

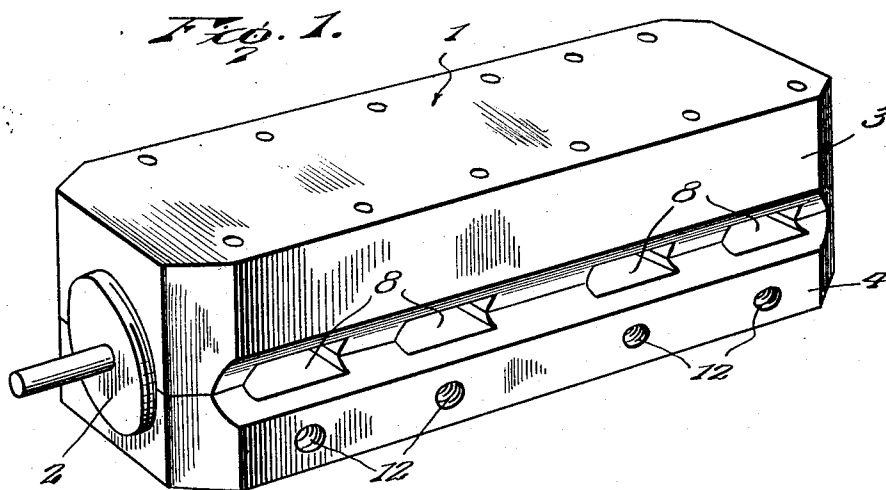
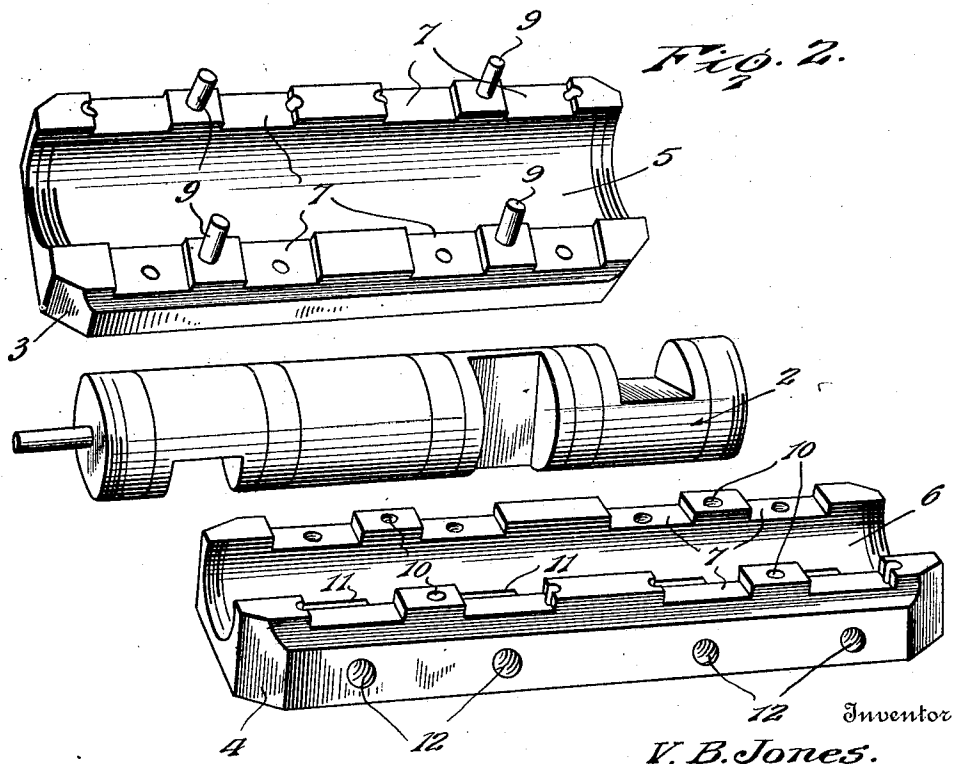
Jan 6, 1931.

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1,787,628

ENGINE HEAD

Filed Feb. 7, 1929



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UNITED STATES PATENT OFFICE

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ENGINE HEAD

Application filed February 7, 1929. Serial No. 338,214.

This invention relates to motors and more particularly to a motor head.

One object of the invention is to provide a motor head defining a chamber in which a valve operates and formed substantially entirely of highly compressed graphite so that the motor head will be inherently self-lubricating in order to eliminate the necessity for lubricating a valve housed by the head and further to provide a motor head which will not be caused to expand and contract by changes in temperature and thereby allow a valve to fit snugly in the motor head without likelihood of binding occurring when the motor is hot.

Another object of the invention is to provide a motor head which will be strong and durable and at the same time of light weight.

The invention is illustrated in the accompanying drawing, wherein

Figure 1 is a perspective view of the improved motor head, and

Fig. 2 is a perspective view showing the sections forming the motor head separated and a valve of the rotary type to be encased in the head disposed between its sections.

In the accompanying drawing, I have disclosed a motor head, indicated in general by the numeral 1. This motor head is merely an illustration of one form of motor head which may be formed in accordance with this invention, and it is to be understood that the invention is not restricted to a motor head of the specific type disclosed. It is to be further understood that the motor head may have associated therewith a rotary valve of the type shown in Fig. 2 and indicated in general by the numeral 2 or any other type of valve desired. The head 1 in the form illustrated consists of upper and lower sections 3 and 4, the inner surfaces 5 and 6 of which are transversely arcuate in order to define a cylindrical chamber to snugly receive the valve 2 when the upper section 3 is fitted upon the lower section. This valve may be formed of any material desired, but in the preferred embodiment it will be formed of graphite as set forth in my prior Patent, No. 1,649,235, issued November 15, 1927. Recesses 7 are formed in the side walls

of the sections 2 and 3 to define ports 8 when the section 3 is placed upon the section 4 where it will be held against longitudinal and transverse movement by pins 9 which fit into sockets 10 formed in the section 4. Ports 11 are formed through the bottom of the section 4 to communicate with the cylinders of an engine block upon which the head is to be secured and sockets 12 are provided to receive spark plugs. As previously stated, the specific formation of the valve and motor head is not important as the drawing merely illustrates one specific form of engine head which may be formed of graphite in accordance with this invention.

The motor head is made of graphite, either natural or artificial, and is formed by mixing the graphite in a highly comminuted state with a suitable binder and subjecting the material to extremely high pressure in a mold of suitable form into which the material is forced. The resulting product possesses extreme hardness and density, at the same time retaining all of the lubricating properties possessed by the graphite. Therefore, it will be seen that the invention contemplates the provision of a motor head which is inherently self-lubricating or, in other words, a motor head of a material having the property of lubricating the surface in contact with which a valve moves. Furthermore, due to the very low coefficient of expansion of the graphite, there will be no likelihood of sticking of the valve because of expansion and, therefore, this difficulty, which is inherent in steel motor heads, is overcome by the present invention. It is, of course, to be understood that the pressure to which the graphite mixture is subjected in molding or forming the motor head is sufficiently high to produce a body having a high degree of hardness and density but that this does not in any way detract from the lubricating quality of the graphite.

Having thus described the invention, I claim:

1. A motor head consisting of ground graphite mixed with a binder and molded under high pressure.
2. A molded motor head consisting of

ground graphite subjected to high pressure while being molded.

3. A motor head substantially entirely of graphite compressed to a high degree of hardness and density.

4. A motor head substantially entirely of highly compressed graphite, and a binder.

5. A motor head substantially entirely of graphite compressed to a high degree of hardness and density and defining a valve chamber provided with ports to be controlled by a valve movably mounted in the chamber.

In testimony whereof I affix my signature.

VIRGIL B. JONES. [L. s.]

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