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DRIVING MEANS FOR MAGNETO GENERATORS.

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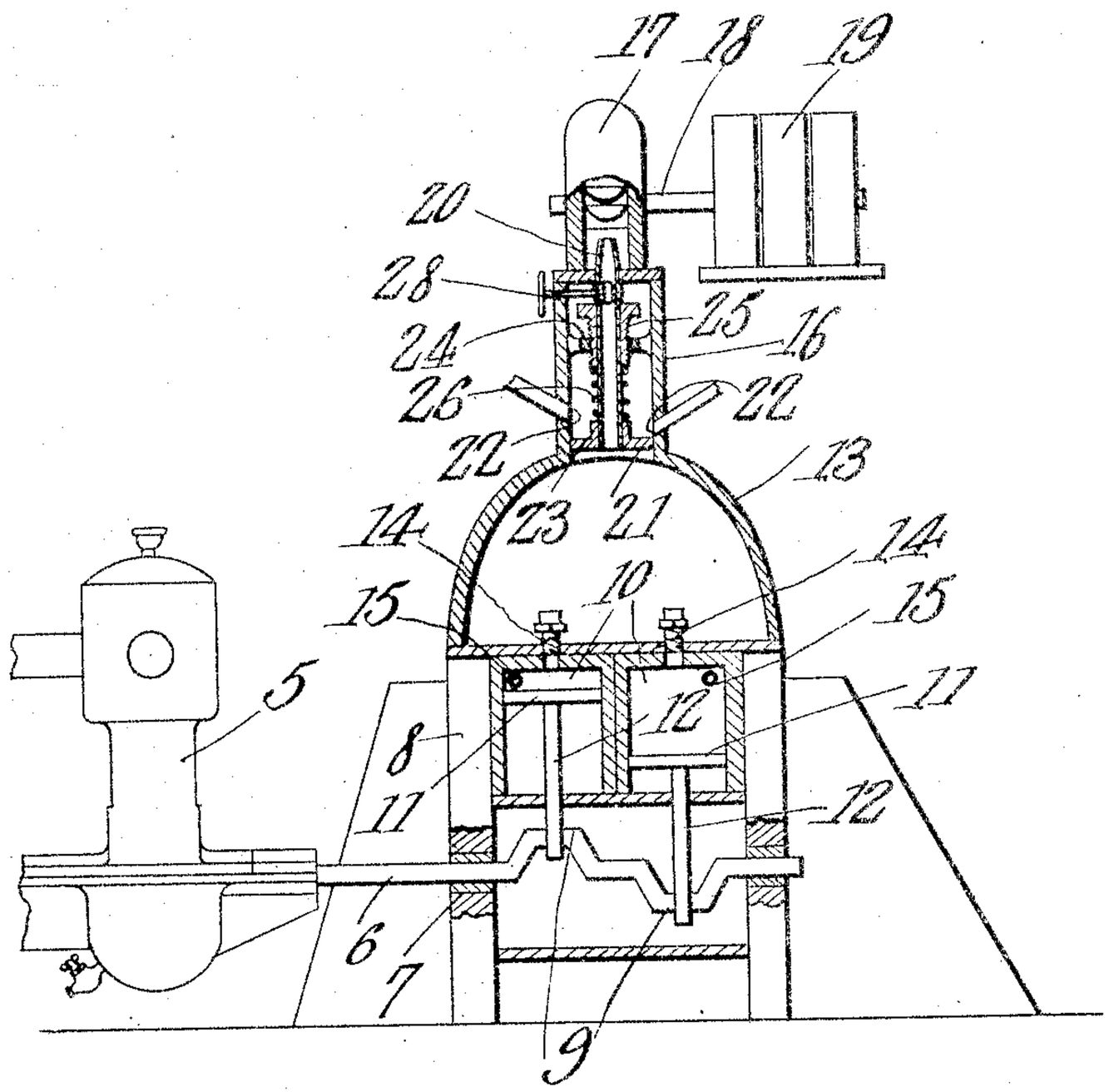
983,853. Patented Feb. 7, 1911.



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UNITED STATES PATENT OFFICE.

ORVILLE E. WOOLDRIDGE, OF GREENVILLE, ILLINOIS.

DRIVING MEANS FOR MAGNETO-GENERATORS.

983,853. Specification of Letters Patent. Patented Feb. 7, 1911.

Application filed April 11, 1910. Serial No. 554,782.

To all whom it may concern:

Be it known that I, ORVILLE E. WOOLDRIDGE, a citizen of the United States, residing at Greenville, in the county of Bond and State of Illinois, have invented a new and useful Driving Means for Magneto-Generators, of which the following is a specification.

This invention relates to that class of magneto generators which are used in connection with the ignition mechanism of internal combustion engines, and it is the object of the invention to provide improved driving means for the generator, together with means whereby the same will be driven at a uniform rate of speed.

With these objects in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed, and in order that the invention may be fully understood, reference is had to the accompanying drawing, in which drawing, a diagrammatic view of the invention, partly in section, is shown.

In the drawing, 5 denotes an internal combustion engine of any type, and 6 is the crank shaft of the engine. This shaft is supported in the usual crank case of the engine, and it is further supported on the outside of the crank case, in bearings 7 carried by a stand 8. On this portion of the shaft is a pair of cranks 9 which extend in opposite directions therefrom. The stand 8 supports two cylinders 10 which are arranged side by side, and in each of which cylinders operates a piston 11, said pistons being connected by rods 12 to the respective cranks 9. Above the cylinders 10 is located a receiver 13 which is in communication with the cylinders by valve controlled ports 14, the valves of said ports being check valves to prevent the fluid from returning to the cylinders. Near the upper end of the cylinders are valve controlled inlets 15. The valves of the last mentioned ports open to the outward stroke of the pistons 11 to let air into the cylinders, and on the return stroke said valves close, and the valves 15 open, whereupon the air is pumped into the receiver 13. The parts therefore operate as an air pump, and the air pumped into the receiver 13 is employed for driving a rotary motor which is operatively connected to the magneto generator.

To the top of the receiver is connected a cylindrical casing 16 which opens into the receiver. On top of this casing is mounted a suitable motor 17 of the rotary impact type. The shaft 18 of this motor is connected to the magneto generator 19.

In the casing 16 is mounted a nozzle 20 which is arranged to discharge against the buckets of the motor 17. This nozzle opens into the receiver 13, and the air in the latter therefore flows through the nozzle, and is discharged against the buckets of the motor. In the casing 16 is slidably mounted a valve 21 which controls relief ports 22 in the wall of the casing. This valve is a disk which fits snugly in the casing on one side of the relief ports, its normal position being between the ports and the receiver. The valve disk has a central opening through which the inlet end of the nozzle 20 passes, and this central opening is surrounded by an upstanding flange 23. The casing 16 also contains a cross bar 24 through the center of which is threaded a nut 25, through which nut the nozzle passes. Between the nut and the top of the flange 23, a spring 26 is coiled around the nozzle, this spring opposing the pressure in the receiver 13. The tension of the spring is adjustable by the nut 25. When the pressure in the receiver 13 rises to a point sufficient to overcome the tension of the spring 26, the valve disk 21 is forced upwardly in the casing 16 until it uncovers the ports 22, whereupon the excess pressure is permitted to escape through said ports. When the normal pressure is reached, the spring 26 returns the valve disk 21 to closed position. This venting action is effected without shutting off the flow of air through the nozzle 20, and the motor 17 therefore continues to run.

In order to retain pressure in the receiver 13 when the engine 5 stops, the nozzle 20 is provided with a stop cock 28. When the engine stops this stop cock will be closed whereupon sufficient pressure will be retained in the receiver to start the generator when the engine is again to be started.

It will be apparent from the foregoing that the motive fluid supplied to the motor 17 will be at a uniform pressure, and the magneto generator 19 will therefore be driven at a uniform rate of speed regardless of the speed of the engine 5. If the speed of the engine should increase to such an extent as to overcharge the receiver 13, the excess pressure will be at once relieved, the relief taking place instantly, and before the speed

of the motor can increase to an appreciable extent.

Although the invention is designed primarily for use in connection with motor vehicles, it will be apparent that it may also be used in connection with marine and other types of internal combustion engines. The invention may also be applied to any mechanism which is to be driven at a uniform rate of speed.

Various changes and modifications in the structural details may also be resorted to without a departure from the invention.

What is claimed is:

1. The combination of an internal combustion engine, a magneto generator for the igniting mechanism, a fluid pressure motor operatively connected to the generator, a pump for supplying motive fluid to the motor, said pump being driven by the engine, a receiver into which the pump discharges, a casing in communication with the receiver, said casing having vent ports, a nozzle in the casing, one end of said nozzle opening into the receiver, and its opposite end discharging into the motor, a valve working in the casing, and controlling the vent ports, said valve being exposed to the pressure in the receiver, and yielding means engaging the valve for opposing said pressure.

2. In a fluid pressure motor, a reservoir for the motive fluid, a casing communicating with the reservoir, said casing having vent ports, a supply nozzle for the motor extending through the casing, and opening into the reservoir, a valve working in the casing, and controlling the aforesaid vent ports, said valve being exposed to the pressure in the reservoir, and yielding means engageable with the valve for opposing said pressure.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ORVILLE E. WOOLDRIDGE.

Witnesses:
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