CLAIMS

1. A drive sprocket comprising a plurality of integrally formed teeth for meshing with a drive member to transmit rotary motion, the drive member including a plurality of engagement pockets engaging the teeth of the drive sprocket, in which each tooth has a tooth profile defined by a first side comprising a first engagement surface and an opposite second side comprising a second engagement surface, which engagement surfaces are configured such that when driven, a tooth meshes to the engagement pocket at a first contact location on the first engagement surface and also at a second contact location on the second engagement surface, in which the first contact location is radially offset from the second contact location.

2. A drive sprocket according to Claim 1, in which each tooth has a front face and a back face, the shape of which faces being defined by the first and second sides, in which the shape of each face is symmetrical about a radial axis of the tooth, and the sides of the faces are defined at least partially by two arcs.

3. A drive sprocket according to Claim 1 or 2, in which adjacent teeth are spaced apart from one another to define a connecting portion of the sprocket.

4. A drive sprocket according to Claim 1, in which each tooth has a front face and a back face, the shape of which faces being defined by the first and second sides such that the shape of each face is symmetrical about a radial axis of the tooth, and the first side of each face is defined at least partially by a first face arc, and the second side of each face is defined at least partially by a second face arc, in which the distance between the centre of the first face arc and the centre of the second face arc of each tooth is substantially the same as the distance between the centre of the first face arc of a first tooth and the centre of the second face arc of an adjacent tooth.

5. A drive sprocket according to Claim 4, in which the first face arc of each tooth comprises a base portion of the first side of the tooth, and the second face arc of each tooth forms a base portion of the second side of the respective tooth, in which the first and second face arcs each comprise a roller seating curve.

6. A drive sprocket according to Claim 4 or 5, in which each first and second side comprises a second portion comprising a convex arc extending from a respective roller seating curve towards a tip portion of a respective tooth.

7. A drive sprocket according to any of Claims 4 to 6, further comprising a supporting curve extending from the roller seating curve of a first tooth towards the roller seating curve of an adjacent tooth.

8. A transmission system comprising a drive sprocket according to any of Claims 4 to 7 and a drive member adapted to mesh with the drive sprocket.

9. A transmission system according to Claim 8, in which the drive member comprises a roller chain and adjacent rollers forming the roller chain define a plurality of engagement pockets, each of which engagement pockets comprising a first engaging surface and a second engaging surface spaced apart from the first engaging surface, preferably the roller chain has a pitch p, and the distance between the centre of the first face arc and the centre of the second face arc of each tooth, and the distance between the centre of the first face arc of a first tooth and the centre of the second face arc of an adjacent tooth is substantially equal to p.

10. A transmission system comprising a drive sprocket according to Claim 1 and a drive member adapted to mesh with the drive sprocket,

in which the drive member comprises a roller chain comprising a plurality of spaced apart rollers, each roller being spaced apart from adjacent rollers by a predetermined distance, and connected to an adjacent roller by a rigid connecting member extending between two adjacent rollers whereby the engagement pockets are defined between adjacent rollers,

in which a first engagement pocket is formed by first and second rollers which are adjacent to one another, a second engagement pocket is formed by the first roller and a third roller, and a third engagement pocket is formed by the second roller and a fourth roller, the third roller being adjacent to the first roller, and the fourth roller being adjacent to the second roller,

and in which an angle formed between a connecting member connecting the first and second rollers, and a connecting member connecting the first and third rollers, comprises a first articulation angle, and an angle formed between the connecting member connecting the first and second rollers, and a connecting member connecting the second and fourth rollers comprises a second articulation angle,

in which the magnitude of the first articulation angle formed when the first second and third rollers are all in contact with a tooth is different to the magnitude of the second articulation angle formed when the first second and fourth rollers are all in contact with a tooth.

11. A transmission system according to Claim 10, in which the drive member comprises a plurality of articulation points, and the articulation angles are defined at articulation points.

12. A transmission system according to Claim 10 or 11, in which the first roller comprises a load bearing roller and the second roller comprises a supporting roller.

13. A transmission system according to Claim 10, 11 or 12, in which the magnitude of the first articulation angle is greater than the magnitude of second articulation angle.

14. A transmission system according to any of Claims 10 to 13, in which magnitude of every other articulation angle is substantially the same.

15. A transmission system according to any of Claims 10 to 14, in which the roller chain comprises a plurality of inner links, each of which serves to connect two rollers to form a roller pair, and a plurality of outer links, each of which serves to connect roller pairs to one another to form the roller chain, such that a space is defined between inner surfaces of facing inner links, and also between inner surfaces of facing outer links, in which each tooth of the sprocket tooth has a width which is the same as, or slightly less than the distance between inner surfaces of facing outer links, and greater than the distance between inner surfaces of facing inner links; and, optionally, each tooth of the sprocket comprises a first width which is the same as or slightly less than the distance between inner surfaces of facing inner links, and a second width that is the same as or slightly less than the distance between the inner surfaces of facing outer links.