

E. N. RITTASE.
ENGINE STARTER.
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956,646.

Patented May 3, 1910.

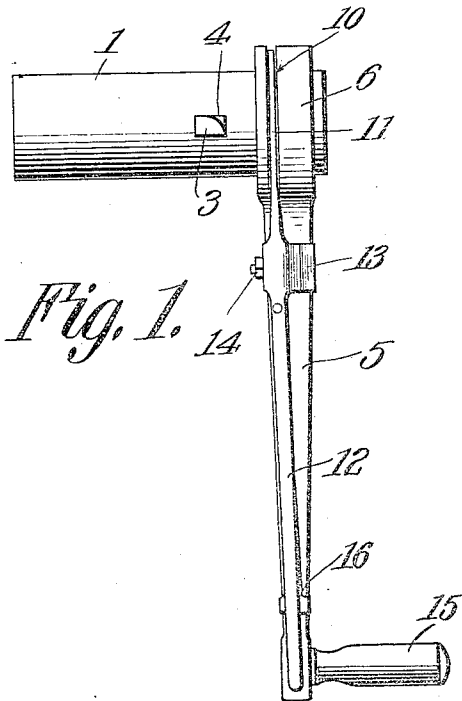


Fig. 1.

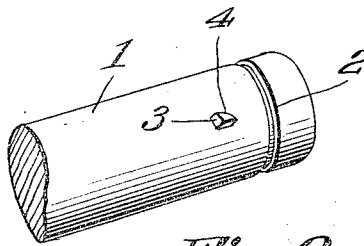


Fig. 2.

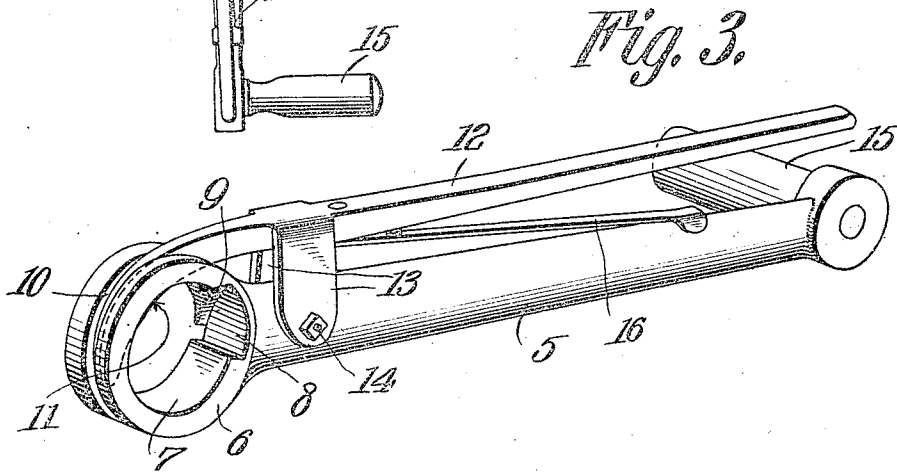


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

EPHRAIM N. RITTASE, OF MANCHESTER, MARYLAND.

ENGINE-STARTER.

956,646.

Specification of Letters Patent.

Patented May 3, 1910.

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To all whom it may concern:

Be it known that I, EPHRAIM N. RITTASE, a citizen of the United States, residing at Manchester, in the county of Carroll and State of Maryland, have invented a new and useful Engine-Starter, of which the following is a specification.

This invention relates to starting devices for explosive engines such as used in connection with automobiles and the like.

It has been customary to utilize cranks for the purpose of starting engines of this type, means being provided whereby the crank is automatically disengaged from the shaft as soon as the first explosion of the engine occurs. These cranks however have been dangerous, because when they are disengaged in this manner they are often thrown off the ends of the shafts and against the operators who are liable to be injured in this manner.

The object of the present invention is to provide a starting crank designed to engage and rotate the shaft of the engine until the starting of the engine is effected whereupon said crank will be shifted longitudinally of the shaft, means being provided however for preventing it from leaving the shaft until the operator desires to remove it. Said crank however will remain practically stationary while the shaft rotates.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings:—Figure 1 is a plan view of a portion of the shaft of an explosive engine, and showing the starting crank in position hereon but disengaged from the projecting lug on the shaft. Fig. 2 is a detail view of that end of the shaft designed to be engaged by the crank. Fig. 3 is a perspective view of the crank.

Referring to the figures by characters of reference 1 designates one of the shafts of the engine and this shaft is provided adjacent its outer end with an annular groove 2. Extending from the shaft at a point removed from said groove is a lug 3, one face of which is beveled as indicated at 4. This lug constitutes one of the interlocking members of the starting mechanism.

The crank used in connection with the shaft consists of an arm 5 having an eye 6 at one end thereof the opening 7 in which is slightly greater in diameter than the diameter of the shaft 1. A recess 8 is formed within the wall of opening 7 and extends from one side to the other of the eye 6, one wall of said recess being parallel with the axis of the eye 6, while the opposite wall 9 of said recess is inclined longitudinally with relation to the first mentioned wall.

A slot 10 is formed within the eye and extends partly therearound, said slot receiving a blade 11 formed at one end of a lever 12. This lever has ears 13 extending therefrom at intermediate points and straddling the arm 5, said ears being pivotally connected to the arm as indicated at 14. One end of lever 12 extends close to the grip 15 which is arranged upon arm 5 and a spring 16 is interposed between lever 12 and arm 5 and serves to hold one edge of the blade 11 normally positioned within the opening 7. The width of this projecting portion of the blade is slightly less than the width of the annular groove 2.

In using the device herein described the lever 12 is pressed toward the grip 15 of arm 5 so as to withdraw the blade 11 from the opening 7. The eye 6 can then be placed over the outer end of shaft 1 and moved toward the lug 3 which will thus become seated within the recess 8. When the crank is turned as ordinarily the straight longitudinal wall of the recess 8 presses against one of the side faces of lug 3 and the shaft 1 will thus be caused to rotate with the crank. While this movement of the crank is being effected the lever 12 is of course left free so as to permit its blade 11 to bear upon the periphery of the shaft 1. As soon as the initial explosion occurs within the engine the shaft 1 will be propelled faster than the crank, and the beveled face 4 of lug 3 will be forced against the inclined wall 9 of recess 8 and the eye 6 will be shifted longitudinally of shaft 1 so as to become disengaged from the lug 3. Immediately subsequent to this movement the blade 11 is brought into register with the groove 2 and is promptly forced thereinto by spring 16. Obviously therefore the crank is thus prevented from flying off the shaft and injuring the operator, but it will nevertheless hang free upon the shaft. In order to re-

move the crank it is merely necessary to draw the lever 12 toward the grip end of arm 5, whereupon the blade 11 will be lifted from the groove 2.

5 It is of course to be understood that various changes may be made in the construction and arrangement of parts without departing from the spirit or sacrificing the advantages of the invention.

10 What is claimed is:—

1. The combination with a shaft having an annular groove therein and a projection upon the shaft adjacent the groove, of a starting device revolubly and slidably
15 mounted upon the shaft, said device having a recess for the reception of the projection, said projection and one wall of the recess constituting means for transmitting motion to the shaft from the starting device prior
20 to the movement of the shaft under its own power and said projection and the other wall of the recess cooperating to automatically disengage the starting device from the projection immediately subsequent to the
25 movement of the shaft under its own power, and a spring controlled lever carried by the starting device and having one end disposed to be automatically seated within the annular groove during the movement of the
30 starting device upon the shaft, the other end

of said lever being depressible to unseat the lever from the groove.

2. The combination with a shaft and a projection thereon, said shaft having an annular groove therein, of a crank having
35 a shaft-receiving portion, said crank being revolubly and slidably mounted on the shaft, there being an elongated slot within the shaft-receiving portion of the crank, means upon the crank for engaging the projection
40 to rotate the shaft in one direction, said means and projection cooperating to shift the crank longitudinally of the shaft and out of engagement with the projection when the shaft starts under its own power, and a
45 spring-controlled lever carried by the crank and having one end normally projecting through the slot and disposed to be automatically seated within the groove during the completion of the sliding movement of
50 the crank away from the projection, one end of said lever being disposed adjacent the handle portion of the crank.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EPHRAIM N. RITTASE.

Witnesses:

JAS. M. WAULER,
C. E. DOYLE.