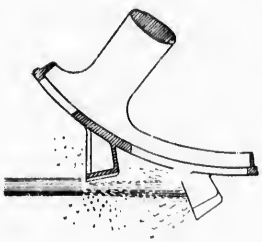
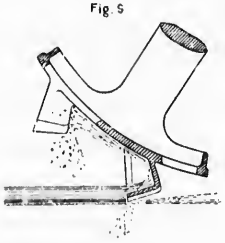
Fig 8



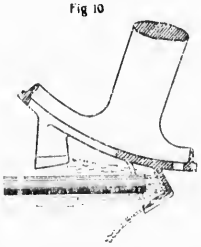
When the vane begins to intercept the jet, as in fig. 8, it is the outer lip or scoop which first comes in contact with the jet. The small amount of water which strikes the blunt edge of this outer lip is scattered, and thus only gives up a proportion of its energy to the wheel. More than this, it probably causes considerable disturbance and consequent loss of energy in the rest of the stream.

Fig 9



As the vane passes further into the path of the jet, as represented in fig. 9, the water strikes on the interior curved surface of the outside scoop portion of the bucket on each side of the outer end of the wedge. The curve of the bucket at this point is such that the water is mainly deflected in an inward and backward curve in the plane of the wheel, so that it emerges from the vane surface in a plane tangential to the wheel rim; it proceeds in the same direction until it strikes the back of the following vane, producing upon it a force of impact opposite to the direction of motion of the wheel.

Fig 10



As the wheel moves into such position that the jet plays upon the central portion of the wedge, the stream is deflected to each side in a plane parallel to the axis of the wheel; and it is then and only then that the conditions of action assumed are approximately fulfilled. This position is shewn in fig. 10.

It may be estimated that the action of the water is not what it is assumed to be while the vane moves over from 1-5 to 1-3 of the total arc of action. During this interval the action of the water is more or less inefficient.