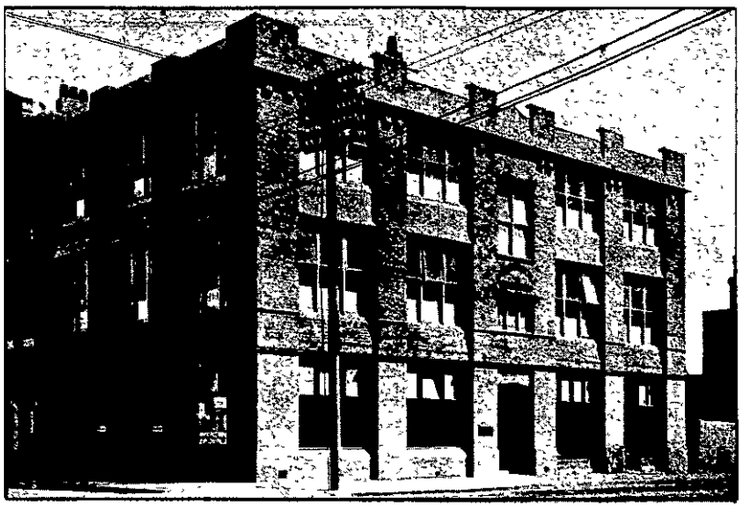
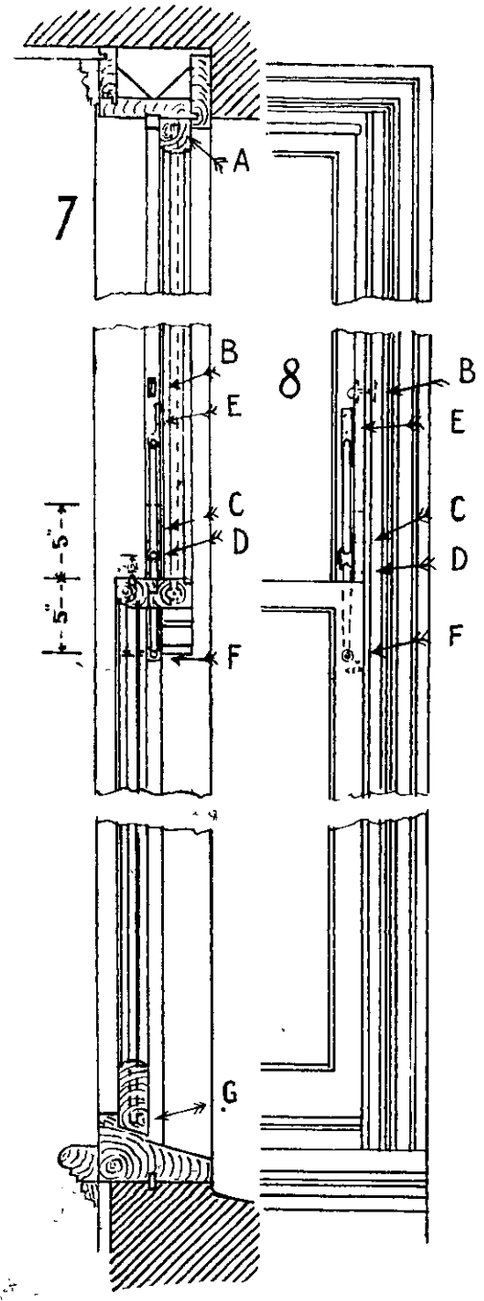
THE AUSTRAL SASH BALANCE.

A REVERSIBLE WINDOW WITHOUT WEIGHTS OR CORDS.

The acknowledged deficiencies of the ordinary window sash have led from time to time to many attempts at improvement. Some of the inventions in this direction have disclosed considerable appreciation of urgent requirements, and they may be classed amongst the many successes which have characterised the varying phases of building construction during the past decade. The Austral Sash Balance, however, makes a very reasonable claim to superiority in respect of ease and safety of inside cleaning, and has already commended itself to practical architects and builders, having been largely adopted in Wellington and other centres of the colony, as well as in Australia, America, and Europe.



SCHOOL OF DOMESTIC INSTRUCTION, CHRISTCHURCH
(FITTED THROUGHOUT WITH THE AUSTRAL SASH BALANCE.)



CROSS SECTION AND ELEVATION.

A. and G. indicate position in which bolts are fitted in centre line of sash, the pins of which run in a groove in the frame.
B. Sash screw used to secure upper section of parting beads, which are removed temporarily during cleaning.
C. Point at which parting beads are cut.
D. Screw plate on which balances are pivoted.
E. Screw plate attaching end of balance to upper sash.
F. Bolt securing other end of balance to lower sash.

Our first illustration shows how the sashes are attached to either end of metal bars pivoted in the centre and supported on screw-plates, the screw-plates in turn being attached to the parting beads on the frame. The effect thus produced is that the sashes are evenly balanced and can be moved up and down in the frame guided by means of fixed pins fitted to the sashes and running in a groove in the frame. Only a minimum of force is required to overcome the friction of the pivot, and between the sash and frame, so that a child can readily move sashes weighing up to 100lbs. By this system the rattling and jamming of sashes and breaking of cords, which are the attendant evils of the weight-and-cord windows, are all entirely overcome, and a perfectly smooth-running pair of sashes is the result. Improved ventilation, which is now admitted to be a question of vital importance by medical men, is secured by the Austral Sash, for it opens in such a manner that the volume of draught tends in an upward direction, rendering possible free ventilation without a direct draught and the resultant cold in the head. For this reason the sash is being adopted for factories, hospitals, and school buildings, one of the latter being illustrated herewith.

Ease and safety in cleaning, as before mentioned, is a most important feature in the Austral Sash Balance. The outside glass of both sashes can be readily cleaned without leaving the room, thus obviating the extreme risk of standing outside on the sill—a course which so often leads to fatal accidents where high buildings are concerned; and the timid housekeeper will not only find a new delight in the improved order of things, but the large employer of labour will experience, no doubt, material reduction in his accident insurance premiums, following on the installation of the system in his factory.

Another of our illustrations shows the top sash swung into the room for cleaning. The full simplicity of its movements must be seen to be properly appreciated, but it will be sufficient, however, to state that both sashes are suspended at a convenient angle during the operation of cleaning, and there is absolutely no weight upon the operator, nor risk of breakage.

We are informed that orders are now on hand to fit the Austral Sash Balance in the following Wellington buildings:—Office of the Wellington Publishing Co.; warehouse for D. Anderson & Son, Molesworth Street; Irvine and Stevenson, Brandon Street; W. H. Turnbull & Co., Panama Street; and other buildings; and we understand that arrangements have already been made for the introduction of over 2000 sashes in New Zealand. (*For further particulars see page* 385.)

TOP SASH, REVERSED FOR CLEANING.

A New Departure.

A novel feature in tunnel design devised by Mr. Charles M. Jacobs, the chief engineer to the Pennsylvania tunnels under the Nadson river, is found in the screw piles, which will be placed at intervals of fifteen feet throughout the length of the tunnels. While the silt forming the bed of the river is sufficiently tenacious to hold the tunnels in perfect alignment during construction, it was not considered firm enough to do so when they are in use. To forestall this possible danger screw piles will be sunk to a solid foundation, and upon them the tunnel proper will rest. The piles will be 27 inches outside diameter, and the shell will be 1⅛ inches thick. The sections will be 7 feet in length, and will be bolted together through internal flanges. The lowest section will be cast with one turn of a screw 4 feet 8 inches in diamerer.

The Gas Cooking Record.

Norwich has in use 18,000 gas cookers and 18,000 slot gas meters, and this total is not equalled by any other city of the same population—just over 100,000.