Jan. 5, 1932. F. E. CLEMONS 1,839,832

INTERNAL COMBUSTION ENGINE

Filed Jan. 10, 1927 2 Sheets-Sheet 1

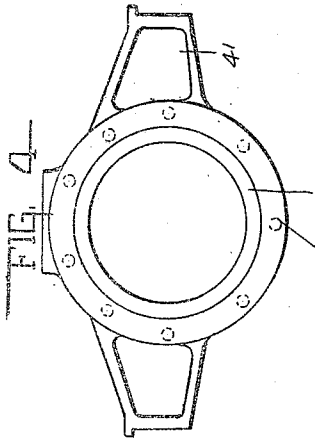

FIG. 4

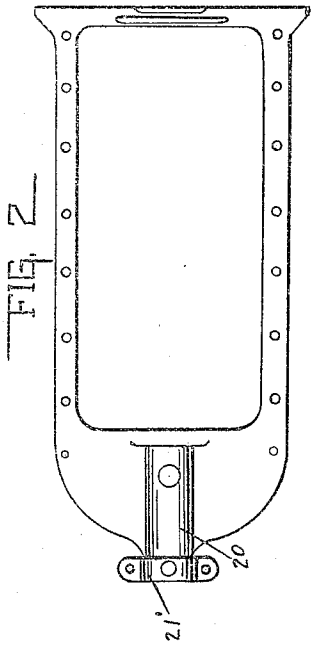

FIG. 2

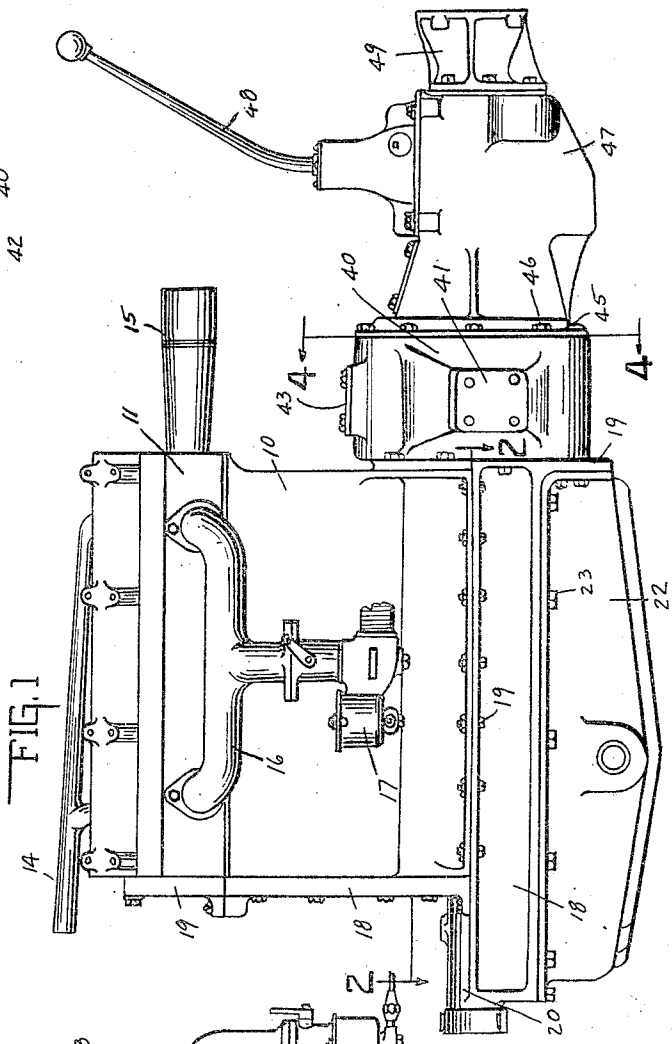

FIG. 1

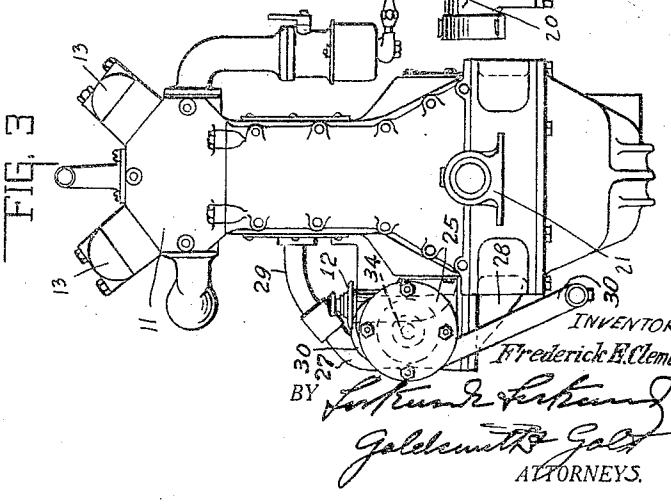

FIG. 3

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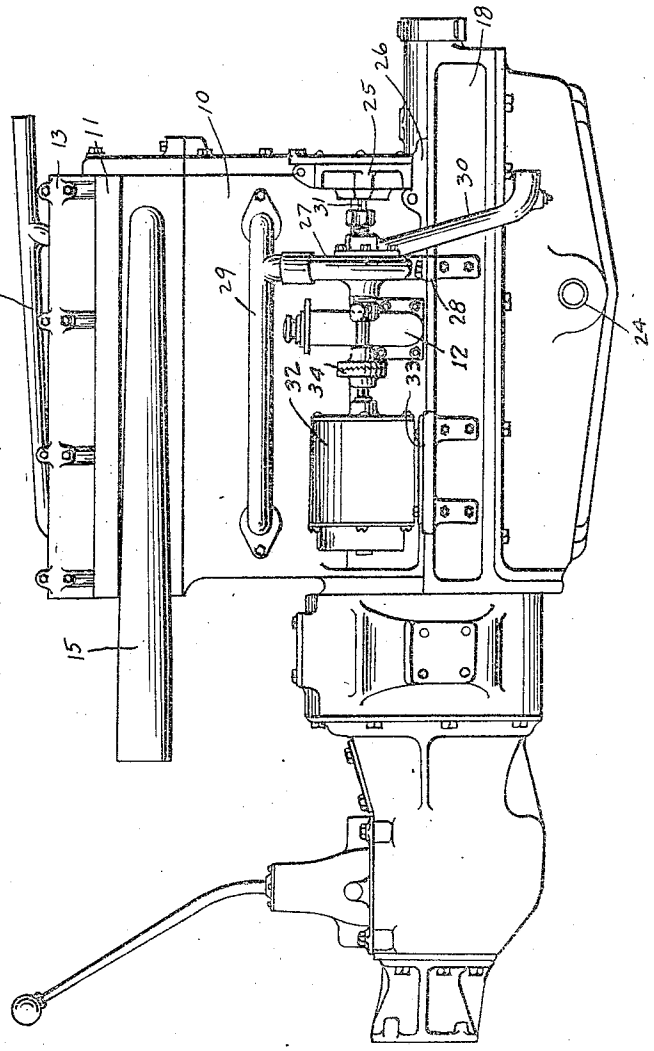
FIG. 5



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Patented Jan. 5, 1932

1,839,832

UNITED STATES PATENT OFFICE

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INTERNAL COMBUSTION ENGINE

Application filed January 10, 1927. Serial No. 160,175.

This invention relates to a unit power plant arrangement including an internal combustion engine, accessory parts and transmission with means for associating the same with other parts of a motor vehicle.

The chief object of the invention is to construct an internal combustion engine of the general character indicated, which is so arranged that the several parts may be made special or may be readily adapted to standard parts of a well known engine.

The chief feature of the invention consists in the construction of the several parts, whereby they may be associated with more or less of standard engine parts for transforming a well known engine construction into a unit power plant arrangement or an arrangement intermediate the same.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim:

Fig. 1 is a side elevational view of one form of the invention showing the same including a special cylinder block and a detachable special head.

Fig. 2 is a top plan view of the Ford block adapter as shown in Fig. 1 and taken in line 2—2 thereof.

Fig. 3 is an end elevational view of the engine shown in Fig. 1.

Fig. 4 is a side elevational view taken in the plane of 4—4 and of the bell housing.

Fig. 5 is a side elevational view of the invention shown in Fig. 1 and taken from the opposite side.

In the drawings 10 indicates a cylinder block detachably associated with a cylinder head 11. Also associated with the cylinder block is a breather pipe construction 12. The cylinder head 11 is herein shown of the overhead cam shaft type and the valves are shown positioned in two lines with their stems inclined at an angle to each other and to the head. 13 indicates the housing associated with each line of valves. A water outlet 14 is also associated with said head. An exhaust 15 is likewise associated with said head and an intake 16 is not only associated with the head but is associated with the carburetor 17. Herein a cover or gear housing 118 including an upper cover 119 completes the full covering for a train of gears or other driving mechanism for the overhead cam shaft operation.

It is to be understood that the cylinder block 10 is constructed so that the dimensions of the same necessary for attachment to the mechanism, hereinafter to be described, are of a well known type. The result is that instead of the conventional block 10 herein illustrated there may be substituted without departing from the broader feature of the invention a cylinder block carrying the cylinder head. However, if it is found desirable to modify the well known engine construction, the cylinder head may be replaced by a head of the character described in the patent to Robert M. Roof, No. 1,301,007, dated April 15, 1919, or the patent to Louis Chevrolet, No. 1,474,511, dated November 20, 1923. The result of the utilization of the cylinder block with either of these heads is pointed out in the before mentioned patents and may be briefly stated as follows: The transformation results in an increase in power derived from the same piston displacement.

As shown clearly in the several figures, Fig. 4 excepted, there is provided an adapter indicated generally by the numeral 18. This adapter is provided with suitable openings with which the bolts 19 are associated for securing to the block 10 or a standard cylinder block said adapter. The adapter includes a vertical flange or extension 219 at one end and a bearing 20 at the other end. The bearing 20 at the other end is formed integral with the adapter and is adapted to receive the crank shaft. A collar 21 is adapted to be positioned upon said bearing and constitutes the front motor support bracket and may be suitably secured to a transverse member upon the frame of the vehicle. Suitably secured to the under and opposite face of the adapter 18 is a combination oil sump and drip pan 22 as by means of the bolts 23. Said sump includes an outlet 24, which is suitably connected to an oil pump construction 25 detachably mounted upon the adapter 18 by the bracket portion 26. This oil pump mounting is not only

adapted to be associated with the cylinder block herein disclosed, but is also adapted to be associated with the standard block. The adapter 18 also is adapted to support a water pump 27 by suitable bracket means 28 and this water pump is connected to an intake 29 as well as a water inlet 30 adapted to be connected to a radiator which is supplied by water discharged from the water outlet 14. A shaft 31 connects the oil and water pumps in axial alignment and this shaft is extended and operates a magneto 32 mounted by means of a bracket 33 upon said adapter 18. A suitable connection 34 is included in said shaft. From the foregoing it will be readily apparent that the aforesaid adapter is adapted to mount a magneto, water pump and oil pump, or either, or any combination thereof, as may be found desirable. All of the foregoing is in addition to the usual well known engine construction and may be readily associated therewith.

Reference will now be had to Figs. 1, 4 and 5 and in said figures there is disclosed a bell housing 40 having laterally extending arms 41 for mounting upon the frame of the vehicle. The bell or fly wheel housing 40 is suitably secured to the flange 19 of the adapter 18 and to either the well known make of cylinder block or the cylinder block 10 herein disclosed by suitable means 142 associated with the openings 42 which are adapted to register with the standard block openings. Cover plate 43 provides access to the bell housing 40 which is adapted to contain a standard clutch such as Borg and Beck clutch. Suitably secured to the bell housing, oppositely from its mounting upon the adapter and the cylinder, by means of the flange 45 and bolts 46 is a transmission case housing 47, which supports a standard selective gear shift transmission controlled by gear shift lever 48 in the usual manner. Suitably secured to this case 47 upon its opposite end is a ball cup adapter 49 which is adapted to take the standard ball cup including the joint upon the propeller shaft.

The foregoing description indicates a unit power plant transformation from a well known motor, or intermediate stages of complete power plant transformation, whereby a high class automotive unit is produced utilizing, if desired, a standard head and cylinder block, as well as well known transmission except that when desired there may be substituted a selective speed transmission and clutch which replaces the well known construction. Furthermore, if it is desired to utilize such a construction and dispense with the transformation into a clutch and gear shift arrangement, the usual well known construction nevertheless may be utilized. The necessary transformation element of the broad invention herein disclosed, therefore, is the adapter unit 18.

The invention claimed is:

A crank case forming adapter including an elongated upper portion for supporting a unitary cylinder block, an elongated lower portion for supporting a crank case cover, a flange portion transverse thereto at one end to which one side of the cylinder block and the cover may be laterally united in spaced relation and to the other side of which a clutch housing may be united, and an upstanding portion near the opposite end for block and cylinder head connection.

In witness whereof, I have hereunto affixed my signature.

FREDERICK E. CLEMONS.