

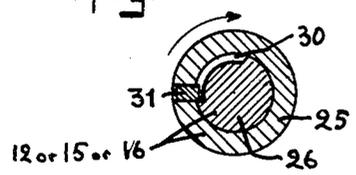
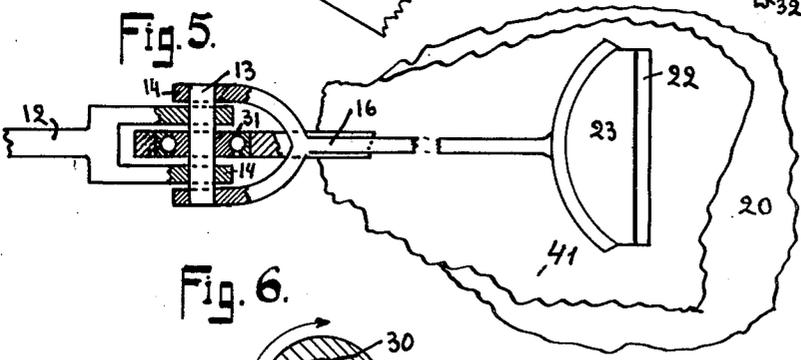
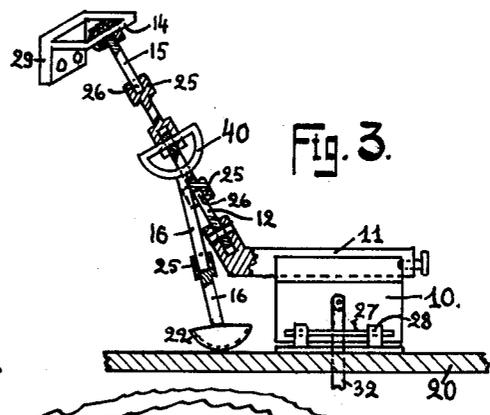
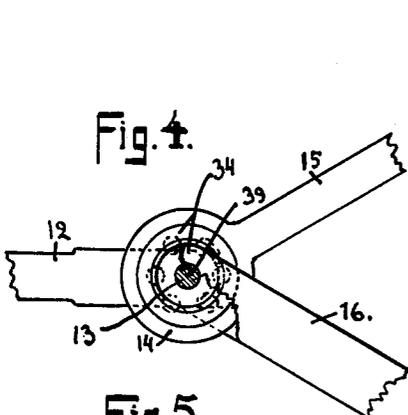
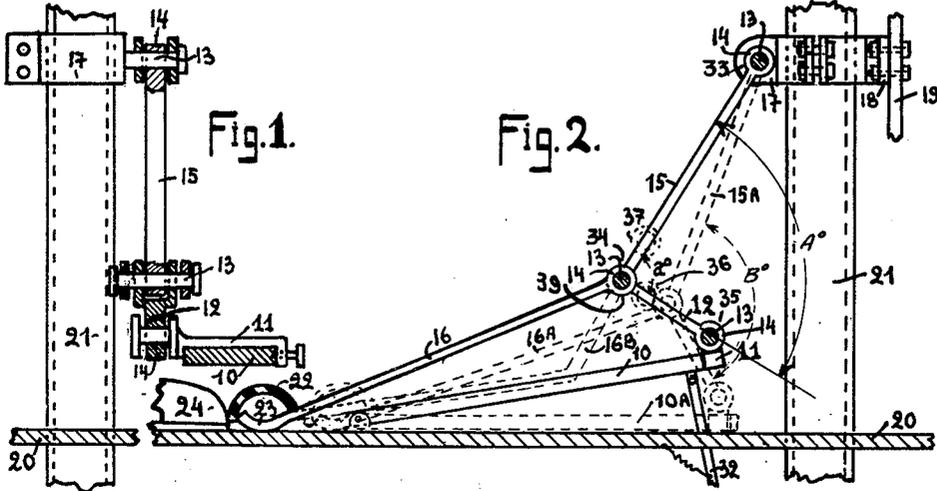
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G. A. RUBISSOW

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LINK SYSTEM FOR AN ACCELERATOR PEDAL

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INVENTOR.

George A. Rubissow

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LINK SYSTEM FOR AN ACCELERATOR PEDAL

George A. Rubissow, 420 Riverside Drive,
New York 25, N.Y.

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The present invention consists in a device which may be adapted and installed in a few minutes to any existing type of throttle, and when so installed, the said device offers the following advantages:

The driver, instead of keeping his foot (or footwear) in a permanently raised position, may rest his foot on the floor without any tension or intentional force to be provided in his muscles and/or in his nerves. That means that the operator who uses the present invention will use his foot exactly in the same manner as if he were sitting in the chair of a theater, when his feet are just resting on the floor without any will-action and without any special force to be provided in the muscles and nerves.

Furthermore, the driver, instead of pressing the footwear against the throttle accelerator pedal (as the operators do at the present time with the existing throttles), will only be obliged to move his footwear to and fro (or sideways or both) contacting during this movement the member (actuating device) subject of this invention, and will operate, by means of this displacement of his footwear (resting or sliding on the floor), the throttle accelerator pedal to which the member is connected by suitable means.

This invention comprises a system of three members interconnected pivotally between them, two of which are each attached pivotally respectively by one of its ends, one pivotally in respect to the vehicle and the other one pivotally in respect to the pedal, and both interconnected pivotally by their other ends one to another. The third member is a pusher member pivotally attached by its one end to either one or both of these other two members and having its other free end freely resting upon the floor of the vehicle and is used by pushing it to and fro by the driver's footwear thus actuating the throttle.

This invention is illustrated in the accompanying drawings but is not limited thereto. Like references refer to like subject matters.

FIGURE 1 is a side view with parts broken out, partially in cross section, of one aspect of this invention.

FIGURE 2 is a side view of FIGURE 1.

FIGURE 3 is another aspect of this invention shown diagrammatically with parts broken out and partially in cross section.

FIGURE 4 is a plan view of a detail of one of the pivotal connections.

FIGURE 5 is a cross-sectional side view of pusher member pivotal connection with parts broken out and partially in cross section.

FIGURE 6 is a cross-sectional side view of a coaxial rotation limiting means in FIGURE 3.

One of the main aspects of this invention is shown in all the figures wherein the pedal 10 is provided with a support 11 to which is rotatably attached one end of the first link 12 through a first bearing means 35 the other end of which is rotatably attached to the second bearing means 34, to which is again rotatably attached the free end of the second link 15 the other end of which is rotatably attached to the third bearing means 33 one part of which (either the axle 13 or the bushing 14) is rigidly attached in respect to the vehicle, i.e. for instance is rigidly attached to a support 17 which is rigidly attached to the shaft 21 of the steering wheel or directly attached to the walls 19 of the vehicle as shown by support 18, or attached otherwise. Either 18 or 17 is used. The second link 15 and the first link 12 are forming an angle "a" between them, which angle is less than 180°.

The third member 16 has its one end attached pivotally or rotatably through a suitable connection, for instance a fourth bearing means 39, to either of the first or second links 12 or 15, for instance in the places of 36 or 37 shown in dotted lines, or it could be attached to the bearing 34 and form one coaxial part with it as shown in FIGURES 1, 2, 4 and 5, or it could be pivotally mounted on means 40, FIGURE 3. The other end of the pusher member 16 is a free end freely resting upon the floor of the vehicle or upon a specially provided friction diminishing plate 41, FIGURE 5 interposed between the floor 20 and the pusher member 16 to diminish the friction engagement between the pusher member resting upon it and the plate 41 serving as an area of displacement for the footwear 24 of the driver when he operates the device. When the pusher member 16 is pushed to and fro by the footwear 24 of the driver by contacting a cushion 22 made of rubber or any other suitable material and mounted upon the end 23 of the pusher member 16, the links 12 and 15 will be obliged to take the positions 12A and 15A and thus will be obliged to push the pedal 10 downward to the position 10A, thus actuating the pedal and throttle accordingly through the rod 32. When the footwear 24 will release the pushing, the links 12 and 15 and the pedal 10 will come back to their initial positions, this due to the spring means urging the throttle. Thus the driver could use either the pedal (as usually used) or use the pusher lever and then keep the footwear resting upon the floor or the plane in any position desired and thus maintain the position of the pedal in any required operating position and this without applying any muscular strength. The free weight of the footwear and of the foot resting upon the floor during all the driving will maintain the pedal in any desired position, and this without any fatigue.

Another important aspect of this invention comprises the arrangement wherein all the four before-mentioned bearings 35, 34, 33, 39 (or 36 or 37) have their respective axes of rotation all parallel one to another. This will permit all the components to move easily in one single plane. The bearings 34 and 39 could be coaxial if desired.

The floor 20 could be of any form. It could be inclined in its front part as is usually done for present day automobiles.

In addition, each of the links 12, 15 or pusher member 16 or all of them could be limitedly or non-limitedly rotatable around their own longitudinal axes as shown by the means 25-26 for the links 12, 15 and pusher member 16 on FIGURE 3. This will permit the pusher member 16 to take any desirable position whatsoever while the links 12 and 15 are pushed to and fro.

Every bearing means or all of them could be of any suitable type, for instance a ball bearing, as shown on FIGURES 4 and 5, or an axle and a bushing as shown on FIGURES 1 and 2, or a combination of them, for instance the second bearing 34 may be a ball bearing as shown in FIGURE 4 and the fourth bearing 39 may be mounted on the shaft 13 of the bearing 34, and the other bearings 33 and 35 could be simple axle 13 and bushing 14. The link 15, FIGURE 4 could be mounted upon the bushing 14 of the bearing 34 and the link 12 upon the axle 13, thus be freely rotatable in respect to it. The pusher member 16 could be as well mounted on a ball bearing instead of a simple axle and bushing arrangement as shown in FIGURE 5 and be freely rotatable around the axle 13.

The angle "a" should be so chosen that when the links 12 and 15 and pusher member 16 are pushed the maximum possible forward, the pedal will go down as much as possible, and the angle "b" shown in dotted lines on FIGURE 2, should be smaller than 180° to permit an easy self-return of the system and of the pedal

to their initial positions, which is achieved by the urging force provided by the resilient means of the throttle.

The links and pusher-member could be of any form, either straight or curved or any combination of them. The pusher member 16 for instance could be of a shape as shown in dotted lines 16B, thus the footwear of the driver will not be hindered by it when it is in operation and the driver could without any hinderance switch on to the operation of the pedal 10 in a normal way if desired.

Resilient means are provided to urge slightly said levers into their initial position after the footwear has been removed from said pusher-member 16.

The pusher-member 16 could be as well placed on any side of the pedal, left or right of it, and at any suitable distance from the pedal and/or from the footwear 24 of the driver. The device could be operated either by the sole, or the front or the heel or by the side of the footwear.

FIGURE 6 shows one aspect of the means 25 and 26 for the links 12 and 15 and pusher-member 16, having in addition to their free rotation means as well a means to limit this rotation by providing a slot 30 in the member 26 and a stopper 31 in the member 25.

This device is very easy to be mounted upon any car and is extremely low in price. Thus it could be used by everyone and will eliminate fatigue of driving and provide a new pioneering driving comfort.

What I claim is:

1. A device for actuating an accelerator pedal of a vehicle comprising a first support rigidly affixed in respect to said vehicle, a first link, one end of which is pivotally mounted through a first bearing means on said support and the other end of which is pivotally mounted through a second bearing means upon one end of a second link provided therefor, the other end of said second link being pivotally mounted through a second support rigidly in respect to said pedal through a third bearing means, the longitudinal axis interconnecting said first and said second bearing means forming an angle with the longitudinal axis passing through said second and said third bearing means, a pusher-member link being pivotally mounted by its inner end upon said second bearing means and having a common pivoting axis with it, the free end of said member being freely slidably mounted upon the floor of said vehicle and adapted to be contacted by a foot wear of the driver which consequently can push it to and fro thus actuating said accelerator pedal.

2. A device as set forth in claim 1, wherein the maximum angle is less than 175°.

3. A device as set forth in claim 1, wherein the initial smaller angle is not less than 45°.

4. A device as set forth in claim 1, wherein said first support is mounted upon a part of the steering wheel post.

5. A device as set forth in claim 1, wherein said first support is mounted upon a part of a wall of said vehicle in front of said pedal.

6. A device as set forth in claim 1, wherein resilient means are provided to urge slightly said links into their initial position after the footwear has been removed from said pusher member.

7. A three link device for controlling the operation of an accelerator pedal of a vehicle, comprising an upper link, a lower link and a pusher-member-link, the three inner ends of said three links being pivotally interconnected between them by a common-to-all-of-them first bearing means, the outer end of said upper link being pivotally interconnected by means of a second bearing means with a support rigidly affixed in respect to the steering post of said vehicle, the outer end of said lower link being pivotally mounted upon said accelerator pedal by means of third bearing means, the outer free end of said pusher member link being slidably mounted upon the floor of said vehicle and adapted to be moved to and fro by a foot-wear of a driver, an angle of less than 180° being provided between the two, longitudinal axes passing through said first and second bearing means for one axis and through said first and third bearing means on the other axis.

8. A device as set forth in claim 7 wherein all the pivoting axes of said first, second and third bearing means are parallel to one another.

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BROUGHTON G. DURHAM, *Primary Examiner.*