

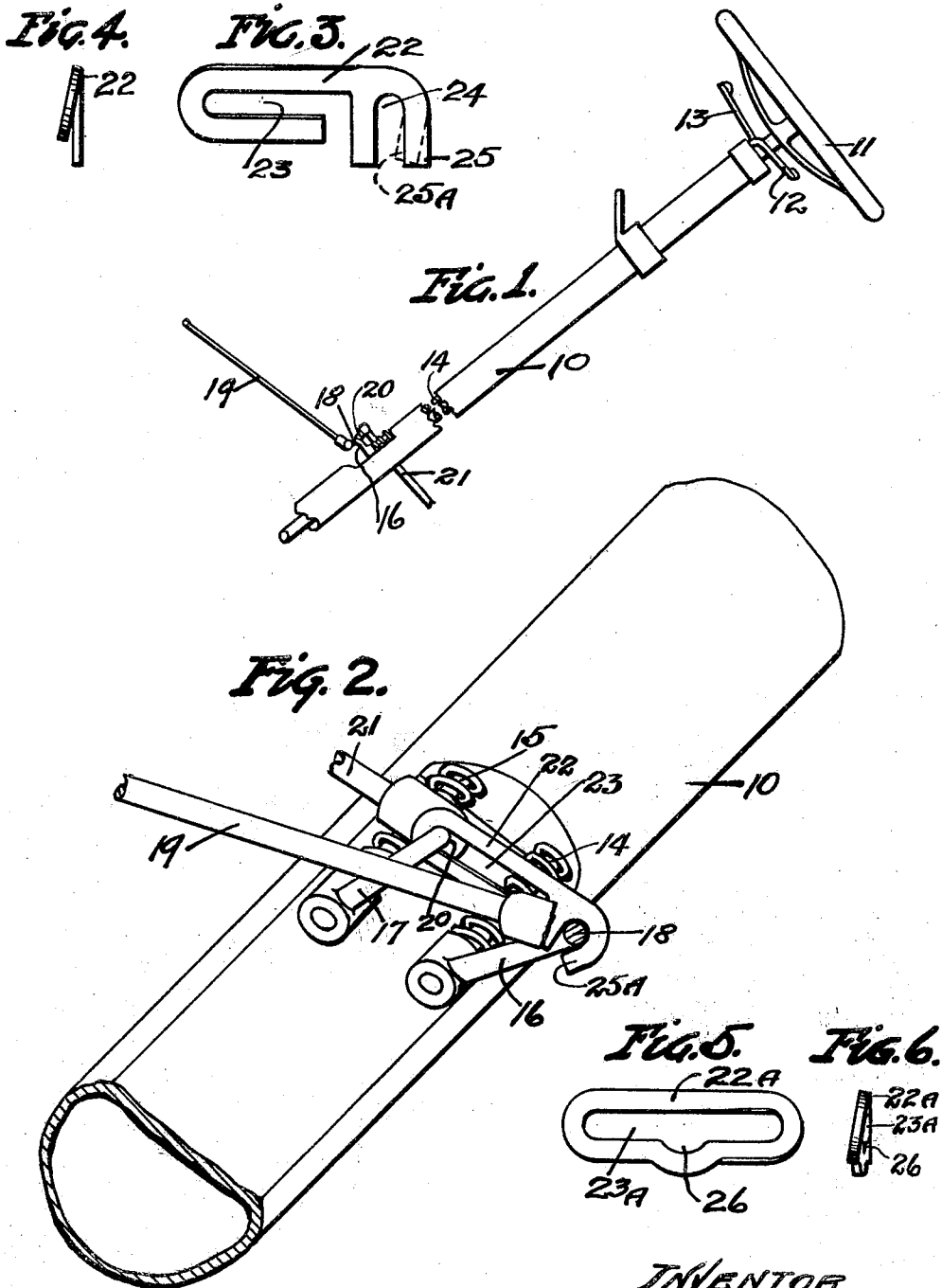
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AUTOMATIC SPARK RETARDER FOR AUTOMOBILES

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AUTOMATIC SPARK RETARDER FOR AUTOMOBILES

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This invention relates to improvements in means for retarding the spark lever of an automobile and is especially designed to interlock the gas and spark levers so that setting the gas lever to feed gas for starting, retards the spark.

In starting the automobile engines the starter may ordinarily be operated with the spark advanced, and in such cases it often happens that the engine backfires, breaking the starter spring or other parts of the starter mechanism.

Automobiles are usually equipped with both a hand control for the gas, known as a gas lever, and with a foot control, known as an accelerator, the latter being almost exclusively used during operation of the car after starting and the former being almost always advanced prior to starting in order that proper supply of gas may be available at such times.

The primary object of this invention is to provide means whereby setting the gas lever to furnish gas for starting, automatically retards the spark lever to the position it should have, so that for all practical purposes it becomes impossible to start the engine without retarding the spark.

The means by which the foregoing and other objects are accomplished and the manner of their accomplishment will readily be understood from the following specification on reference to the accompanying drawing, in which:

Fig. 1 is a side elevation of the steering post and wheel of an automobile showing the gas and spark levers adjacent the wheel and gas and spark arms actuated respectively thereby;

Fig. 2 is an enlarged fragmentary view substantially full size showing these gas and spark arms and the carburetor and timer connecting rods leading therefrom, and showing my improved link inter-connecting these levers;

Fig. 3 is a side view approximately full size of the preferred form of link;

Fig. 4 is an end elevation thereof;

Fig. 5 is a side elevation of a modified form of this link; and

Fig. 6 is the corresponding end view thereof.

Referring now to the drawing in which the various parts are indicated by numerals, 10 is the steering post, 11 the steering wheel, 12 the spark lever and 13 the gas lever. Extending downward from these levers and within the steering post are rods 14, 15 respectively, the lower ends of which project outward beyond a shouldered portion of the post and carry arms 16 and 17 respectively. The end of the arm 16 is bent downwardly at right angles to the body of the arm and to form a shank 18 which carries a timer connecting rod 19. The end of the arm 17 is bent upward at right angles to form a similar shank which carries the carburetor control rod 21. All of the before mentioned parts are in common use and are usual parts of at least one well known make of automobile.

22 is a link which is engaged over the shanks 18 and 20 of the arms 16 and 17, thus interconnecting these arms. This link as will be more clearly seen by reference to Fig. 3, is provided with an elongated slot 23 in which the arm shank 20, may slide backward and forward and is also provided with a second slot 24 transverse to the first mentioned slot. The shank 20 is engaged with the slot 23 through the open end thereof and thereafter the slot 24 is engaged with the shank 18 and the link part 25 is bent inward to the dotted position 25A to secure the link in place.

In Figs. 5 and 6, a closed link 22A is shown which link has a longitudinal slot 23A which is enlarged at 26 to permit the link to be engaged first over one shank, and then shifted and engaged over the other shank it being necessary in such case to disconnect the rods 19 and 21 before thus putting the link in place.

In using the device after the gas and spark levers have been linked together the gas lever 13 is moved downward, which is to the right as the autoist faces the steering wheel, to advance the gas control and provide the necessary gas for starting the engine. This movement shifts the arm 17 to the left in Fig. 2, and through the link 22 correspondingly

shifts the arm 16 to the left, and through the timer connecting rod 19 correspondingly shifts and retards the timer.

The starter on the car may now be operated without danger of backfiring. When the engine starts the spark lever is advanced in usual manner to running position which action also shifts the gas lever to cut off the gas, necessitating thereafter that the gas be fed by the foot lever or accelerator. Should it be necessary at any time, such as after stopping on a hill, to feed gas by the hand lever momentarily, such action will of course retard the spark but immediately after the clutch is engaged and the brake released the foot may be again shifted to the foot accelerator and the spark be again advanced returning the gas lever to normal running position.

It is of course possible to use the starter without retarding the spark but in such event the gas is so far cut down that starting is ordinarily impossible and it is not likely that backfiring will occur. It will be noted also that the spark lever may be retarded at any time without advancing the gas lever so that is entirely feasible to set the spark lever at any desired point of advancement or retardation without affecting the normal running position of the gas lever.

Having described my invention, what I claim is:

1. The combination with gas and spark controls for a gas engine, said controls occupying adjacent positions and each having arms, with shanks thereon connected respectively to the carburetor and timer of said engine, and said shanks diverging on advancement of either, of a link connecting said shanks and limiting separation of said shanks the one from the other.

2. The combination with gas and spark controls for a gas engine, said controls occupying adjacent positions and each having arms, with shanks thereon connected respectively to the carburetor and timer of a gas engine, and said shanks diverging on advancement of either, of a slotted link connecting said shanks and limiting separation of said shanks the one from the other.

3. The combination with gas and spark controls for a gas engine, said controls occupying adjacent positions and each having arms with shanks thereon connected respectively to the carburetor and timer of the engine, and said shanks diverging on advancement of either, of a member connecting said shanks and limiting separation of said shanks the one from the other.

4. The combination with gas and spark control parts for a gas engine, said parts occupying adjacent positions and diverging on advancement of either, of means limiting the separation of said parts whereby advancement of either retards the other thereof.

5. The combination with gas and spark

controls for a gas engine, said controls occupying adjacent positions and each having an arm with shank thereon, said shanks being connected respectively to the carburetor and timer of the engine and said shanks diverging on advancement of either, of a link connecting said shanks and limiting separation thereof, said link comprising a pair of U shaped ends integrally connected, said ends being adapted each to engage one of said shanks and the legs of at least one of said U ends extending toward the other of said ends.

6. The combination with gas and spark controls for a gas engine, said controls occupying adjacent positions and each having an arm with shank thereon, said shanks being connected respectively to the carburetor and timer of the engine and said shanks diverging on advancement of either, of a link connecting said shanks and limiting separation thereof, said link comprising a pair of substantially parallel sides, having U shaped ends adapted to engage said shanks, the open side of at least one of said U ends extending toward the other of said ends.

7. The combination with gas and spark controls for a gas engine, said controls occupying adjacent positions and each having an arm with shank thereon, said shanks being connected respectively to the carburetor and timer of the engine and said shanks diverging on advancement of either, of a link connecting said shanks and limiting separation thereof, said link having an end adapted to engage one of said shanks and an opposite U shaped end adapted to engage the other of said shanks, with the legs of said U extending toward said first end.

8. The combination with gas and spark controls for a gas engine, said controls occupying adjacent positions and each having an arm with shank thereon, said shanks being connected respectively to the carburetor and timer of the engine and said shanks diverging on advancement of either, of a link connecting said shanks and limiting separation thereof, said link being of an elongated O shape and having its ends engaging the remote sides of said shanks.

9. The combination with gas and spark controls for a gas engine, said controls occupying adjacent positions and each having an arm with shank thereon, said shanks being connected respectively to the carburetor and timer of the engine and said shanks diverging on advancement of either, of a link connecting said shanks and limiting separation thereof, said link having a U shaped end adapted to loosely engage one of said shanks, with the legs of said U extending toward the other of said shanks and having its opposite end integral with at least one of said legs and engaging said latter shank.

10. The combination with gas and spark

controls for a gas engine, said controls occupying adjacent positions and each having an arm with shank thereon, said shanks being connected respectively to the carburetor and timer of the engine and said shanks diverging on advancement of either, of a link connecting said shanks and limiting separation thereof, said link comprising a pair of U shaped ends the legs of at least one of which extend toward the other thereof, said ends being connected by at least one of said legs and being adapted to engage said shanks.

In testimony whereof I hereunto affix my
signature.

15 GEORGE F. ^{his} × COLLEY.
mark

his
×
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