

S. H. BOSWELL,
 DEVICE FOR STARTING MOTORS ON MOTOR CARS FROM THE DRIVER'S SEAT OR FOOTBOARD.
 APPLICATION FILED JULY 10, 1909.

994,370.

Patented June 6, 1911.

Fig. 1

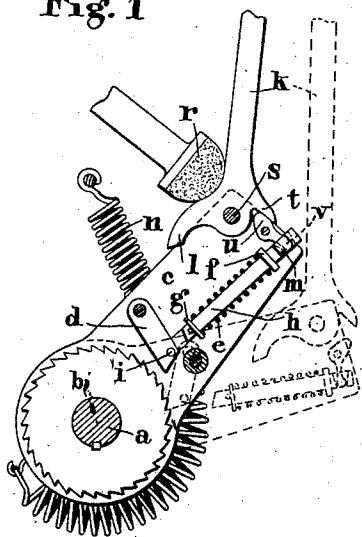


Fig. 2.

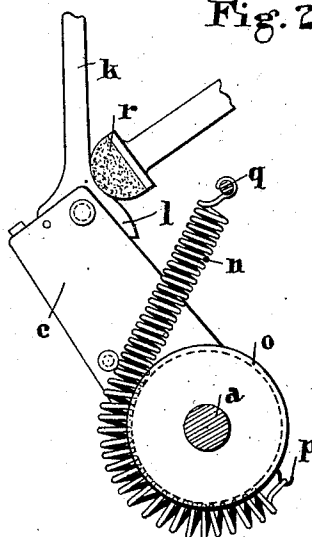
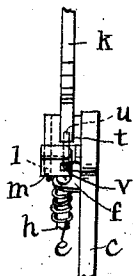


Fig. 3.



ATTEST

B. M. Stahl,
E. R. Tolson.

INVENTOR.

SAMUEL HOWARD BOSWELL.

By Spear, Middleton, Donaldson & Co.,
 ATTYS

UNITED STATES PATENT OFFICE.

SAMUEL HOWARD BOSWELL, OF NORWICH, ENGLAND.

DEVICE FOR STARTING MOTORS ON MOTOR-CARS FROM THE DRIVER'S SEAT OR FOOTBOARD.

994,370.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed July 10, 1909. Serial No. 506,976.

To all whom it may concern:

Be it known that I, SAMUEL HOWARD BOSWELL, a subject of the King of Great Britain and Ireland, and residing at 48 London street, Norwich, in the county of Norfolk, England, have invented certain new and useful Improvements in Devices for Starting Motors on Motor-Cars from the Driver's Seat or Footboard, of which the following is a specification.

This invention relates to devices by which the motor upon a motor car can be started from the driver's seat or footboard by the driver merely depressing a pedal, and thereby throwing a driving pawl into engagement with a ratchet wheel on the motor shaft. The object of this invention is to improve the apparatus above referred to in order to avoid shock being transmitted to the driver's foot in the event of the motor back firing while it is being started, and it consists in providing a stop or buffer in such a position that it arrests the starting device and automatically withdraws the driving pawl when the device is rotated in the reverse direction due to the motor back firing.

Reference will now be made to the accompanying drawings in which,

Figures 1 and 2 are a front and rear view respectively showing the starting device in a position assumed when a backfire occurs. Fig. 3 is a fragmentary side view.

In the drawings a device of the type before mentioned is illustrated, comprising a ratchet wheel, *b*, keyed upon a motor shaft, *a*, a pawl, *d*, pivoted to a plate, *c*, which is free to be oscillated about the shaft, *a*, by means of a foot rod, *k*, the latter having a toe, *l*, which at the end of the operative stroke is adapted to engage the projecting end, *m*, of a rod, *h*, which is connected to the pawl, *d*, by a pin, *i*, so that the pawl is withdrawn from the ratchet wheel at the end of the stroke.

The rod, *h*, is surrounded by a spring, *e*, abutting at one end against a lug, *f*, on the plate, *c*, and at the other end against a collar, *g*, on the rod, this spring tending to maintain the pawl, *d*, in engagement with the ratchet wheel, *b*. The foot rod, *k*, may

also be locked in its depressed position by means of a lock plate.

The oscillatory plate is rotated by a spring *n*, which is passed around a grooved boss, *o*, formed integrally with or connected to the plate, *c*, the spring, *n*, having one end secured to a hook, *p*, on the grooved boss, *o*, while the other end is hooked on to a stationary pin, *q*. By this arrangement, the spring is able to pull at a tangent to the boss, *o*, in all positions of the plate, *c*, so that the leverage at which it pulls does not vary.

According to the present invention also a buffer or stop, *r*, is arranged in such a position that in the event of the motor back-firing while being started, the rod, *k*, strikes the buffer, *r*, which causes the rod, *k*, to move about its pin, *s*, and to thereby bring a heel, *t*, into engagement with a small lever, *u*, so as to cause the latter by means of its end, *v*, to withdraw the pawl, *d*, through the medium of the rod, *h*. In this way the starting device is released from the motor and no damage is done to it.

By providing a rubber pad or the like upon the buffer any shock which might otherwise occur is avoided.

In Fig. 1 the device is indicated in one position in dotted lines with the pawl, *d*, in engagement with the ratchet wheel, *b*, this being one position which it occupies during the starting and while the foot rod, *k*, is being depressed.

Should backfire occur, the ratchet wheel, *b*, drives the plate upwardly into the position indicated in full lines, in which position, however, the buffer, *r*, immediately causes the release of the pawl, *d*.

Instead of employing a rubber or like pad upon the buffer a spring or dash pot may be adopted in order to cushion any shock which may occur.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

A device for starting motors on motor cars, comprising in combination, a ratchet wheel secured to the motor shaft, a plate pivoted on said shaft, a pawl carried by said plate and adapted to engage said

ratchet wheel, a foot rod connected to said plate, a heel on said foot rod, a lever pivoted on said plate and adapted to be engaged by said heel, a rod operable by said lever and connected to said pawl and a spring surrounding said rod, substantially as and for the purpose described.

In testimony whereof, I affix my signature in presence of two witnesses.

SAMUEL HOWARD BOSWELL.

Witnesses:

JOHN DELMAR MORGAN,
BERTRAM H. MATTHEWS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
