

The same effect is produced by the manner in which the tendons of the muscles run over the joints. They would act more powerfully, if they went in a straight line to the toes or tips of the fingers: but by being laced down in sheaths, they move the toes and fingers with a velocity proportioned to their loss of power.

Let us see how far this corresponds with other mechanical contrivances. A certain power of wind or water being obtained, the machinery is moved; but it is desired to give a blow, with a velocity far greater than the motion of the water or the turning of the wheels. For this purpose a fly-wheel is put on, the spokes of which may be considered as long levers. The wheel moves very slowly, at first; but being once in motion, each impulse accelerates it with more and more facility; at length, it acquires a rapidity, and a centrifugal force which nothing can equal in its effects, but the explosion of gunpowder. The mechanist not having calculated the power of accelerated motion in a heavy wheel, has seen his machinery split and burst up, and the walls of the house blown out as by the bursting of a bomb-shell. A body at rest receives an impulse from another, which puts it into motion—it receives a second blow; now this second blow has much greater effect than the first—for the power of the first was exhausted in changing the body from a state of rest to that of motion—but being in motion when it receives the second