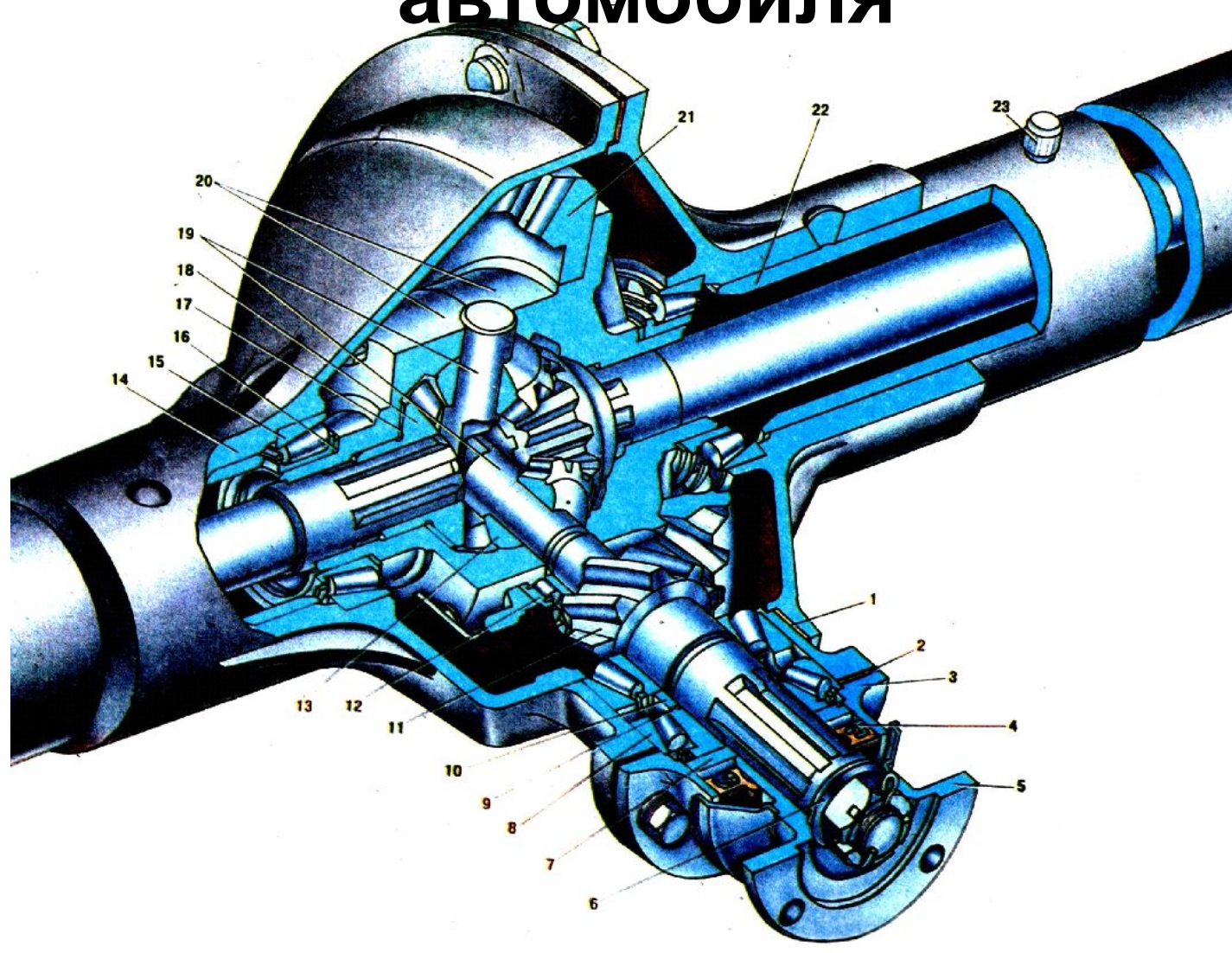
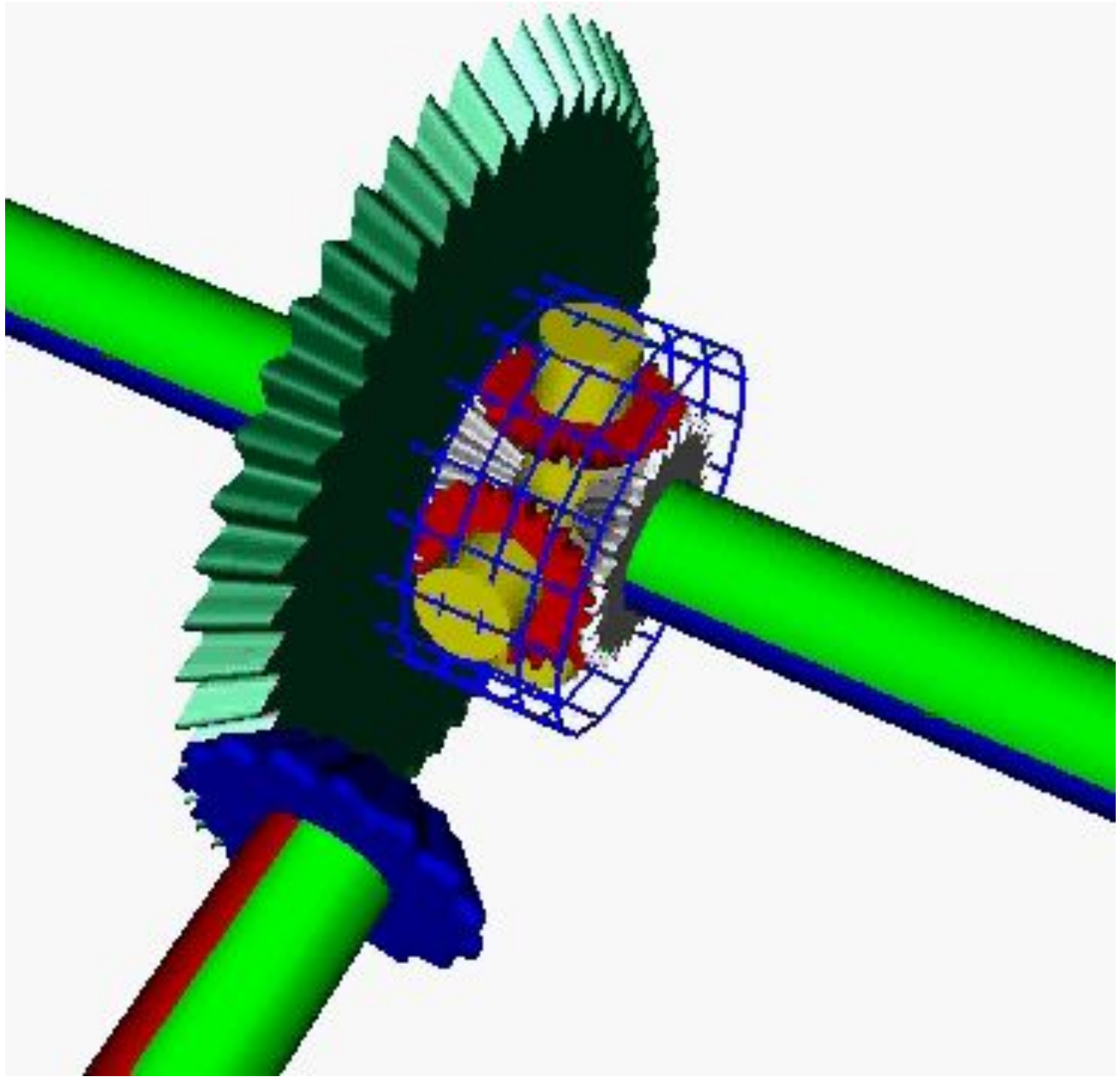


Дифференциальная передача автомобиля

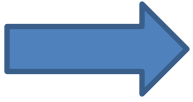




$$u_{45}^{(H)} = \frac{n_4 - n_H}{n_5 - n_H} = -1$$

$$n_4 - n_H = n_H - n_5$$

$$n_H = \frac{n_4 + n_5}{2}$$

Остановлено колесо **4**  $n_H = \frac{n_5}{2}$

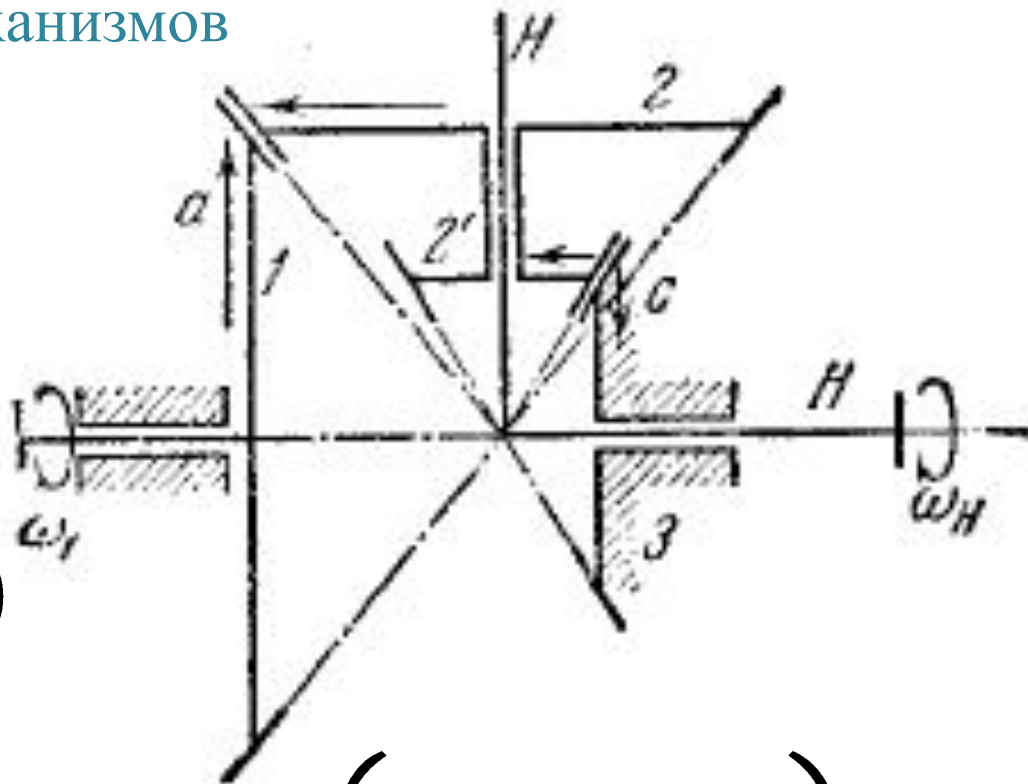
Остановлено коробка H  $n_4 = -n_5$

Примеры расчета передаточных отношений планетарных механизмов

Пример. 1

$$z_1 = 60 \quad z_2 = 48$$

$$z_{2'} = 18 \quad z_3 = 30$$



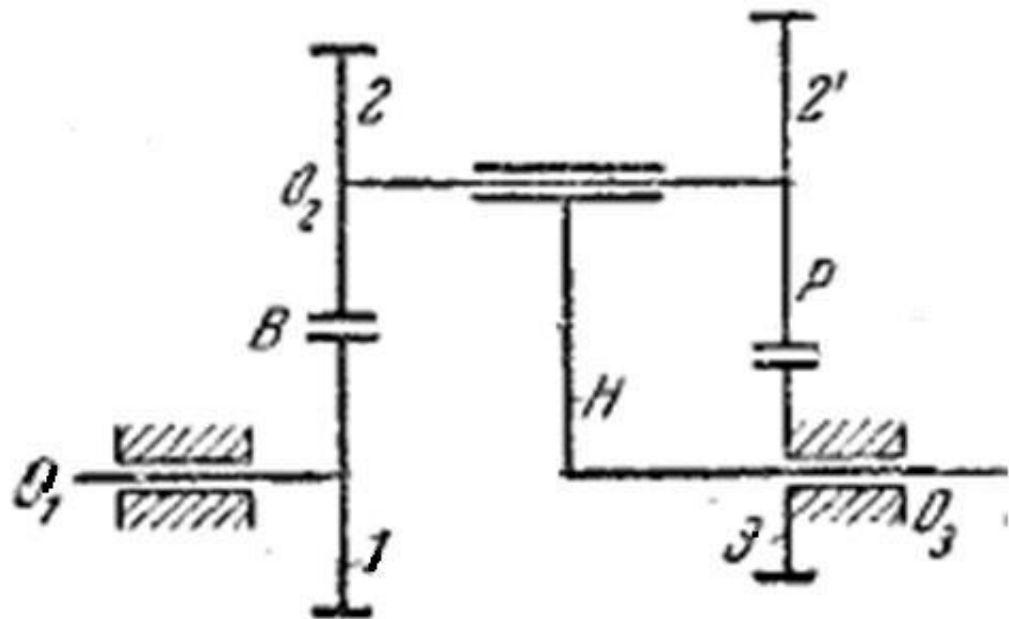
$$u_{1H}^{(3)} = 1 - u_{13}^{(H)} = 1 - \left(-\frac{z_2}{z_1} \cdot \frac{z_3}{z_{2'}} \right) =$$

$$= 1 + \frac{48}{60} \cdot \frac{30}{18} = 7,3$$

Пример. 2

$$z_1 = 20 \quad z_2 = 22$$

$$z_{2'} = 20 \quad z_3 = 18$$



$$u_{1H}^{(3)} = 1 - u_{13}^{(H)} = 1 - u_{12} \cdot u_{2'3} =$$

$$= 1 - (-1)^2 \left(\frac{z_2}{z_1} \cdot \frac{z_3}{z_{2'}} \right) = 1 - \frac{22}{20} \cdot \frac{18}{20} = 0,01$$

$$\omega_H = 100\omega_1$$

ИЛИ

$$n_H = 100n_1$$

Пример. 3

$$z_1 = 25 \quad z_2 = 50 \quad z_{2'} = 20$$

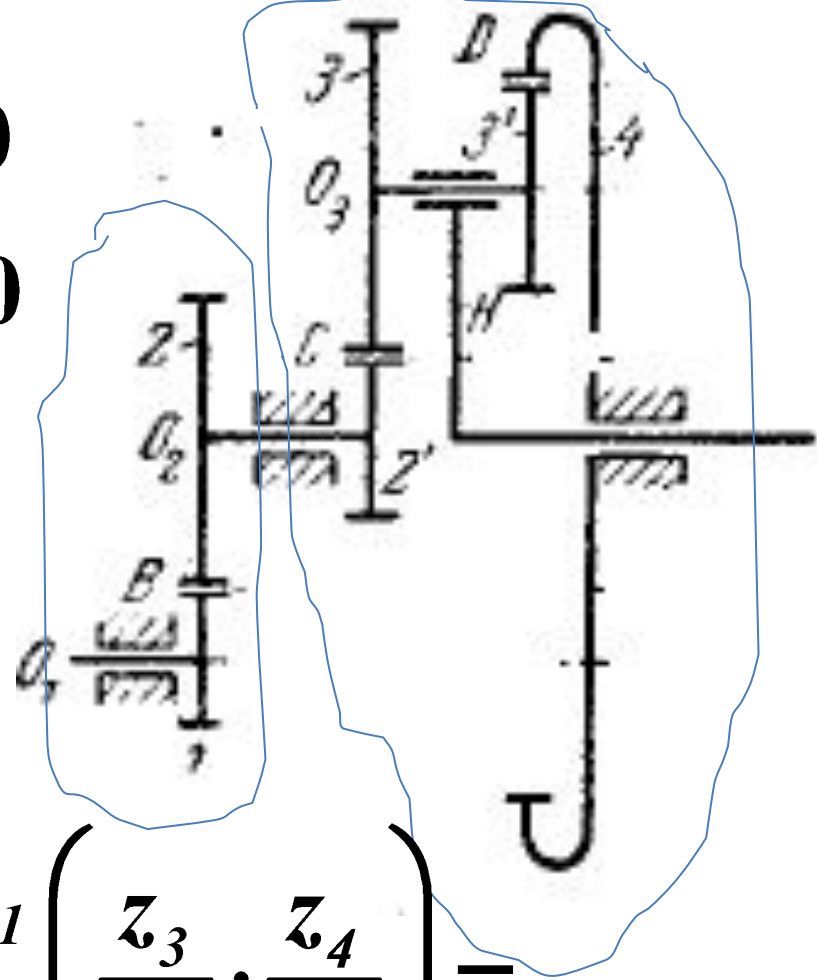
$$z_3 = 40 \quad z_{3'} = 30 \quad z_4 = 90$$

$$u_{1H}^{(4)} = u_{12} \cdot u_{2'H}^{(4)}$$

$$u_{12} = (-1)^1 \frac{z_2}{z_1} = -\frac{50}{25} = -2$$

$$u_{2'H}^{(4)} = 1 - u_{2'4}^{(4)} = 1 - (-1)^1 \left(\frac{z_3}{z_{2'}} \cdot \frac{z_4}{z_{3'}} \right) =$$

$$= 1 + \frac{40}{20} \cdot \frac{90}{30} = 7 \quad u_{1H}^{(4)} = u_{12} \cdot u_{2'H}^{(4)} = (-2) \cdot 7 = -14$$

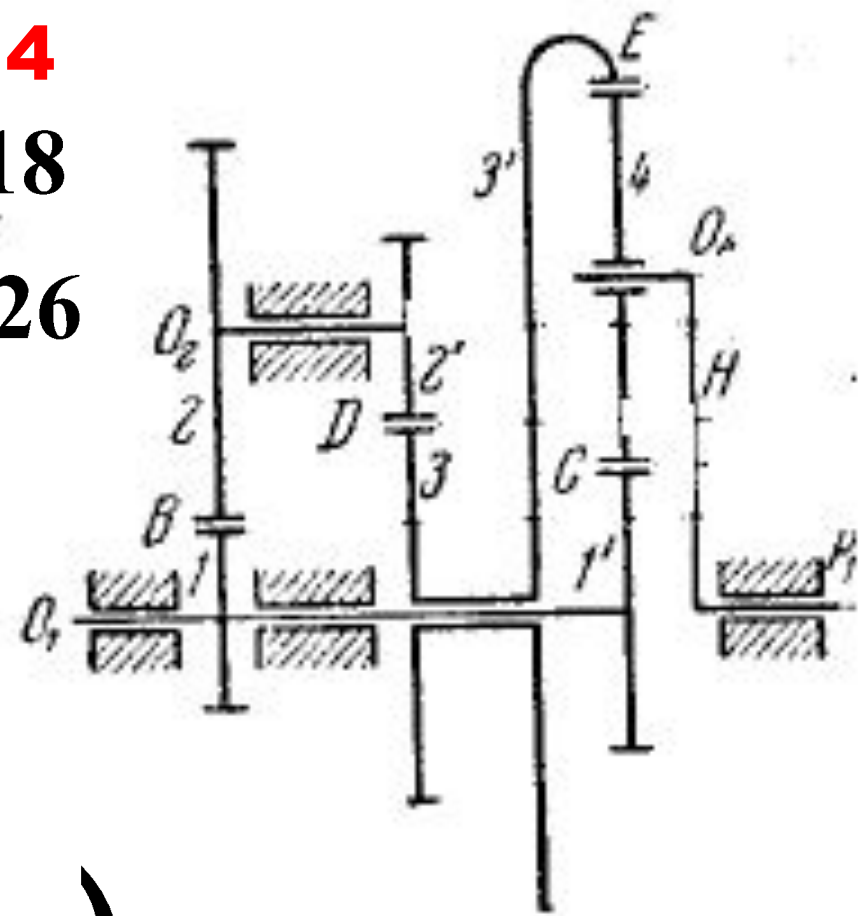


Пример. 4

$$z_1 = 20 \quad z_2 = 34 \quad z_{2'} = 18$$

$$z_3 = 36 \quad z_{3'} = 78 \quad z_4 = 26$$

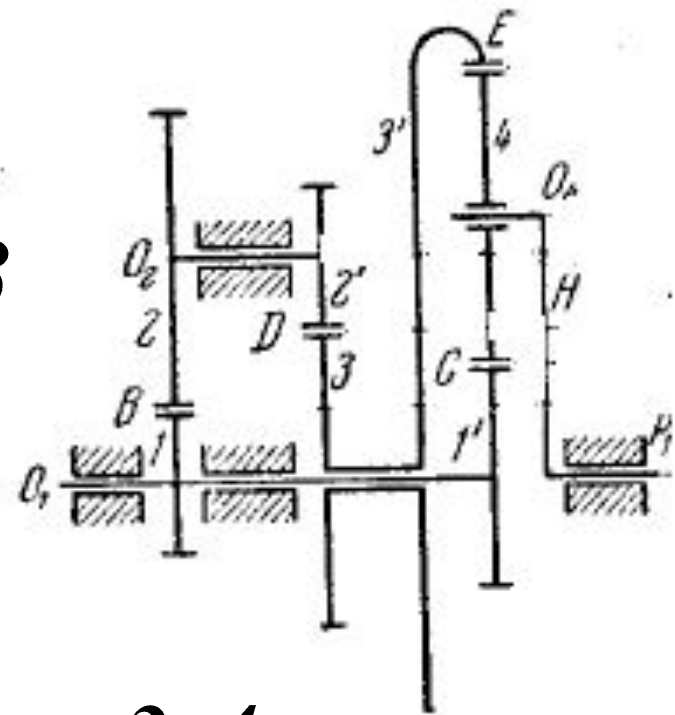
$$z_{1'} = 26$$



$$u_{1'3'}^{(H)} = \frac{\omega_{1'} - \omega_H}{\omega_{3'} - \omega_H}$$

$$u_{1H} = \frac{u_{13} \left(u_{1'3'}^{(H)} - 1 \right)}{u_{1'3'}^{(H)} - u_{13}} = \frac{u_{1'3'}^{(H)} - 1}{\frac{u_{1'3'}^{(H)}}{u_{13}} - 1}$$

$$u_{1'3'}^{(H)} = -\frac{z_{3'}}{z_{1'}} = -\frac{78}{26} = -3$$



$$u_{13} = \frac{z_2}{z_1} \cdot \frac{z_3}{z_{2'}} = \frac{34 \cdot 36}{20 \cdot 18} = 3,4$$

$$u_{1H} = \frac{-3 - 1}{3,4} = 2,125$$