

C. H. KENNEY.
MUFFLER FOR EXPLOSION ENGINES.
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Fig. 1.

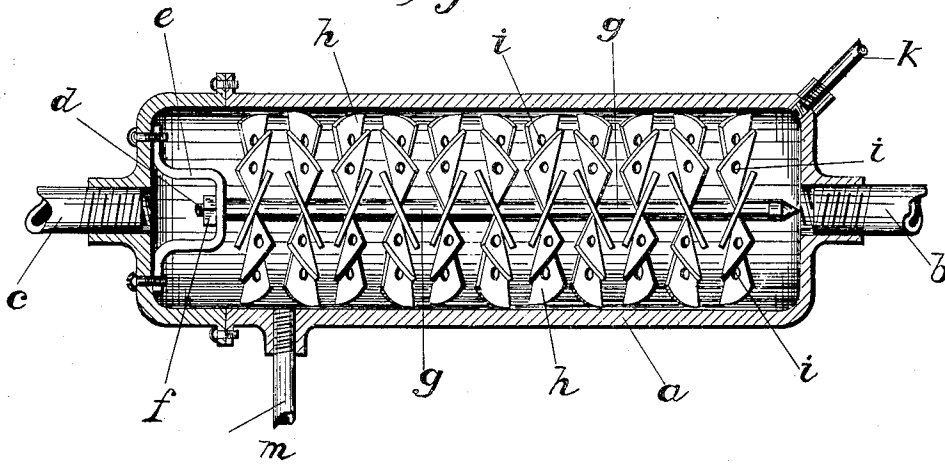
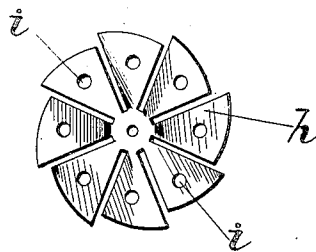


Fig. 2.



Fig. 3.



Charles H. Kenney.

INVENTOR,

WITNESSES:
Arthur B. Wilcox.
Madeline D. Ritchie.

BY
Frank H. Allen
ATTORNEY,

UNITED STATES PATENT OFFICE.

CHARLES H. KENNEY, OF NEW LONDON, CONNECTICUT, ASSIGNOR TO EMARON J. EATON, OF NEW LONDON, CONNECTICUT.

MUFFLER FOR EXPLOSION-ENGINES.

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To all whom it may concern:

Be it known that I, CHARLES H. KENNEY, a citizen of the United States, and a resident of New London, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Mufflers for Explosion-Engines, of which the following is a specification.

This invention relates to that general class of mufflers in which a plurality of baffle plates are arranged within a suitable housing, and my present purpose is to provide a novel construction and arrangement of baffle plates, whereby I am able to deflect, and check, the exhaust gases resulting from the rapidly succeeding explosions without objectionably retarding the passage of said gases through the muffler.

Briefly described, my said improvement consists in providing, within a suitable housing, a plurality of non-rotatable fan-shaped disks, that are arranged in alternate right and left-hand relation to each other and, by preference, I pass through the said housing a current of water that is discharged against the said disks in such manner as to separate the water into a spray that is carried forward by the exhaust gases until it settles by gravity sufficiently to leave the housing by a special exit instead of passing outward with said gases. The said water may thus be used in circulation and continuously.

In order to explain my invention clearly I have provided the accompanying drawings, in which—

Figure 1 is a central, longitudinal, sectional, view of a muffler embodying my present improvements. Fig. 2 is a detached view of a rod upon which the baffle plates or disks may be strung and clamped and in Fig. 3 I have shown one of said plates.

Referring to these drawings, the letter *a* indicates an elongated, preferably cylindrical, shell which forms the housing or casing of my muffler, the ends of said housing being adapted to receive an inlet pipe *b* and an outlet pipe *c* for the intake and discharge respectively of the exhaust. Centrally located in the housing *a* is a rod *d* that is retained in its central position and is prevented from rotating, by a yoke *e* that is fixedly bolted or screwed to the discharge end of the housing, the rod *d* being fastened to the yoke by means of a nut *f*. The other end of rod *d* is provided with a cone-shaped

head *d'* that is so located with respect to the intake pipe *b* that it (the head *d'*) receives, and deflects radially, the in-rushing exhaust gases and directs said gases against the initial baffle disk. The said baffle disks are strung on rod *d*, as here shown, and they are separated by washers *g*, the disks being indicated by the reference letter *h*. The diameter of the disks is slightly less than the interior diameter of the housing *a* and said disks are formed as right-hand and left-hand fans that are mounted on rod *d* in alternate relation to each other, as seen in Fig. 1 of the drawings, and so that the exhaust gases, in their passage through the housing, are deflected in their course as they pass from disk to disk. Each of the wings of the fans is also preferably perforated, as at *i* in order to more effectually break up and deflect the volume of gas in its passage through the muffler. By reason of the repeated impact of said gases against the disks *h*, and their consequent deflection, the said gases are gradually checked and are finally discharged through the outlet *c* in a spent condition.

In order to more effectually muffle the exhaust gases I preferably introduce into the intake end of housing *a*, (through a pipe *k*) a stream of water that strikes the wings of the initial disk *h* at such an angle as to separate the particles of water into a spray which mingles with the in-rushing gases and is carried forward by them until the force of the gases is somewhat spent, when the water drops by gravity to the lower side of the housing and passes outward through a discharge opening *m* while the relatively lighter gases pass outward through the discharge opening *c*, the spray of water serving to cushion and smother the gases and thus assist materially in muffling said gases.

My described device is so designed and constructed that its several parts may be readily constructed and assembled and I find by actual demonstration that it operates to overcome the objectionable noise which results when the exhaust is directed immediately against the free atmosphere.

Having thus described my invention I claim as new and wish to secure by Letters Patent:—

1. In combination in and with a housing having a gas inlet and an outlet, a plurality of fan-shaped, non-rotatable, baffle disks ar-

5 ranged in right and left-hand relation to each other within said housing and substantially throughout the length thereof, an inlet pipe at one end of the housing adapted to discharge a current of water against the initial baffle disk, and a discharge opening for said water.

10 2. A muffler comprising a casing having a gas inlet and an outlet in alinement with each other, a plurality of fan-shaped non-rotatable baffle disks arranged in right and left hand relation to each other within the said casing, means extending longitudinally

of the casing and supporting said disks in predetermined relation, the end of said supporting means adjacent the inlet adapted to receive and deflect radially the intruding gases, and means for introducing water at the intake end of the casing and disposed at an angle to cause the water to strike the initial baffle disks. 15 20

CHARLES H. KENNEY.

Witnesses:

FRANK H. ALLEN,
FRANK C. PALMER.