

7

flexible continuous element driveably engaging the first and second sheaves at steplessly variable radial positions.

11. A continuously variable transmission comprising:
- an input shaft;
 - an intermediate shaft;
 - an output shaft;
 - a second output shaft;
 - a variable ratio drive mechanism having an input, an output driveably connected to said input and intermediate shaft, and an endless belt driveably engaged with the input and output for producing a continuously variable ratio of the input speed to the output speed;
 - a fixed ratio drive mechanism having a first element driveably connected to the output shaft drive and a second element driveably connected to the intermediate shaft;
 - a first gearset having an input driveably connected to the input shaft and an output, for driving the output at a slower speed than the speed of the input;
 - a second gearset having an input driveably connected to the output of the first gearset and an output driveably engaged with said input, for producing a slower speed and opposite direction of rotation of the output relative to the speed and direction of the input;
 - a transfer clutch for alternately driveably connecting and disconnecting the input of the variable ratio drive mechanism and input shaft; and
 - an overrunning clutch producing a one-way drive connection of the output of the second gearset and the output shaft;

8

a low brake for alternately driveably holding fixed against rotation and releasing an element of the first gearset whereby the output of the first gearset is driven at a slower speed than the speed of the input shaft;

- a clutch for alternately driveably connecting and disconnecting the intermediate shaft and second output shaft;
- a first reverse clutch for alternately driveably connecting and releasing the input shaft, output of the first gearset and the input of the second gearset; and
- a second reverse clutch for alternately driveably connecting and disconnecting the gear of the second gearset and the output shaft.

12. The transmission of claim 9 wherein:

- the overrunning clutch produces a one-way drive connection of the gear of the second gearset and the output shaft;
- the low brake alternately driveably holds fixed against rotation and releasing the ring gear;
- the first gearset includes a sun gear driveably connected to the input shaft, a ring gear surrounding the sun gear, a carrier, a first set of planet pinions rotatably supported on the carrier and driveably engaged with the ring gear, a second set of pinions rotatably supported on the carrier and driveably engaged with sun gear and first set of pinions; and
- the second gearset includes a pinion driveably connected to the carrier, a gear meshing with the pinion; a first gearset driveably connected to the input shaft and output shaft, for driving the output shaft at a slower speed than the speed of the input shaft.

* * * * *