



closed. The mercury now falls more rapidly in the arm *KH*, but by opening the screw-clip *F* slightly and cautiously air is allowed to enter the apparatus through the tube *B*. *F* is opened until the mercury in the gauge begins to fall; it also falls in *C* and rises in *A* until the jet *K* is below the mercury surface. The entry of air is then restricted and after a few minutes a steady state is reached such that a decrease in pressure causes air to enter through *K* more rapidly and an increase of pressure restricts the access of air. In practice, the quantity of mercury which is being agitated around *K* in the tube *A* should not be great: the lower the pressure the smaller the quantity agitated. If, in order to arrive at the required pressure, the screw-clip *F* has to be opened so much that a large quantity of mercury gets into tube *A*, the reservoir *D* should be lowered slightly, tap *H* opened, and mercury thus withdrawn from *A*. After *H* has been closed, *F* may be readjusted. When the pressure in the distillation apparatus is suddenly altered by any large amount, *e.g.*, in changing the receiver or stopping the distillation, taps *E* and *G* should be closed *simultaneously* and, in the latter case, the regulator should be disconnected at *E*. The diameter of the jet *K* in the present apparatus is about 0.7 mm.

A little trouble is almost certain to be experienced at first in adjusting the regulator, by mercury moving out of the top of *C*, and particularly with the screw-clip *F*. When the pressure tubing at *F* is new, it is difficult to open it slightly by the screw-clip and mercury is apt to rush into tube *A* and out at *E*. However, when the tubing has been used for some little time, and after experience, the regulator can be set to within 1 or 2 mm. of the required pressure and with care the pressure will not vary more than 2—3 mm. The regulator is least sensitive below a pressure of 100 mm., but between this and 760 mm. it holds the pressure steady to within 1—2 mm.

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