L. B. SPERRY.

INTERNAL COMBUSTION ENGINE.

APPLICATION FILED JULY 15, 1915.

1,214,967.

Patented Feb. 6, 1917.

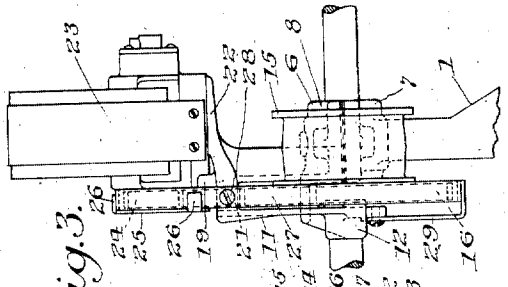


Fig. 3.

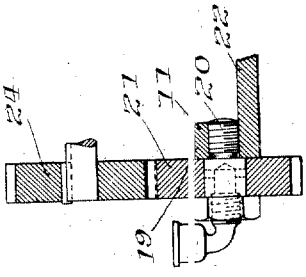


Fig. 5.

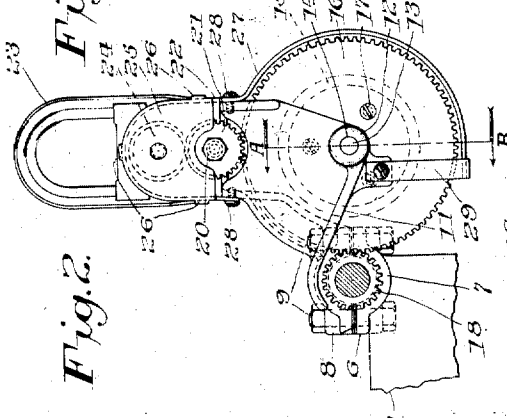


Fig. 2.

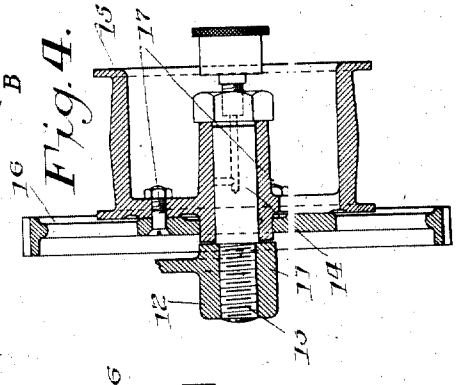


Fig. 4.

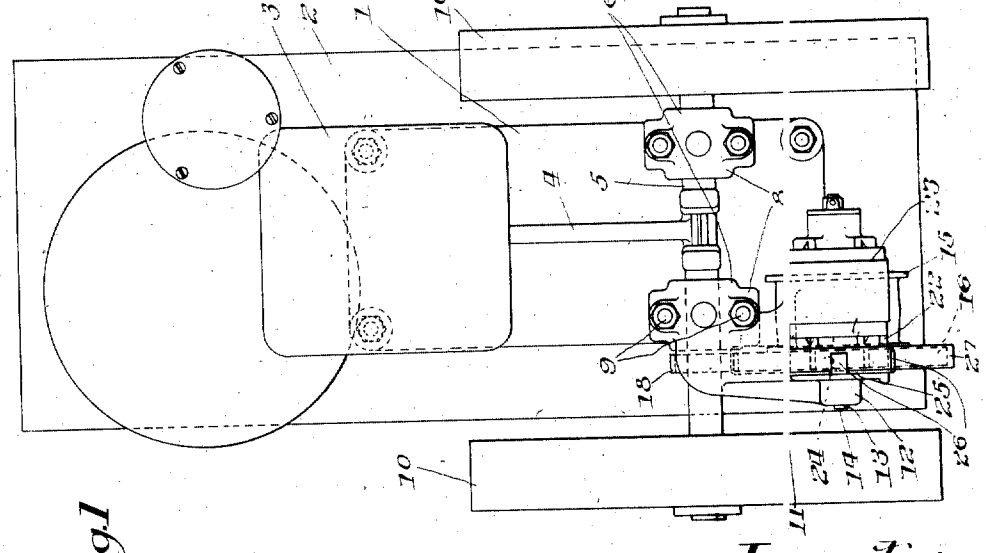


Fig. 1

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# UNITED STATES PATENT OFFICE.

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## INTERNAL-COMBUSTION ENGINE

1,214,967. Specification of Letters Patent. Patented Feb. 6, 1917.

Application filed July 15, 1915. Serial No. 40,103.

*To all whom it may concern:*

Be it known that I, LEONARD B. SPERRY, a citizen of the United States, residing at Wauwatosa, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Internal-Combustion Engines, of which the following is a full, clear, and exact specification.

This invention relates to internal combustion engines, and in particular to improved means for supporting the magneto and its actuating gears, and a driving pulley upon a part of the engine structure comprising a single bracket member carrying a stud upon which a pulley and a magneto actuating gear are journaled, a base member to which a magneto is secured, and an internal bearing box member forming a part of one of the bearings in which the crank shaft of the engine is journaled.

The object of the invention is to eliminate parts and simplify the construction of the engine, thereby effecting a material reduction in cost.

I attain this object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of an internal combustion engine having my invention embodied in its construction;

Fig. 2 is a side elevation of part of Fig. 1;

Fig. 3 is a side view of Fig. 2;

Fig. 4 is a vertical section of part of Fig. 2, along line A—B, and designed to show the manner of mounting one of the power transmitting gears and its pulley; and

Fig. 5 is a sectional view along the same line of Fig. 2, showing the magneto operating pinions.

The same reference characters designate like parts throughout the several views.

1 represents the engine frame mounted upon a supporting base 2, including a power cylinder 3, a connecting rod 4, and crank shaft 5 journaled in bearing boxes 6, having their lower half box 7 integral with the frame 1, and their upper half box 8 separable therefrom and secured in position by means of stud bolts 9 in a common way, and 10 represents fly wheels secured to opposite ends of the shaft. Integral with one of the separable upper half boxes 8 is a rearwardly extending bracket member 11 provided with a laterally disposed boss 12 that receives the threaded reduced end 13 of a stud 14 disposed parallel with the crank shaft 5 and having a pulley 15 journaled thereon. 16 represents a spur gear member secured to the web of the pulley by means of bolts 17 and meshing with a driving pinion 18 secured to the crank shaft. The bracket 11 extends upward from the boss 12 at the outside of the gear member 16, substantially parallel therewith, and is provided at its upper end with a boss 19 that receives the threaded end of a stud 20, upon which is journaled an intermediate pinion 21 that meshes with the gear member 16, and 22 represents an inwardly extending horizontal shelf integral with the bracket and having a magneto 23 secured thereto, the armature of the magneto carrying a pinion 24 meshing with the intermediate pinion 21.

A shield for the gears includes a plate member 25, having inwardly extending ear members 26 whereby it is secured to a band member 27 secured to opposite sides of the upper end of the bracket member 11 by means of screws 28, and curving downward around the gear member 16 is secured at its lower end to a hanger 29 depending from the bracket member 11.

By means of this unitary attachment, the structure is greatly simplified and rendered compact.

Having shown and described a preferred embodiment of my invention, I do not desire that it be confined to the specific details of the structure as illustrated, it being understood that changes may be made in the form and proportion of its parts without departing from the spirit of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is:

1. An internal combustion engine including, in combination, an engine frame, a crank shaft journaled in fixed bearing members carried by said frame, separable bearing caps coacting with said fixed members, and a gear carrying bracket integral with one of said separable caps.

2. An internal combustion engine including, in combination, an engine frame, a crank shaft journaled in fixed bearing members carried by said frame, separable bearing caps coacting with said fixed members, and a gear carrying bracket integral with one of said separable caps having a magneto mounted thereon.

3. An internal combustion engine includ-

ing, in combination, an engine frame, a crank shaft journaled in fixed bearing members carried by said frame, separable bearing caps coacting with said fixed members, and a gear carrying bracket integral with one of said separable caps, said bracket having a laterally disposed shelf adapted to receive a magneto.

4. An internal combustion engine including, in combination, an engine frame, a crank shaft journaled in fixed bearing members carried by said frame, separable bearing caps coacting with said fixed members, a pinion secured to said shaft, a bracket member integral with one of said separable caps, a magneto carried by said bracket, and gear means journaled upon said bracket and operatively connecting said pinion with said magneto.

5. An internal combustion engine including, in combination, an engine frame, a crank shaft journaled in fixed bearing members carried by said frame, separable bearing members coacting with said fixed members, a pinion secured to said shaft, a bracket member integral with one of said separable bearing members, a magneto carried by said bracket, studs secured to said bracket member, a gear member journaled upon one of said studs and engaging with said pinion, a driving pulley secured to said gear member, an intermediate pinion journaled upon said remaining stud and meshing with said gear member, and a pinion forming part of the magneto mechanism.

6. An attachment for gas engines including a bearing cap having magneto and pulley supporting means.

7. An attachment for gas engines including a bearing cap having supporting portions, a magneto secured to one of said portions, and a pulley secured to another.

8. An attachment for gas engines including a bearing cap having magneto supporting means.

9. An attachment for gas engines including a bearing cap having a supporting portion, and a magneto mounted on said supporting portion.

In testimony whereof I affix my signature.

LEONARD B. SPERRY.