

No. 771,683.

PATENTED OCT. 4, 1904.

C. W. SVENSON.

ELECTRIC IGNITION DEVICE FOR INTERNAL COMBUSTION MOTORS.

APPLICATION FILED JUNE 17, 1903.

NO MODEL.

Fig. 1.

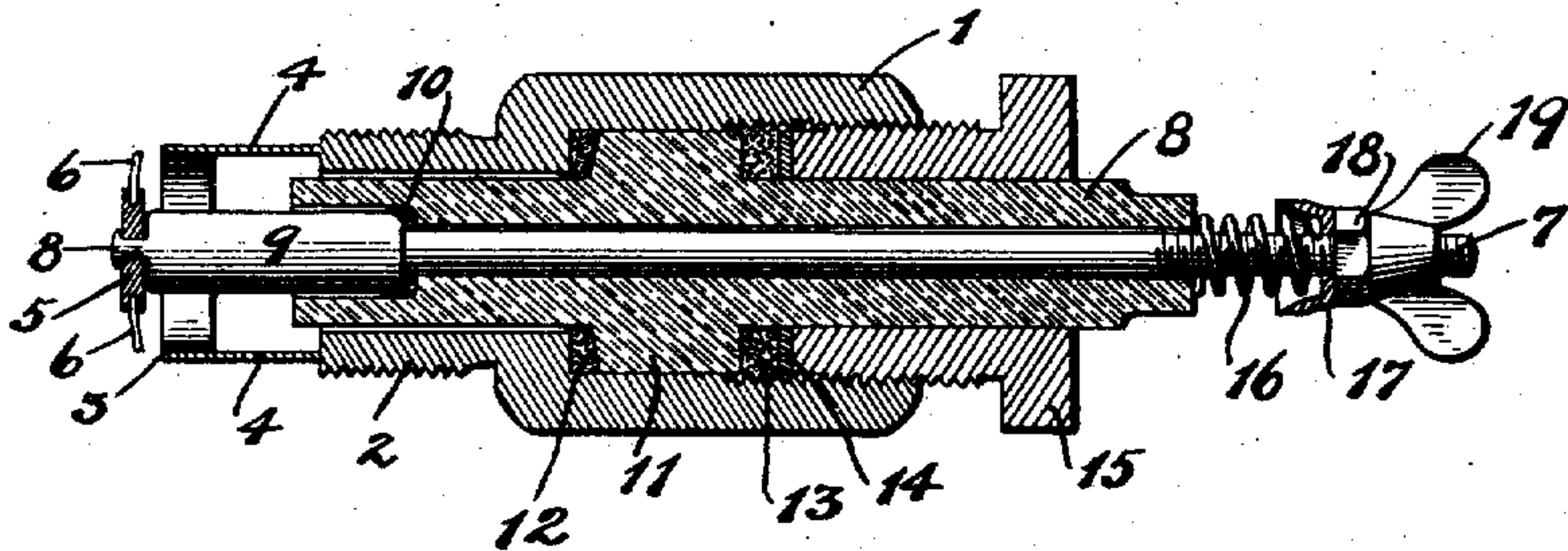


Fig. 2.

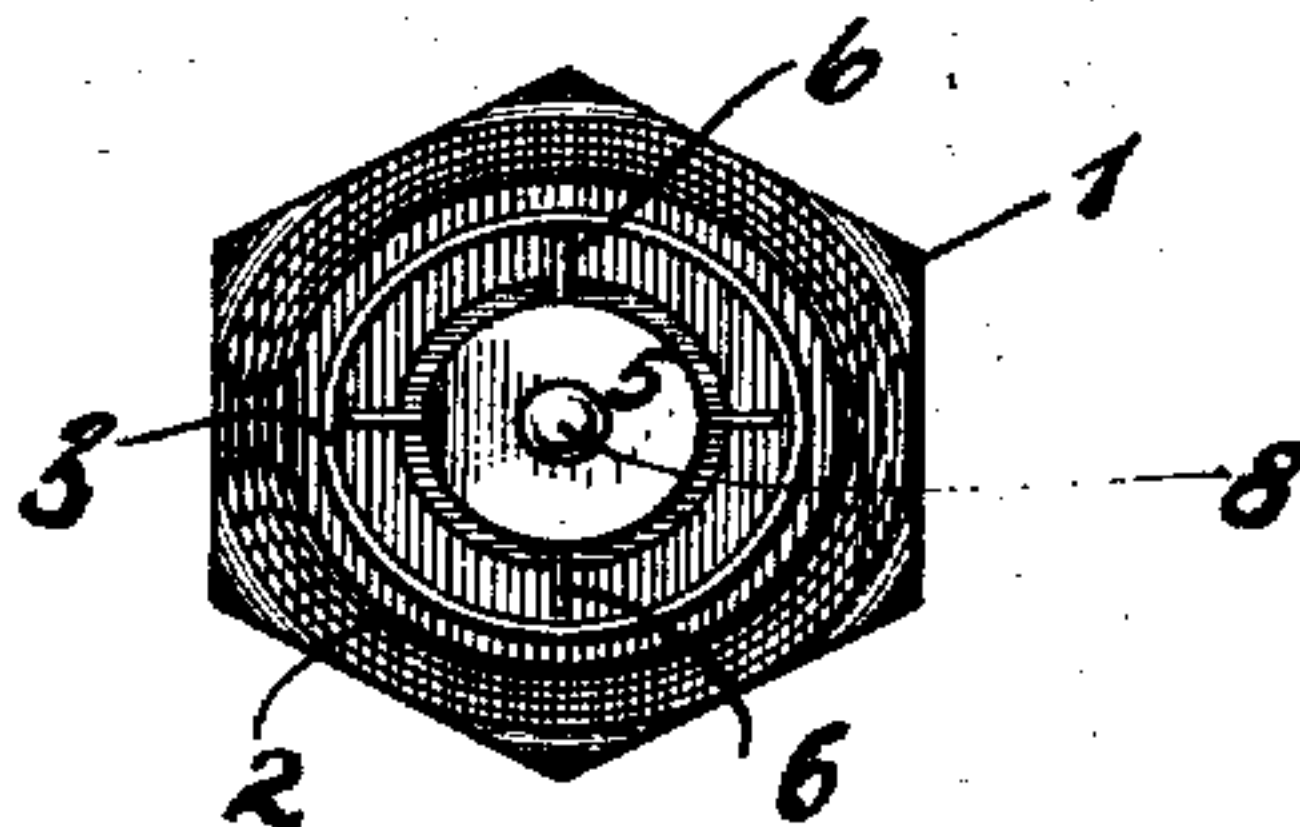
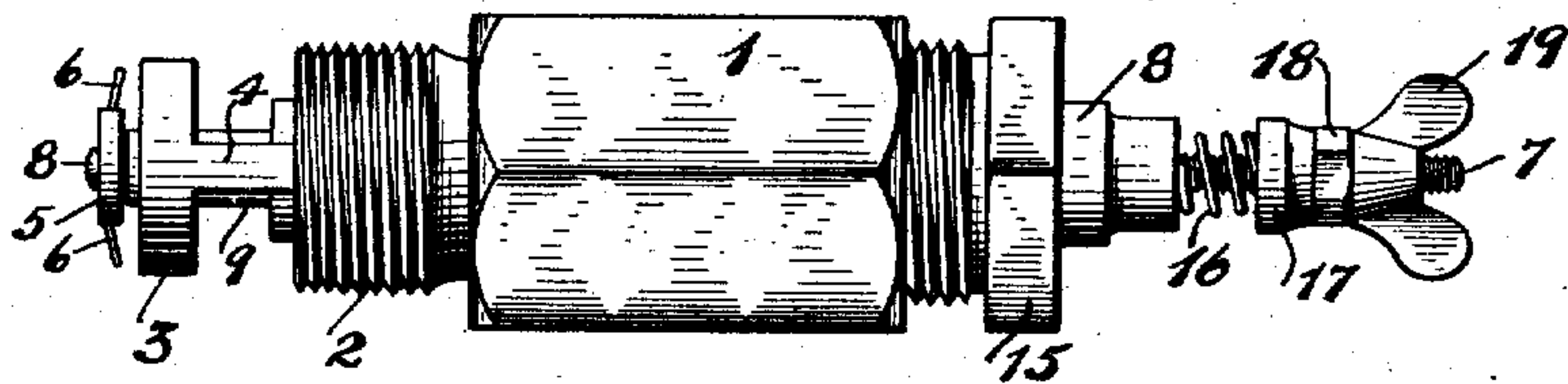


Fig. 3.



Witnesses
Geo. F. Rasmussen
W. D. Allen

Inventor
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UNITED STATES PATENT OFFICE.

CHARLES W. SVENSON, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR
TO THE CORBIN SCREEN CORPORATION, OF NEW BRITAIN, CON-
NECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRIC IGNITION DEVICE FOR INTERNAL-COMBUSTION MOTORS.

SPECIFICATION forming part of Letters Patent No. 771,683, dated October 4, 1904.

Application filed June 17, 1903. Serial No. 161,829. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SVENSON, a citizen of the United States, residing at New Britain, in the county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Electric Ignition Devices for Internal-Combustion Motors, of which the following is a full, clear, and exact description.

My invention relates to improvements in ignition devices for gas or oil engines of the internal-combustion or explosion type, and particularly to what is commonly termed a "spark-plug."

In the particular form to which this invention relates the ignition is accomplished by means of what is termed a "jump spark," which occurs between two terminals in an electric circuit, any source of electrical energy being provided, such as a storage battery or a dynamo. A great difficulty which is experienced in devices of this character occurs as a result not only of the oxidation by sparking, but by reason of the coating of the terminals by the products of combustion within the cylinder. The difficulty is so great at times as to completely disable the engine and to cause great inconvenience.

By my improvement I have provided terminals of a new construction. One terminal consists of a stationary annular ring, and the other terminal consists of a revoluble member having a plurality of points. The sparking can therefore occur from any one of the points to the other annular terminal, depending upon which gap presents the least resistance to the passage of the current. The movement of the rotatable terminal is accomplished by the ordinary vibration of the engine. It may also be moved by hand.

The particular construction which I have used and desire to protect by patent will be more clearly seen on an inspection of the accompanying drawings and the following specification.

Figure 1 is a longitudinal cross-section of the spark-plug, showing a support for one terminal in elevation. Fig. 2 is an end ele-

vation looking from the left of Fig. 1. Fig. 3 is a side elevation of the spark-plug, shown at right angles to that of Fig. 1.

1 is a stationary body member which has a screw-threaded portion 2 for attaching the plug in the side or end of the cylinder of the engine. The main portion is hexagonal or otherwise irregular in shape, so that it may be readily handled. The actual sparking-terminal 3 of this member is an annular band connected with the body 1 by the two arms 4 4. The other terminal member, 5, is in the form of a disk having four radiating points 6 6, which extend in close proximity to the terminal 3. The sparking will of course occur between the terminal 3 and that portion of the terminal 5 which presents the least resistance to the passage of the current. The electrical connection to the terminal 5 is made by the rod 7, which extends through the stationary member 1 and has a pivotal mounting 8 for the member 5. The construction will therefore be seen to be such that the disk 5 may be revolved upon its axis upon the rod 7, so as to continually change the relative positions of the two terminal points 3 and 6. This greatly reduces the possibility of the spark-plug being disabled from carbon being deposited on the terminals or from oxidation or other causes. In the drawings it will be noted that there is a considerable free space between the arms 4 4, so that the gases inside of the cylinder may pass freely around the terminals, and thus be subject readily to the influence of the sparking across the terminals.

8 is an insulating member, preferably of porcelain, which separates the stationary body member 1 from the movable rod member 7. The rod 7 is enlarged at 9, so as to form a shoulder which may coact with a shoulder in a recess in the insulating member 8.

10 is a suitable packing material, such as asbestos, situated between the shoulder 9 on the member 7 and the corresponding shoulder in the insulating member.

11 is an enlarged portion of the insulating member, which has a shoulder in proximity to a corresponding shoulder on the stationary

terminal 1, between which is placed a packing material 12, such as asbestos. 13 is a similar packing material on the outer side of the shoulder 11.

5 14 is a washer which is placed beyond the packing 13 and provides a bearing for the tightening member 15, which is screw-threaded on the exterior to engage the interior of the stationary body member 1. By means
10 of this tightening member 15 the insulating member 8 may be held securely in place in the stationary body member 1, the two sets of packing materials 12 and 13 providing an efficient means for preventing leakage from
15 the cylinder.

16 is a spring which surrounds the rod 7 and abuts against the insulating member 8.

17 is a cap forming the opposite abutment for the spring 16.

20 18 is a set-nut, and 19 an adjusting-nut, by means of which one terminal wire of the electric circuit may be connected to the terminal member 7. When the nut 18 is tightened,

the terminal 7 is drawn down so that the shoulder 9 engages securely against the packing 10 25 and holds the terminal securely in place.

It will be noted that the terminal 7 may be pressed inward against the pressure of the spring, so as to manually change the relative position of the terminal points 3 and 6. The
30 construction will therefore be seen to be simple and efficient in its operation.

What I claim is—

A spark-plug of the character described comprising a relatively stationary annular
35 member, a rod mounted longitudinally thereof, and a revoluble disk having a plurality of sparking points carried at the outer end thereof adjacent the annular terminal.

Signed at New Britain, Connecticut, this 40 15th day of June, 1903.

CHARLES W. SVENSON.

Witnesses:

CHAS. GLOVER,
G. E. ROOT.

Corrections in Letters Patent No. 771,683.

It is hereby certified that in Letters Patent No. 771,683, granted October 4, 1904, upon the application of Charles W. Svenson, of New Britain, Connecticut, for an improvement in "Electric Ignition Devices for Internal-Combustion Motors," errors appear in the printed specification requiring correction, as follows: In the heading the name of the assignee, "The Corbin Screen Corporation," should read *The Corbin Screw Corporation*, and in line 22, page 1, the word "or" should read *of*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 22d day of November, A. D., 1904.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.

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