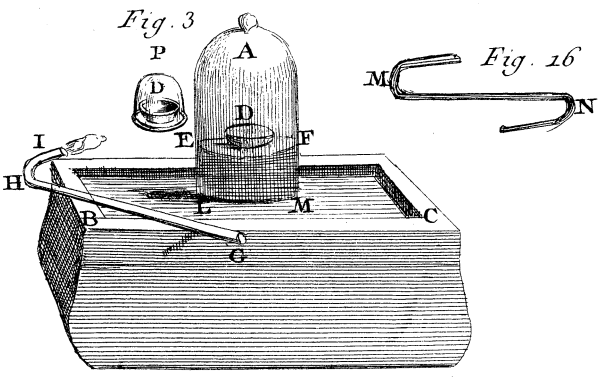

the tinder, and then promptly plug the bottle so that the iron thread BC is
[42] inside of it as in the figure I have already cited.

3.17 As soon as the tinder is placed in the vital air, it bursts into a dazzling flame, it communicates the fire to the iron, which also burns, sending out brilliant sparks which fall to the bottom of the bottle in round droplets which turn black as they cool, and which retain a residual metallic luster. The iron burned in this way is even more brittle and fragile than glass. It is easily reduced to a powder, and magnets still attract it, though less so than before combustion.

3.18 Ingenhousz did not examine what happened to the iron or to the air in this procedure, so I found myself obliged to repeat the experiment under different conditions and with equipment better suited to my purposes.

3.19 I filled a bell jar, A (Plate IV, Figure 3), with about 6 pints of pure air, that is to say, with the "highly respirable" part of the air. I carried this

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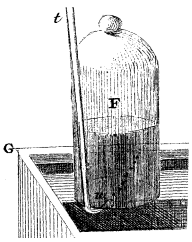
3.17 *the iron ... burns, sending out brilliant sparks*: Such vehement combustion indicates a strong affinity of iron for the base of vital air. If mercury cannot similarly be set aflame in purely vital air, one would conclude that its affinity for the respirable part of air is weaker (3.16).



3.19 *I filled a bell jar ... with about 6 pints of pure air*: An unfilled jar already contains ordinary air, so how can he fill it with pure air? He first fills the jar with water by immersing it in a tub of water. Then, holding the jar mouth down as shown in the drawing, he uses a suitably bent tube to bubble pure air into the jar; the pure air replaces the water in the jar.

pure ... "highly respirable": Lavoisier is still casting about for a suitable name. He will propose one in the following chapter, after having discussed the principles that will govern his naming of newly-discovered substances.