

CHAPTER III.

GRAPHICAL REPRESENTATIONS—THE RESULTANT COMPONENTS.

Graphical Representation of Force.

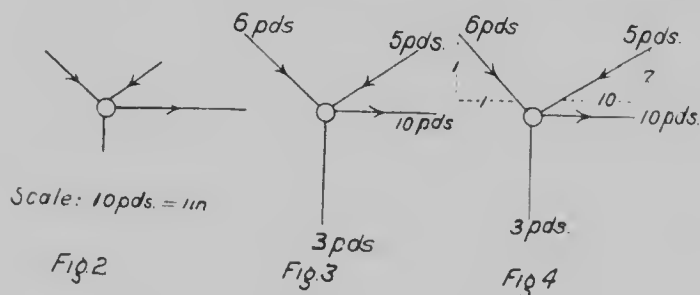
A Force, being a Vector Quantity, may be represented by a right line; for the direction of the line may represent the line of action of the force, the magnitude and sense being represented by first cutting off a portion of the line to some convenient scale of magnitude, and by then placing on this portion an arrow head pointed in the sense of action of the force.



Fig. 1.

Fig. 1 represents a force of ten pounds magnitude acting in the horizontal direction, with sense to the left, as indicated by the arrow head. The scale of magnitudes in this case is $\frac{1}{4}$ inch = 1 pound.

Fig. 2 represents a set of forces acting at a point. In this diagram the magnitudes of the forces are represented by the lengths of the various lines. It is often more convenient, however, merely to represent the directions and senses accurately, and to place the numerical value of the magnitudes beside the lines representing



the respective forces as in Fig. 3. Sometimes, when general conditions are merely wished in the form of a note, the directions as well as the magnitudes are only relatively represented, and the actual direction ratios, as well as the magnitudes, jotted down on the diagram as in Fig. 4