



Explanation:

Bevel gears are gears where the axes of the two shafts intersect and the tooth-bearing faces of the gears themselves are conically shaped. Bevel gears are most often mounted on shafts that are 90 degrees apart, but can be designed to work at other angles as well. The pitch surface of bevel gears is a cone.

Applications:

The bevel gear has many diverse applications such as locomotives, marine applications, automobiles, printing presses, cooling towers, power plants, steel plants, railway track inspection machines, etc.

Bevel gears are used in **differential drives**, which can transmit power to two axles spinning at different speeds, such as those on a cornering automobile.

Bevel gears are also used as the main mechanism for a **hand drill**.

Advantages:

This gear makes it possible to change the operating angle.

Differing of the number of teeth (effectively diameter) on each wheel allows mechanical advantage to be changed. By increasing or decreasing the ratio of teeth between the drive and driven wheels one may change the ratio of rotations between the two, meaning that the rotational drive and torque of the second wheel can be changed in relation to the first, with speed increasing and torque decreasing, or speed decreasing and torque increasing.

Disadvantages:

One wheel of such gear is designed to work with its complementary wheel and no other. Must be precisely mounted.

The axes must be capable of supporting significant forces.

Animation: [Gears_animation.gif](#)

