

S. BEAN.
MOTOR.

Patented Feb. 26, 1895.



Samuel Bear
INVENTOR

by 

Attorney

UNITED STATES PATENT OFFICE.

SAMUEL BEAN, OF SYRACUSE, KANSAS, ASSIGNOR OF ONE-HALF TO WALTER H. JORDAN AND JEANNIE M. JORDAN, OF SAME PLACE.

MOTOR.

SPECIFICATION forming part of Letters Patent No. 534,947, dated February 26, 1895.

Application filed September 20, 1894. Serial No. 523,574. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL BEAN, a citizen of the United States of America, residing at Syracuse, in the county of Hamilton and State of Kansas, have invented certain new and useful Improvements in Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a motor in which gas evolved from gasoline may be considered the prime power which is supplemented by compressed air, the gas after having been used being fed to a tank where it is cooled and re-used.

In carrying out my invention I make use of the apparatus constructed as shown in the accompanying drawings, in which—

Figures 1 and 2 are side views.

A designates a suitable frame which forms the support for the different parts of the apparatus.

B designates a tank which contains the gasoline, a pipe *b* leading therefrom to a suitably constructed burner *B'*. The tank or reservoir B is also connected by means of a pipe *b'* with a larger pipe *b²* which leads to a heater C of such construction that it may be heated to an intense heat by means of the burner *B'* hereinbefore referred to. The pipe *b²* with which the feed-pipe *b'* is connected also communicates with a compression tank D, said tank having placed therein a mixture of ether and glycerine, or other analogous mixture one of the elements of which is of a greasy or oily nature and the other extremely volatile. The glycerine is used to hold the ether so that the mixture of gas and air will be cooled as it passes through the same, and the glycerine also prevents back pressure. It will be seen that by this arrangement gases are fed to the tank D in a heated condition and under a comparatively high pressure.

The tank D is provided with a pipe E which is connected thereto and to the heater C by means of joints and couplings as shown, and

between the coupling which connects the pipe with the heater and the point of connection with the tank D is interposed a suitable valve which may be adjusted by hand.

F designates a rotary motor of any approved pattern which is connected with the induction pipe E and is provided with an induction pipe *g* which exhausts into a tank G, said tank being partially filled with a cooling mixture the component parts of which are ether and glycerine. The tank G is connected by means of a pipe *h* with a suction fan I, and the casing of said fan also communicates with an air-pump K which is connected by means of the tubes or pipes *k k* with the compression tank D. The piston-rod of the pump K connects with a lever *m* which is suitably pivoted to the frame and is connected at its other end to a pitman-rod *m'* extending from a wrist-wheel on the shaft of the suction-fan I. The shaft of the suction-fan also carries a sprocket-wheel *n* over which passes a sprocket-chain N extending from a sprocket-wheel on the shaft of the rotary motor F, the shaft of the rotary motor also having pulleys over which pass belts for driving machinery, &c.

The compression tank D is provided with a suitable safety-valve *D'*.

In operation, the cock in the pipe *b* is turned to feed the proper amount of gasoline or other oil to the burner *B'* and after the heater C is heated to an intense heat the cock in the pipe *b'* is turned to admit oil therein which is at once generated into a highly heated gas, and the tank D being previously filled with compressed air prevents the gas flowing into the same and it is therefore mixed with the air from the tank D and flows to the rotary motor F which it operates and is exhausted into the tank G where it is cooled. The rotary motor having started, the suction-fan I is driven by means of the sprocket-chain and will draw the exhausted gas thereto, and by means of the connection *i* and air-pump K this gas, with a certain quantity of air which is drawn into the fan through suitable valves, is forced into the tank D; so that the said tank virtually becomes a storage reservoir for the surplus power which is generated by the heating of the oil in the heater C.

The pipes hereinbefore referred to may be

provided with suitable check-valves for the prevention of back pressure, and the suction-fan, rotary-motor, air-pump, heater and burner may all be of any approved construction.

I do not wish to limit myself to the use of gasoline as any hydrocarbon oil may be utilized.

Having thus described my invention, what I claim is—

1. In a motor, the combination, of an oil supply, means for connecting said oil supply with a burner and a heater, a tank D having a pipe extending therefrom to the heater, the oil supply being connected to said pipe, a pipe also connected with the tank and heater and with a motor, the pipes hereinbefore referred to having valves, substantially as shown.

2. In combination with an oil supply connected to a heater and a burner, a tank D which is in communication with the heater

and with a rotary motor, a suction-fan and compression pump driven from the rotary motor, the suction fan being connected directly or indirectly with the exhaust of the motor, substantially as shown.

3. In combination with a storage tank, a heater C connected therewith substantially as shown and with a rotary motor, a cooling tank connected with the exhaust of the motor, a pipe connecting the cooling tank with a suction-fan, a pump connected with the suction-fan and tank, an inlet air opening or supply suitably located, and valves arranged as shown, substantially as shown and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL BEAN.

Witnesses:

P. S. GUY,

M. E. NICKLES.