

to do any more; for the Dimensions of themselves are purely arbitrary. If you have a clear Idea of the Construction of the Machine by this general Description, it is all I have aimed at.

XV. *Extract of a Letter from the Marquis Nicolini F. R. S. to the President, concerning the same Mirror burning at 150 Feet Distance.*

S I R,

* * *

Read April 30. 1747. YOU know that the Affair of *Archimedes* setting the *Roman* Fleet on Fire by means of Burning-Glasses, has been look'd upon as a Thing impossible and romantic. *Descartes* positively denied the Fact, which had been believed for so many Ages; and our modern Philosophers, after many Trials, and various Reasonings, have been of the same Opinion. But *M. de Buffon*, being asked if it might be possible to invent a *Phaometer*, or *Machine* for measuring the *Intensity* of *Light*, hath discovered by Trial, that *Light* was able to produce great Effects in a *Focus* at a great Distance, if one made use of a great Number of Disks, which would reflect so many Images of the Sun, and fling them all into one Place. He put together therefore a sort of *Polyedron*, consisting of 168 small Mirrors, or flat Pieces of Looking-glass, each 6 Inches square; by means of which, with the faint Rays of the Sun, in the Month of *March*, he set on Fire some Boards
of

of Beech Wood at 150 Feet Distance. By increasing the Numbers of Mirrors, he hopes to be able to do the same 900 Feet off.

His Machine has besides, the Conveniency of burning downwards or horizontally, as one pleases; and it burns either in its greater *Focus*, or in any nearer Interval, which our commonly known Burning Glasses have not, their *Focus* being fix'd and determined.

Perhaps this Machine may afford a Manner of measuring either Light, or the different Degrees of Heat of burning Bodies. The Difficulty is to find the Method of marking the Degrees, and of fixing a Point of Comparison; for the Point of kindling will not determine it; because that chiefly depends upon the greater or less Degree of Inflammability of different combustibile Bodies.

Mr. *Maupertuis*, in a Letter to the *President*, dated at *Potzdom*, May 20. 1747. says, that his Friend *Buffon* has recover'd the Burning-Glasses of *Archimedes*; that with 168 plane Glasses, each 6 Inches square, he has melted a silver Plate, at the Distance of 60 Feet, and fired pitch'd Boards at 150. Each *Speculum* is moveable, so as, by the Help of 3 Screws, to be set to a proper Inclination for directing the Rays towards any given Point.