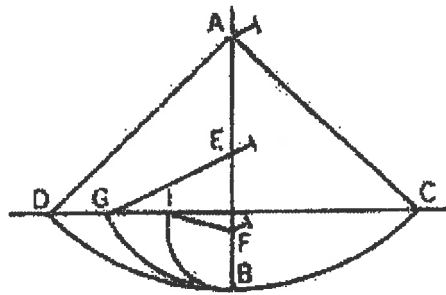
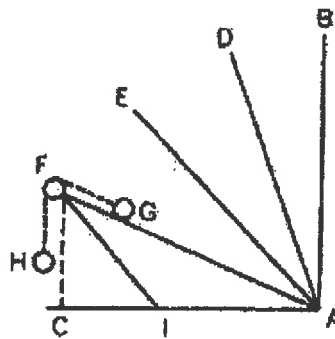


## *“Galileo’s Postulate”*

The same speed is acquired from any given height whether in direct fall or along an inclined plane.



First edition



Posthumous Edition

Torricelli: *De Motu Graviorum Naturaliter Descendentium  
Et Projectorum* (1644)

Galileo, when about to discuss naturally accelerated motion, puts forward a principle, that he himself thinks not yet clear, as long as he strives to establish it by the not fully precise experiment of the pendulum, which is: *That the stages of velocity of the same moving object, when amassed over differently inclined planes, are equal when the elevations of the same planes are equal.* From this claim hangs as it were his whole doctrine on both accelerated and projectile motion. If anyone has doubts about the principle, he will not have at all secure knowledge of the things that follow from it. I know that Galileo in the last years of his life tried to demonstrate that supposition, but because his own argument, with his book on motion, has not been published, we have brought forth these few statements on the movements of weights, to be fixed at the beginning of our little book, so that it may appear that Galileo's supposition can be demonstrated and indeed at once by that theorem that he himself selected as demonstrated from Mechanics in the second part of his sixth proposition on accelerated motion, to wit: *The momenta of equal weights over planes unequally inclined are to each other as the perpendiculars of equal parts of the same planes, [that is, as the sines of the angles of inclination of the planes].*

*We set forth*

that two weights joined together cannot move of themselves unless their common center of gravity descends.

For whenever two weights are so joined together among themselves that the motion of one follows on the motion of the other, these two weights will be as if one weight made up of two, whether this be a balance, or a pulley, or any other mechanical proportion; however a weight of this sort will not ever move unless its center of gravity descends. And so whenever it is set up so that its common center of gravity cannot at all descend, the weight will remain wholly at rest in its own place; for it will be moved elsewhere without effect; namely, by horizontal motion, which tends downward in vain.