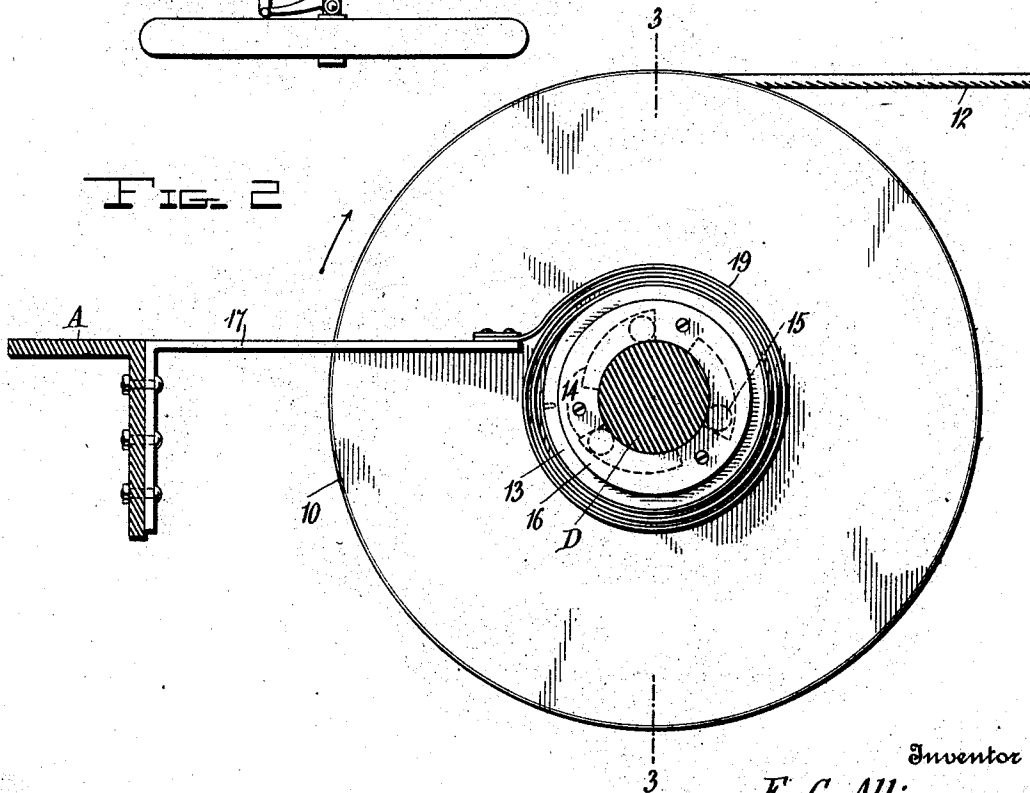
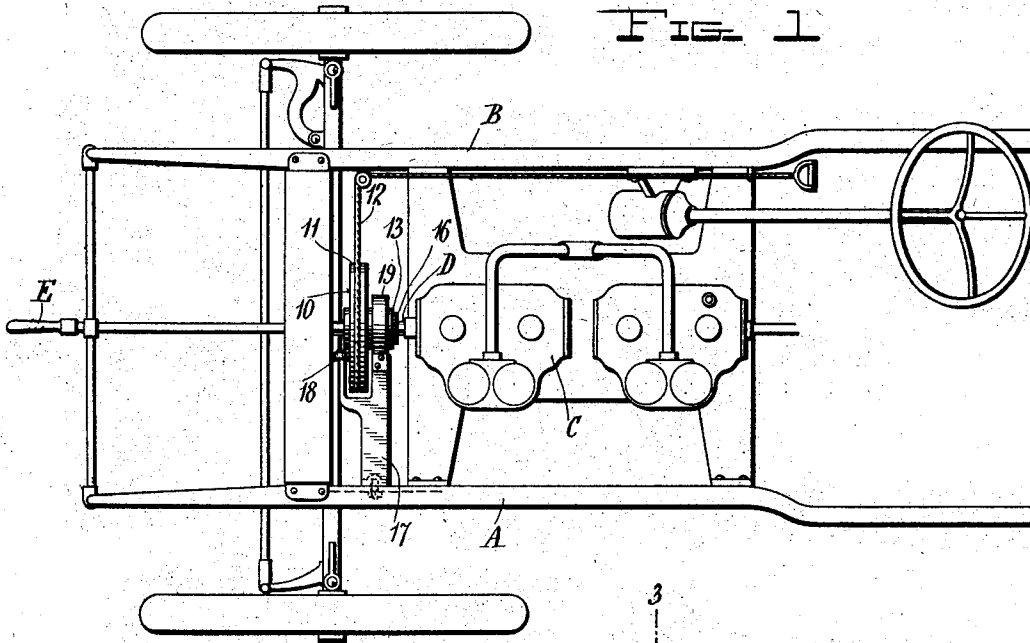


E. C. ALLISON.
ENGINE STARTER.
APPLICATION FILED FEB. 3, 1910.

973,738.

Patented Oct. 25, 1910.

2 SHEETS-SHEET 1.



Witnesses
J. L. Dutton.
M. J. Miller.

Inventor
E. C. Allison
By *Charles Chas. Chas.*
Attorneys

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FIG. 3

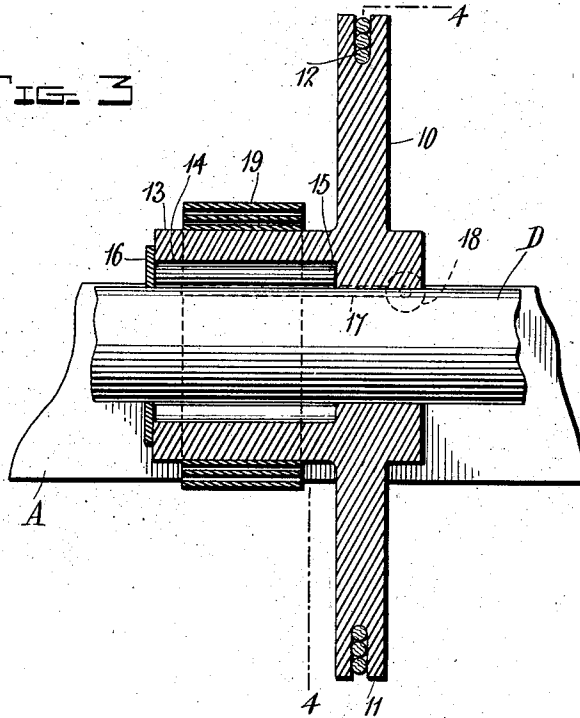
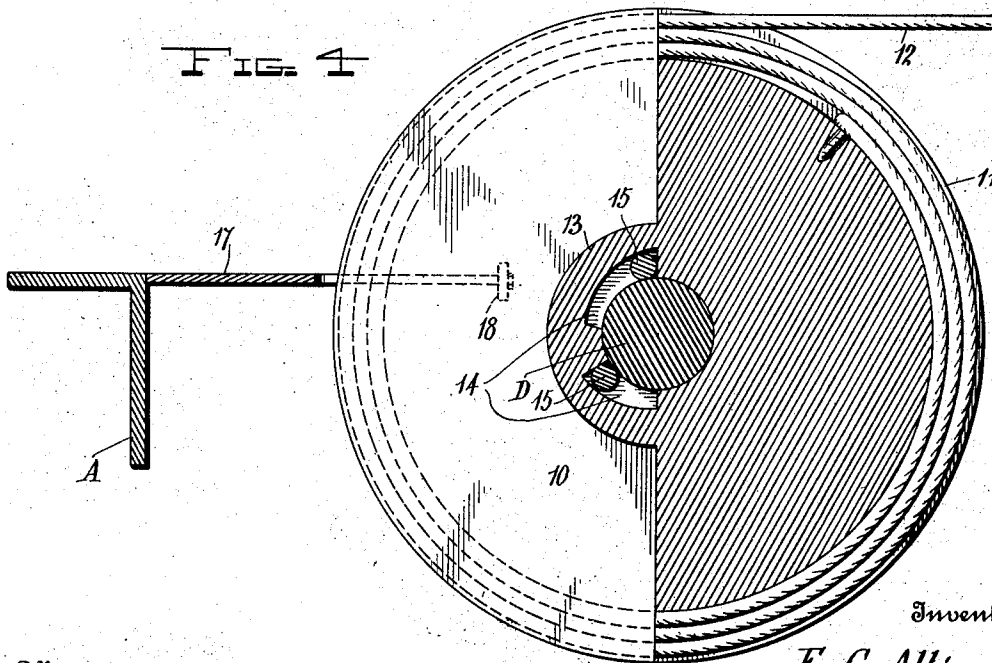


FIG. 4



Inventor.

E. C. Allison

Witnesses

22 Gordon.
M. F. Miller.

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Handels Handels
Attorneys

UNITED STATES PATENT OFFICE.

ELWOOD C. ALLISON, OF NEW YORK, N. Y.

ENGINE-STARTER.

973,738.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed February 3, 1910. Serial No. 541,820.

To all whom it may concern:

Be it known that I, ELWOOD C. ALLISON, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Engine-Starters; and I do hereby 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.

This invention relates to engine starters and is particularly designed for use in connection with explosive engines of the gas and gasolene type.

The primary object of the invention is to provide an engine starting device that can be manipulated from the seat of the automobile, when used on such, and which is constructed of few parts, simply arranged and effectual in their operation.

With other objects in view than have been specifically stated herein and which will be readily apparent to those skilled in the art to which the invention appertains, the starter also includes those novel details of construction, combination and arrangement of parts, all of which will be described in detail, reference being had to the accompanying drawings wherein like characters of reference denote corresponding parts in the several views and in which,

Figure 1 is a plan view of the forward end of an automobile with certain portions thereof omitted to expose to view the engine and the improved starter mounted on the shaft of the engine; Fig. 2, a rear view of the starter showing one of the chassis of the automobile in section with the forked arm secured thereto which holds the starter against movement with respect to the longitudinal axis of the engine shaft; Fig. 3, a vertical section on the line 3—3 of Fig. 2; and, Fig. 4, a section on the line 4—4 of Fig. 3.

Referring to the drawing, A and B indicate the chassis of an automobile, C the engine, D the engine shaft and E the crank for instituting the starting of the engine C in the usual and well-known manner.

The improved starting device which constitutes the subject matter of this application is shown as comprising a drum 10 having a grooved periphery 11 upon and from which is adapted to be wound and unwound a cable 12. The drum 10 is extended cen-

trally of its front face as at 13 and said extension and drum are provided with a common central bore to permit same to be loosely mounted upon the engine shaft D. The wall of that portion of the central bore of the starting device which is disposed within the limits of the extension 13 is provided with a plurality of tapering pockets 14, in each of which is placed a steel roller 15 constituting a well-known form of clutch. The rollers 15 are retained against longitudinal displacement from the pockets 14 by means of a ring plate 16 which is secured against the outer end of the extension 13. The chassis A of the automobile has secured thereto the vertical arm 17 of an angle iron, while the horizontal arm of said angle iron is bifurcated at its outer end and disposed on each side of the drum 10, said bifurcated horizontal arm serving to hold the starting device against movement with respect to the longitudinal axis of the engine shaft. A friction wheel 18 is mounted on the fork of the bifurcated horizontal arm which is disposed in advance of the front face of the drum 10 to obviate possible binding from a tendency of the starting device to slide forward on the engine shaft. A spring 19 has its intermediate portion disposed around the periphery of the extension 13 and one end disposed thereto in a fixed manner while its other end is secured to the fork of the bifurcated horizontal arm which is disposed behind the rear face of the drum 10. The end of the cable 12 is carried over any suitable system of pulleys to a point adjacent the seat of the driver of the automobile and provided with a gripping handle.

In operation it will be apparent that in order to start the engine through the instrumentality of the device just described it will only be necessary for the driver to pull with sufficient force on the cable 12 to rotate the drum 10 on the engine shaft D, such rotation being in the direction of the arrow indicated in Fig. 2. This operation will cause the rollers 15 to bind between the wall of the pocket and the shaft D and thus institute the simultaneous rotation of said shaft and the drum 10 which will effect the initial explosion and starting of the engine. During this movement of the drum 10, it will be further apparent, that the spring 19 will be wound up or energized and when the force applied to the cable 12 is released said spring will serve to return the drum 10 to

its normal position and the engine shaft will be free to rotate, without further effect on the starting device.

From the above description it will be seen
5 that a very efficient means is afforded for imparting the initial rotation of an internal combustion engine for starting the same with the motor easily accessible to and easily operated by the person on the seat of the
10 vehicle.

What is claimed is:

1. The combination with a vehicle and an explosive engine carried thereby for propelling same, of a drum on the crank shaft
15 of said engine, means for imparting the rotation of said drum in one direction to the crank shaft, automatic means for rotating the drum in the opposite direction energized by the rotation of the drum in the first
20 named direction, and a forked member mounted on the vehicle embracing said drum, the arms of said member being disposed partially across the respective ends of said drum.

25 2. The combination with a vehicle and an explosive engine carried thereby for propelling same, of a drum on the crank shaft of said engine, means for imparting the rotation of the drum in one direction to the
30 crank shaft, automatic means for rotating

the drum in the opposite direction energized by the rotation of the drum in the first named direction, a forked member secured to the vehicle and embracing the drum and a friction wheel journaled on one of the arms
35 of said member and in engagement with one end of the drum.

3. The combination with a vehicle and an explosive engine carried thereby for propelling same, of a drum on the crank shaft
40 of the engine, means for imparting the rotation of the drum in one direction to the crank shaft, automatic means for rotating the drum in the opposite direction energized by the rotation of the drum in the first
45 named direction, said means comprising a projecting hub formed on the drum, a forked member secured to the vehicle and having its arms disposed partially across the respective ends of the drum, and a spring encir-
50 cling said hub and having one end fixed thereto and the other end secured to one of the arms of said forked member.

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

ELWOOD C. ALLISON.

Witnesses:

ARTHUR K. HILL,
DIXIE HINES.