

SpeedBuffer

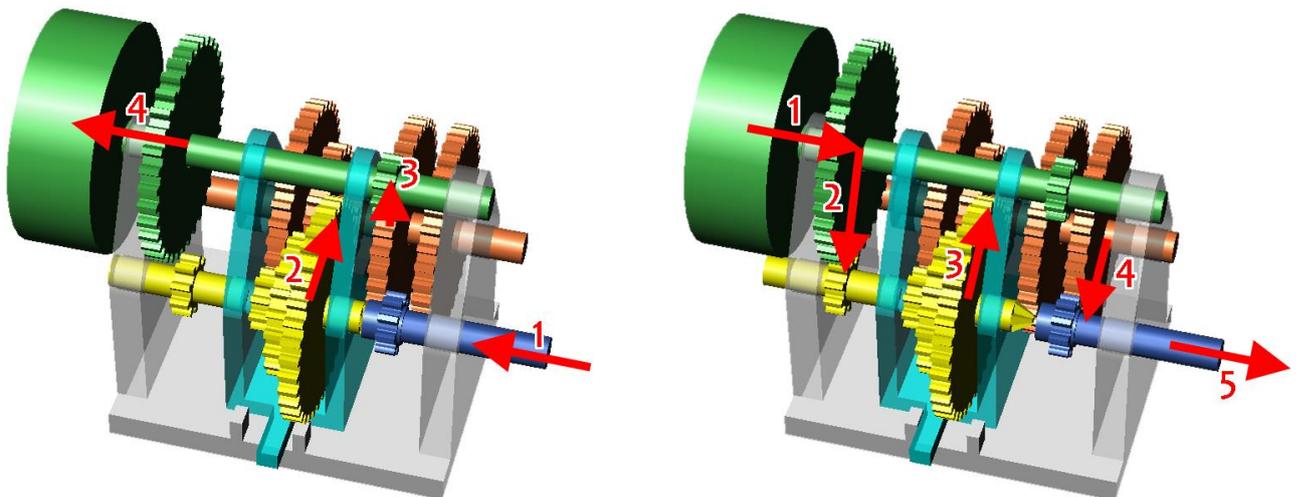
Energy buffer storage device

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Storage	Restitution
When the stored energy increases, the transmission ratio also increases, and the flywheel accelerates.	The greater the amount of energy stored, the more the transmission ratio decreases.

The principle consists in a first step in storing energy in a buffer storage, and in a second step in recovering this energy, benefiting for each of the two steps from the advantages of a, automatic gearbox with a transmission ratio that varies according to the resistive torque, and above all by using the same and unique automatic gearbox in both stages.

The energy storage means can be for example a flywheel or an elastic return such as a spring, but the invention is especially effective when the torque required to store energy increases when the stored energy is greater, and/or when the energy return torque decreases when the stored energy decreases.



**ENERGY
STORAGE**

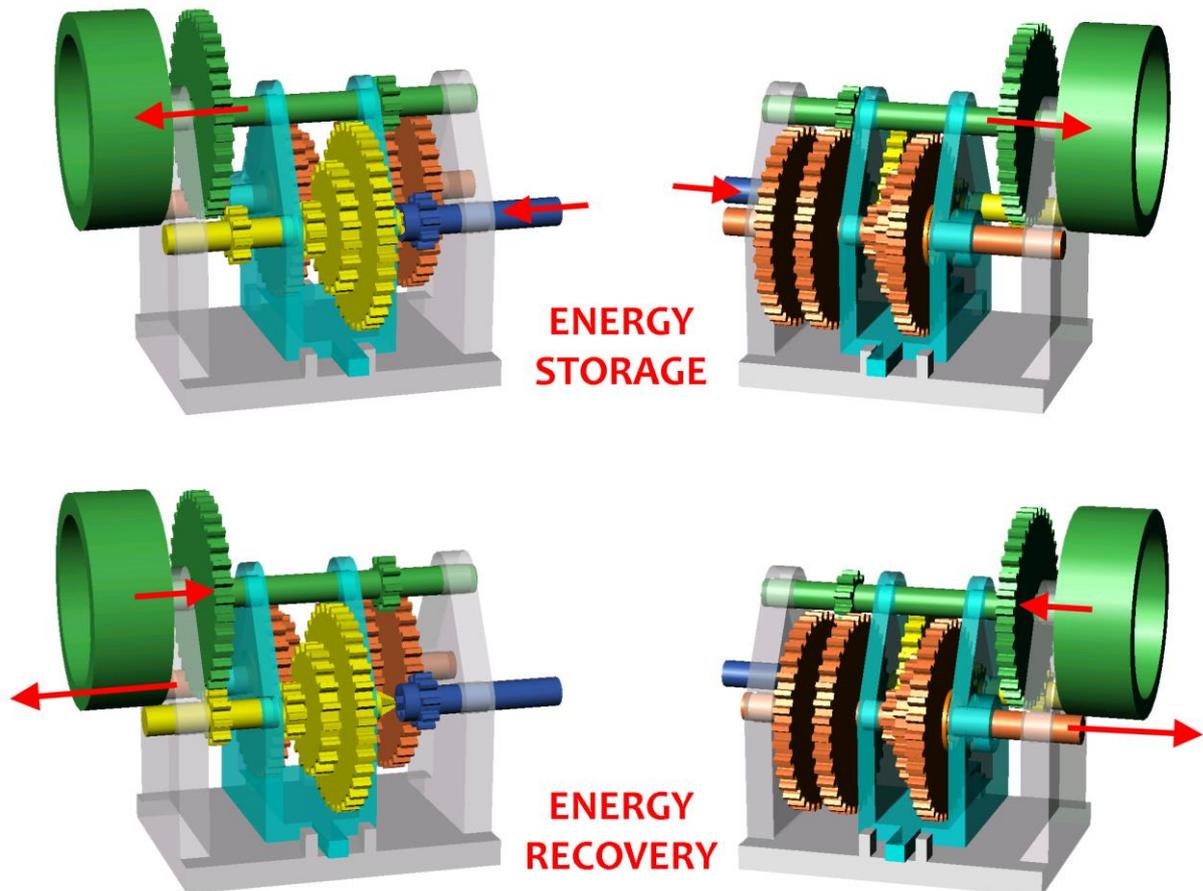
**ENERGY
RECOVERY**

The output shaft and the input shaft can be confused as illustrated above if, for example, the rotation of the wheels of a vehicle is used to subsequently propel it.

During the energy return step, the output shaft can rotate in the same direction of rotation as during the energy storage step, but it can also rotate in the opposite direction, depending on the choice of the designer of the device. This may be due for example to the type of energy storage means chosen, a shaft linked to a spring restoring its energy by rotating in the opposite direction to that of the storage while a shaft linked to a flywheel restores its energy by turning in the same direction as that of storage, or for the purpose pursued, a miniature car toy that can store energy by rolling in the direction in which it must then roll by the return of energy, or in the opposite direction.

The selector can automatically change position when the storage means has stored a determined energy value, to switch from the energy storage position to the energy recovery position as soon as this value is reached. The selector can also change position by command of a computer-controlled mechanical means.

If one wants to store energy by rolling an airplane on the ground for example and restore this energy by rotating its propeller to make it fly, the output shaft and the input shaft may be separated as shown below. below.



The intermediate positions of the selector between its two clutch positions can both stop the rotation of the input and/or output shafts, or link them mechanically according to a fixed transmission ratio, or even eliminate any mechanical link between these two shafts.

Different selector positions can have the effect that the transmission between the input shaft and the output shaft is a direct drive or is done through the automatic gearbox.

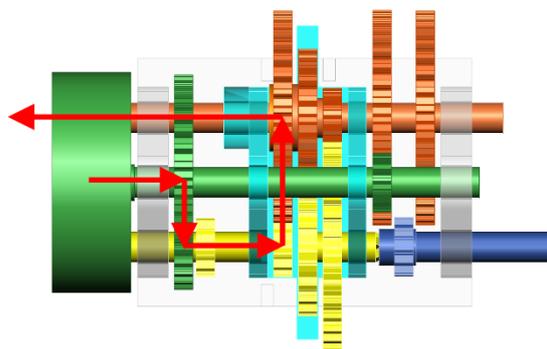
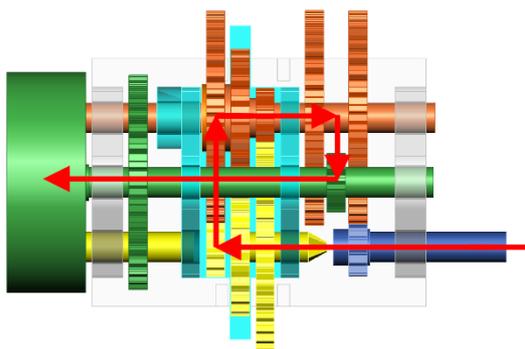
This method is also compatible with continuously variable transmissions providing infinite torque ratios.

This project is protected by patent application FR2011675 which enjoys priority from November 13, 2020 and which will be extended internationally.

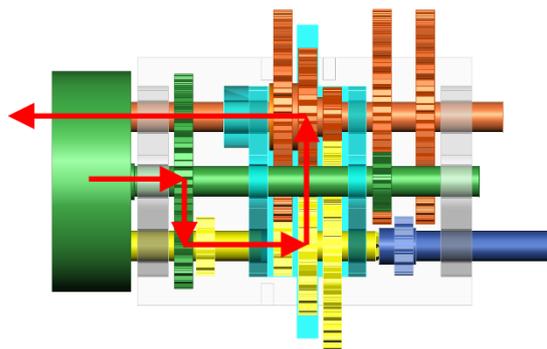
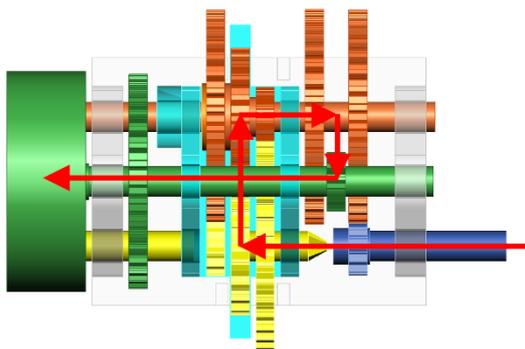
ENERGY STORAGE

ENERGY RECOVERY

1



2



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