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T. S. BAILEY & F. T. CABLE.

IGNITION MECHANISM FOR INTERNAL COMBUSTION ENGINES.

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Fig. 1,

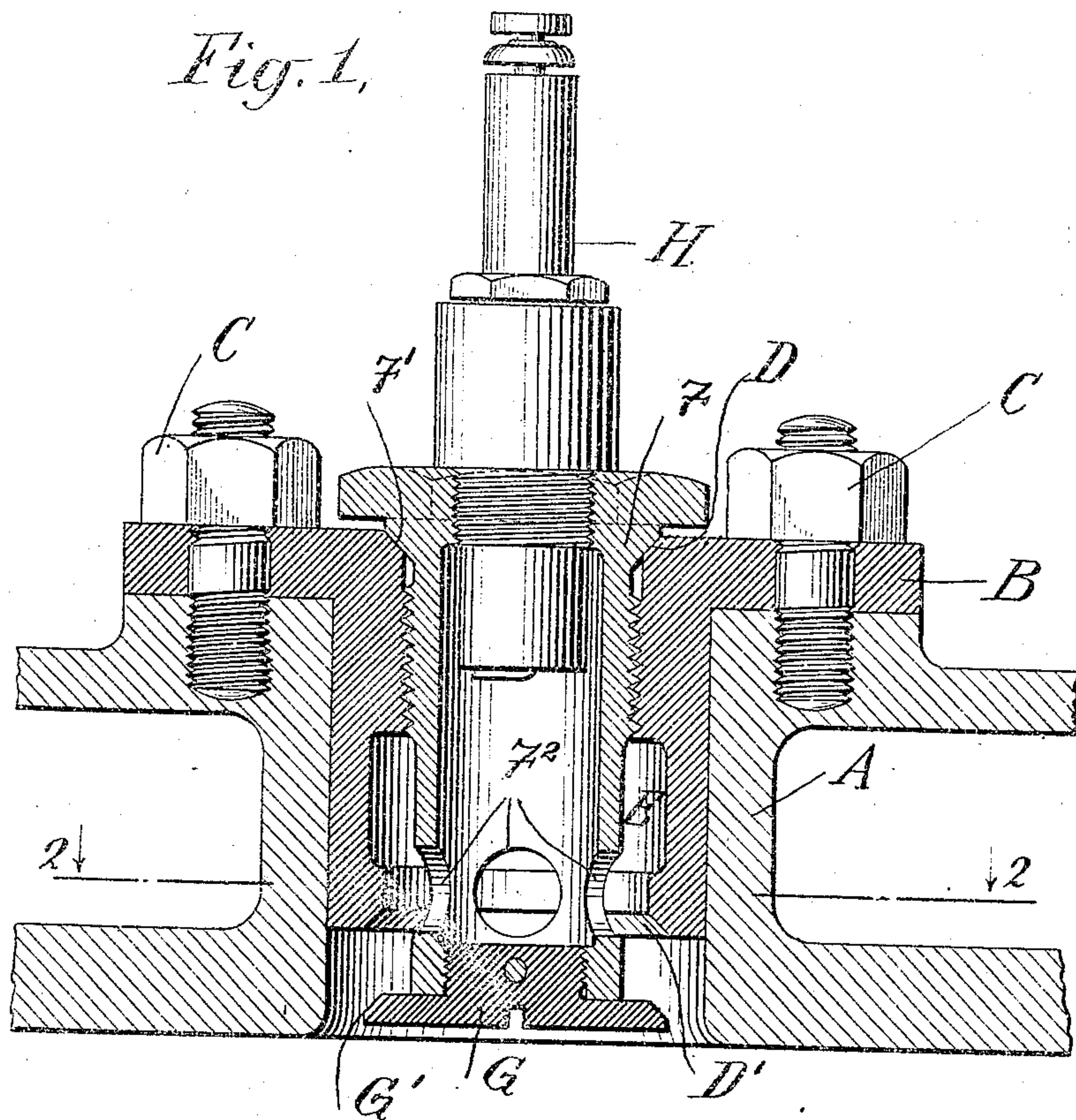
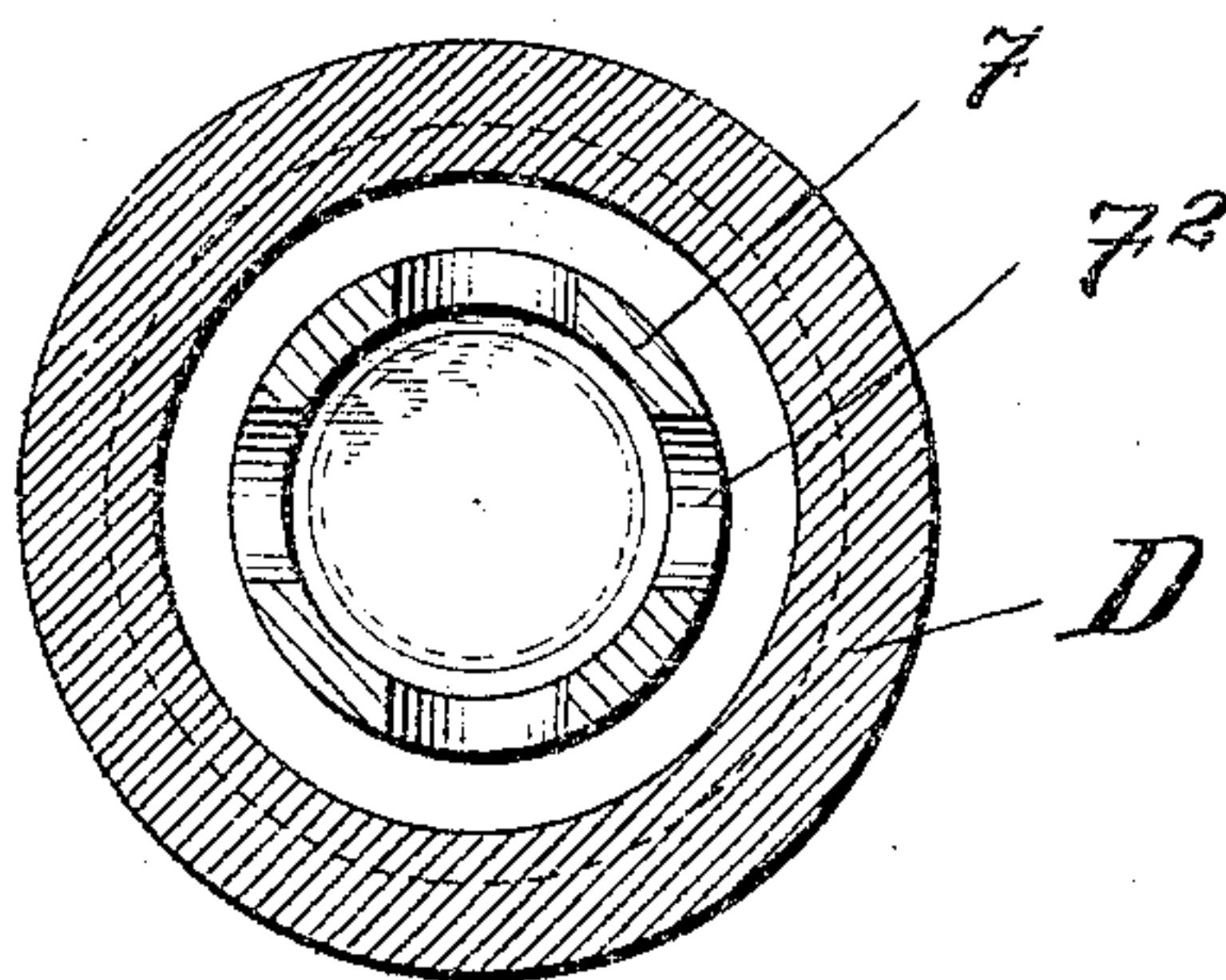


Fig. 2,



WITNESSES:

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UNITED STATES PATENT OFFICE.

THEODORUS S. BAILEY AND FRANK TAYLOR CABLE, OF QUINCY, MASSACHUSETTS,
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IGNITION MECHANISM FOR INTERNAL-COMBUSTION ENGINES.

No. 883,851.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed March 7, 1907. Serial No. 361,063.

To all whom it may concern:

Be it known that we, THEODORUS S. BAILEY, a citizen of the United States, residing at Quincy, Massachusetts, and FRANK TAYLOR CABLE, a citizen of the United States, residing at Quincy, Massachusetts, have invented certain new and useful Improvements in Ignition Mechanism for Internal-Combustion Engines; and we 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.

Our invention relates to an arrangement of igniting device for internal combustion engines, by which the igniter may be removed and replaced without stopping the engine. It is particularly applicable to engines having more than one cylinder, but may be applied to a single cylinder engine if some auxiliary igniting device is added to ignite the charges during the removal of the main igniter.

The nature of our invention will be understood from a reading of the following description in connection with the accompanying drawing.

In the drawing, Figure 1 is a cross-section of a portion of the wall of the combustion chamber, showing the arrangement of igniter mechanism, and Fig. 2 is a section on the line 2—2 of Fig. 1.

In a hole cored in the wall A of the combustion chamber of the engine is secured a flanged fitting B by means of the bolts C as shown. This fitting is provided with the valve seats D and D' at either end, and between these seats is a screw-threaded reduced portion and an enlarged chamber E. A screw-threaded hollow plug F is inserted in the fitting B and screwed into place. At the outer end this plug is provided with a ground valve surface F', and near the inner end with the ports F². Into the extreme inner end of this plug is screwed the disk G having the ground valve surface G'. The upper end of this plug is made in the form of a polygonal nut, so that it may be actuated by a suitable wrench. This nut has a central, screw-threaded opening into which an ignition device H (here illustrated as a jump-spark igniter) may be screwed.

With the parts in the position shown in Fig. 1, the gas passes from the combustion chamber of the engine through the ports F²

into the interior of the auxiliary chamber 55 formed by the hollow plug F and is there ignited by the spark in the usual way. If it is desired to remove the igniter for renewing or cleaning it, or for any other reason, the plug F is screwed by means of the nut on its end until the surface G' engages the seat D', thus closing communication between the combustion chamber and the auxiliary chamber containing the igniter. The igniter may then be removed and replaced without opening the combustion chamber to the atmosphere. After replacing the igniter, the plug F is screwed back into the position shown in the drawing, and the close contact between the seat D and the surface F' prevents any leaking of gas from the combustion chamber.

Though the preferred form of our invention contemplates the employment of the fitting B as shown, it will be understood that this fitting may be dispensed with and the plug F screwed into the wall of the combustion chamber itself, which in that case would be fitted with the valve seats like D and D'. It will further be understood that though we have shown a jump-spark igniter, the construction may be used with any form of igniter.

What we claim as our invention is:

1. In an internal combustion engine, a combustion chamber, having an opening in the wall thereof a fitting secured in said opening and provided with a valve seat at either end, a hollow plug so mounted in said opening as to be capable of being advanced or withdrawn therein, and having, a port adapted to communicate with the combustion chamber when the plug is advanced, a valve at each end of said plug adapted to engage the adjacent valve seat, and a removable igniter projecting into the interior of said plug, substantially as described.

2. In an internal combustion engine, a combustion chamber having an opening in the wall thereof, a fitting secured in said opening and provided with the valve seats D and D' and the chamber E, a hollow plug, having the ports F², so mounted in said fitting as to be capable of being advanced or withdrawn therein, and provided at each end with a valve adapted to engage the adjacent valve seat, and a removable ignition device projecting into said hollow plug, substantially as described.

3. In an internal combustion engine, a combustion chamber having an opening in the wall thereof, a fitting secured in said opening and provided with a valve seat at
5 its inner end, a hollow plug having ported walls so mounted in said fitting as to be capable of being advanced or withdrawn therein, and provided with a valve adapted to engage with said valve seat, and a removable ignition device projecting into said hollow plug,
10 substantially as described.

4. In an internal combustion engine, a combustion chamber having an opening in the wall thereof, a fitting secured in said
15 opening and provided with a valve seat at

its inner end, and a chamber E, a hollow plug, having ports F², so mounted in said fitting as to be capable of being advanced or withdrawn therein and provided with a valve adapted to engage the said valve seat, and a
20 removable ignition device projecting into said hollow plug, substantially as described.

In testimony whereof we affix our signatures, in presence of two witnesses.

THEODORUS S. BAILEY.
FRANK TAYLOR CABLE.

Witnesses:

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