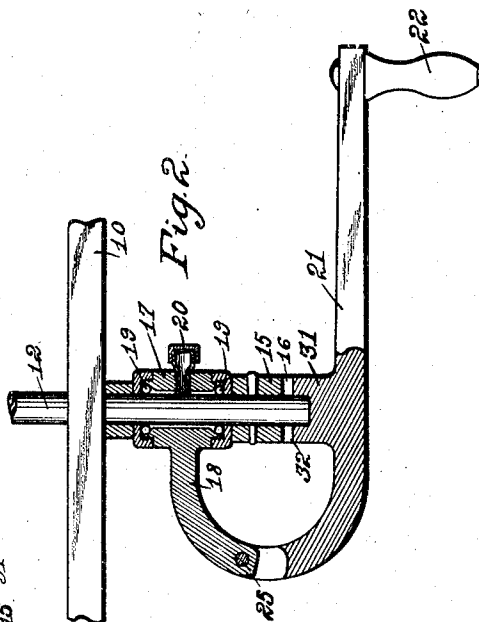
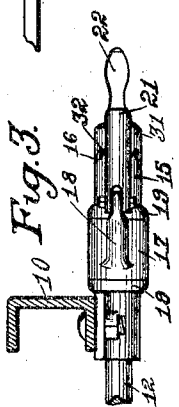
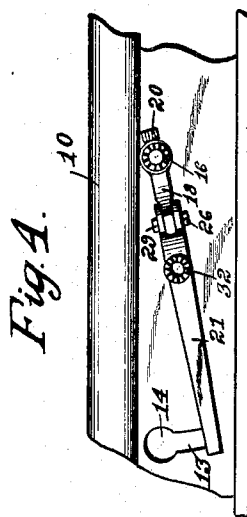
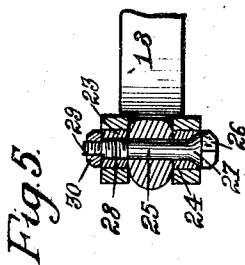
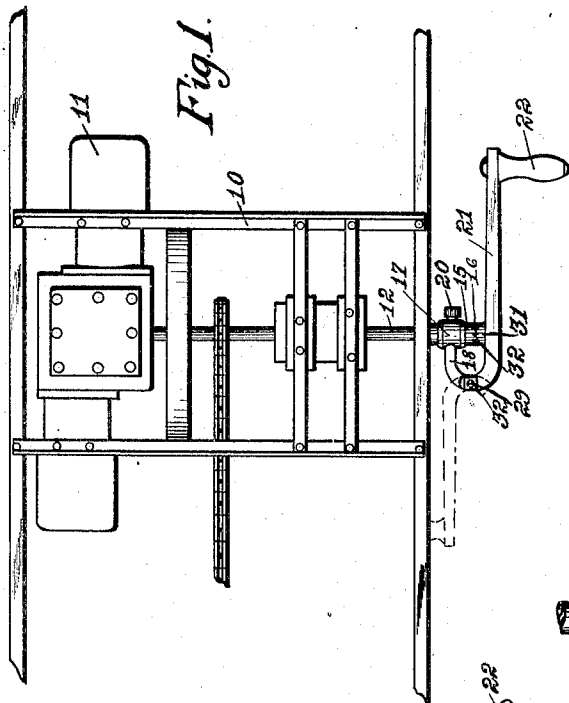


R. H. CLIFTON.
CRANKING DEVICE.
APPLICATION FILED NOV. 12, 1909.

972,097.

Patented Oct. 4, 1910.



Witnesses.
W. A. Loftus.
F. C. Caswell

Inventor.
Ray H. Clifton.
by Oving & Lema Atty's

UNITED STATES PATENT OFFICE.

RAY H. CLIFTON, OF EAST PERU, IOWA.

CRANKING DEVICE.

972,097.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed November 12, 1909. Serial No. 527,718.

To all whom it may concern:

Be it known that I, RAY H. CLIFTON, a citizen of the United States, residing at East Peru, in the county of Madison and State of Iowa, have invented a certain new and useful Cranking Device for Automobiles, of which the following is a specification.

The object of my invention is to provide a crank for the engine shaft of explosive engines such, for instance, as is used in automobiles, so arranged that it may be folded to position where it will remain stationary when the engine shaft is turning and where it will be maintained in position so that it will not interfere with the ordinary uses of the device to which it is applied, and also so that it will apply a minimum of friction to the engine shaft, and further to provide a device of this kind which may be readily, quickly and easily swung to operative position where it may be used in cranking an engine in the ordinary way.

My invention consists in certain details, in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a plan view of a part of an automobile frame and engine with my improved cranking device applied thereto, the dotted lines showing the crank in its folded position. Fig. 2 shows an enlarged, detail view, partly in section, illustrating the end of the engine shaft with my improved cranking device applied thereto. Fig. 3 shows a detail end view of the cranking device embodying by invention in position for operating the engine shaft. Fig. 4 shows a detail side view of a part of an automobile frame having my improved cranking device applied to the engine shaft, the crank being shown in its folded position supported by a part of the automobile frame, and Fig. 5 shows an enlarged, detail, sectional view through the joints in the crank.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the frame in which the explosive engine 11 is located. This engine is provided with an engine shaft 12. In the side of the frame adjacent to the end of the engine shaft is a slot 13 having an enlarged open-

ing 14 at its upper end for purposes hereinafter made clear. Keyed to the end portion of the engine shaft is a collar 15 having a ratchet faced outer end 16. Rotatably mounted upon the engine shaft adjacent to the collar 15 is a sleeve 17 having an arm 18 extended outwardly from it. At the ends of the sleeve 17 are the ball bearing devices 19 so arranged as to reduce the friction between the sleeve 17 and the shaft 12 to a minimum. An oil cup 20 is also provided in the sleeve 17.

The crank proper comprises a body portion 21 having a handle 22 at its outer end, said handle having an enlarged outer end and a reduced body portion. The end of the crank 21 opposite from the handle is bifurcated to overlap the end of the arm 18 and said overlapping ends are each provided with an opening. The opening of the upper end is provided with a cylindrical nut 23 screw threaded on its interior and loosely fitted in the opening. The lower end is provided with a cylindrical washer 24 having a tapered opening in it. The crank is secured to the arm 18 by means of a bolt 25 having an angular end 26, a tapered portion 27, a smooth body portion at its center, a screw threaded part at 28 to enter the round nut 23 and a reduced screw threaded portion 29 at its upper end. The latter is designed to receive the nut 30. The advantage of this arrangement is that the bolt may be placed in position so that the ends of the crank loosely engage the arm 18, and then the nut 30 may be applied and screwed tightly to serve as a lock nut for holding said parts in said position without causing the ends of the crank to bind on the arm 18.

Formed on the crank 21 is a lug 31 having its inner face provided with ratchet teeth at 32 to coact with the ratchet teeth 16.

In practical use it is obvious that if the crank 21 is held by the operator in position with the ratchet teeth 32 in engagement with the ratchet teeth 16, the engine shaft may be turned in one direction by the crank in the manner usually employed in cranking or starting explosive engines. As soon as the engine shaft is run continuously the operator may turn the crank outwardly away from the engine shaft and then inwardly until the handle 22 passes through the round opening 14 and its reduced portion enters the slot 13, whereupon the crank will be held by gravity with the handle 22

in the bottom of the slot 13. On account of the ball bearings which are interposed between the arm 18 and the engine shaft, the friction on the arm 18 will be reduced to a minimum. By the construction shown it is obvious that an engine crank is provided that, when not in use, will be folded to such position that it will not in any way be in the road and yet when it is desired to use it the operator may very quickly and easily swing it to position required for use and operate it in the ordinary manner of an engine cranking device.

I claim as my invention—

1. The combination with a shaft of an explosive engine, of a ratchet device fixed thereto, an arm rotatably mounted upon the engine shaft, a crank fulcrumed to said arm, a ratchet device carried by said crank and designed to coact with the ratchet device on the engine shaft, and means for supporting said crank in position at one side of the shaft.

2. The combination with the shaft of an explosive engine, of a ratchet device fixed thereto, an arm rotatably mounted thereon, a crank fulcrumed to said arm, a ratchet device fixed to the crank, a handle for the crank, said crank being capable of swinging from position with its ratchet device in engagement with that of the shaft to position with its ratchet device moved to its limit of movement away from the engine shaft, and a frame having a slotted opening therein to receive said handle.

3. A device of the class described, com-

prising a frame, an engine carried by the frame, a ratchet device fixed to the engine shaft, a sleeve rotatably mounted on the engine shaft, ball bearing devices interposed between the sleeve and the engine shaft, an arm carried by said sleeve, a crank having a forked end to receive the end of said arm, an internally screw threaded cylinder mounted in one of said forked ends, a cylinder with a tapered opening mounted in the other one of said forked ends, a bolt having a tapered portion extended through said forked ends and through the arm with its tapered portion in engagement with the tapered cylinder, said bolt being provided with a screw threaded portion to engage said screw threaded cylinder, and said bolt also being provided with a reduced screw threaded portion, a nut on said reduced screw threaded portion, a handle fixed to the crank having an enlarged outer end and a reduced portion adjacent to the outer end, a ratchet device carried by the crank to coact with the ratchet device on the engine shaft, said frame being provided with a slot and with a round opening at the upper end of the slot designed to receive said handle when swung to its limit of movement away from the engine shaft, substantially as and for the purposes stated.

Des Moines, Iowa, Oct. 18, 1909.

RAY H. CLIFTON.

Witnesses:

L. F. CLIFTON,
JOHN W. PETER.