H. V. DIVINE.

CRANKING OR STARTING DEVICE FOR EXPLOSIVE ENGINES.

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1,367,359. Patented Feb. 1, 1921.

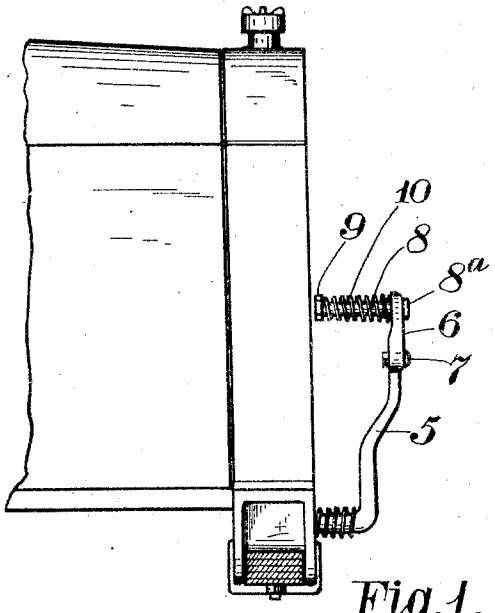


Fig. 1.

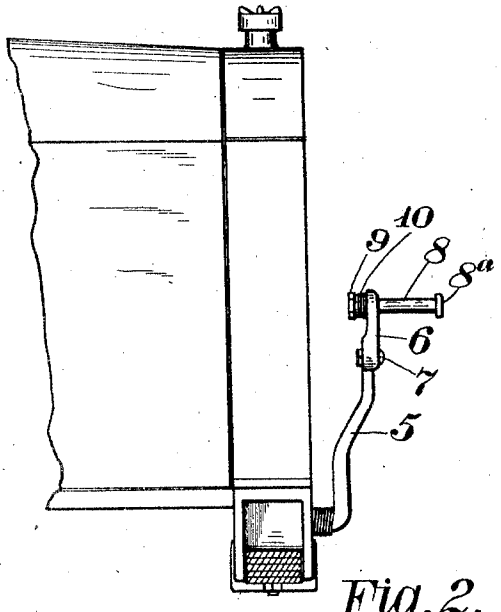


Fig. 2.

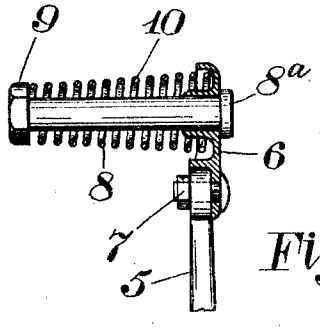


Fig. 3.

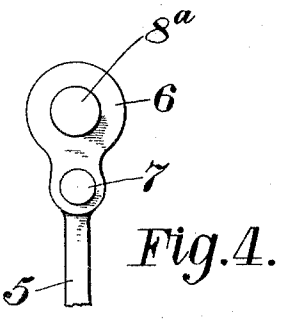


Fig. 4.

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UNITED STATES PATENT OFFICE.

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CRANKING OR STARTING DEVICE FOR EXPLOSIVE-ENGINES.

1,367,359. Specification of Letters Patent. Patented Feb. 1, 1921.

Application filed March 25, 1920. Serial No. 368,635.

To all whom it may concern:

Be it known that I, HARRY V. DIVINE, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Cranking or Starting Devices for Explosive-Engines, of which the following is a specification.

Many an arm has been broken in "cranking" or starting an explosive or automobile engine. As well understood such trouble is due to "back firing" of the engine thereby causing the crank shaft and cranking device to turn in the reverse of normal direction. It is usually the handle portion of the cranking device that does the damage. I remove the danger by providing the cranking lever with a handle that automatically retreats from operating position when pulled from the hand.

The invention is embodied in the example herein shown and described.

In the accompanying drawing forming part hereof—

Figure 1 shows in side view the cranking device as it appears applied to the engine of a Ford car, the handle or hand-hold being in normal position.

Fig. 2 is a similar view showing the cranking device with the handle withdrawn from operating position.

Fig. 3 is a sectional detail on a larger scale.

Fig. 4 is a view looking at the right hand side of Fig. 3.

In the views 5 designates the body of the cranking lever said lever having at its lower end the usual device for connecting it to the cranking shaft of the engine. Instead of the usual handle fixed with the body of the lever there is provided in the present instance a frame 6 bolted to the lever at 7, said frame 6 having an orifice in which a sliding bar 8 constituting the operating handle. The bar 8 has a stop or head 8^a at its outer end and a nut 9 on the other. Between the nut and the frame 6 is located a coil spring 10 adapted to be placed under sufficient compression by the movement of the bar 8 to operating position to quickly throw said bar 8 to the position shown in Fig. 1 when the bar is not manually held out as shown in Fig. 2.

When, therefore, it is desired to crank or start the engine the bar or hand-hold is pulled out against the tension of the spring, and held in the hand, the engine being "turned over" in the usual way. If the engine back fire and the motion of the lever is reversed the hand-hold is pulled from the hand, as usual but instantly the spring 10 withdraws the hand-hold to the position shown in Fig. 1 and out of position to strike and do injury to the wrist or arm of the operator.

I have shown my invention as embodying the separable frame 6 but this is not necessary. I show it in this way as illustrating how it can be applied to the existing crank lever, it being only necessary as far as this part is concerned to remove the ordinary fixed hand-hold and replace it with my device. If necessary the upper portion of the body of the lever should also be bent out to make room between the radiator and the upper end of the lever for the retreat of the hand-hold. This can be done by any blacksmith.

The forms of the parts can be changed without departing from the gist of the invention as claimed.

What I claim is:

1. A cranking or starting device for an explosion engine consisting of a cranking lever having a rectilinearly sliding hand-hold and a spring for holding said hand-hold normally retreated from operating position.

2. A cranking or starting device for an explosion engine consisting of a cranking lever having a detachable frame, a sliding hand-hold in said frame and a spring for holding said hand-hold normally retreated from operating position.

3. A cranking or starting device for an explosive engine consisting of a cranking lever having a movable hand-hold and a spring for withdrawing said hand-hold from operating position when removed from the hand.

HARRY V. DIVINE.