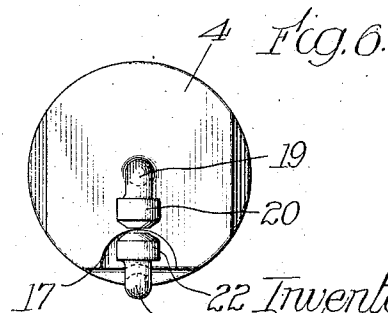
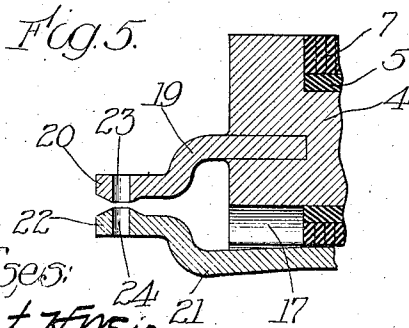
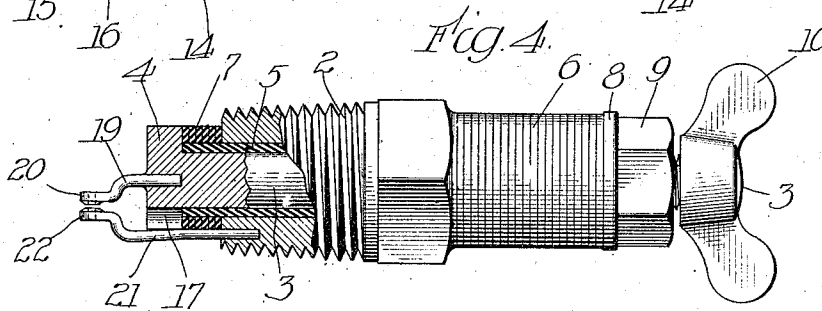
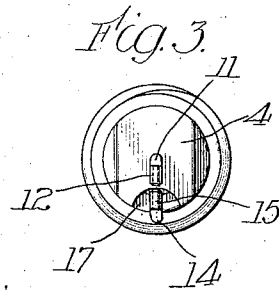
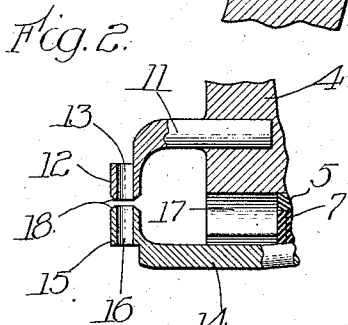
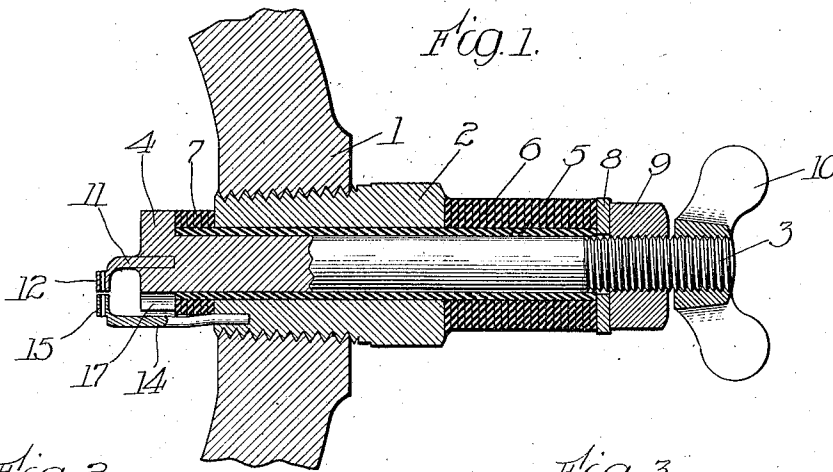


W. C. WESTAWAY.
IGNITER OR THE LIKE.
APPLICATION FILED JULY 16, 1908.

1,028,514.

Patented June 4, 1912.



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UNITED STATES PATENT OFFICE.

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TO CHICAGO PNEUMATIC TOOL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION
OF NEW JERSEY.

IGNITER OR THE LIKE.

1,028,514.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed July 16, 1909. Serial No. 507,894.

To all whom it may concern:

Be it known that I, WALTER C. WESTAWAY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Igniters or the Like, of which the following is a description.

My invention relates to that class of devices known as igniters or the like, for use on internal combustion engines to ignite the charge within the combustion chamber of the engine, and particularly relates to that part of the igniter at which the spark is produced.

My invention has for its objects the production of a more efficient, durable and satisfactory device of the kind described, in which there is a certainty of action, and such a device as may be manufactured at a comparatively small cost.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings wherein like reference characters indicate like or corresponding parts, Figure 1 is a longitudinal sectional view of one form of my device. Fig. 2 is an enlarged view of a portion of the same. Fig. 3 is an end elevation of the form shown in Fig. 1. Fig. 4 is a partial sectional view of a slightly modified form of device. Fig. 5 is an enlarged sectional view of a portion of the same, and Fig. 6 is an end elevation of the modified form shown in Fig. 4.

Referring to the drawings in which the preferred forms of the device are shown, 1 represents the engine cylinder or wall of the combustion chamber, provided with the igniter. The igniter shown, which is the form commonly known as a jump spark igniter, comprises a body part 2, arranged to be secured to the combustion chamber wall 1, the same being provided with a rod 3 extending therethrough and formed with a head preferably as shown at 4. The rod 3 is suitably insulated from the body part 2 by insulating material 5 of mica or any suitable equivalent for the purpose. As shown, the rod 3 is retained in position relative to the body part 2 by means of suitable insulating material 7 and 6, preferably mica, cooperating with the head 4, a washer 8 and a nut 9.

The rod 3 is also provided with a thumb screw 10 or its equivalent, the same forming convenient means for the attachment of a conductor to the rod.

Referring particularly to Figs. 1, 2 and 3, an electrode 11 extended and formed into a tube 12 is arranged in the end 4 of the rod 3, the same being secured thereto in any suitable way. A substantially similar electrode 14 extended in the form of a tube, as at 15, is secured to the body part 2 in any suitable way, the two electrodes 11 and 14 being substantially fixed relative to each other with a space therebetween. The electrodes are preferably so arranged that the ends of the tubes or faces are proximate so that the openings or passageways 13 and 16 in the electrodes are in alinement. As shown, the head 4 of the rod 3 is preferably cut away, as at 17, to prevent accidental short circuiting between the head 4 and the electrode 14. As most clearly shown in Fig. 2, the adjacent ends of the tubes 12 and 15 are preferably brought substantially to an edge, as indicated at 18, there being a suitable space between the two tubes.

In use the wall 1 forms a part of an electrical circuit, as does the rod 3, so that there is a discharge between the electrodes 11 and 14 at the edges 18 of the tubes 12 and 15. The charge is ignited at the ends 18 and shoots from the space around the tubes, as well as from the outer ends of the openings 12 and 16. This gives a very efficient and satisfactory ignition and substantially prevents carbon or other residue from collecting on the faces of the electrodes. Of course the relative positions of the two electrodes may be adjusted to meet the requirements.

Referring to Figs. 4, 5 and 6, the body of the igniter is substantially similar to that shown in Fig. 1, but the electrodes are slightly modified.

Referring to Fig. 5, the two electrodes 19 and 21 are enlarged or upset at the ends and openings 23 and 24 provided extending transversely through the same, or from the faces thereof to other parts of the exterior of the same. These electrodes 20 and 22 are also preferably brought to an edge as shown. This construction is probably somewhat cheaper to manufacture than the other form, and has proved very satisfactory in use.

In the foregoing description a complete

igniter is described, but it should be understood that the several parts of the same may be varied or modified as desired.

Having thus described my invention it is obvious that various immaterial modifications may be made in the form, construction, arrangement and combination of parts shown and described without departing from the spirit of my invention. Hence I do not wish to be understood as limiting myself to the exact form, arrangement or combination of parts herein shown and described.

What I claim as new and desire to secure by Letters Patent is:

1. In a device of the kind described and in combination, a plurality of electrodes spaced from each other, each electrode comprising a tube open at both ends and arranged with an end of each tube proximate the end of the opposite tube, the proximate end of one of said tubes brought substantially to an edge.

2. A spark plug, comprising a body part and a pair of relatively fixed electrodes mounted thereon and insulated from each other, each electrode comprising a tube open at both ends, with an end of each beveled on the exterior and arranged proximate to the similarly formed end of the opposite tube.

3. In a device of the kind described and in combination, a plurality of relatively fixed electrodes spaced from each other, each electrode comprising a tube open at both ends, with an end of each substantially brought to an edge and arranged proximate to the similarly formed end of the opposite tube.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

WALTER C. WESTAWAY.

Witnesses:

ROY W. HILL,

CHARLES I. COBB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."