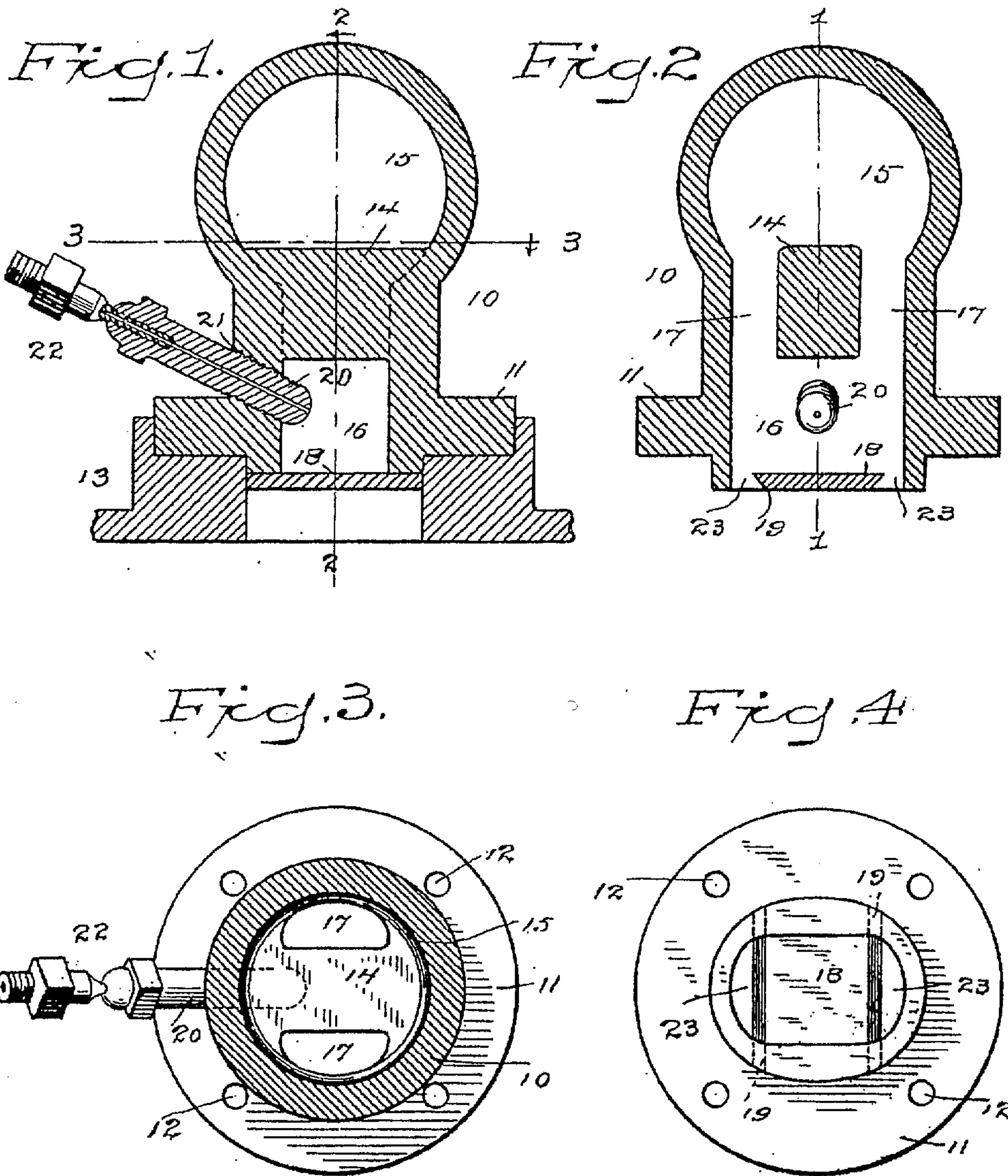


O. L. SMALLEY.
HOT HEAD FOR EXPLOSIVE ENGINES.
APPLICATION FILED JUNE 1, 1907.



WITNESSES

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HOT-HEAD FOR EXPLOSIVE-ENGINES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES L. SMALLEY, a citizen of the United States, residing at Stepney, county of Fairfield, State of Connecticut, have invented a new and useful Hot-Head for Explosive-Engines, of which the following is a specification.

This invention relates to hydrocarbon explosive engines, more especially to engines of the stationary type using kerosene as fuel, and has for its object to provide a hot head, so called, for explosive engines in which the oil shall be highly heated before striking the flash plate, in which the combustion of the oil shall be complete, the circulation of the gases perfect and the deposit of carbon in the head shall be wholly avoided.

With these and other objects in view I have devised the novel hot head of which the following description in connection with the accompanying drawing is a specification, reference characters being used to indicate the several parts:

Figure 1 is a vertical section of my novel hot head on the line 1—1 in Fig. 2; Fig. 2 a vertical section at right angles thereto on the line 2—2 in Fig. 1; looking in the direction of the arrows; Fig. 3 a transverse section on the line 3—3 in Fig. 1, looking down; and Fig. 4 is an inverted plan view.

10 denotes the body which is bulbous in form and is provided with a flange 11 provided with screw holes 12 as a means of attachment to an engine, indicated by 13. Within the body at approximately its mid-height is a cross-wall or partition 14 which may be cast integral with the body or made separate and secured thereto as preferred. Above this cross-wall is a chamber 15 which I term for convenience the circulation chamber, and below the cross-wall is an explosion chamber 16, passages 17 on opposite sides of the cross-wall providing free communication between said chambers. At the base of the explosion chamber is a flash plate 18 which is preferably made separate from the head and made downwardly undercut on opposite sides to engage corresponding ways 19 in the head, eduction passages 23 being left on opposite sides of the flash plate. Oil is supplied to the explosion chamber by means of a supply plug 20 which is placed at an incline and is externally threaded to engage a downwardly and inwardly inclined threaded opening 21 in the head. Oil is conducted to the plug by means of a supply pipe (not shown) which is connected to a valve 22 of any ordinary or preferred construction at the upper or outer end of the plug, this valve controlling the supply of oil to the engine. The best results are secured by

placing the orifice of the plug at a distance above the flash plate, as the oil becomes highly heated in the plug, and placing the plug at such an angle of inclination to the flash plate that the oil will strike the opposite side of the head and be deflected and strike the flash plate in the form of a spray, thus insuring instant and complete combustion of the oil. In practice, the gaseous products of the explosions will pass upward from the explosion chamber into the circulation chamber through one of the passages 17 and will pass downward through the other passage 17, through the explosion chamber and outward through eduction passages 23 on opposite sides of the flash plate. I have found in practice that this construction insures complete combustion of the oil, perfect circulation of the gases and entire relief from carbonization in the head which is such a serious objection to engines of this class as now built.

Having thus described my invention I claim:

1. A hot head for explosive engines comprising a body having a cross wall, passages on opposite sides of the wall and chambers above and below the wall, a flash plate in the lower chamber and means for supplying oil thereto.

2. A hot head for explosive engines comprising a bulbous body having a cross wall, passages on opposite sides of the wall, an explosion chamber below the wall and a circulating chamber above the wall, a flash plate in the explosion chamber and means for supplying oil thereto.

3. A hot head for explosive engines, comprising a body having a cross wall with passages on opposite sides thereof and chambers above and below the wall.

4. A hot head for explosive engines comprising a body having a cross wall with passages on opposite sides thereof, an explosion chamber below the cross wall, a flash plate in the explosion chamber and an inclined oil supply plug above the flash plate.

5. A hot head for explosive engines comprising a body having an explosion chamber with a flash plate therein and an oil supply plug placed at an incline so that oil therefrom will strike the wall of the chamber and be deflected upon the flash plate in the form of spray.

6. A hot head for explosive engines comprising a body having a cross wall, passages on opposite sides of the cross wall, a circulation chamber above the cross wall and an explosion chamber below the cross wall, a flash plate in the explosion chamber and an oil supply plug inclined at an angle so that oil therefrom will strike the wall of the chamber and be deflected upon the flash plate in the form of spray.

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

CHARLES L. SMALLEY.

Witnesses:

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