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DEVICE FOR MOVING A CONFIRMATION DEVICE - SPINDLE

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Technical Task:
Today´s adjustable pedal systems (pedals) in motor vehicles have the primary purpose of improving ergonomics and usability.

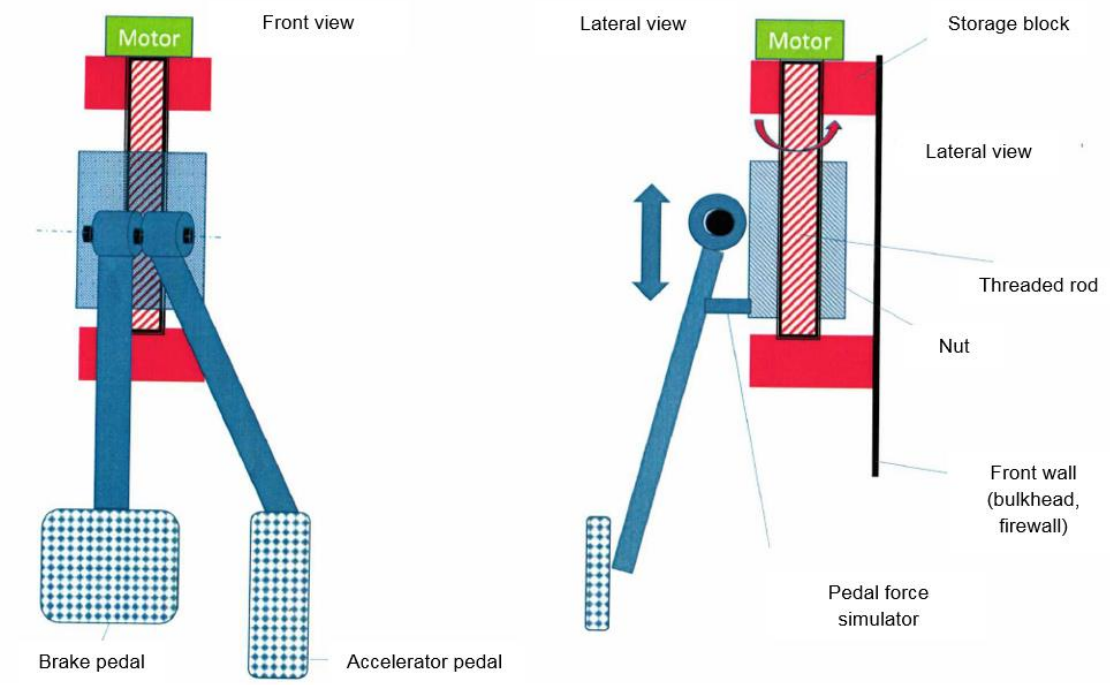
Initial Situation:
In highly automated driving, when the vehicle has taken over the driving task independently, it is desirable that the passenger on the "driver side" gets maximum freedom of movement.

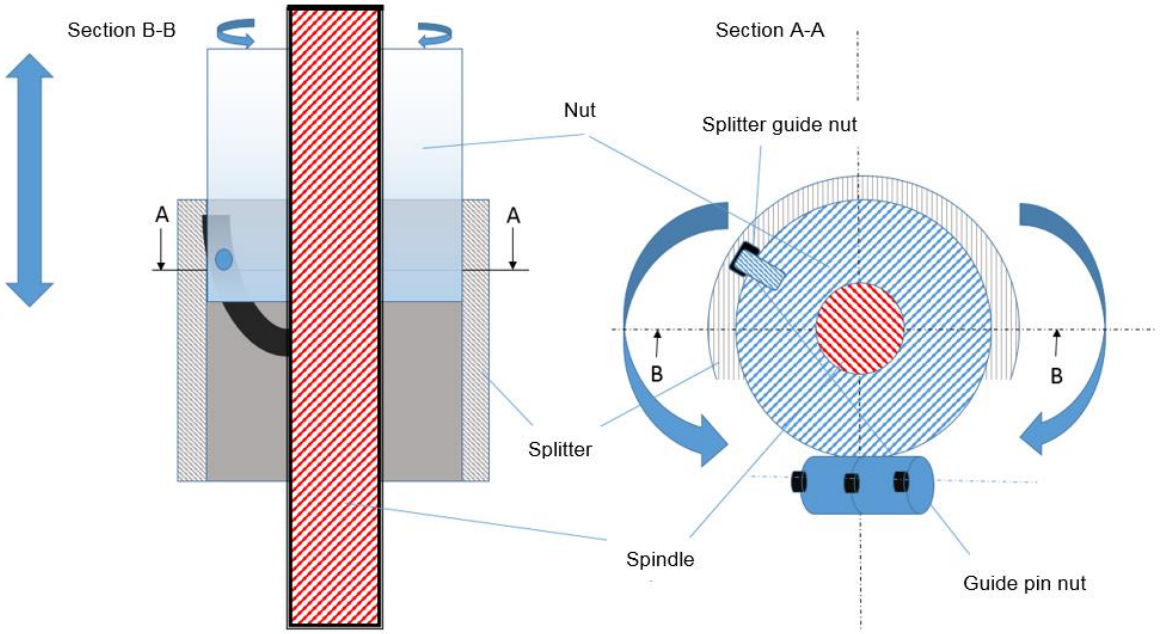
Today´s adjustable pedal systems have the disadvantage of only working in direction of travel (x), so that they always remain in the foot area and restrict the freedom of movement of driver´s/passenger´s feet on the driver side.

Solution:
The pedals should be designed in a way so that they can be pulled under the cockpit while driving autonomously (It is assumed that with increasing level of autonomous driving, confirmation devices without mechanical passage, viz. “steer by wire” and “brake by wire”, will have prevailed. In the confirmation elements for "brake by wire" the pedals then no longer have any connection to the brake system. This enables the pedals to move relatively freely.).

The confirmation takes place by means of a spindle drive, whereby the pedal arm of the nut (which must be secured against twisting) is flange-mounted. The drive of the spindle is possible via electric motor, if necessary by a gear. When the engine is energized, the spindle rotates and the nut moves to the direction of the longitudinal axis of the spindle. If necessary (for instance due to space limitations), the adjustment mechanism can be executed around the axed, which is tilted on the y-coordinate system, so that the adjustment is made in an oblique plane.

The accelerator and brake pedals may have common pivotal mounting and/or separate pivotal mounting. The adjustment mechanism can be mechanically locked in the end positions by means of locking elements in order to ensure safe operation or end position. A pedal force simulator and a pedal travel sensor should be installed between the nut and the pedal.





Advantages:

- The driver or passenger on the driver's side has full freedom of movement in the footwell during autonomous driving without being restricted by pedals.
- Operating error by the driver is impossible.