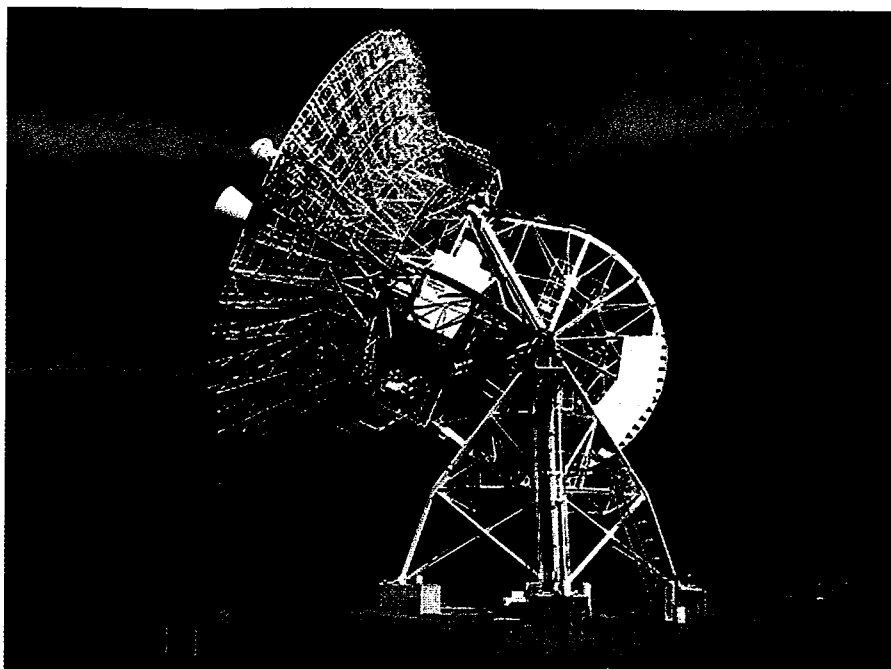


the most iconic examples of engineering achievement of all time. The Apollo program ended in 1973.

The program was set in motion in a speech by US president John F Kennedy on 25 May 1961 when he announced the goal of sending astronauts to the Moon before the end of that decade. America responded enthusiastically and up to 400,000 workers were involved in the complex project.

On 21 July 2009 Armstrong, Aldrin and Collins received the Congressional Gold Medal in the US Congress.

In a rare recent television interview Armstrong explained how he over-rode the autopilot of the descending Eagle, when it was heading for a landing among car-size rocks, and found a safe landing place just before the rocket's fuel ran out. Ever the cool pilot, he then reported: "The Eagle has landed".



Owen Peake is the chair of the National Board of Engineering Heritage Australia.

Antenna DSS-46, which was located at Honeysuckle Creek near Canberra, received the historic pictures and sound from the surface of the Moon. It has since been moved to the Canberra Deep Space Communications Complex at Tidbinbilla.

PATENTLY SUCCESSFUL

A patent that saved a lot of water

by Edward Genocchio

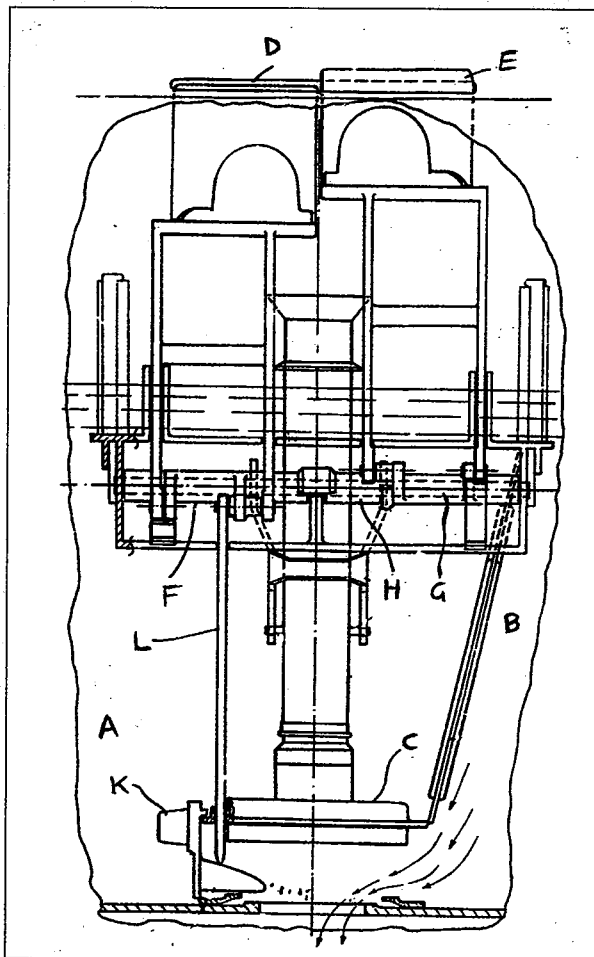
Around 1980 Australian engineer Bruce Thompson of Caroma Industries in South Australia patented a particular two-button dual-flush toilet cistern, that today is a standard feature of many bathrooms around Australia.

The dual flush has the primary function of varying the volume of water discharged during flushing

The accompanying diagram shows Caroma's patented system.

The cistern includes two reservoirs A and B and a valve C. By depressing either button D or E respective shafts F and G engage third shaft H which lifts valve C emptying either reservoir A and/or B. However, when depressing button D shaft F also engages arm L which rotates hinged stopper K to seal off reservoir A allowing only reservoir B to empty creating the reduced water flow.

At the time, the Caroma dual-flush cistern was so revolutionary that the shape of the toilet bowl had to be redesigned to accommodate the reduced water flow to ensure the toilet worked correctly. Over the past 20 years the Caroma dual-flush cistern (and other similar dual-flush mechanisms) have saved Australian households hundreds of thousands of litres of water and been so successful that legislation throughout Australia changed to encourage their use. ■



Sketch of the Caroma dual flush toilet system.