

G. W. HOYT.
 CRANKING LEVER FOR GAS ENGINES.
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1,009,068.

Patented Nov. 21, 1911.

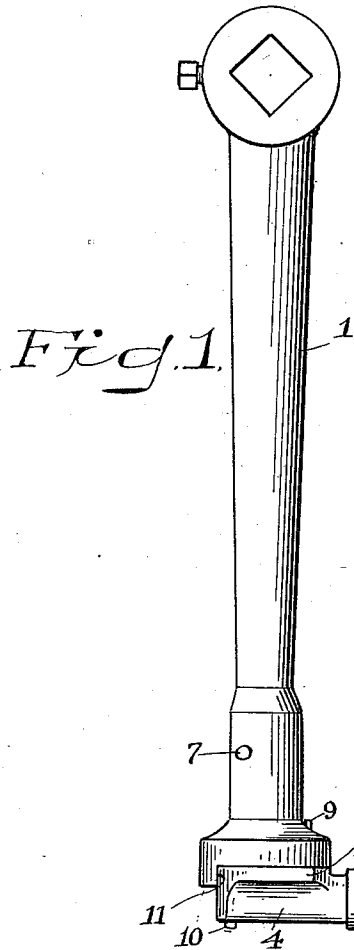
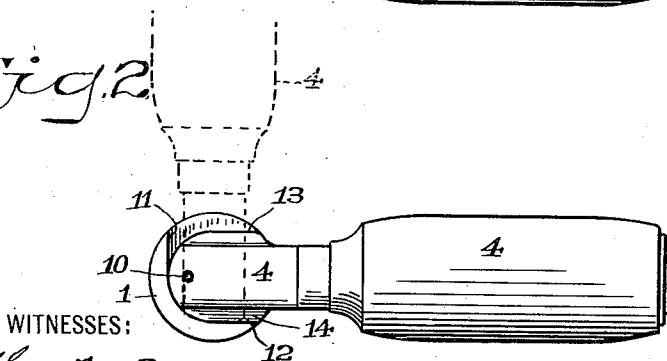


Fig. 2.



WITNESSES:

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Fig. 3.

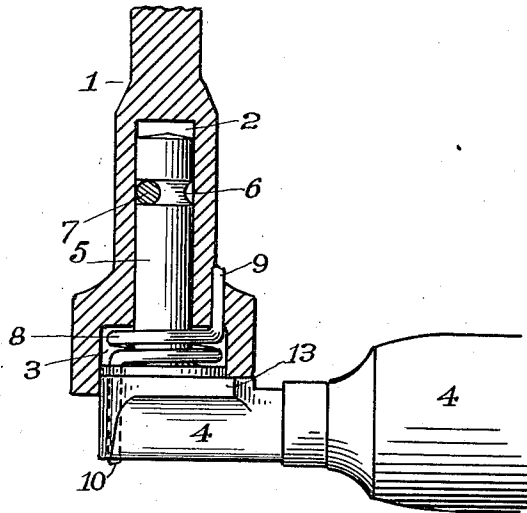
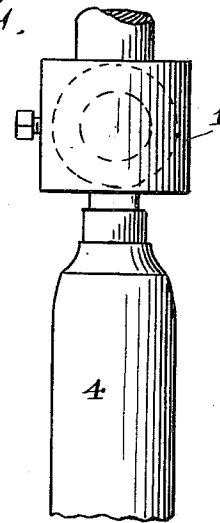


Fig. 4.



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CRANKING-LEVER FOR GAS-ENGINES.

1,009,068.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GRANVILLE W. HOYT, a citizen of the United States, residing in the city of Danbury, county of Fairfield, and State of Connecticut, have invented certain new and useful Improvements in Cranking-Levers for Gas-Engines; and I do 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.

My invention relates to certain new and useful improvements in cranking levers for gas engines, and has for its object to minimize the danger of injury to the operator by reason of the back firing of the engine, and with this end in view my invention consists in certain details of construction and combination of parts hereinafter fully described and then particularly pointed out in the claims which conclude this description.

In the accompanying drawing Figure 1 is a front elevation showing the normal position of the cranking device—Fig. 2 an end view—Fig. 3 a broken sectional elevation, and Fig. 4 a broken plan view.

Similar numerals of reference denote like parts in the several figures of the drawings. 1 is the crank lever which may be secured in any ordinary and well known manner to the shaft of the engine. Within the outer end of this lever is an elongated circular recess 2 terminating at its outer end in an enlargement 3.

4 is any suitable crank handle having extending at right angles from the inner end thereof a spindle 5 adapted to be contained within the recess 2 around which spindle is an annular groove 6 within which extends a pin 7 driven through the lever 1, whereby said spindle is held within the recess and at the same time is capable of axial rotation.

Around the spindle 5 contiguous to the inner end of the handle 4 is a coil spring 8 which is disposed within the enlargement 3 one extremity 9 of which spring extends within the lever 1 while the other end 10 of said spring extends within the inner end of the handle 4. When the handle is in the position shown at Figs. 1, 2, and 3, the spring will be relaxed, but when the handle is turned to the position shown at Fig. 4, and shown in dotted lines at Fig. 2, the spring will be wound.

The outer extremity of the lever 1 is cut

away so as to form abutments 11, 12, while extending from opposite sides of the inner end of the handle 4 are shoulders 13, 14, and when the handle is swung to operative position against the resiliency of the spring, as shown at Fig. 4, the shoulder 13 will strike the abutment 11 and thereby enable the cranking operation to be performed with as great efficiency as would obtain were the lever 1 and handle 4 integral; when the handle 4 is released the spring will force it to instantly return to normal position and the shoulder 14 will strike against the abutment 12, as shown in solid lines at Fig. 2, so as to hold the handle extended in a horizontal plane.

The operation of my improvement is as follows:—The operator grasps the handle and swings it around until the shoulder 13 strikes against the abutment 11 and then performs the cranking operation. When the handle is released, whether voluntarily by the operator after a successful cranking operation or whether involuntarily, owing to the back firing of the engine, said handle will instantly return to normal position so that the revolution of the crank lever will not endanger life or limb, because the handle does not project outwardly beyond the crank lever.

The motion required to initially swing the handle to cranking position is substantially the same as that required in cranking so that my invention is very conveniently operated.

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

1. The combination of the crank lever having within its outer extremity a recess, the handle having a spindle extending from its inner end within said recess and provided with an annular groove, the pin extending through said lever within said groove, the coil spring around the base of said spindle and having its extremities engaged respectively with said lever and handle, and abutting portions formed on said lever and handle whereby the independent swinging movements of said handle will be arrested in the operative and normal positions of the latter.

2. The combination of a crank lever having its outer end formed with a longitudinal recess, a handle provided with a spindle swiveled in said recess, and a spring dis-

posed within said recess and encircling said spindle for maintaining said handle normally in inoperative position with relation to said lever, said spring having one extremity secured to said handle and the other extremity to said lever.

3. The combination of a crank lever provided at its outer end with a longitudinal recess, and with a pair of abutments, a handle provided at its inner end with a spindle swiveled in said recess and with a pair of shoulders arranged to contact with said abutments for arresting the independent swinging movements of said handle in its operative and inoperative positions, and a spring disposed within said recess and encircling said spindle, said spring having its extremities secured to said lever and handle for normally holding the latter in its inop-

erative position, with one of its shoulders in contact with the corresponding abutment.

4. The combination of a crank lever provided at its outer end with a longitudinal recess, a handle provided with a spindle rotatably fitted in said recess and formed with an annular groove, a pin extending through said lever into said groove, and a spring disposed within said recess and encircling said spindle, said spring having its extremities secured to said lever and handle for holding the latter normally in inoperative position with relation to the former.

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

GRANVILLE W. HOYT.

Witnesses:

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