

THE ORIGINAL CRAYFORD FOCUSER

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The original Crayford focuser was invented by John Wall, an English amateur of Dartford, Kent. This new type of focuser, built for a 13.5" $f/4$ comet seeker, was first shown at meetings of the *Crayford Manor House Astronomical Society* in the early 1970's. The first description of this innovative focuser appeared in the *Journal of the British Astronomical Society* (February, 1971, page 118) and also in *Model Engineer Magazine* (May, 1972) and *Sky and Telescope* (September, 1974). Soon after, the focuser was known as the Crayford Eyepiece Mount or Crayford focuser (Figure 1).

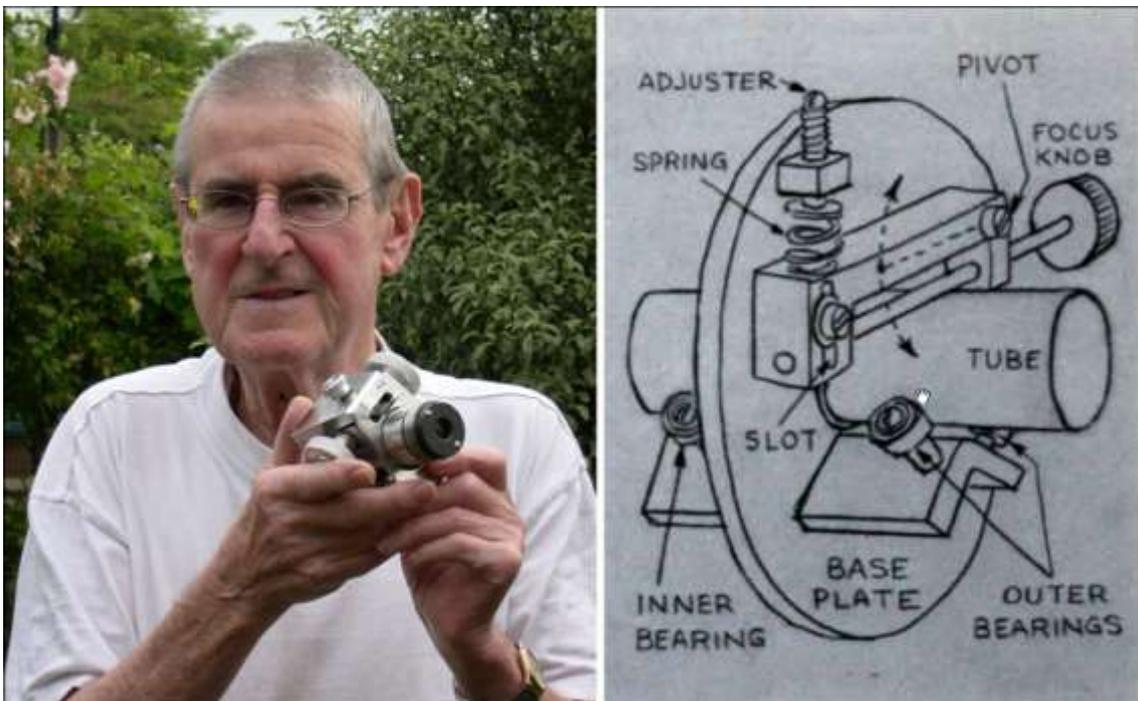


Figure 1- John Wall in inventor of the Crayford focuser (left) and first sketches of the Crayford Focuser (right).

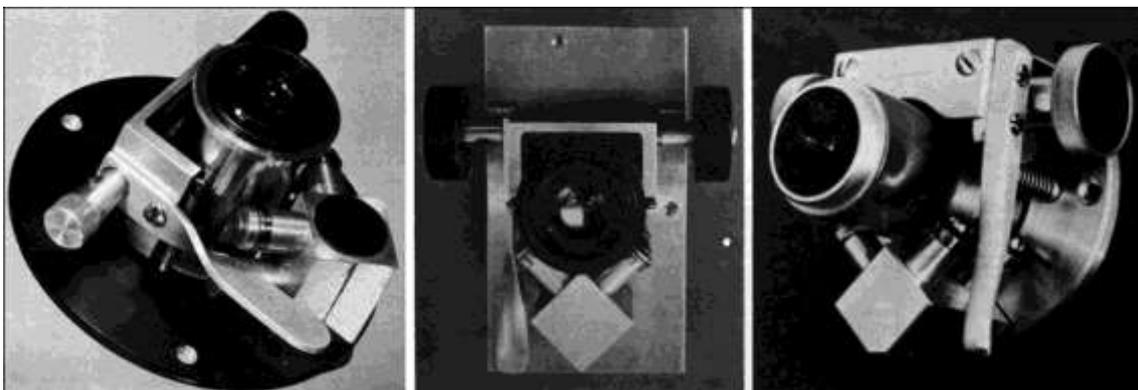


Figure 2- Three different Crayford Focusers built by J. Wall.

J. Wall built three different versions of his original focuser (Figure 2 and 3). In these focusers, the eyepiece tube has five contact points: consisting of four ball bearings arranged in a “V” configuration and a cross shaft that moves the tube in opposite directions. The focusers are spring loaded in order to maintain a constant pressure with the four ball bearings. By turning the shaft, the eyepiece tube rolls in or out. The spring pressure can be adjusted when a heavy eyepiece is used.

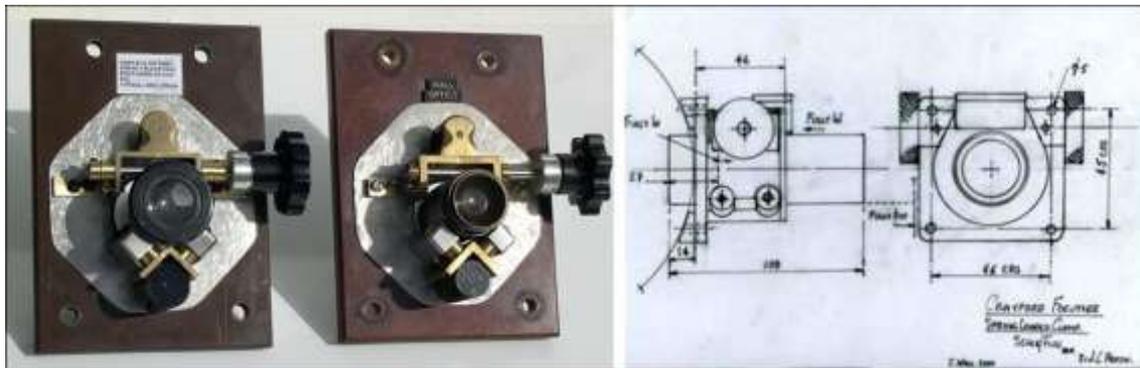


Figure 3- The first Crayford Focuser (left) and some of J. Wall original drawings (right).

Crayford focusers are very popular among amateur astronomers. They are easy to build (by experienced ATMs), do not require precision tools or precision machining. Focusing is very precise without any backlash or image shift. Crayford focusers are also presently produced by a variety of companies specialized in amateur telescope accessories (Figure 4). This type of focuser is excellent for visual and photographic applications.



Figure 4- Modern Crayford Focuser (Feathertouch).



Figure 5- Modern Crayford Focusers.