CIS009-2, Mechatronics
Mechanical Fundamentals - Mechanisms

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October 24, 2012

Outline

1. Introduction
2. Mechanisms
3. Kinematics
4. Kinematic chains
5. Cams
6. Gear trains
7. Ratchet and pawl

Introduction
Mechanisms
Kinematics
Kinematic chains
Cams
Gear trains
Ratchet and pawl

Introduction

Introduction
Mechanisms
Kinematics
Kinematic chains
Cams
Gear trains
Ratchet and pawl

Mechanisms

What is a mechanism?

- A *mechanism* is a system of mechanical elements arranged to transmit motion from one form to another form.

Example

- It might, for example, transform:
  - a linear motion into a rotational motion
  - a motion in one direction into a motion in a direction at right angles
  - a linear reciprocating motion into rotary motion,
    - as in the internal combustion engine where the reciprocating motion of the pistons is converted into rotation of the crank and hence the drive shaft.

Composition of a Mechanism

Mechanisms consist of mechanical elements including linkages, cams, gears, rack-and-pinion, chains, belt drives, etc. The rack-and-pinion can be used to convert a rotational motion to a linear motion. Parallel shaft gears might be used to reduce a shaft speed. Bevel gears might be used for the transmission of rotary motion through 90?. A toothed belt or chain drive might be used to transform rotary motion about one axis to motion about another. Cams and linkages can be used to obtain motions which are prescribed to vary in a particular manner.

Kinematics

Introduction

Mechanisms

Kinematics

Kinematic chains

Cams

Gear trains

Ratchet and pawl

Kinematic chains

Introduction

Mechanisms

Kinematics

Kinematic chains

Cams

Gear trains

Ratchet and pawl

Cams

Introduction

Mechanisms

Kinematics

Kinematic chains

Cams

Gear trains

Ratchet and pawl

Gear trains

Introduction

Mechanisms

Kinematics

Kinematic chains

Cams

Gear trains

Ratchet and pawl

Introduction
Mechanisms
Kinematics
Kinematic chains
Cams
Gear trains
Ratchet and pawl

Ratchet and pawl

Introduction

Mechanisms

Kinematics

Kinematic chains

Cams

Gear trains

Ratchet and pawl