

NECESSITY IS THE MOTHER OF INVENTION

August 2016

Inventions often come from crucial times of need.

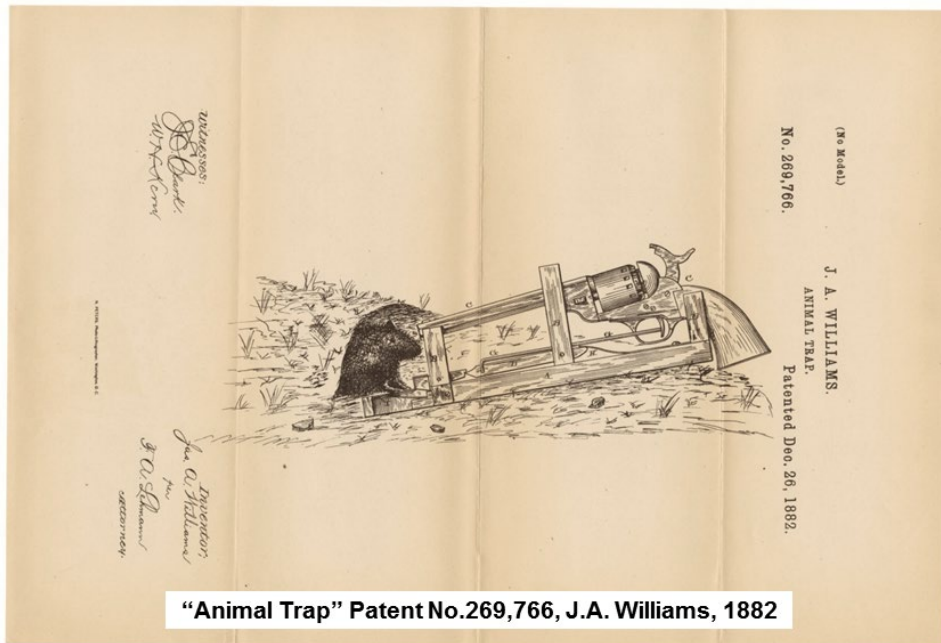
For example...

Do you need a bicycle for the whole family?





Or perhaps...a mouse trap that really works?



"Animal Trap" Patent No.269,766, J.A. Williams, 1882

Seriously, inventions and innovations in the metallurgical industry often do come out of times of need...or sometimes even out of **DEPERATION!!!**

Some classics from my many years in engineering and consulting include:

An unexpected project threatening problem during plant design

A major autoclave feed pulp settling problem arose when changing from old to fresh ore samples for the final settling testwork with tap water for the Bulong nickel laterite project in WA in the 1990s. Resulted in recognition of the beneficial effect of hypersaline process water on slurry viscosity!



Bulong Nickel Laterite Project
(Ref. John O'Callaghan presentation, ALTA 2003)



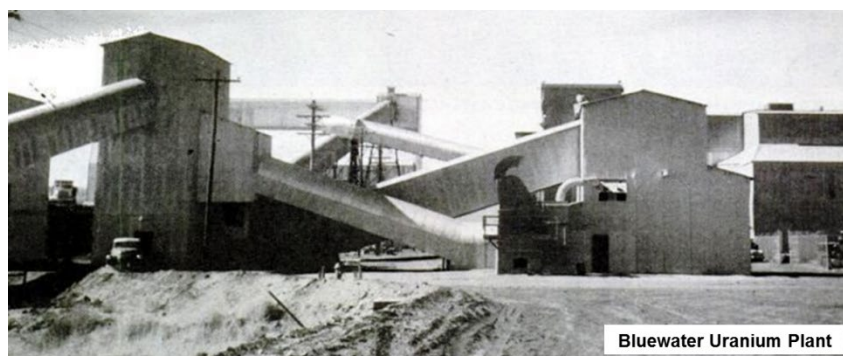
Operating failure of two major equipment items during early plant operation

At the Twin Buttes copper leach-SX-EW plant in the 1970s, the operating team moved the failed (plugged) dual media SX feed filters to EW feed duty to replace failed (plugged) a chopped fibre glass coalescer. Became industry standard to this day!



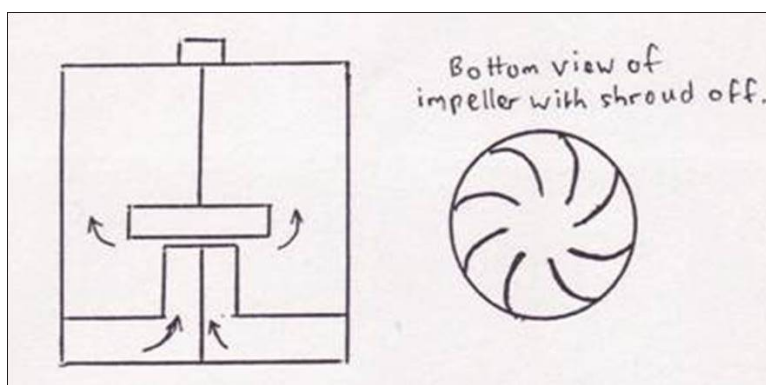
A commissioning problem during night shift on a winter holiday weekend`

During the Bluewater uranium expansion project commissioning in New Mexico in the 1970s, FRP piping failure led to on-site HDPE pipe being used for SX organic duty to avoid a long delay in repairing the FRP. Led to widespread industry use of HDPE for SX organic piping and mixer-settler lining!



An urgent telephone call from the project site in the middle of the night site shouting ...“WHAT SHALL WE DO?”

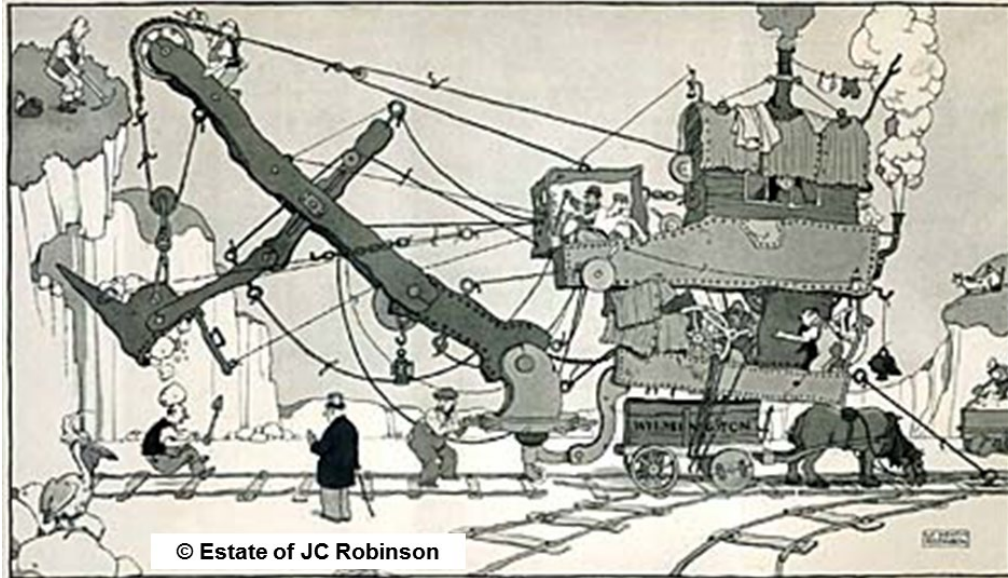
During commissioning of the Bear Creek Uranium Project in Wyoming in the 1970s, the commissioning team couldn't achieve the design flow through the mixer-settlers. A quick inexpensive fix to the mix box born out of panic and desperation was amazingly successful and even reduced power input. This “innovation” became a standard feature for future projects using the Davy type double shrouded pump-mix impeller!





So necessity really can be the mother of invention...

Unless your "inventor" happens to be Heath Robinson!!!



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MetBytes are metallurgical commentary and insights written by Alan Taylor who has 40+ years' experience in the metallurgical, mineral and chemical processing industries.

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