

laboratory atmospheres, so was not often used. To save wear on the bearings when the balance was not in use, various arrestment schemes were invented, the simplest being a series of cords and pulleys operated by a front lever. This was the mechanism which operated the beam in the 1897 Oertling model 00 shown in Figure 7, which belonged to Mining Captain Lean, Manager of the Great Cobar Copper Mine in Cobar, NSW.

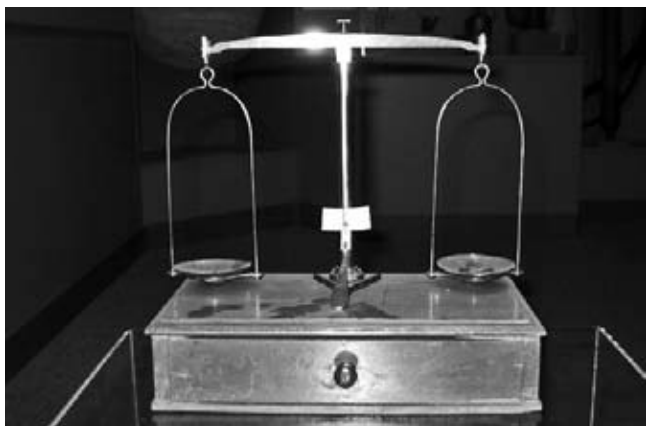


Fig. 7. Captain Lean's Oertling model 00

Twin column balances (Fig. 8) had rods inside the columns which could raise (for weighing) or lower (for rest) the beam when the control knob was turned, and the pan supports moved down or up at the same time. This beautiful balance, an Oertling model 12SBA, dates from 1946. Note the magnifier in front of the scale, and the extremely fine fretwork beam.



*Fig. 8. Oertling model 12SBA in the Perth Mint Historical Display
(Photographed with permission)*

Sometimes a large cam was used to raise the beam, and a very rare example was found in the Burke Museum at Beechworth, Victoria, on an 1850s 24" beam bullion balance, once used by the Beechworth Branch of the Bank of New South Wales.

Pointers were sometimes at the end of the beam, as in the beautiful 1900 Oertling model 14 (Fig. 9), but were usually vertical, as in the model 9.



*Fig. 9. Oertling model 14 in the Perth Mint Historical Display
(Photographed with permission)*

Improvements for reading the scale continued, and often a light beam reflected from mirrors was used to project an enlarged image of a tiny scale onto a ground glass screen at eye level. As early as the Great Exhibition of 1851, there were precision balances using this principle. The 1935 Sartorius, (Fig. 10)⁹, has the illuminated screen, as well as other 'modern' improvements, including damping cylinders, and external dials for addition of weights less than 1g.