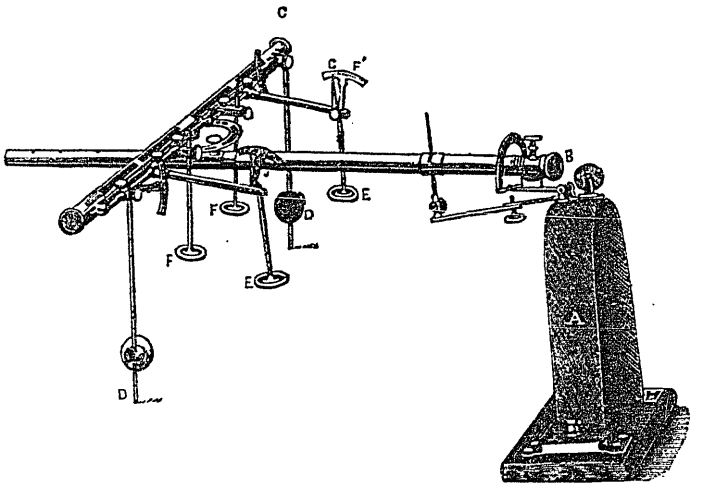
that it required, more extensive development; but time and circumstances have imperiously restricted me to a mere sketch of the subject.

I now conclude with a description of the Pneometer, an instrument which I have contrived and got constructed in this city, for the purpose of determining with a mathematical exactitude the different expansions of the lungs, whether horizontal, vertical, or lateral.



The object contemplated in the construction of this instrument, is to determine with exactitude the relation which exists between the volume of air which enters the lungs and the development of the body.

From the conclusions we have drawn from the labours of authors who have written on Respiration, conjoined with our own observations, the succeeding laws would appear to be established; 1. That the quantity of air respired governs the quantity of blood; 2. That the quantity of blood governs the weight, size and height of the body; 3. That every cubic inch of air respired represents very nearly a pound of blood; 4. That every pound of blood in the body, is equivalent to eight or ten pounds of the weight of the body; and 5. That twenty-four pounds in weight of the body are about equivalent to an English foot in the height of the body.

Having made a great number of experiments on healthy persons, we have found but few exceptions to the laws just laid down.

The appreciation of the power of the constitution or of its healthy condition, depends upon the true relationship between its height and weight, and its respiratory capacity. These have limits established by the properties of matter itself, and these limits serve at the same time as the boundaries of the development of the height and weight. Hence it is that beyond a certain development of the body, respiration no longer follows its increase, and any further increase in the volume of the body may be considered abnormal. We cannot transcend the limits of the dilating properties of matter, without at the same time destroying its cohesion, with a disintegration of its molecules, or at least producing a relaxation of its texture.