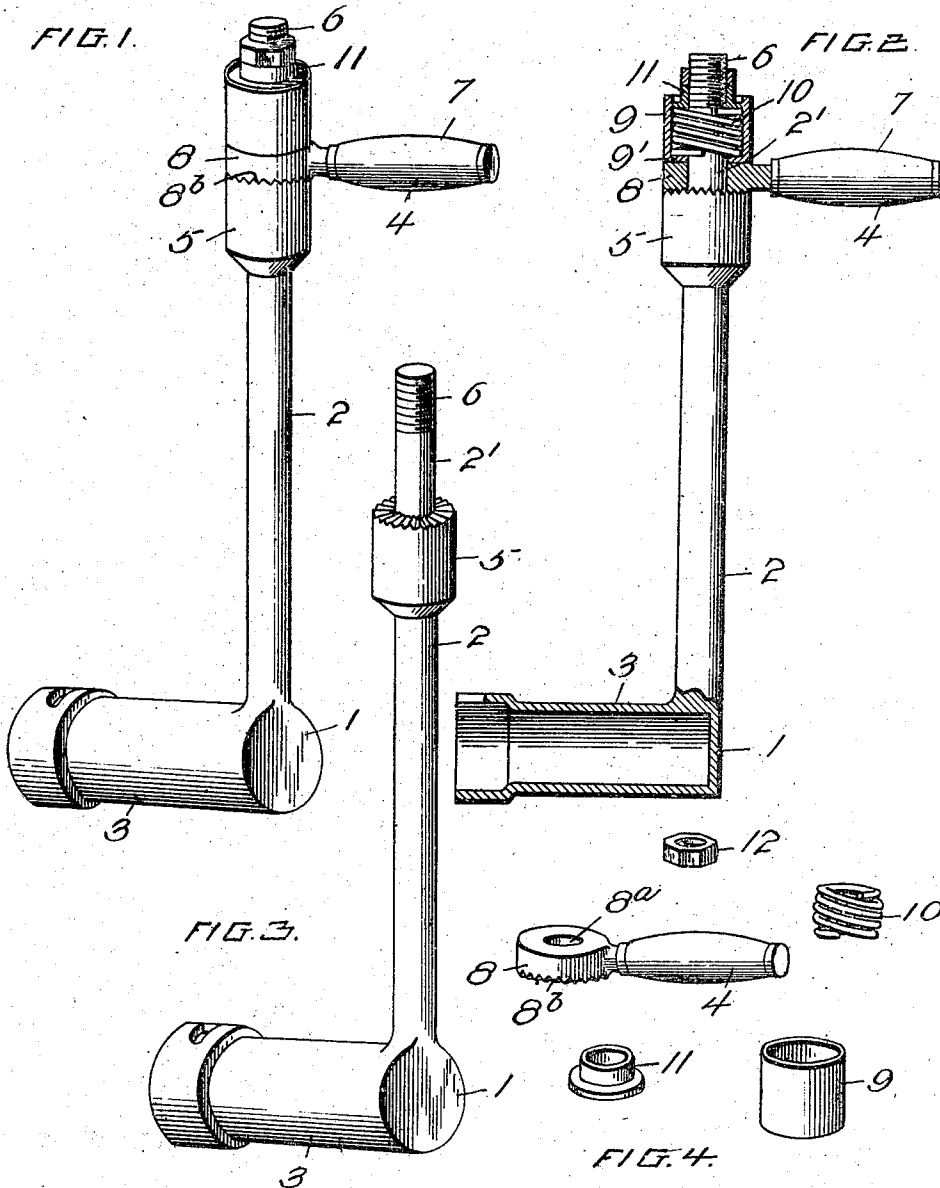


H. H. KOLB.
 STARTING CRANK FOR EXPLOSIVE ENGINES.
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Patented Nov. 19, 1912.



WITNESSES:
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HERMANN H. KOLB, OF BADGER, IOWA.

STARTING-CRANK FOR EXPLOSIVE-ENGINES.

1,045,041.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERMANN H. KOLB, a citizen of the United States, residing at Badger, in the county of Webster and State of Iowa, have invented new and useful Improvements in Starting-Cranks for Explosive-Engines, of which the following is a specification.

My invention relates to starting cranks for explosive engines.

The object of my invention is to produce a starting crank for explosive engines in which injury to the operator is obviated in case of "back firing" or reversal of the engine.

A further object thereof is to produce a crank of said character having a grip or handle yieldingly attached upon the shank of the crank adapted to be held in operative position at a predetermined tension, but allowing the handle to slip sideways upon the shank when resisted by more than the predetermined force, and a still further object of my invention is to produce a more simple, cheap and efficient safety crank than has heretofore been provided.

To these ends, my invention includes the combination and arrangement of component parts to be hereinafter described and more particularly pointed out in the claims.

In the accompanying drawings, in which like reference characters indicate similar parts, Figure 1 is a perspective view of my invention; Fig. 2 is a longitudinal sectional view of the same, and Fig. 3 is a detail perspective view of the parts thereof disassembled.

My invention includes, generally, a starting crank of conventional form as employed for explosive engines, having a laterally disposed cylindrical head and hook for engaging the engine shaft, a shank, a laterally disposed handle yieldably secured upon the opposite end of the shank by a sleeve, a spring, and cap and a nut.

Referring now to the drawings, 1 indicates a crank for starting explosive engines comprising the shank 2, the laterally disposed cylindrical head 3 adapted to engage the end of an engine shaft, and the yieldably attached laterally extending handle 4. As shown in the drawings, the shank 2, adjacent to its outer end, is provided with an enlarged portion 5 forming an annular shoulder, the outer face of which is serrated to engage the serrated face 8^b of the handle

4. The outer end of the shank is screw-threaded at 6 to receive the nut 12, herein-after described. The handle 4, comprises the grip 7 and head 8, which is pierced transversely at 8^a to receive the end portion 2' of the shank 2, and one face of said handle head is serrated at 8^b to mesh with the serrated shoulder 5 on the shank. The handle portion 4, thus described, is secured yieldably upon the shank by the sleeve 9 surrounding the outer portion 2' of the shank, which is provided with an inwardly extending annular flange 9' adapted to fit snugly around said outer portion of the shank, and rests upon the head 8 of the handle. Within said sleeve is carried the coil spring 10 which rests upon the flange 9', and is held therein by the cap 11 loosely fitting upon the end of the shank and within the collar and bearing upon the coil spring carried therein. Said cap is held in position and adjusted longitudinally upon the shank by the nut 12 screwed upon the end of the shank.

From the foregoing description and by reference to the accompanying drawings, it will be apparent that the handle is held upon the shank at the preferred angle for turning the engine shaft, and yieldingly held in such position by the sleeve 9, spring 10, cap 11, and nut 12, the latter of which may be adjusted longitudinally upon the shaft to regulate the tension of the spring 10 and the consequent pressure of the serrated face of the handle upon the contacting face of the shoulder upon the shank, and thus secure same sufficiently rigid for the purpose of use. If, however, the engine should "back fire" or reverse when starting and throw the crank out of the hands of the operator and strike his arm, as frequently occurs, the force would be sufficient to displace the position of the handle without inflicting serious injury.

Having thus described my invention, what I claim as new and desire to be secured by Letters Patent, is—

1. A crank for starting explosive engines, comprising a shank, a handle yieldably secured upon the end thereof, a spring for controlling the pressure of the contacting parts of the shank and handle, and means for regulating the tension of the spring, substantially as described.

2. A crank for starting explosive engines, comprising a shank, an annular shoulder adjacent to the outer end thereof, a handle

yieldably secured upon the end of said shank and spring pressed upon said shoulder, substantially as described.

5 3. A crank for starting explosive engines, comprising a shank, an annular serrated shoulder adjacent to the outer end thereof, a handle yieldably secured upon the shank having serrations thereon meshing with the serrations on the shoulder, a slidable spring

pressed sleeve for holding said serrated 10 parts in contact, and an adjustable cap and nut for regulating the pressure of the handle on said shoulder, substantially as described.

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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."