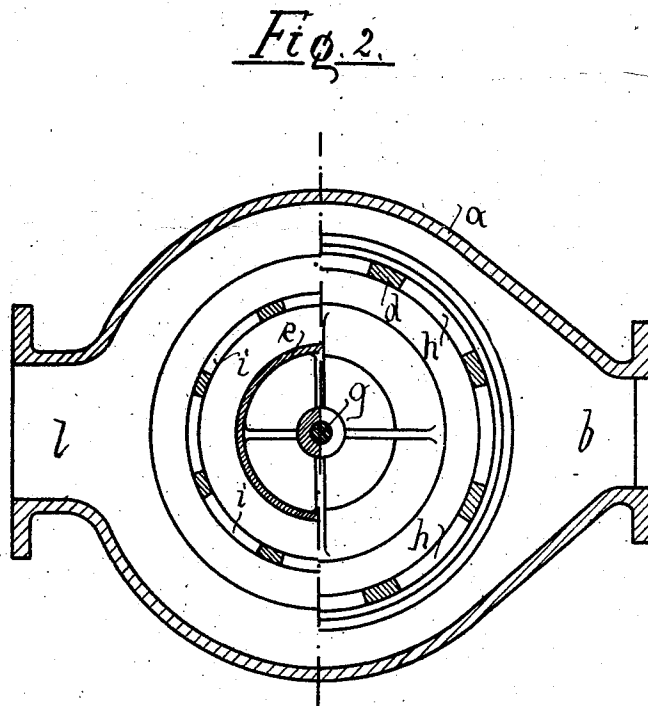
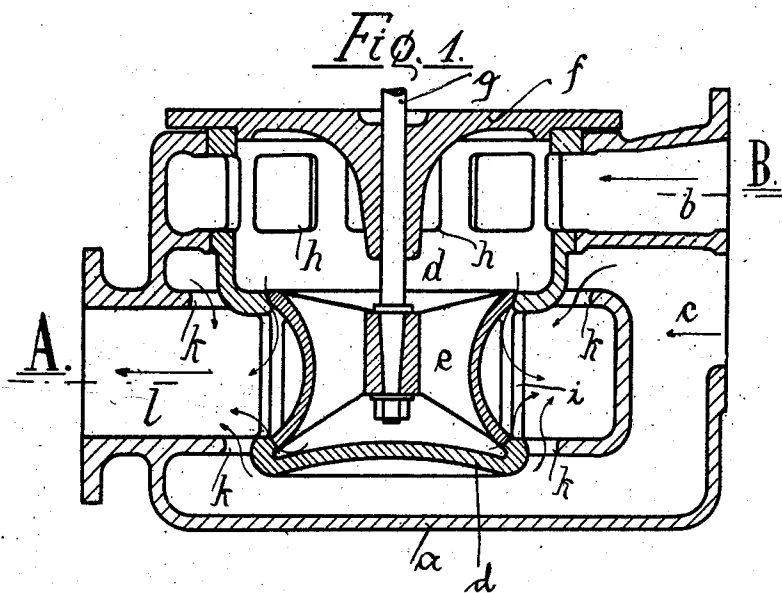


No. 862,130.

PATENTED AUG. 6, 1907.

H. BONTE.
MIXING DEVICE FOR COMBUSTION ENGINES.
APPLICATION FILED AUG. 14, 1906.



WITNESSES

W. P. Burke
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INVENTOR

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ATTYS

UNITED STATES PATENT OFFICE.

HANS BONTE, OF NUREMBERG, GERMANY, ASSIGNOR TO THE FIRM OF VEREINIGTE MASCHINENFABRIK AUGSBURG UND MASCHINENBAUGESELLSCHAFT NÜRNBERG, A.-G., OF NUREMBERG, GERMANY.

MIXING DEVICE FOR COMBUSTION-ENGINES.

No. 862,130.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed August 14, 1906. Serial No. 330,571.

To all whom it may concern:

Be it known that I, HANS BONTE, engineer, a subject of the King of Prussia, residing at Nuremberg, Bavaria, Germany, have invented new and useful Improvements in and Connected with Mixing Devices for Combustion-Engines, of which the following is a specification.

This invention relates to mixing devices for combustion engines in which the mixture of the gas and air takes place directly on the seat surface of the gas valve in order to thoroughly mix the same. According to this invention this result is attained to an increased extent by employing a double seated valve, instead of the single seated valve employed in the usual forms of construction both valve disks of which double seated valve serve exclusively for opening or closing the gas passage. The gas current is thereby divided into two parts and also in consequence of the small apertures of the passage the formation of eddies is facilitated so that a more thorough mixture of the gas and air takes place than where a single seated valve is used.

One form of construction of the improved mixing arrangement with the double seated valve is shown in Figures 1 and 2 of the accompanying drawings.

The valve casing *d* for the double seat valve *e* is inserted in a casing *a* which has both inlet apertures *b* and *c* for gas and air, and also an outlet aperture *l* for the mixture. The cover *f* serves for closing the valve casing *d* also for guiding the valve spindle *g* which is moved in any suitable manner and also holds the valve casing *d* in its place. The casing *a* and the valve casing *d* form three chambers, of which the uppermost, the gas chamber, communicates with the aperture *b*, the second, the air chamber, lying under the gas chamber, with the aperture *c*, and the mixing chamber construct-

ed in the air chamber, with the outlet aperture *l*. The valve casing *d* has in its upper part, side ports *h* through which the gas can flow into the interior of same. The lower chamber of the valve casing *d* which chamber receives the double valve *e* and forms the seat surfaces for the same, also has side ports *i* through which the gas enters the mixing chamber. The latter has somewhat the form of a ring of rectangular section which leaves free above and below in direct proximity to the seat surfaces of the valve *e*, an annular narrow slot *k* through which the air enters the mixing chamber at a suitable speed.

A further advantage is produced by the double seat valve only needing to be lifted half as high, in order to obtain an equal section of passage, as a single seat valve of similar diameter. The smaller however the distance of the valve disk is from the valve seat, the stronger will the escaping gas be throttled. Thereby the formation of stronger eddies is facilitated, which in turn substantially assists the thorough mixing of the gas and air.

I declare that what I claim is:—

A mixing apparatus for combustion engines comprising a casing, a double seat valve regulating the admission of gas, a mixing chamber surrounding the valve in the form of a ring, said mixing chamber having openings provided in its outer wall near the valve and a surrounding air chamber communicating with the mixing chamber through said openings so that the incoming supply of gas may be regulated independently of the air influx, and the gas as well as the air enter the mixing chamber from the outside in opposite directions.

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

HANS BONTE.

Witnesses:

MARTIN OFFENBACHER,
OSCAR BOCK.