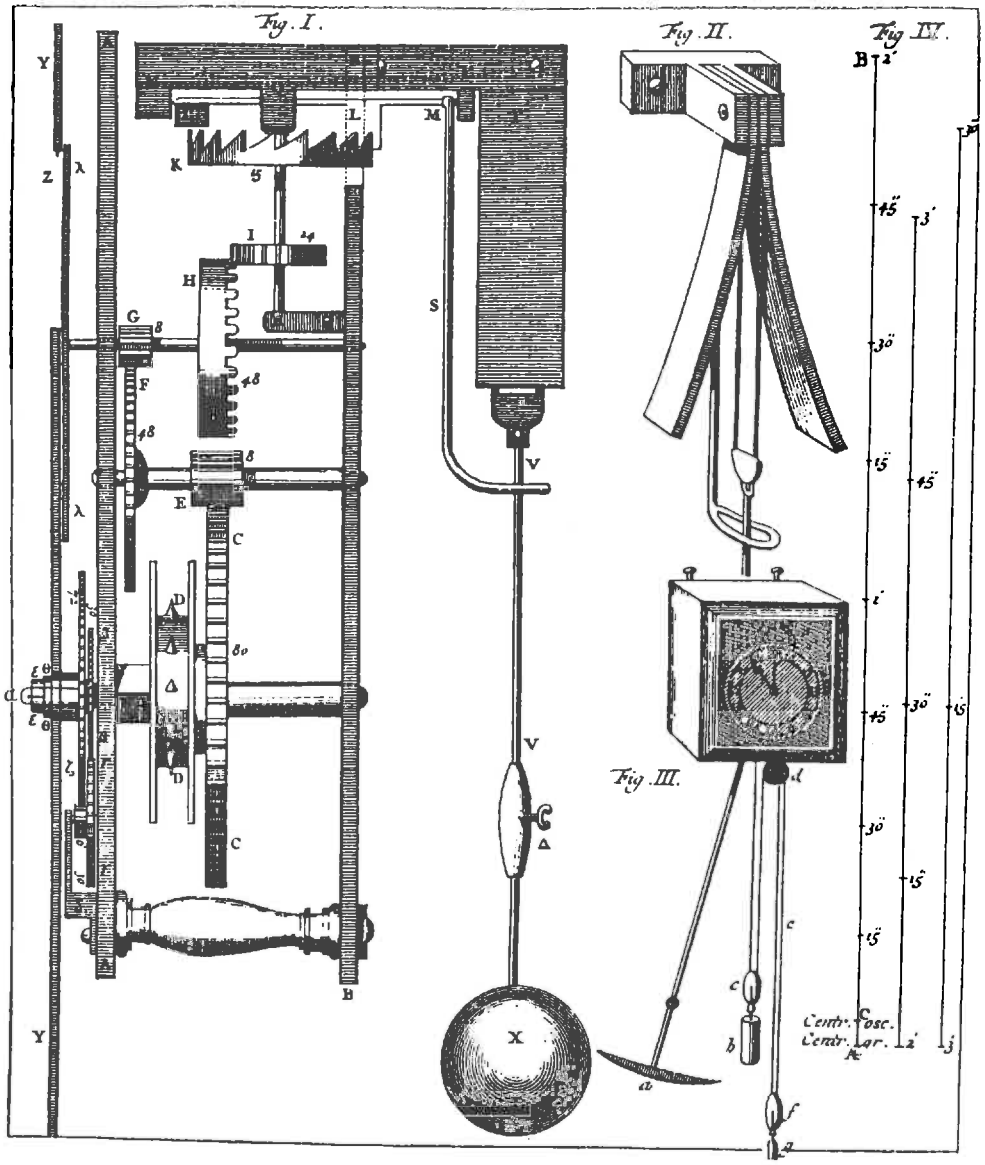
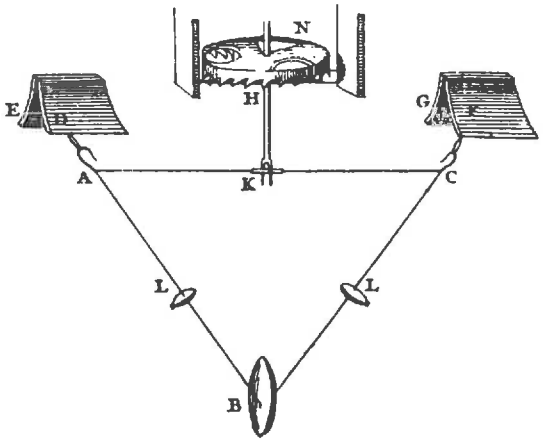
[Fig. 1: I, II, III, IV]

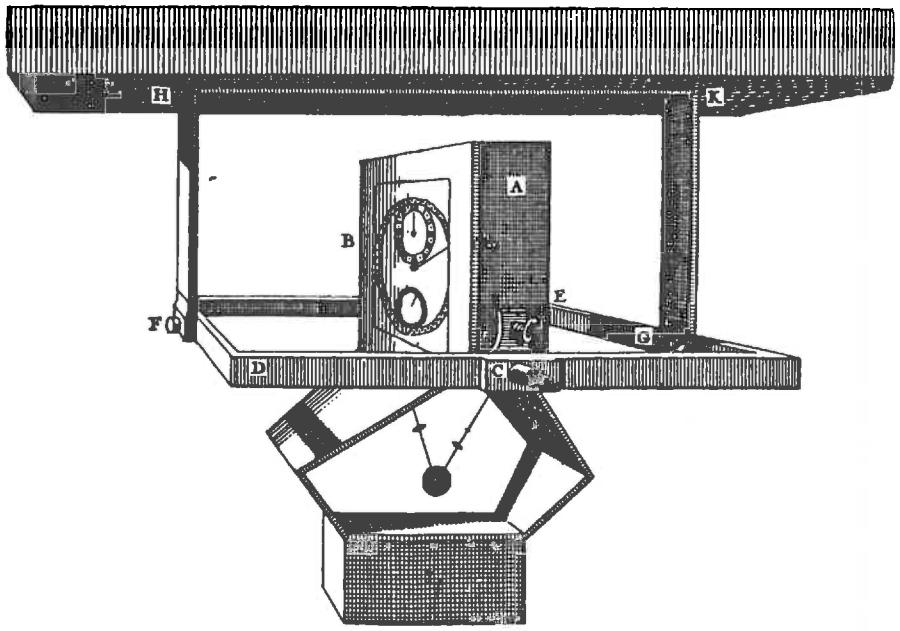



[Fig. 5]




ment the clock maintains a perpendicular position no matter what the inclination of the ship is. Also the axis C, together with the one opposite it, are so located that they correspond in a straight line to the points of suspension of the pendulum just described. From this it follows that the oscilla-

[Fig. 6]



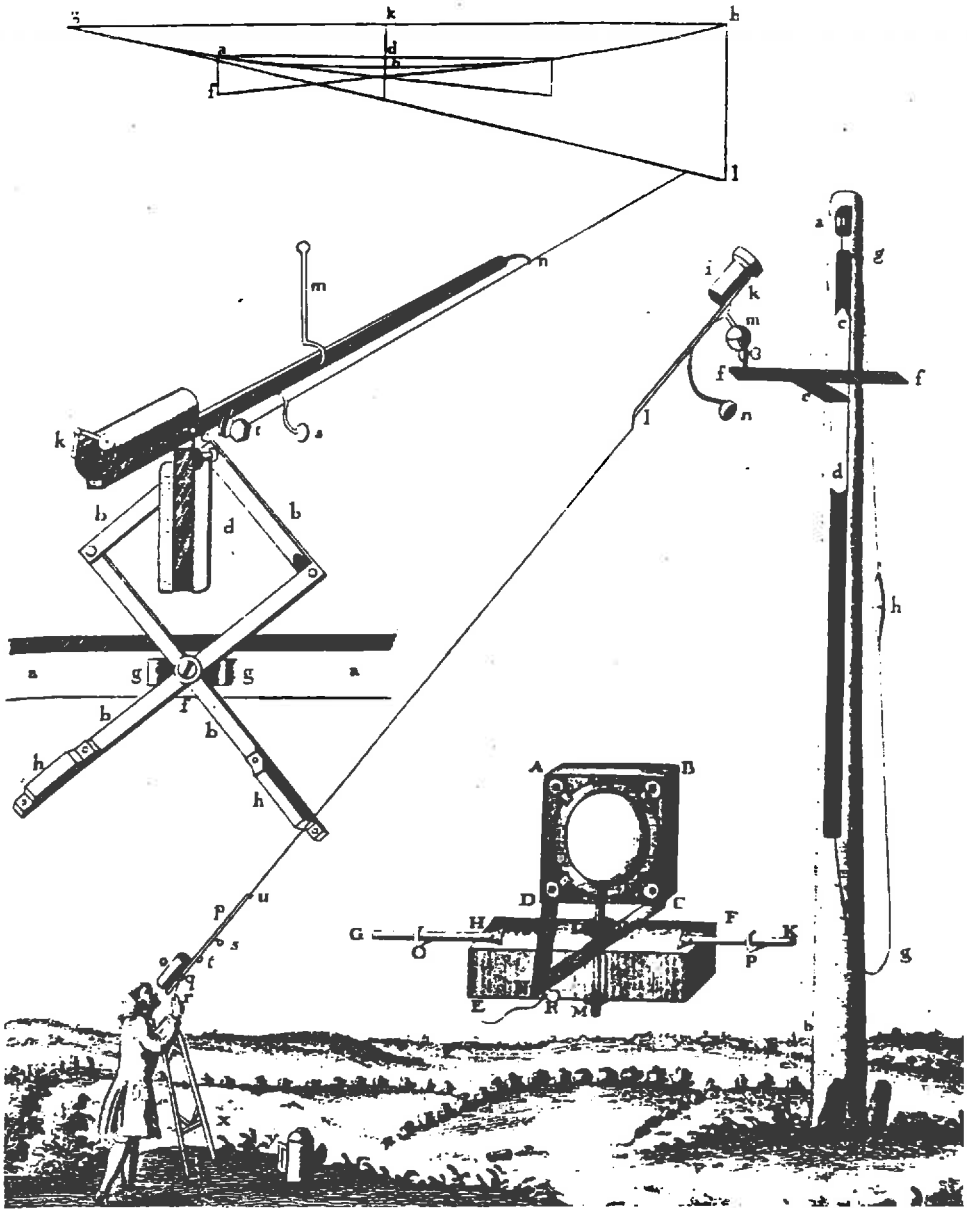


**Fig. 25—Huygens' aerial telescope**

*(Science Museum, London. British Crown copyright)*

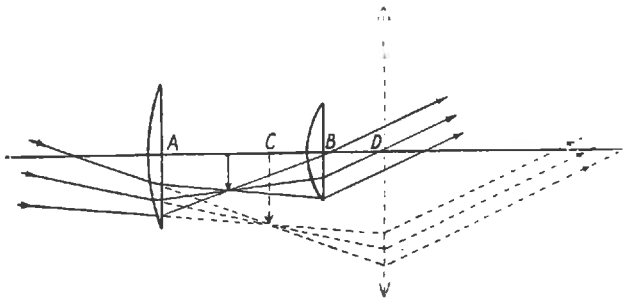
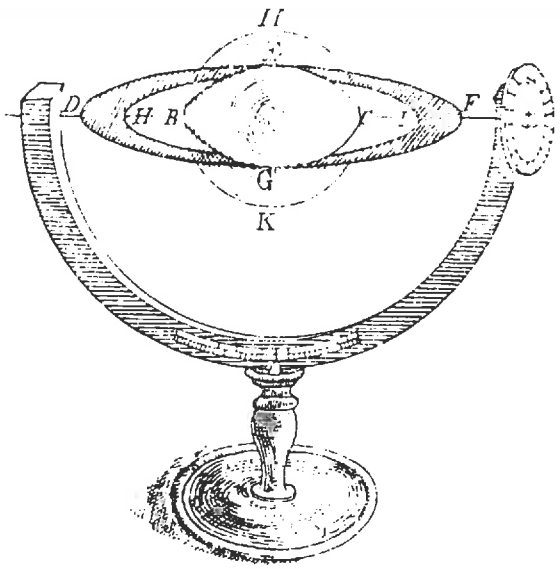



**Fig. 26—Huygens' eyepiece**

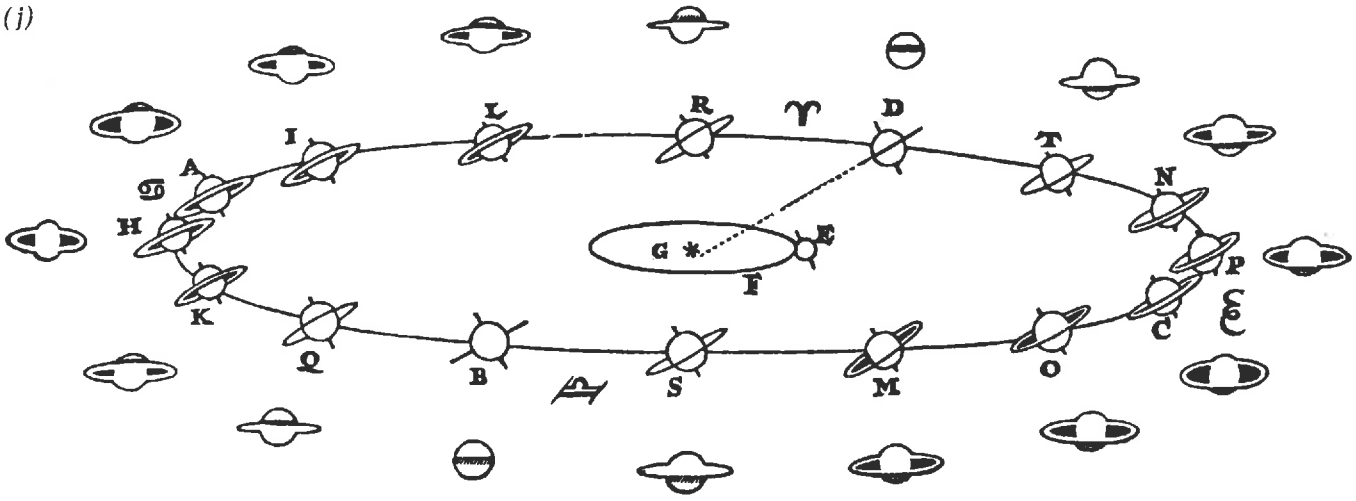
*A* Field-lens
*B* Eye-lens
*D* Position of single lens giving the same magnification
*CD* Focal length of equivalent lens

(*i*) and (*j*) When Saturn again appeared edgewise, in the mid-1650s, astronomers were formulating fully-fledged theories to explain the planet's strange appearances. Christopher Wren (*i, right*) in 1657 supposed that an infinitely thin elliptical 'corona' was attached to the planet, while the entire formation rotated or librated around its long axis. In 1656 Christiaan Huygens (*j, below*) supposed that the planet "is surrounded by a thin flat ring which does not touch him anywhere and is inclined to the ecliptic". The thickness of Huygens's ring was not negligible.

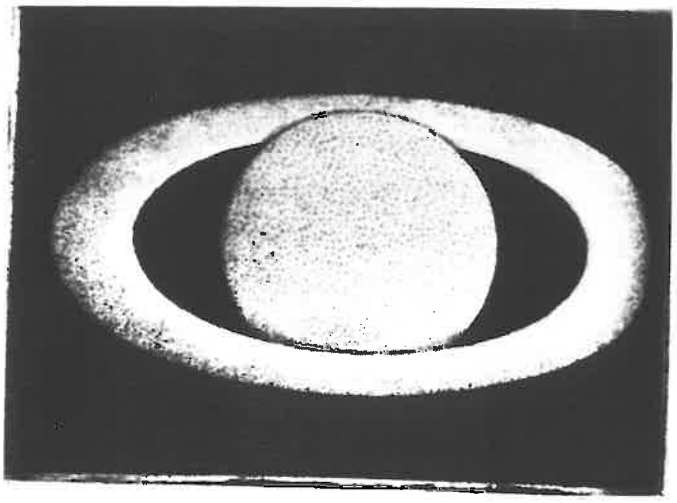
(*i*)




(*j*)

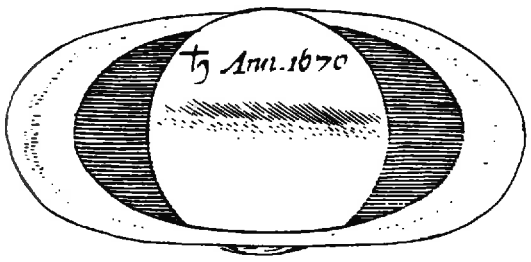



(*k*)



(*k*) Between 1660 and 1675 the ring theory (as well as better telescopes) led to the discoveries of shadow effects that in turn confirmed the theory, as is shown here in the 1664 observation by Giuseppe Campani.

(*l*)




(*l*) Finally, in 1675, Gian Domenico Cassini discovered that the ring had a gap in it.