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THEME: STEERING SYSTEM OF AUTO CRANE



What is Steering system?

To guide the car, it is necessary to have some means of turning the front wheels so that the car can be pointed in the direction the driver wants to go. The steering wheel in front of the driver is linked by gears and levers to the front wheels for this purpose.

The front wheels are on pivots so they can be swung to the left or right. They are attached by steering knuckle arms to the rods. The tie-rods are, in turn, attached

When the steering wheel is turned, gearing in the steering gear

assembly causes the pitman arm to turn to the left or right. This movement is carried by the tie-rods to the steering arms, and wheels, causing them to turn to the left or right.



The steering system incorporates: the steering wheel and column, steering gear, pitman arm, steering knuckle arm, front axle, steering knuckle pivot, tie-rods.

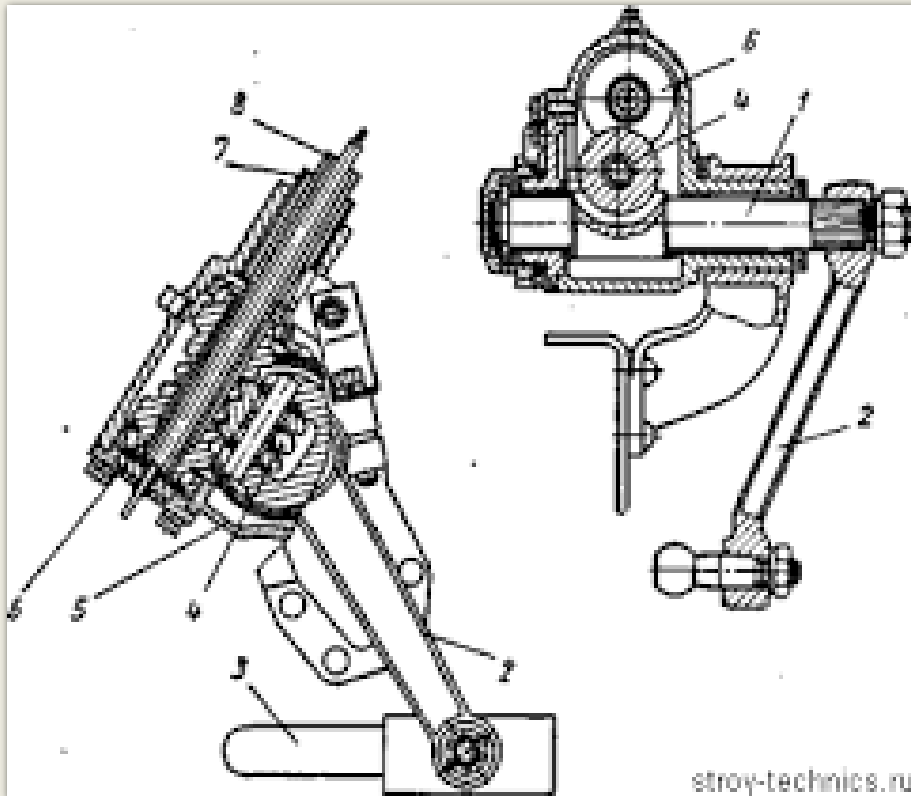
There are several different manual steering gears in current use, such as the rack and pinion type and the recirculating ball type.

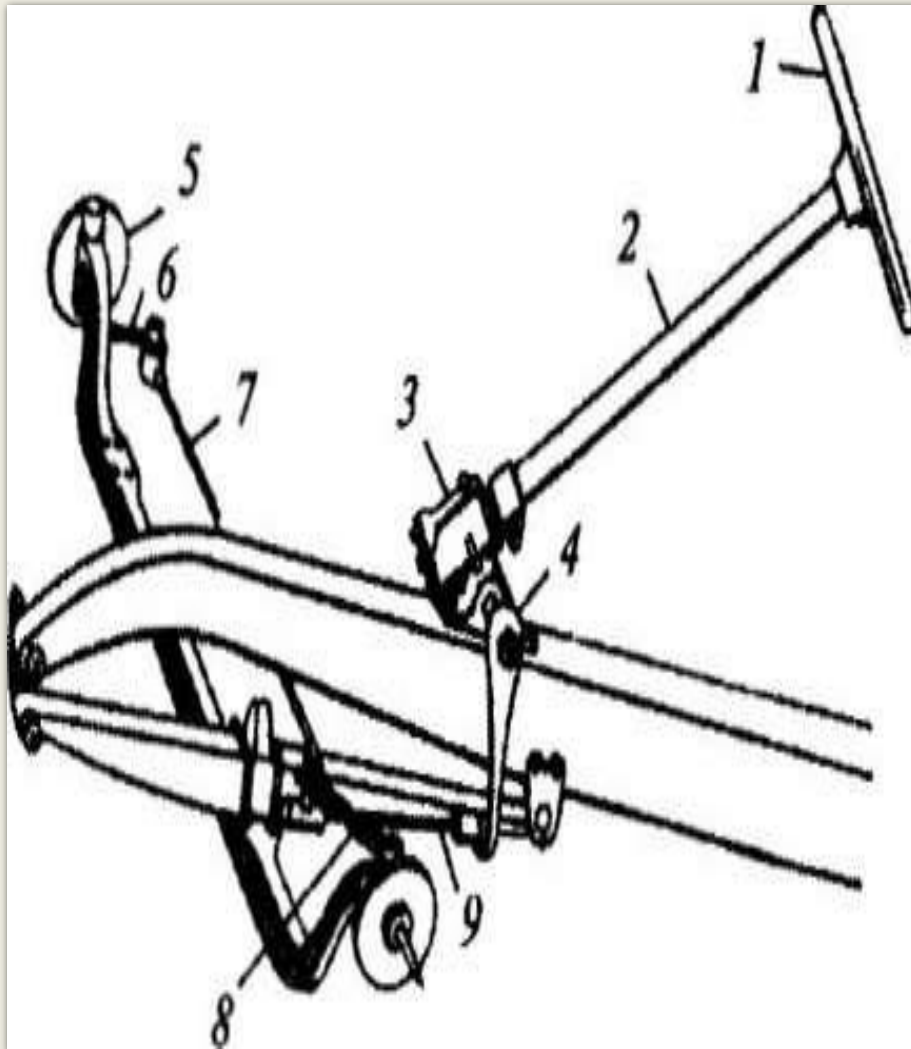
The rack and pinion steering gear is widely used. Another manual steering gear which is popular in imported cars is the worm and sector type.

The steering wheel and column are the source of injury to the driver, air bags and other devices being developed now to save the life of a driver.

Energy-absorbing columns must stop the steering wheel and column from being pushed to the rear as the front of the car is crushed in an impact.

Energy-absorbing columns must also provide the driver with a tolerable impact as he moves forward and strikes the wheel with his chest.





1. steering wheel - рулевое колесо

2. steering column, steering mast — рулевая колонка

3. steering gear - рулевой механизм

4. steering arm, steering lever, (steering) pitman arm — рулевая сошка

5. steering knuckle — поворотная цапфа, поворотный кулак

6. steering knuckle lever, steering knuckle arm — рычаг поворотного кулака

7. single tie-rod - неразрезная поперечная рулевая тяга

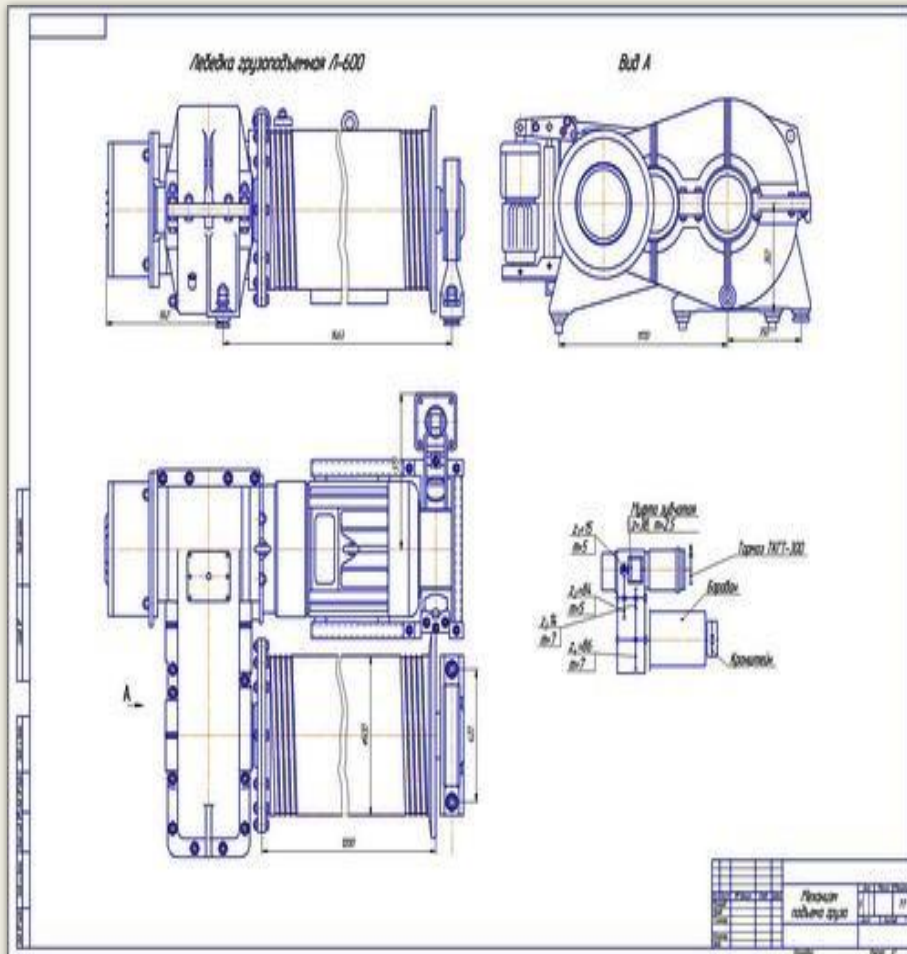
8. steering knuckle lever, steering knuckle arm — рычаг поворотного кулака

9. drag link, steering gear connecting rod, steering drag rod — продольная рулевая тяга

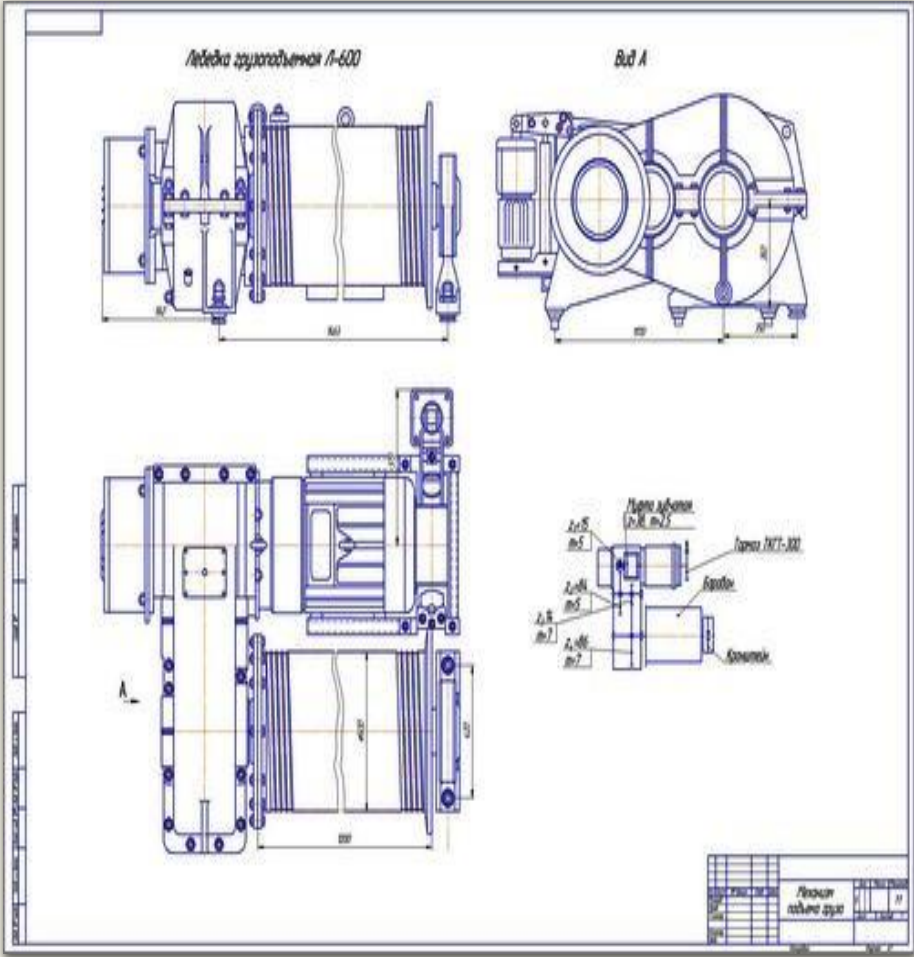
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An outgrowth of power steering is speed sensitive steering, where the steering is heavily assisted at low speed and lightly assisted at high speed. Auto makers perceive that motorists might need to make large steering inputs while maneuvering for parking, but not while traveling at high speed



ESSENTIAL VOCABULARY



absorb — поглощать

air bag - подушка безопасности

bending — изгиб

excessive - чрезмерный

for this purpose — для этой цели

guide - управлять

hydraulic pump — гидравлический насос

leakage — утечка

lever — рычаг

leverage - рычажный механизм

linkage — соединение

means of turning - средство поворота

pitman arm - рулевая сошка

pitman shaft - рулевой вал

pivot — шарнир

rack and pinion assembly - реечно-шестеренчатый механизм

rack and pinion type steering gear - рулевой механизм с рейкой и шестерней

recirculating ball type steering gear - левой механизм с шариковой гайкой

steering box — картер рулевого механизма

steering column - рулевая колонка

steering knuckle arm — рычаг поворотного кулака

steering wheel — рулевое колесо

swing - поворачиваться

tie-rod — поперечная тяга