

The Foster Patent Squib Safety Box

by Hal Post

I usually don't think of squib boxes as very exciting. More often than not, my image of a squib box is usually a tin, tube shaped case in various stages of oxidation, well used and dinged, with a slide off cap. There are exceptions and this is one of them. Recently a squib box caught my eye and looked very interesting. Better yet, I had the opportunity to acquire it. Neil Tysver, my good friend from Alaska, found an earlier *Eureka* article by Jim Van Fleet on "Squib Tins" that showed an assortment of squib boxes from the Lester Bernstein collection. There in the group was this squib box but only briefly mentioned by Jim as the "most famous squib box." Suddenly it became a research challenge. As it turns out, the brass box is very nicely made, patented and comes with a boatload of history. It's not the box itself that's of such interest but the people associated with the box. They include a relatively unknown newspaper editor in a small town in Pennsylvania who would become the father of correspondence schools in the US and a pioneer tobacco company in Baltimore, Maryland that would become the major part of the tobacco giant, American Tobacco Company.



Figure 3. Gail & Ax Safety Box

The safety box is shown in Figure 1. It's all brass and embossed on both sides with GAIL & AX'S "NAVY" SQUIB, MATCH AND TOUCH PAPER SAFETY BOX PATENTED JANUARY 27, 1885. The box is 7 3/8 in. long, 2 in. tall and 1 in. wide and has spring-loaded caps on each end, one of which is a match striker. It has three compartments inside for holding squibs, matches and touch paper (paper impregnated with potassium nitrate that burns steadily without flame and can be used as a fuse). Figures 2-4 show more of the features of the box. The safety box was patented by Thomas Jefferson Foster of Shenandoah, PA as Letter Patent No. 311,183 on January 27, 1885 as shown in Figure 5 and assigned to George W. Gail, Ernst Schmeisser and Christian Ax of the Baltimore, Maryland tobacco firm of Gail & Ax.

The details of the arrangement between Foster and Gail & Ax are not known but both parties are quite well known for different reasons and their association makes a lot of sense for both parties. Vocational education and industrialization in America owes much to the work of one man: Thomas Jefferson Foster – miner, patentee, printer, teacher, and the founder of the International Correspondence Schools of Scranton, PA in 1891.



Figure 4. Safety Box End Cap Open



Figure 5. Safety Box Match Striker End Cap



Figure 6. Safety Box Match Striker Cap Open

It's amazing that in the days of limited transportation and educational opportunities Foster's courses brought advancement and training to even the most remote post office box holder. Within fifteen years he had enrolled over a million students. In a month's time his schools were enrolling more students than Harvard, Yale, Princeton and Dartmouth combined in a year. At the turn of the century one American adult out of 27 had taken at least one of his courses. T. J. Foster was born at Pottsville, Pennsylvania, January 1, 1843. During the decade of the 1870s, he was editor of the *Shenandoah Herald*, a daily paper published at Shenandoah, in the coal-mining district of eastern Pennsylvania. As editor he reported on mine tragedies which were then an almost daily occurrence, and which he concluded were mostly due, not to fate, but to ignorance of mine gases, mine ventilation and mine engineering. He successfully lobbied for a revision of the state's mine laws that required mine foremen to pass an examination on safe mining practices. In 1879 he established the *Mining Herald*, a weekly publication devoted to technical and practical mining, in which he published a question and answer column on mining subjects in preparation for the in depth tests required of miners and inspectors by the new Pennsylvania Mine Safety Act of 1885. Publishing these columns ultimately led to the founding of the International Correspondence Schools. He served as president and general manager of the International Textbook Company, which he founded in 1895, to serve as proprietors of the International Correspondence Schools and to publish instruction papers, booklets, and textbooks for its subsidiary department, the International Correspondence Schools. Under his direction the schools gained a worldwide reputation for quality. The course offerings grew into over 240 separate areas. Businesses and governments encouraged their employees to enroll. At its height of success the printing plant turned out textbooks and lessons for Foster's students that was rivaled only by the United States Government Printing Office in size.

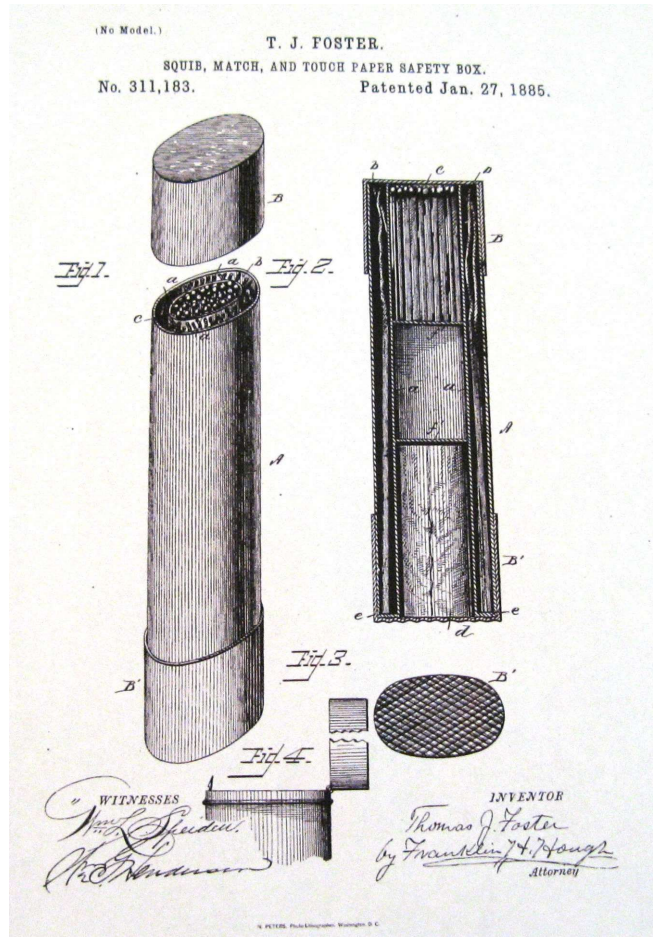


Figure 7. Foster's Safety Box Patent

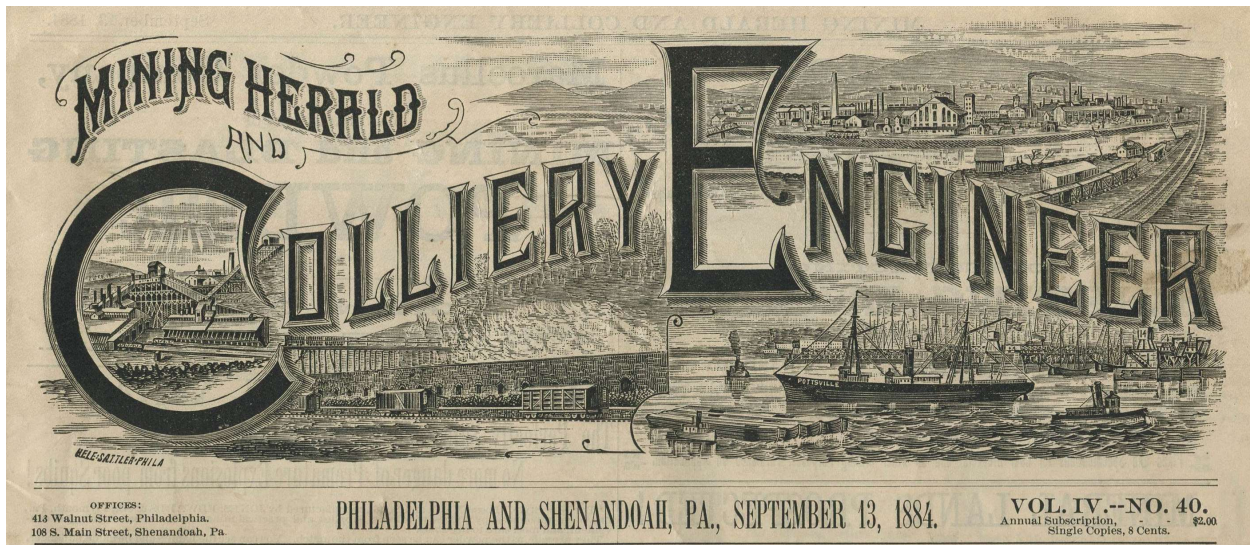


Figure 8. Heading for Sept. 13, 1884 Edition of the Mining Herald and Colliery Engineer (compliments of Tony Moon)

Along the way, Foster was joined by his cousin Rufus James Foster in 1888 to help in publishing the journal founded by T. J. Foster called the *Colliery Engineer*. This journal became the most widely circulated mining periodical in the world at the time. Over the years, Foster changed the name of the

journal to suit his purposes numerous times. Foster was editor and publisher of a weekly mining journal he started in 1879 which he called the *Mining Herald*, an outgrowth of the weekly newspaper *The*

Shenandoah Herald. In August 1887, Foster changed *Mining Herald* to the *Colliery Engineer* after using both titles together for the previous three years. This name change was suggested by Foster's editorial friend of the English journal *Colliery Guardian*. By June 1894, the scope of the journal had widened and the name was changed again to the *Colliery Engineer and Metal Miner*. In 1897, the name was changed again to *Mines & Minerals*, with the Colliery Engineer Company controlled by Foster as the publisher. In 1913 the name was changed back to *Colliery Engineer*, this title being used until it was discontinued in October 1915. And if that wasn't enough, Foster wrote a popular technical reference for coal miners called the *Coal and Metal Miners' Pocketbook* that was revised through at least a dozen editions. In 1905, Foster fell victim to several bad investments that nearly bankrupted the schools. He resigned

THE
COLLIERY ENGINEER
POCKET-BOOK
OF
PRINCIPLES, RULES, FORMULÆ,
AND TABLES,

SPECIALY COMPILED AND PREPARED FOR THE CONVENIENT
USE OF COLLIERY OFFICIALS, MINING ENGINEERS,
AND STUDENTS PREPARING THEMSELVES FOR
CERTIFICATES OF COMPETENCY AS MINE
INSPECTORS OR MINE FOREMEN.

GENEROUSLY ILLUSTRATED.

Thomas J. Foster

"Though index learning turns no student pale,
It grasps the Eel of Science by the tail."
Anon.

Copyright, 1890, by The Colliery Engineer Company.

SCRANTON, PA.:
THE COLLIERY ENGINEER COMPANY,
COAL EXCHANGE.
1891.

Figure 10. Cover Page of Foster's 1891 Edition of the Pocket Book

from his position and his ties to the International Textbook Company were severed. He died in 1936, at the age of 93, nearly penniless except for a small pension. Thomas J. Foster was elected to The National Educators' Hall of Fame in September 2001. His accomplishments in educating miners to safe practices underground have no equal. The International Correspondence Schools of Scranton, Pennsylvania, was operated under that name from 1895 till bankruptcy in 1996. It continues in operation today as the Penn Foster Career School.

The books published by Foster's International Textbook Company covering the many courses of study were used and made available to at least 184 colleges and at least 649 public libraries, a staggering accomplishment.



Figure 9. Home of International Correspondence Schools in Scranton, PA




Figure 11. Gail & Ax's Navy Brand of Tobacco

The firm of G. W. Gail & Ax in Baltimore was founded in 1850 by Georg Wilhelm Gail, one of the early pioneers in the tobacco manufacturing business. Georg Wilhelm was born July 8, 1828 in Giessen, Hesse-Darmstadt, Germany. He came to the US in 1847 to expand the family tobacco business he had learned in Germany. Arriving in Baltimore, he converted a small house on Pratt Street to a tobacco factory and by 1850 had started his business. In 1851 Christian Ax, his brother in law, arrived from Germany to join him as a salesman and field representative. The business at that time was under the name of G. W. Gail until

January 1st, 1860 when the firm name of G. W. Gail & Ax was adopted. The first part of the company's large factory building on Barre Street was erected in 1853, and by 1858 a major extension was added. The Civil War significantly increased their revenue and in 1864 their output was 2,634,000 pounds of smoking tobacco. The firm continued to expand with its popular Navy brand of chewing and smoking tobacco and in 1882, Ernst Schmeisser, a son-in-law of G. W. Gail, joined the firm. In 1887 Christian Ax died and by 1888 Georg Wilhelm's son George W. Gail Jr. and Ax's son Christian Ax Jr. had both joined the firm. The total output of tobacco products of Gail & Ax in 1890 was 5,479,672 pounds, of which 614,475 pounds, or 11.2 per cent, was snuff. In 1891, Gail & Ax was sold to the recently organized American Tobacco Company. Georg Wilhelm Gail, the company founder, died at sea, October 5, 1905, while returning from a visit to Germany. Gail Jr. and Schmeisser continued with American to manage the Gail & Ax branch of the company. By 1911, the government sued American Tobacco Company for violations of the Sherman Anti-Trust Act. In May of that year, American was broken up and any remnants of Gail & Ax were lost to history. Gail & Ax had an extensive product line including fine tobacco products and advertising tins featuring their company building in Baltimore and the Navy brand which showed a sailor dressed in blue with a foot atop a package of the Navy tobacco wrapped in blue paper.

None Genuine without this



GAIL & AX'S "NAVY" TOBACCO !

—THE MOST POPULAR FOR USE—

UNDERGROUND AND IN THE MINES!

—BECAUSE OF ITS—

Remarkable Adaptability Both for Smoking and Chewing!

☞ Free Draught Adapts it for Smoking. ☞ Elegant Flavor Commends it for Chewing.

It has been manufactured of a uniform standard of excellence for 30 YEARS and wherever introduced in Mining Districts ranks as the

FAVORITE TOBACCO OF AMERICAN MINERS.

☞ BEWARE OF IMITATIONS. Put up in Blue wrappers in quarter, half and one pound packages.

Address G. W. GAIL & AX, 28 Barre St., Baltimore, Md. ☞ Ask Your Storekeeper for it.

Figure 12. Gail & Ax's "Favorite Tobacco of American Miners" Ad from the Sept. 13, 1884 Edition of Mining Herald and Colliery Engineer (compliments of Tony Moon)

Match cases, customer sample tins as well as larger tins that would later serve as kitchen canisters were all part of their advertising to attract new customers. In the case of the patented squib safety box, their marketing of the patented box is thought to be a win-win situation for both T. J. Foster and Gail & Ax. His patent would keep squibs and fuses out of the dampness and in an organized fashion that would lead to better practices for blasting safety. Gail & Ax was already a popular brand of tobacco, marketed to miners, and they could manufacture the boxes and distribute them widely for advertising. A handful of these safety boxes are known in private collections.

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