Aug. 16, 1927. 1,639,449

D. B. BAKER

INTERNAL COMBUSTION ENGINE

Filed Nov. 12, 1921 2 Sheets-Sheet 1

Fig. 1.

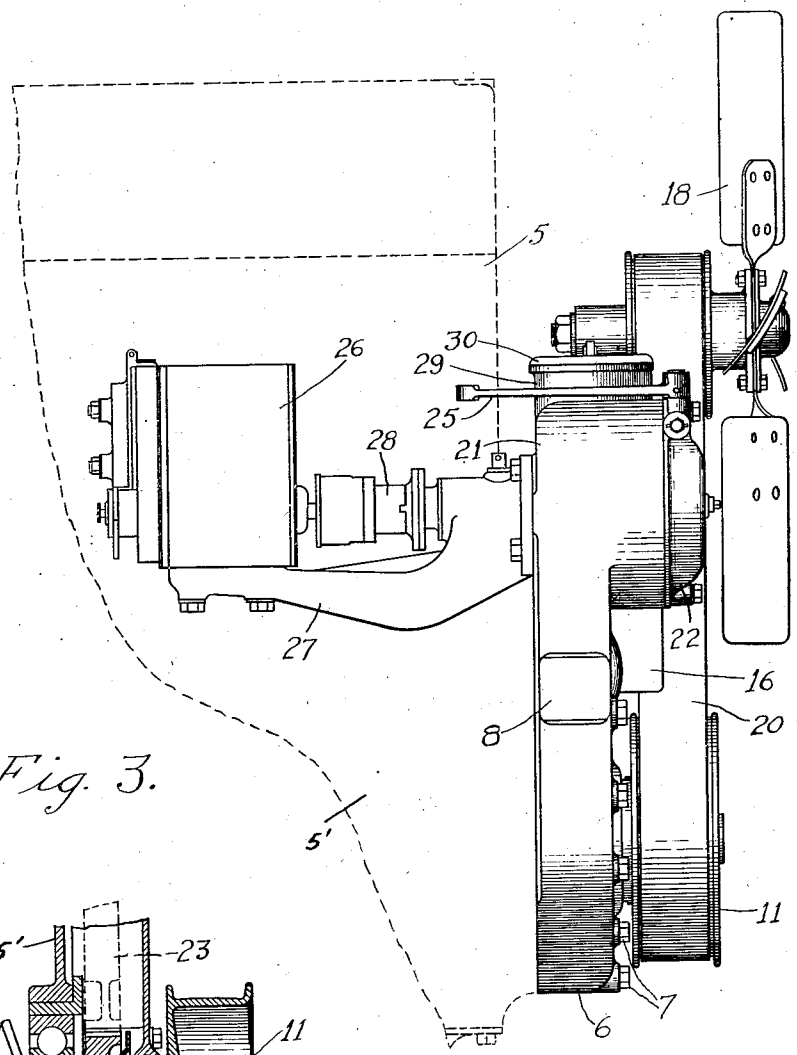

Fig. 3.

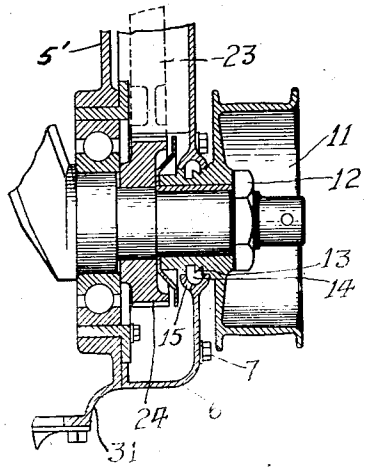

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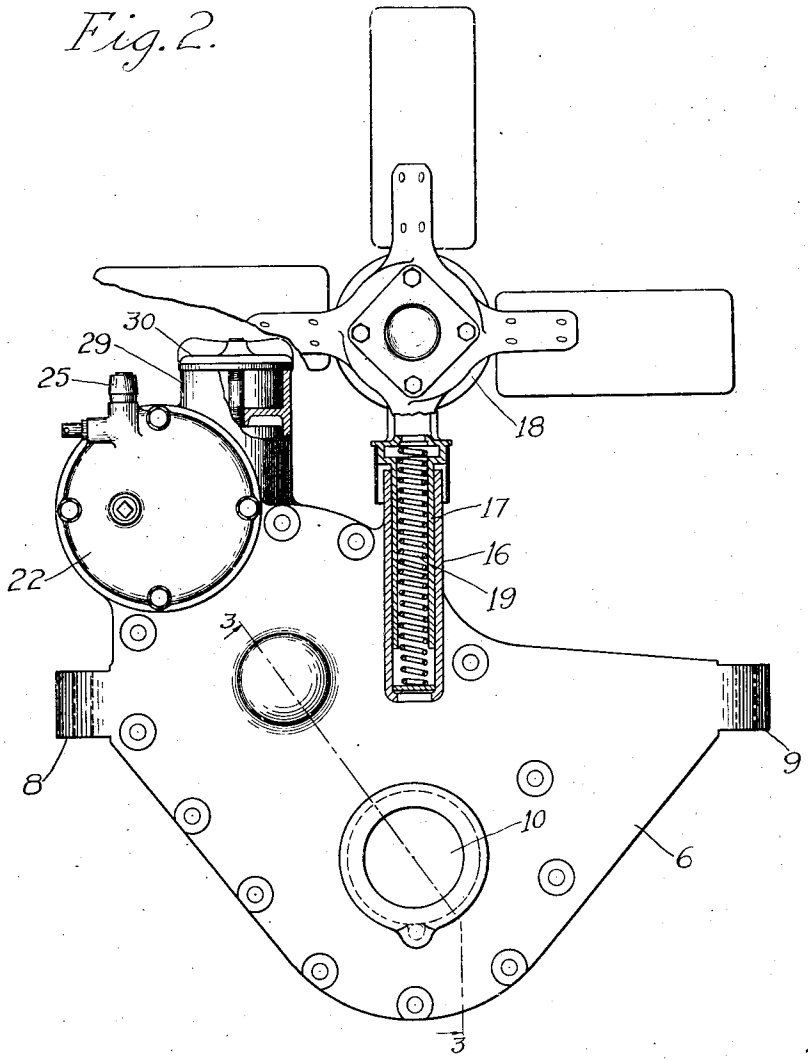
Fig. 2.



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Patented Aug. 16, 1927. 1,639,449

UNITED STATES PATENT OFFICE.

DAVID B. BAKER, OF CHICAGO, ILLINOIS, ASSIGNOR TO INTERNATIONAL HARVESTER COMPANY, A CORPORATION OF NEW JERSEY.

INTERNAL-COMBUSTION ENGINE.

Application filed November 12, 1921. Serial No. 514,496.

My invention relates to internal combustion engines, and particularly to an accessory unit assembly forming a part of the frame construction.

I have invented a mounting for certain of the engine accessories that is very compact, neat in appearance, and readily accessible for repairs and adjustments. This I have accomplished by incorporating the magneto, governor, cooling fan and front cover for the cylinder block into a unit assembly, the cover also serving as a support for one end of the cylinder block and providing an oil filling means and breather tube for the engine.

Referring to the accompanying drawings which form a part of this specification—

Figure 1 is a side elevation of the front cover and assembly, the cylinder block being shown in dotted lines;

Fig. 2 is a front elevation of the assembly; and,

Fig. 3 is a section substantially on the line 3—3 of Fig. 2 showing the mounting of the fan drive pulley on the crank shaft and in the front cover.

The cylinder block 5 of the engine may be of any desired construction, and has a crank case 5′ open at the front end. A cover 6, which is secured to the cylinder block by a plurality of bolts 7, closes the opening and has two laterally extending lugs or arms 8, 9 for supporting the front end of the engine on the chassis or frame of the vehicle. The cover is bored at 10 to rotatably receive the hub of a fan drive pulley 11, which is splined to the projecting end of the crank shaft and held in place thereon by the lock nut 12. The pulley hub has an oil flinging edge 13 within a groove 14 in the cover. Any excess oil tending to escape between the pulley and cover will be thrown by the sharp edge 13 into the groove 14, from whence it will drain out into the crank case through the drain hole 15. Directly above the pulley 11 is a socket 16 preferably formed integral with the cover and bored to slidably receive the supporting spindle 17 of the cooling fan 18. A coil spring 19 tends to raise the spindle from the socket and maintain the proper tension in the fan belt 20.

A chamber 21 formed integral with the cover is closed by a removable plate 22, and provides a housing for the governor which may be of any desired type and is mounted on a shaft having a spur gear meshing with the cam shaft gear 23, which is driven at half speed from the gear 24 on the crank shaft. An arm 25 controlled by the governor is connected to the throttle valve of the engine, not shown.

A magneto 26 is mounted on a supporting arm 27, preferably formed from a diamagnetic material such as aluminum or white brass, and bolted to the front cover. However, the arm may be cast integral with the cover and made of any desired material. The magneto is mounted coaxial with the governor and is driven from an extension of the governor shaft, being connected thereto by a detachable coupling 28.

A hollow cylindrical extension 29 formed on the cover is closed by a removable cover 30, and provides means for adding oil to the engine, the oil running over the gears 23, 24 and into the crank case 31 of the engine, and also serves as a breather tube.

When it is desired to remove the front cover and its associated parts from the engine, the nut 12 and the bolts 7 are removed, and the throttle and spark control means (not shown) disconnected from the governor and magneto, whereupon the entire assembly is removable as a unit.

It will be apparent to those skilled in the art that I have invented a compact assembly of accessories and parts of an engine that can be readily removed and reassembled to the engine without disturbing the adjustment of any of the several component parts, but nevertheless so arranged that any one part, such as the governor, magneto or fan, may be independently removed if desired.

While I have shown and described the several accessories as assembled in a definite relation to each other, it is to be understood that I do not desire to be limited to the exact arrangement and proportion of parts disclosed, but that the invention is capable of many modifications and rearrangements, and I desire to include as my invention all such modifications as may fall within the scope of my claims.

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

1. In an internal combustion engine, the combination of an engine block having a crank case open at one end, a removable cover therefor, the cover having an aper-

ture adapted to receive a fan drive pulley, a fan support on the cover above the aperture, a governor casing formed in the cover, and a bracket adapted to support a magneto secured to the cover.

2. In an internal combustion engine, the combination of an engine block having a crank case open at one end, a removable cover therefor having an aperture adapted to rotatably receive a fan drive pulley, a fan support formed on the front of the cover, a governor casing provided in the cover, a bracket adapted to support a magneto fixed to the rear side of the cover adjacent said casing, and a breather opening formed in the cover.

3. In an internal combustion engine an accessory assembly comprising a removable cover, a cooling fan mounted thereon, a governor housing integral with the cover, a governor mounted therein, a magneto supported on a bracket adjacent the governor, and common driving means for the governor and magneto.

4. In an internal combustion engine, an accessory assembly comprising a removable cover having a breater opening and an aperture adapted to rotatably receive a pulley, a pulley rotatably mounted in the aperture, a cooling fan mounted on the cover, means for driving the fan from the pulley, a governor housed in a casing formed in the cover, a magneto supported on a bracket secured to the cover, and a common driving means for the governor and magneto.

5. In an internal combustion engine, an accessory assembly comprising a removable cover having a bore adapted to receive a pulley, a fan yieldably mounted above the bore, a governor housing in the cover, a governor in the housing, a magneto bracket adjacent the housing, a magneto thereon, and common driving connections for the magneto and governor.

In testimony whereof I affix my signature.

DAVID B. BAKER.