July 2, 1929. R. D. MOORE 1,719,718

AUTOMATIC ACCELERATOR

Filed July 29, 1927 2 Sheets-Sheet 1

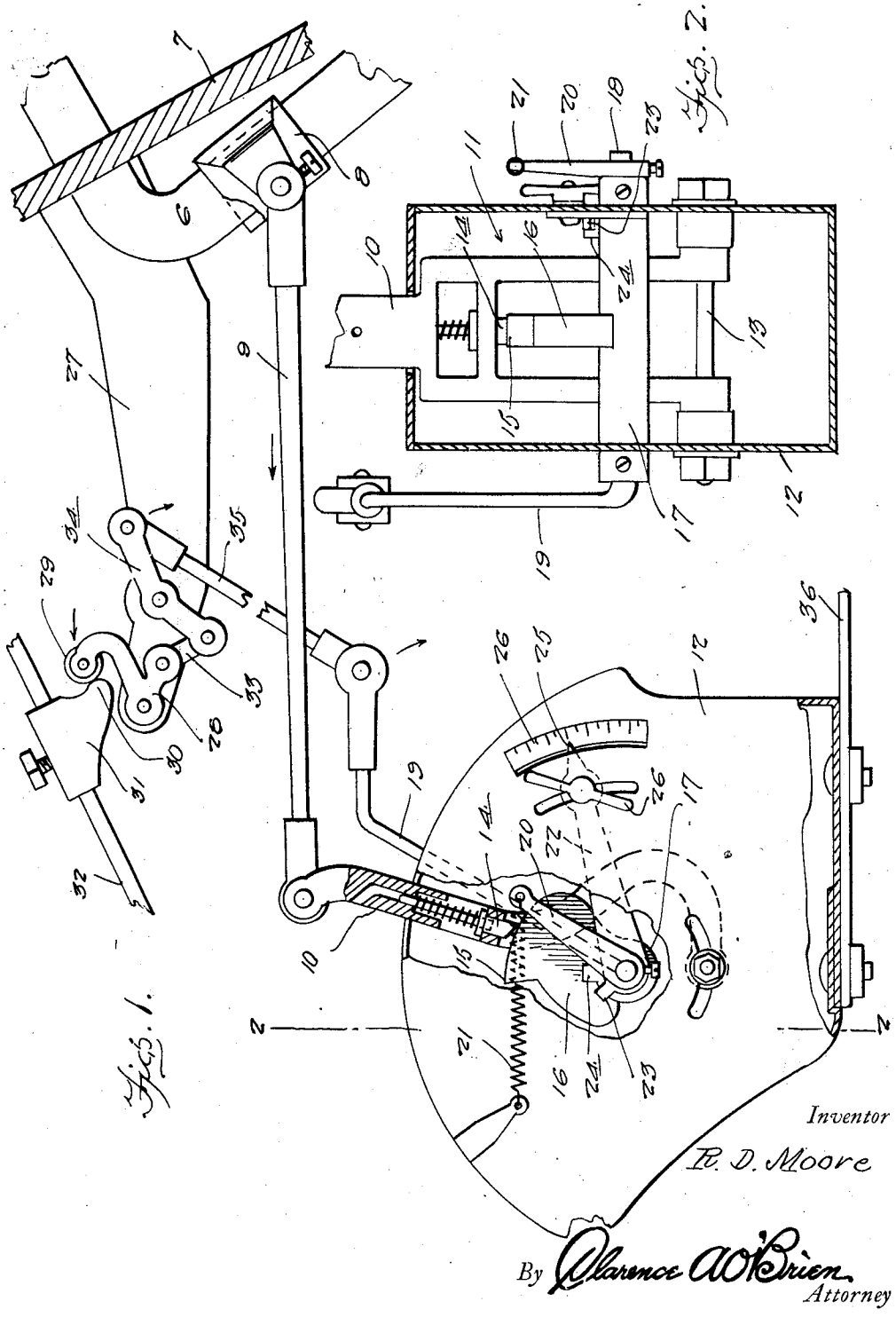


Fig. 1.

Fig. 2.

Inventor
R. D. Moore

By Clarence A. O'Brien
Attorney

July 2, 1929. R. D. MOORE 1,719,718

AUTOMATIC ACCELERATOR

Filed July 29, 1927 2 Sheets-Sheet 2

Fig. 3.

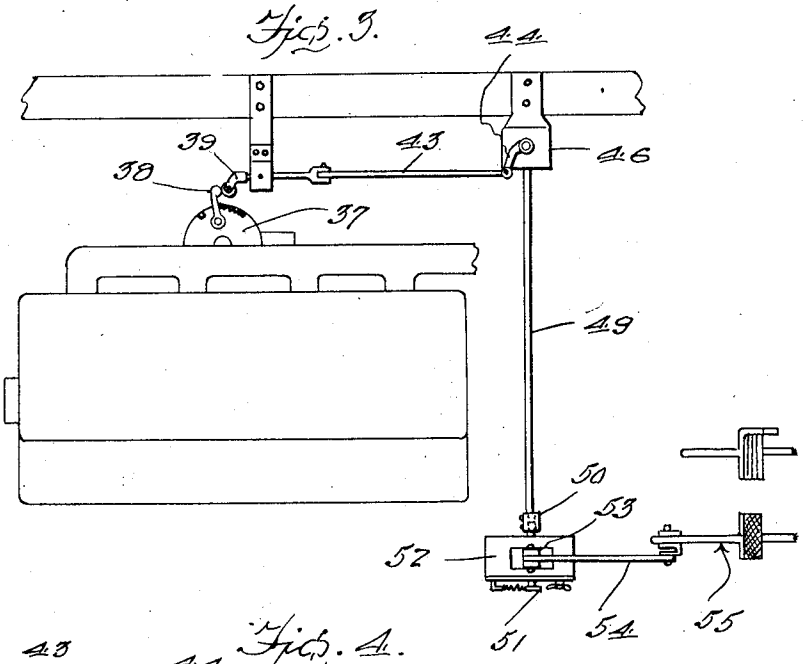


Fig. 4.

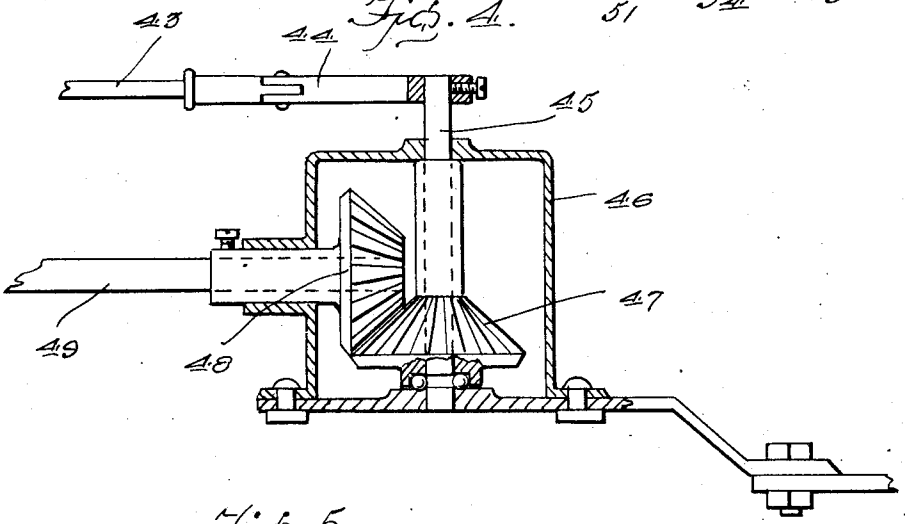
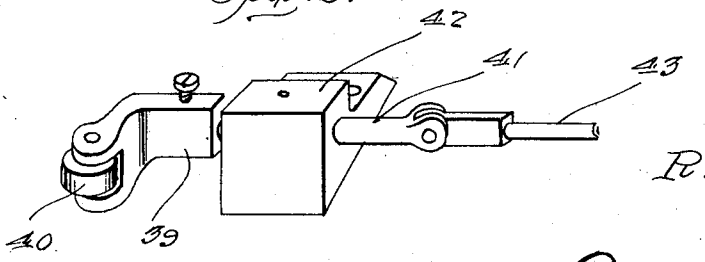


Fig. 5.



Inventor

R. D. Moore

By Clarence A. O'Brien

Attorney

Patented July 2, 1929. 1,719,718

UNITED STATES PATENT OFFICE.

RICHARD DONNELLY MOORE, OF BIRMINGHAM, ALABAMA.

AUTOMATIC ACCELERATOR.

Application filed July 29, 1927. Serial No. 209,303.

This invention relates to a device to be used for automatically accelerating the supply of gasolene to the carbureter of an automobile engine without the use of the customary foot accelerator pedal, and it has reference to a device which comes automatically into play while changing the gears.

A device of this class is particularly advantageous when driving in heavy traffic and in places where extra precaution is essential. It furnishes an even smooth acceleration, permitting the driver to keep one foot on the clutch and the other one on the brake, insures smooth operation in either forward or backward motion and practically eliminates objectionable noise caused by racing of the motor, such as is now the case with the present accelerator arrangement.

The device is clearly advantageous in that it overcomes injurious depreciation of parts caused by racing motors particularly when changing from high to low on steep grades. It thereby effects a noticeable saving in fuel.

The particular details and their relative arrangement and association will become more readily apparent from the following description and drawings:—

In the drawings:—

Figure 1 is a view in section and elevation of one embodiment of the invention showing the complete structure.

Figure 2 is a vertical section taken approximately upon the plane of the line 2—2 of Figure 1.

Figure 3 is a top plan view of a slightly different embodiment of the invention showing the more direct operation.

Figure 4 is an enlarged fragmentary detail and sectional view showing certain of the mechanism.

Figure 5 is a perspective view of a noiseless actuating part.

From the drawings it will be observed that I have illustrated two different embodiments of the structure, and these will be separately described. Before doing this, however, I would state that, in a generic sense, the invention comprises broadly, in combination, a clutch, a carbureter control device, and an operating connection between said device and the clutch, said control coming into play and shifting the gears and operating the clutch in a customary manner.

Attention is first invited to Figures 1 and 2 wherein it will be seen that the reference character 6 designates generally the shank of a clutch pedal extending through the opening in a floorboard 7. This shank carries a special clamp 8 with which a push rod 9 is connected at one end. The push rod is connected at its opposite end with an upstanding portion 10 on a swingably mounted U-shaped carrier 11. Incidentally, this carrier is located within a suitably shaped housing 12 and the arms thereof are connected with an adjustable pivot forming shaft 13. As shown, the carrier constitutes a mounting for a spring-pressed latch 14. The latch is cooperable with a shoulder 15 formed on a segmental plate 16 carried by a tubular shaft 17. The tubular shaft extends transversely across the housing 12 and is fastened by set screws or equivalent means to a rock shaft 18. On the left hand end of the rock shaft in Figure 2 is a crank arm 19 which serves a purpose to be hereinafter described. On the opposite end is a short arm 20 with which a return spring 21 is connected.

The spring is anchored upon its opposite end to the housing 12 as shown in Figure 1. Attention is here invited to a gauge element 22 having a stop lug 23 on its inner pivoted end for cooperation with a complemental lug 24 on the tubular shaft 17. These lugs cooperate in limiting the rotation of the shaft 17 in one direction. This element 22 is formed with a pointer 25 cooperating with a scale 26 in order to indicate accurately the adjustment of the stop lugs. A retaining nut 26^a is provided for this element, thereby permitting it to be held in any suitable adjusted position.

Attention is now invited to a bracket 27 which is rigidly fastened to the floor board. On the end portion of this bracket is a pivotally mounted bellcrank 28 carrying an antifriction roller 29 for cooperation with a cam 30 on an adjustable abutment or bracket 31 carried by the fuel control rod 32 leading to the carbureter (not shown). Connected

to the bellcrank through the medium of a short link 33 is an actuator 34 of the design indicated. This is also pivotally mounted on the bracket 27 and the one arm thereof is connected with a rod 35 which is in turn connected with the aforesaid crank arm 19. It is yet to be stated that suitable attaching brackets 36 are connected with the aforesaid housing 12, whereby to permit the latter to be mounted on the motor or chassis as desired.

With this arrangement it is obvious that when the clutch pedal is pushed down to release the clutch, the push rod 9 is moved in a direction from right to left as indicated by the arrow. This swings the U-shaped member 11 upon its pivot in a corresponding direction, thus bringing the latch 14 in the position to drop behind the shoulder 15 on the segmental plate 16. Now, when the foot is removed from the clutch pedal to allow the clutch to be thrown in, the latch being engaged in the shoulder 15, serves to rock the shaft 17 as well as the shaft 18. This produces an actuation of the abutment 31 and carbureter control 32 through the medium of the shank arm 19, part 35, 34, and the bellcrank 28. At a predetermined time in this return of the clutch, the latch 14 clears the shoulder 15 owing to the eccentricity of the pivot 13 as compared to the axis of rotation of the shaft 17.

Referring now to Figures 3 to 5 inclusive, it will be seen that the reference character 37 represents a carbureter having a suitable actuator 38. Cooperating with this part 38 is a bracket 39 carrying an anti-friction roller 40. The bracket is mounted on a slide 41 which is movable through a bore in a guide block 42. A push rod 43 is connected with its slide at one end, and at its opposite end is connected with a crank arm 44. The crank arm, as shown in Figure 4, is fastened upon the extending end of a small rock shaft 45 which is journaled for oscillation in a gear casing 46. A suitable attaching bracket is provided for this casing. Keyed or otherwise fixedly mounted on the rock shaft 45 is a bevelled gear 47 which cooperates with a bevelled pinion 48. The pinion 48 is carried by an oscillatory shaft 49 which, as shown in Figure 3 extends at right angles to the push rod 43 and is coupled as at 50 with a short rock shaft 51 in an appropriate enclosure 52. The rock shaft 51 is provided with a rocker arm 53 to which a push and pull link 54 is connected. This link in turn is connected with the clutch pedal represented generally at 55.

With this arrangement it is obvious that when the clutch pedal is operated, the link 54 serves to actuate the rocker arm 53. This in turn oscillates the shaft 49 which, through the medium of the intermeshing gearing 47 and 48, operates the push rod 43. Thus, the slide 41 is moved in a longitudinal direction, and through the medium of the bracket 39 and the roller 40, the actuating device 38 of the carbureter is operated.

From the foregoing, it is believed that the construction and operation of the invention will be quite clear as well as the advantages derived from its use, and therefore, a more lengthly description is believed unnecessary.

While the preferred embodiment has been shown and described, it will be understood that minor changes coming within the field of invention claimed may be resorted to as desired.

I claim:—

1. In a structure of the class described, in combination, a carbureter control rod, an abutment carried thereby, a bracket, a bellcrank mounted on said bracket and cooperable with said abutment, a housing, a rock shaft mounted in said housing, a crank arm carried by said rock shaft, an operating connection between said crank arm and bellcrank, a clutch pedal, a clamp carried by said pedal, a push rod connected with said clamp, and latch means connected with said push rod and operable upon said rock shaft.

2. In a structure of the class described, in combination, a carbureter control rod, a casing, a clutch pedal, a rock shaft mounted for oscillation in said casing, an automatically releasable latch in the casing cooperable with the rock shaft, and operating connection between the latch and pedal, and a separate operating connection between the rock shaft and said control rod.

3. In a structure of the class described, in combination, a carbureter control rod, a clutch pedal, a housing, an oscillatory member mounted for movement in the housing, an operating connection between said member and carbureter control rod, a carrier swingably mounted in the housing, an operating connection between the carrier and the clutch pedal, and a releasable operating connection between the carrier and the said oscillatory member.

4. In a structure of the class described, in combination, a carbureter control rod, a clutch pedal, a housing, an oscillatory member mounted for movement in the housing, an operating connection between said member and carbureter control rod, a carrier swingably mounted in the housing, an operating connection between the carrier and the clutch pedal, a releasable operating connection between the carrier and the said oscillatory member, said operating connections between the carrier and said member comprising a shouldered keeper, carried by the oscillatory member, spring pressed latch carried by the carrier, and being movable in an arc eccentric to the axis of said oscillatory member.

5. In a structure of the class described, a housing, a rock shaft mounted for oscillation

in the housing, a shouldered keeper plate carried by the rock shaft, a substantially U-shaped carrier swingably mounted in the housing, and a spring-pressed latch on the carrier, cooperable with the shoulder on said plate, said latch being movable in an arc eccentric to the axis of oscillation of the rock shaft, whereby to permit the latch to engage the shoulder on said plate and to move the rock shaft for predetermined time, and then to permit automatic disengagement of the latch from the shoulder.

In testimony whereof I affix my signature.

RICHARD DONNELLY MOORE.