

No. 692,094.

Patented Jan. 28, 1902.

C. F. WEEBER.
MUFFLER FOR EXPLOSIVE ENGINES.

(Application filed Sept. 7, 1901.)

(No Model.)

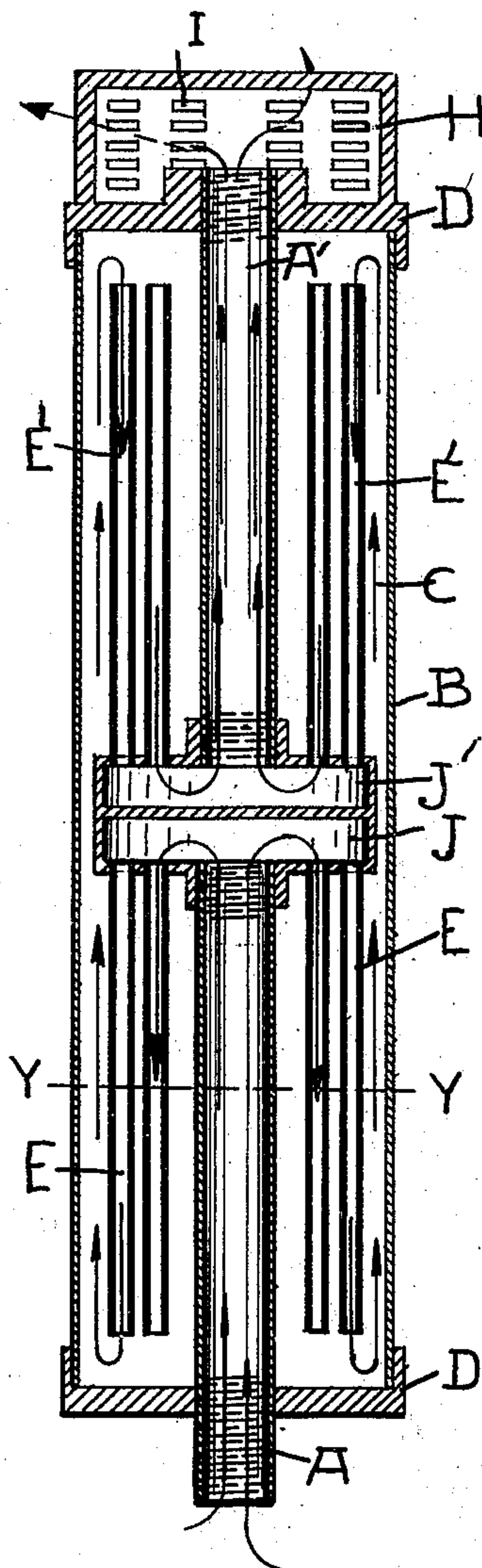


Fig 2

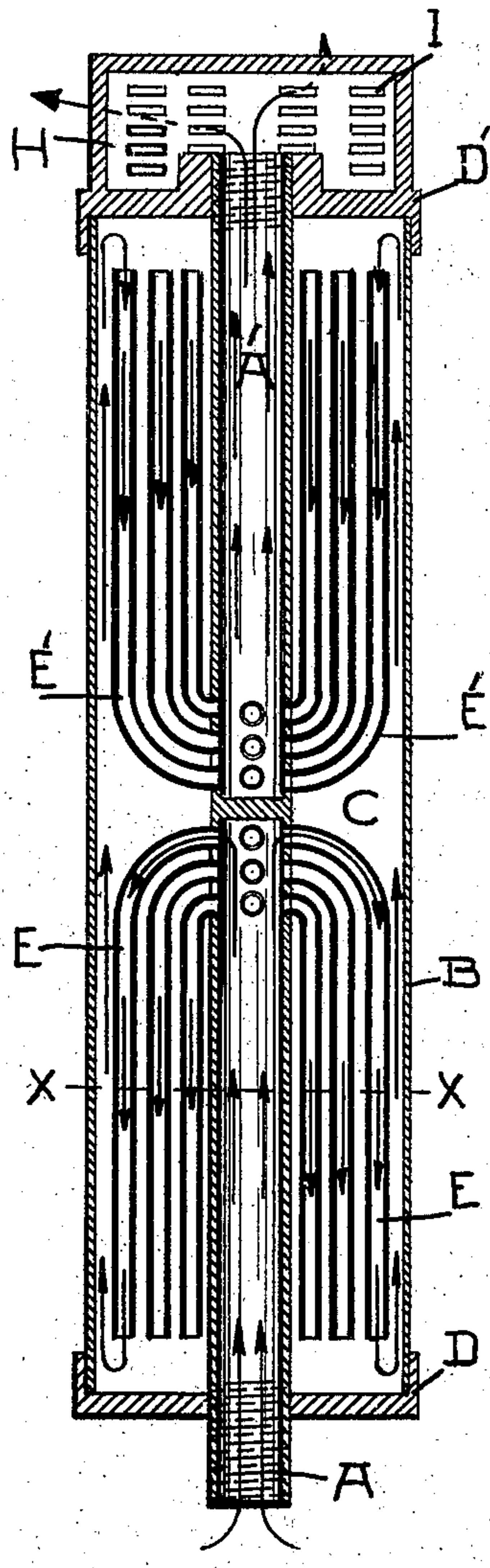
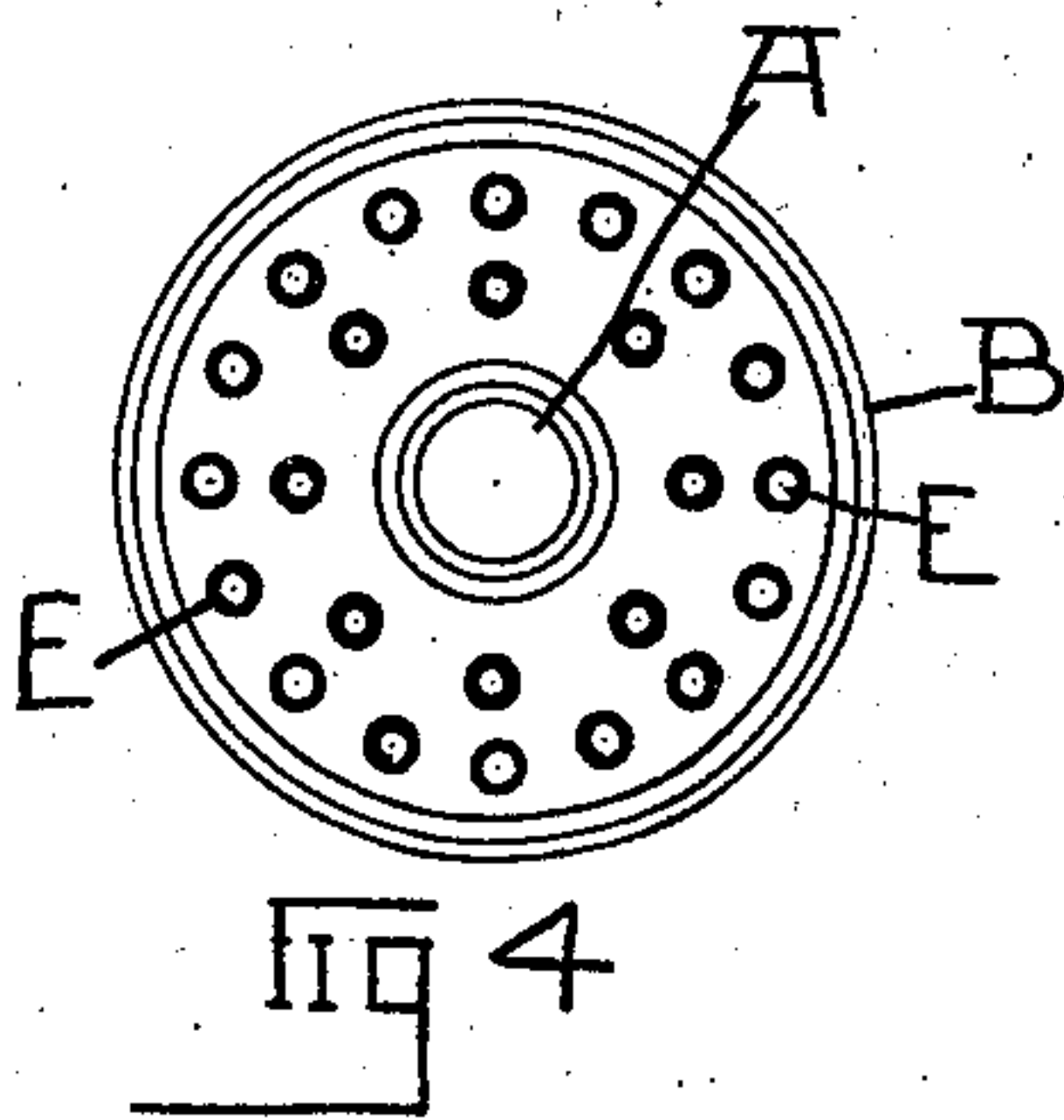
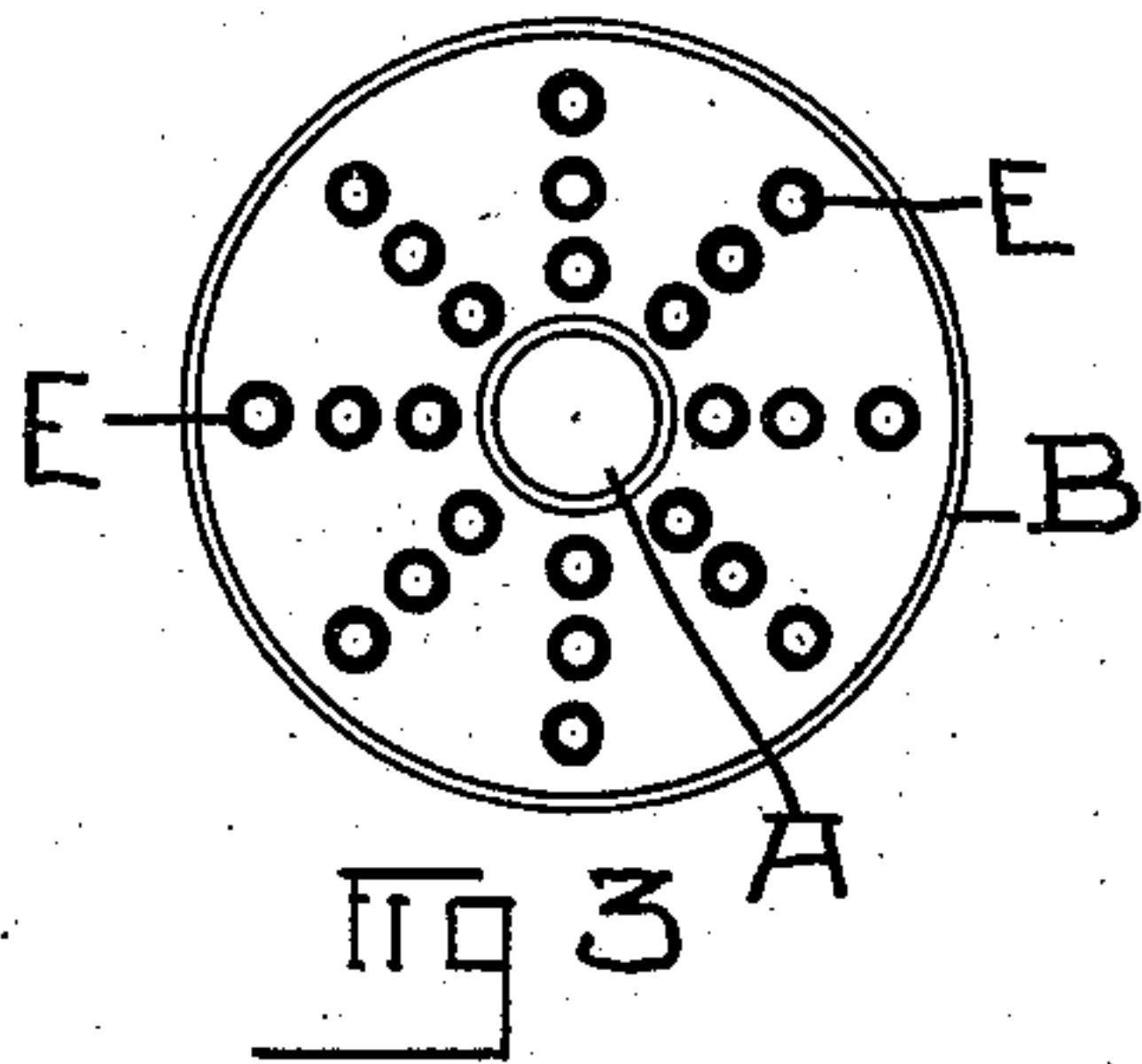


Fig 1

WITNESSES
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UNITED STATES PATENT OFFICE.

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MUFFLER FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 692,094, dated January 28, 1902.

Application filed September 7, 1901. Serial No. 74,631. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN F. WEEBER, a citizen of the United States of America, and a resident of the city of Albany, county of Albany, State of New York, have invented certain new and useful Improvements in Mufflers for Explosive-Engines, of which the following is a specification.

My invention relates to mufflers for engines and motors the motive power of which is the explosion of gas or mixtures of air and gas; and the object of my invention is to provide a muffler which may be attached to the exhaust-pipe of gasolene or similar motors through which the exhaust will be discharged with a steady uniform pressure without the annoyance of the usual explosive sounds. I accomplish this object by the means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a longitudinal section of my muffler. Fig. 3 represents a cross-section of the same at $x x$, Fig. 1. Fig. 2 represents a longitudinal section of the modified form of my muffler. Fig. 4 represents a cross-section of Fig. 2 at $y y$.

A is a pipe to be attached upon the end of the exhaust-pipe in such a manner that the exhaust will pass into the pipe A. The pipe A is incased in a shell or casing B and extends part way through the shell B.

E E are tubes leading from near the end of the pipe A farthest from its connection with the exhaust-pipe and extending in the direction toward exhaust-pipe.

A' is a pipe extending from near the end of the pipe A farthest from the exhaust-pipe to the extreme end of the shell B and through the end of the shell.

E' E' are tubes leading from the end of the pipe A' and extending toward the end of the shell B farthest from the exhaust-pipe.

C represents the chamber in the shell B, surrounding pipes and tubes A A', E E, and E' E'.

D is the end of the casing nearest the exhaust-pipe, and D' is the end of the casing farthest from the exhaust-pipe.

H is a cap attached to and inclosing the end of the pipe A' where it extends through the end of the casing D', and I I are slots made

in the cap H for the escape of the exhaust. These parts are all attached and arranged as shown in the drawings, so that the exhaust from the motor or engine will pass into the pipe A and thence into tubes E E, thence into the chamber C, whence it will pass into the tubes E' E' and so into the pipe A' and out into the chamber of the cap H and through the slots I I into the open air, thus allowing a gradual expansion of the exhaust, so as to maintain a steady uniform pressure and prevent any noise such as usually occurs with an engine or motor of this class when not provided with my muffler.

In the form of muffler shown in Fig. 1 the tubes E E and E' E' are brazed into the pipes A and A' and the connections are direct; but in the form shown in Fig. 2 the pipe A empties into the small recess or chamber J, which in turn empties into the tubes E E, which discharge into the larger chamber C, from which the exhaust passes into the tubes E' E', thence into the small recess or chamber J', and thence into the pipe A', the principle, operation, and result being the same as in the form of muffler shown in Fig. 1.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a muffler to an explosive-engine, a shell or frame forming a chamber inclosing pipes and tubes; a pipe partly inclosed in said chamber, with one end adapted to be attached to the exhaust-pipe of the engine, and the other end of said pipe extending to or near the center of said chamber; tubes connecting with said pipe at or near the end farthest from the engine, and extending parallel with said pipe to near the end of said chamber nearest the engine, and adapted to conduct said exhaust from said pipe into the end of the chamber nearest the engine; another pipe extending from near the center of said chamber through the end of said chamber farthest from the exhaust-pipe; tubes connecting with the last-named pipe at or near the end nearest the center of said chamber and extending parallel with said pipe to near the extreme end of said chamber farthest from the engine, and adapted to conduct said exhaust from the said chamber to said pipe, and said last-named pipe adapted to conduct said exhaust

from said last-named tubes to the outside of said chamber, substantially as described and for the purposes set forth.

2. In a muffler to an explosive-engine, a
5 shell or frame forming a chamber inclosing pipes and tubes; a pipe partly inclosed in said chamber, with one end adapted to be attached to the exhaust-pipe of the engine and the
16 other end terminating in a small inner chamber inclosed within the said first-mentioned chamber; tubes leading from said inner chamber and extending parallel with said pipe to near the end of the chamber nearest the engine; a second small inner chamber near the

center of said first-named chamber; a pipe 15 extending from said second inner chamber through the end of said first-named frame or shell farthest from the engine and tubes extending from near the said extreme end of said first-named chamber into said second inner chamber, all substantially as described
20 and for the purposes set forth.

Signed at Albany, New York, this 28th day of August, 1901.

CHRISTIAN F. WEEBER.

Witnesses:

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FLORENCE D. MESICK.