same rule that when I speak of one substance as being entirely full, because composed of cubical particles, and another as being not more than half full, because its parts are spherical, I mean only comparatively, and not that such substances really exist; for experience has fully informed us, that in transparent bodies, such as glass, which is both dense and heavy, there is but a small quantity of matter in proportion to the extent of the intervals; nay, as we have before observed, it might be demonstrated that even gold, which is the most dense species of matter, has more vacuities than substance.

To investigate the powers of Nature is the object of rational mechanics, while active mechanics is solely confined to a combination of particular powers, and consequently the art of constructing machines. This art has at all times been certain of cultivation from necessity and convenience; and both ancients and moderns have equally excelled in it. But rational mechanics is a science invented in our days; for, from the days of Aristotle to those of Descartes, even the philosophers have reasoned no better upon the nature of motion, than uniformly to mistake the effect for the cause. Impulsion was the only force with which they Aaa VOL X. were