the match and make it safer over time. This box of matches – example of matches made by another company, claiming to be an improvement on Walker's invention.

Recognition

John Walker's decision to not patent his invention meant that he had no fortune when he died in 1859 and he went uncredited for his discovery.

In the years following Walker's death, researchers uncovered his invention and appealed for him to be publicly recognised as the inventor of the friction match.

In 1977 a sculpture of John Walker was unveiled in Stockton Town Centre to celebrate the 150th Anniversary of the Invention of the friction match.

John Walker's legacy is also reflected in a replica of his chemist shop at Preston Park Museum's Victorian Street, and an original John Walker friction match is held in the collection.

Booklet – Published and printed by Stockton company Heavisides in 1909.

The smallest discoveries can change the world. Today, billions of matches are used around the world. All based on the discovery and invention John Walker made in his small shop in Stockton on Tees.

John Walker Word Search

M A T C H E O G I G N I T I O N K K
E Z Z B N Y X F M S A F E T Y Z U I
C Y U R H E B P I A X F W T Z M C N
H W B C X H L J E R T I S S S C H V
E S P A R K J S Z R E C X Z C S E E
M F R I C T I O N L I G H T S P M N
I W M E D I C I N E U M P S Y X I T
C O M B U S T I O N K V E P T B S I
A E X P E R I M E N T K R N A I T O
L M I N V E N T I O N R G W T E C N
S O S T O C K T O N S U L P H U R K
F E U H R X J O H N W A L K E R R U

Find the following words hidden in the puzzle.

Words can be found → and ↓ and ↘

FRICTIONLIGHTS
COMBUSTION
EXPERIMENT
JOHN WALKER
MATCHSTICK
INVENTION
CHEMICALS
IGNITION
MEDICINE
SULPHUR
CHEMIST
SAFETY
SPARK
MATCH
FIRE
STOCKTON

All images used in this pack are courtesy of Preston Park Museum and Grounds.

You can find all our Talking Tees Valley packs through the Tees Valley Museums website under 'Latest News' or here: https://teesvalleymuseums.org/news/

If you would like to share your stories or contact us about the packs please e-mail teesvalleymuseums@stockton.gov.uk