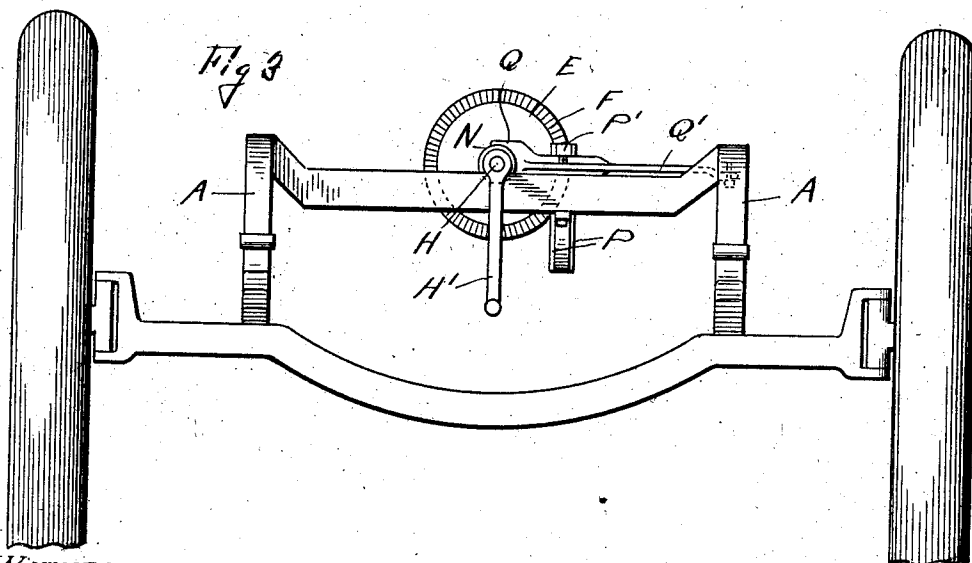
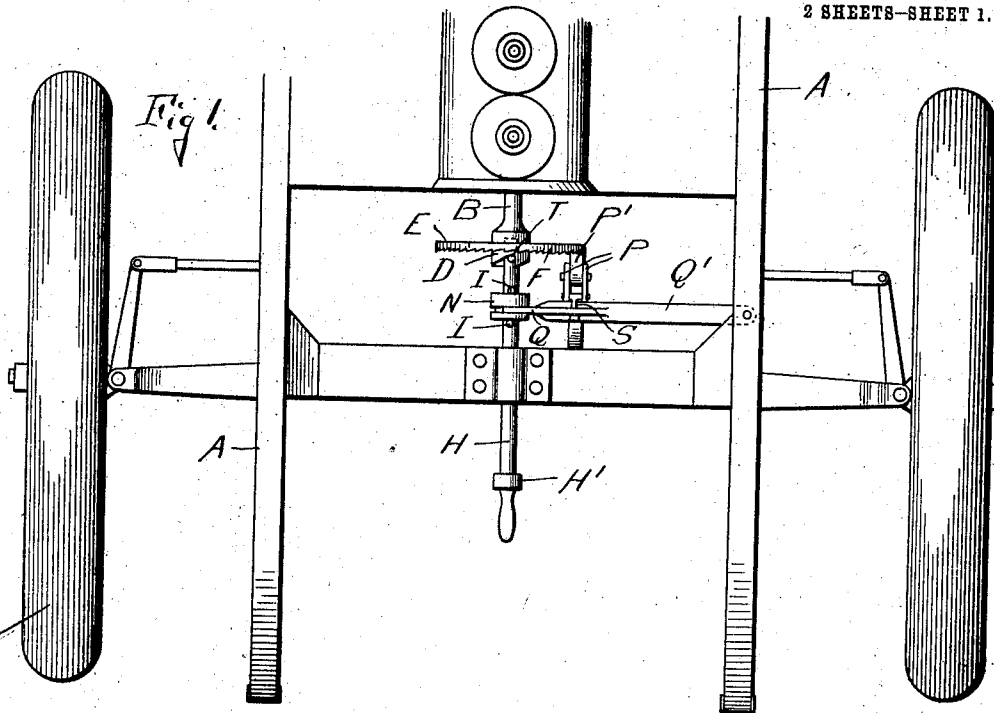


A. A. FAUCHER & T. CROSBY.
 NON-REVERSIBLE CLUTCH.
 APPLICATION FILED APR. 10, 1911.

1,021,748.

Patented Mar. 26, 1912.

2 SHEETS-SHEET 1.



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2 SHEETS-SHEET 2.

FIG. 2.

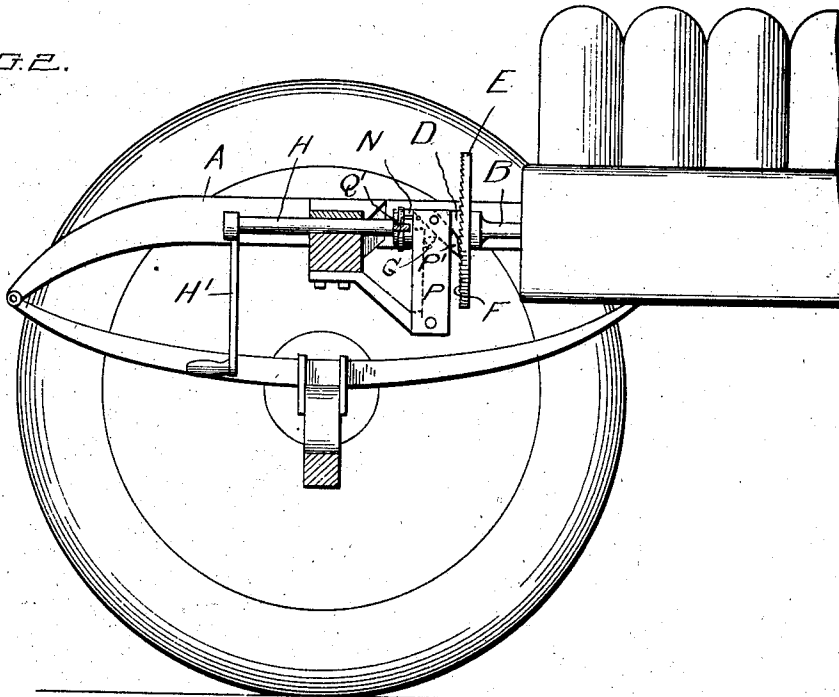


FIG. 4.

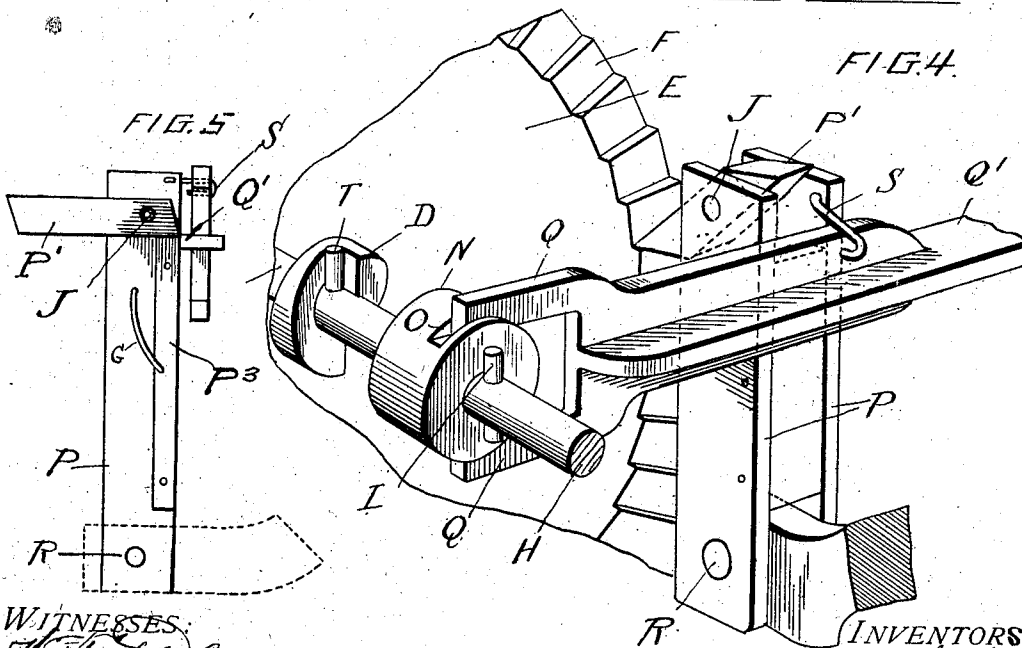
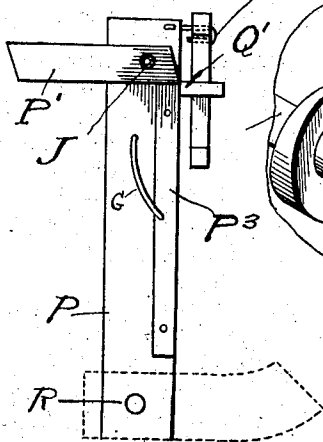


FIG. 5.



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UNITED STATES PATENT OFFICE.

ALEX A. FAUCHER AND THADDEUS CROSBY, OF SAN JACINTO, CALIFORNIA.

NON-REVERSIBLE CLUTCH.

1,021,748.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed April 10, 1911. Serial No. 620,262.

To all whom it may concern:

Be it known that we, ALEX A. FAUCHER and THADDEUS CROSBY, citizens of the United States, residing at San Jacinto, in the county of Riverside and State of California, have invented certain new and useful Improvements in Non-Reversible Clutches; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in automatic clutch releases and non-reversible crank devices for internal combustion engines and the object in view is to produce a simple and efficient device of this nature which will avoid accidents which are common in the starting or cranking of engines of this type.

The invention consists of a simple and efficient device of this kind having various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

We illustrate our invention in the accompanying drawings, in which:—

Figure 1 is a top plan view of our improved automatic clutch release device shown as applied to the chassis of an automobile.

Fig. 2 is a side elevation of a portion of the apparatus. Fig. 3 is an end elevation, and Fig. 4 is a detail perspective view.

Reference now being had to the details of the drawings by letter, A designates the usual frame of the chassis of an automobile, B the motor shaft mounted in suitable bearings and which has fitted thereto a clutch collar D. Fixed adjacent to said collar is a disk E having a series of ratchet teeth F upon one face thereof and adjacent to the marginal edge of the disk.

A crank shaft, designated by letter H, is journaled in suitable bearings upon the frame of the apparatus and has a crank handle H' fitted thereto. Loosely mounted upon said crank shaft is a collar N held from longitudinal movement upon the shaft by means of the projecting pins I upon either side of said collar and which project from the crank shaft. Said collar is pro-

vided with diametrically opposite grooves or channels O in which the arms Q of the pivotal bar Q' are disposed.

Pivotally mounted upon a pin R which is fastened to a part of the frame of the apparatus are the bars P which are spaced apart and between which a pivotal pawl P' is mounted, which latter is journaled upon a pin J, said pawl being adapted to engage the series of ratchet teeth when the pawl is at its farthest limit toward said disk.

A link S is fastened at one end to the bar Q' and its other end to one of the bars carrying the pawl, one edge of said bar Q' being adapted to bear against the bars P when it is desired to crank the engine. A pin T passes through the crank shaft and its projecting ends are adapted to engage the shoulders of the clutch collar upon the engine shaft to cause the latter to rotate when the crank is turned and, when said pin T is in engagement with the shoulders of the clutch collar, the pawl will be held in engagement with the ratchet teeth upon the disk E by means of a spring G.

In operation, the crank shaft is normally held at its farthest outer throw in which position the inner end of the same and the pin carried thereby will be out of contact with the clutch collar upon the engine shaft and also the pawl will be held out of the teeth of the ratchet teeth upon the disk. In the event of it being desired to crank the engine, the operator by taking hold of the crank shaft and imparting a longitudinal movement to the same will cause the pin T to be thrown against the shoulders of the clutch collar and, by giving a rotary movement to the crank shaft, will cause the engine or motor shaft to be rotated. As the crank shaft is moved longitudinally, the pivotal forked bar will cause the pawl to be thrown into engagement with the ratchet teeth of the disk. In the event of there being any reverse movement to the engine shaft, such as the kicking back of the same incident to starting the motor, a rapid reverse motion will cause the dog engaged by the ratchet teeth to throw quickly the pivotal bar, the forward forked end of which engages the loosely mounted collar upon the crank shaft and thus quickly impart an outer longitudinal movement to the same, returning the crank shaft to its normal position. This outer movement of the crank

shaft will disengage the pin T from the clutch collar and, after the forked member has reached its outer limit, the pawl or dog will fall by gravity out of the path of the
5 ratchet teeth.

By the provision of an apparatus embodying the features of our invention, it will be readily apparent that the danger of injury from cranking engines, which is of
10 common occurrence, especially upon automobiles, will be entirely eliminated, as our improved automatic clutch apparatus will cause the crank shaft to be quickly thrown to its normal position and the clutch mechanism out of gear, the device being entirely
15 automatic in its action.

What we claim to be new is:—

1. An automatic clutch release for cranking internal combustion engines comprising,
20 in combination with the motor shaft, a clutch collar and a ratchet wheel fixed thereto, a longitudinally movable crank shaft, a clutch pin carried thereby, a collar swiveled upon said crank shaft, a pivotal forked bar
25 engaging said collar, a pawl engaging the teeth of said ratchet wheel, and connections between the pawl and said forked bar.

2. An automatic clutch release for cranking internal combustion engines comprising,
30 in combination with the motor shaft, a clutch collar and a ratchet wheel fixed thereto, a longitudinally movable crank shaft, a clutch pin carried thereby, a collar swiveled upon said crank shaft, a pivotal forked bar en-
35 gaging said collar, pivotal bars, a pawl mounted upon the latter and adapted to engage the ratchet teeth, said bars being in the path of said forked member and adapted to be tilted thereby as the crank shaft is
40 moved, toward the clutch collar, and con-

nections between the pawl carrying bar and said forked bar.

3. An automatic clutch release for cranking internal combustion engines comprising,
45 in combination with the motor shaft, a clutch collar and a ratchet wheel fixed thereto, a longitudinally movable crank shaft, a clutch pin carried thereby, a swiveled collar upon said crank shaft, a pivotal forked bar en-
50 gaging said collar, pivotal bars, a pin carried thereby, a spring-pressed pawl mounted upon said pin and adapted to engage the teeth of the ratchet wheel when the pawl is at its farthest throw toward the ratchet
55 wheel, a link pivotally connecting one of said pawl carrying bars with the forked bar.

4. An automatic clutch release for cranking internal combustion engines comprising,
60 in combination with the motor shaft, a clutch collar and a ratchet wheel fixed thereto, a longitudinally movable and rotatable crank shaft, pins projecting therefrom, a collar swiveled between said pins and having di-
65 ametrically opposite grooves, a clutch pin carried by the crank shaft, a plate pivoted to the frame of the apparatus and having
70 forked arms engaging said grooves, swinging bars, a pawl carried by the latter and adapted to engage the teeth of the ratchet wheel, and a link connecting one of said
75 swinging bars with the forked bar.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

ALEX A. FAUCHER.
THADDEUS CROSBY.

Witnesses:

A. H. BUCKLEY,
T. MALORE.

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