

No. 713,536.

Patented Nov. 11, 1902.

J. L. & C. J. TOBIAS.

EXHAUST PIPE MUFFLER FOR GAS OR OTHER ENGINES.

(Application filed Oct. 11, 1901.)

(No Model.)

Fig. 1

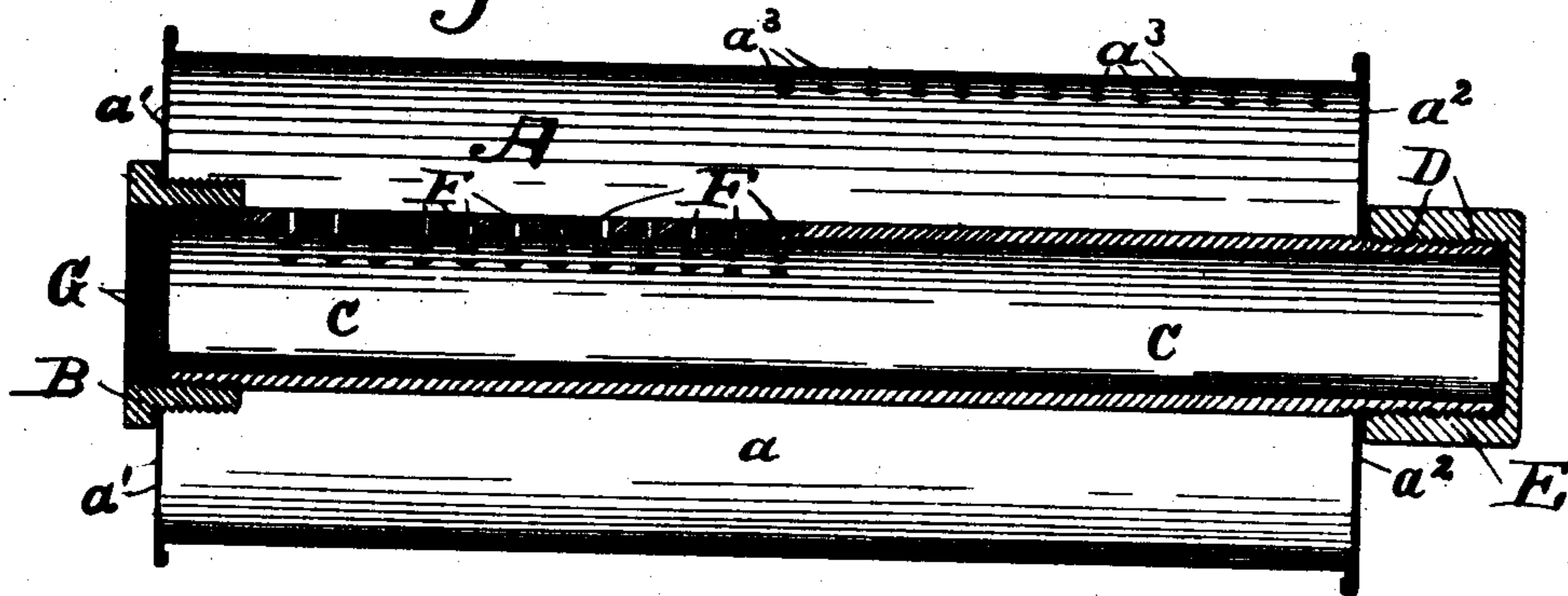
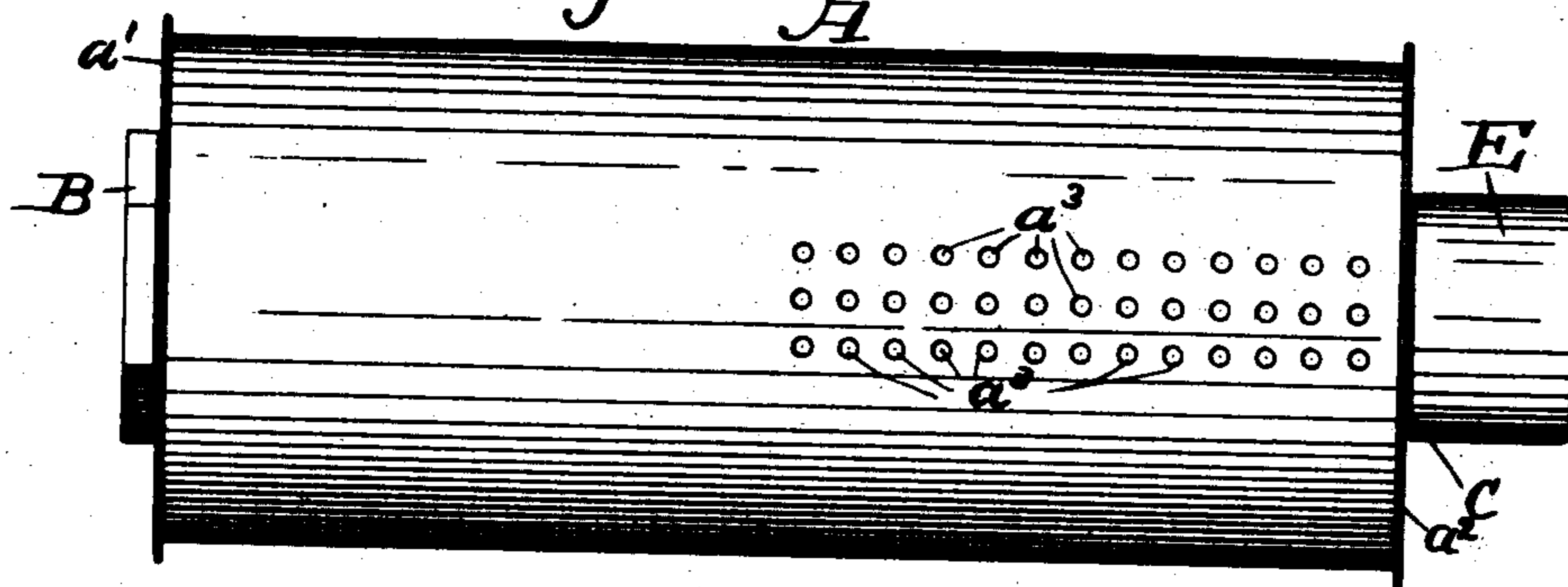


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN L. TOBIAS AND CHARLES J. TOBIAS, OF CHICAGO, ILLINOIS.

EXHAUST-PIPE MUFFLER FOR GAS OR OTHER ENGINES.

SPECIFICATION forming part of Letters Patent No. 713,536, dated November 11, 1902.

Application filed October 11, 1901. Serial No. 78,353. (No model.)

To all whom it may concern:

Be it known that we, JOHN L. TOBIAS and CHARLES J. TOBIAS, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Exhaust-Pipe Mufflers for Gas or other Engines, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

The object of this invention is to obtain a muffler which may be attached to the discharge end of the exhaust-pipe of an engine, particularly a gas or gasoline engine, and which when so attached will diminish the noise ordinarily attending the exhaust of an operating-engine.

A further object of the invention is to obtain a muffler of the kind named which will not produce a back pressure upon the engine to the exhaust-pipe whereof it is attached.

In the drawings referred to, Figure 1 is a side elevation of a muffler embodying our invention, and Fig. 2 is a longitudinal sectional view of such muffler.

A reference-letter applied to designate a given part is used to indicate such part throughout both figures of the drawings.

A is a shell or case provided with cylindrical body part a and end a' . The cylindrical body part a is provided with perforations a^3 .

B is a coupling or reducer secured in head a' of the shell.

C is a pipe secured in the coupling and reducer B at one of its ends and at its other end projecting through the end a' . The projecting end of the pipe C is provided with screw-threads D, corresponding with the internal screw-threads of cap E. The cap E fits over the end of the pipe C to seal the same. The pipe C is provided also with perforations F, preferably placed at the end thereof adjacent to the coupling or reducer B.

G G are internal screw-threads in coupling or reducer B, such screw-threads corresponding with the screw-threads fitting thereinto on pipe C and also corresponding with screw-threads on the end of the exhaust-pipe to which the apparatus is to be attached.

The operation of the apparatus is: The exhaust from a gas or other engine enters the pipe C and passes out from such pipe through apertures F F into the shell A and from such shell through apertures $a^3 a^3$ to the atmosphere. The passage of the gaseous products constituting the exhaust which pass through this apparatus, as last above described, are broken into small bodies or currents by means of the apertures F F $a^3 a^3$, and the noise thereof is greatly lessened. The sum of the cross-sectional areas of the holes F F is substantially the same as the cross-sectional area of pipe C, as is also the sum of the cross-sectional areas of the holes $a^3 a^3$.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a muffler for gas and other engines the combination of a shell provided with a series of small apertures grouped on one side of the cylindrical wall thereof and extending from one end toward the other end, a bushing in one end wall of the shell, such bushing provided with a shoulder abutting against the end wall, a pipe secured in the bushing, such pipe extending through the other end of the shell and a cap closing such pipe, such pipe and cap provided with corresponding screw-threads to force the end of the cap against the end of the shell adjacent thereto, and such pipe provided with a series of small apertures grouped on one side thereof and extending from near one end thereof; substantially as described.

JOHN L. TOBIAS.

CHARLES J. TOBIAS.

In presence of—

CHARLES TURNER BROWN,
CORA A. ADAMS.