is taken (or the "fulcrum") upon the direction of the force. Thus if we have a force P (Fig. 27), and the ful-

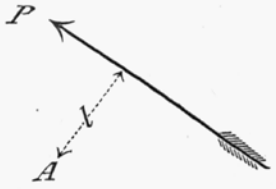

FIG. 27.

crum about which it acts is A, then l is the lever-arm of that force, and P multiplied by l the moment. Since the tendency of a force acting with a lever is to produce motion, and it being evident that all the forces acting at any given point of a beam or truss can not act in the same direction, it follows, if equilibrium is to be maintained, the sum of all tendencies to move in one direction must equal those in the opposite direction, or their algebraic sum be zero.

The ordinary crowbar (Fig. 28) is a familiar every-

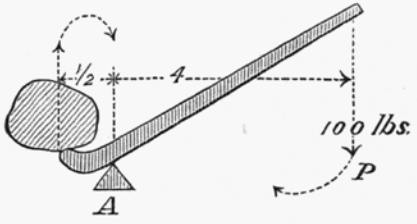

FIG. 28.

day example of the "principle of moments" above explained. Suppose a man presses down with a force of 100 lbs., distant 4 ft. from the fulcrum A. The *moment*