A. J. KLONECK.

EXPLOSION MOTOR.

APPLICATION FILED DEC. 29, 1915. RENEWED DEC. 13, 1920.

1,371,905. **Patented Mar. 15, 1921.**

Fig. 1.

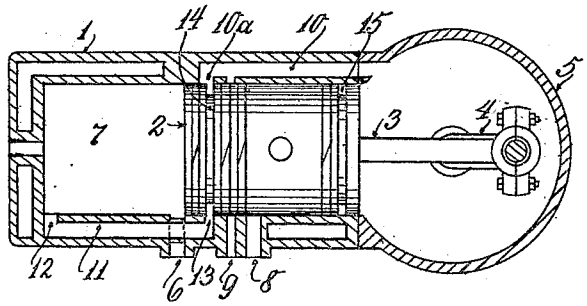


Fig. 2.

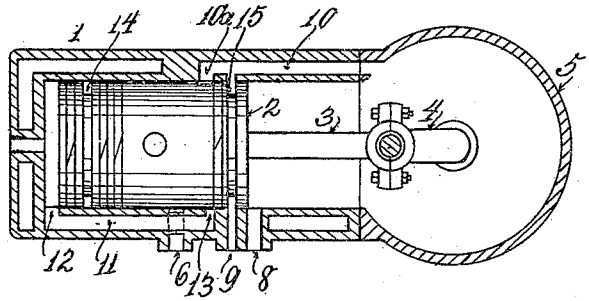
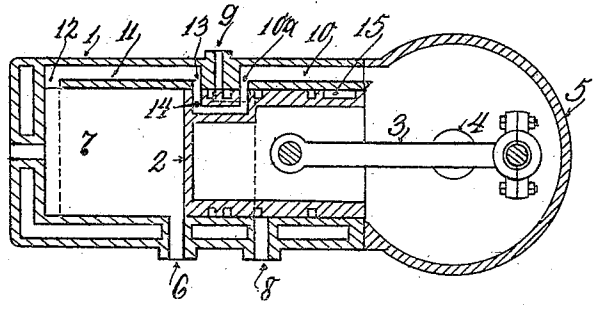


Fig. 3



WITNESSES.

Martin Rappelaur.

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UNITED STATES PATENT OFFICE.

AUGUST J. KLONECK, OF NEW YORK, N. Y.

EXPLOSION-MOTOR.

1,371,905. Specification of Letters Patent. Patented Mar. 15, 1921.

Application filed December 29, 1915, Serial No. 69,226. Renewed December 13, 1920. Serial No. 430,552.

To all whom it may concern:

Be it known that I, AUGUST J. KLONECK, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Explosion-Motors, of which the following is a specification.

This invention relates to explosion motors and more particularly to that of a two cycle engine.

One object of the invention is to provide a novel arrangement of ports and channels to obtain a better discharge of burned gases from an engine cylinder.

Another object of the invention is to interpose unmixed air between the exhausting burned gases and a fresh charge of a cylinder.

A still further object of the invention is to heat the new charge and to cool with the same the piston and cylinder of the engine.

With the above and other objects in view, I have invented the improvements illustrated in the accompanying drawings in which:—

Figure 1 is a sectional view of a motor cylinder, showing a piston at the extreme outstroke of the same. Fig. 2 shows the piston at the innermost position in the engine cylinder. Fig. 3 is a sectional view of a modified arrangement of ports and channels for a motor cylinder.

Like reference characters indicate like parts throughout the specification and in the drawings in which 1 indicates a cylinder, 2 a piston, 3 a connecting rod and 4 a crankshaft; the latter rotates within the crankcase 5. The cylinder 1 is provided with an exhaust port 6 for the explosion chamber 7, an inlet port 8 to the crank case 5 and an extra air port 9 into a chamber 10 of the crankcase 5; further a channel 11 with two ports 12 and 13, opening to the combustion chamber 7 of the cylinder and the crankcase 5, respectively. The piston 2 has two channels or recesses; one channel 14 serves to connect the explosion chamber of the cylinder with the crankcase by means of port 10, at the extreme outstroke of the piston 2, while the other channel 15 serves to suck extra air into chamber 10 of the crankcase at the suction stroke of the piston, as Fig. 2 shows.

At the position of the piston 2, as indicated in Figs. 1 and 3, the exploded gases exhaust through port 6, while the explosion chamber 7 is charged with an unexploded supply of gas mixture from the crank case 5 by means of the chamber and port 10, driving the extra air from said chamber ahead of it through the recess or channel 14 of the hot piston 2, further through port 13, the channel 11 within the jacket of the cylinder and the port 12 into the combustion chamber 7 of the cylinder. As the fresh charge for the cylinders enters the same at the top of the cylinder while the exhaust port is at lowest position of the piston, it is obvious that the exploded gas will be completely driven from the combustion chamber of the cylinder. Further, as the extra air enters first the combustion chamber, it forms a non-combustible body between the exploded and unexploded gases, preventing a backfire of the engine and an escape of gas mixture through the exhaust.

In Figs. 1 and 2, the piston 2 is provided with annular recesses around the same, while in Fig. 3, the piston 2 has channels through the same.

Having fully described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In an explosive engine, a cylinder casing having an air retaining chamber and a piston with an air channel extending around its crank end adapted to convey a charge of atmospheric air into said chamber on the outstroke of said piston, said casing having an air inlet port on its side opposite to said chamber and communicating with said channel at said outstroke position whereby air is caused to travel around the piston to cool the same before reaching said chamber, said casing having a charge passage with an opening at each end into said cylinder, said piston having an annular channel at its compression end adapted to connect said chamber and said passage on the instroke of said piston.

2. In an explosive engine, a cylinder casing having an air retaining chamber and a piston with a chanel extending around its crank end adapted to convey a charge of atmospheric air into said chamber on the outstroke of said piston, said casing having an air inlet port on its side opposite to said chamber and communicating with said channel at said outstroke position whereby air is caused to travel around the piston to cool the same before reaching said chamber, said casing having a charge passage with an

opening at each end into said cylinder, said piston having an annular channel at its compression end adapted to connect said chamber and said passage on the instroke of said piston whereby said air passes around said compression end of said piston to cool said latter end.

3. In an internal combustion engine means for alternating explosive charges with charges of atmospheric air into the compression and explosion chambers of the engine prior to ignition of said explosive charges, said means embracing an air chamber and an air inlet port and a piston provided with means for connecting the same, said first means also embracing a passage having ports entering two parts of the engine cylinder, said piston having means for connecting said chamber and said passage, said second means consisting of an annular channel in the crank end of said piston.

4. In an internal combustion engine means for alternating explosive charges with charges of atmospheric air into the compression and explosion chambers of the engine prior to ignition of said explosive charges, said means embracing an air chamber and an air inlet port and a piston provided with means for connecting the same, said first means also embracing a passage having ports entering two parts of the engine cylinder, said piston having means for connecting said chamber and said passage, said second means consisting of an annular channel in the crank end of said piston, said third means consisting of an annular channel in the compression end of the piston.

In testimony whereof I sign my name to this specification in the presence of two witnesses.

AUGUST J. KLONECK.

Witnesses:

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NORBERT LANDAU.