No. 859,414. PATENTED JULY 9, 1907.

W. H. SMITH.

MUFFLER.

APPLICATION FILED OCT. 13, 1906.

Fig. 1

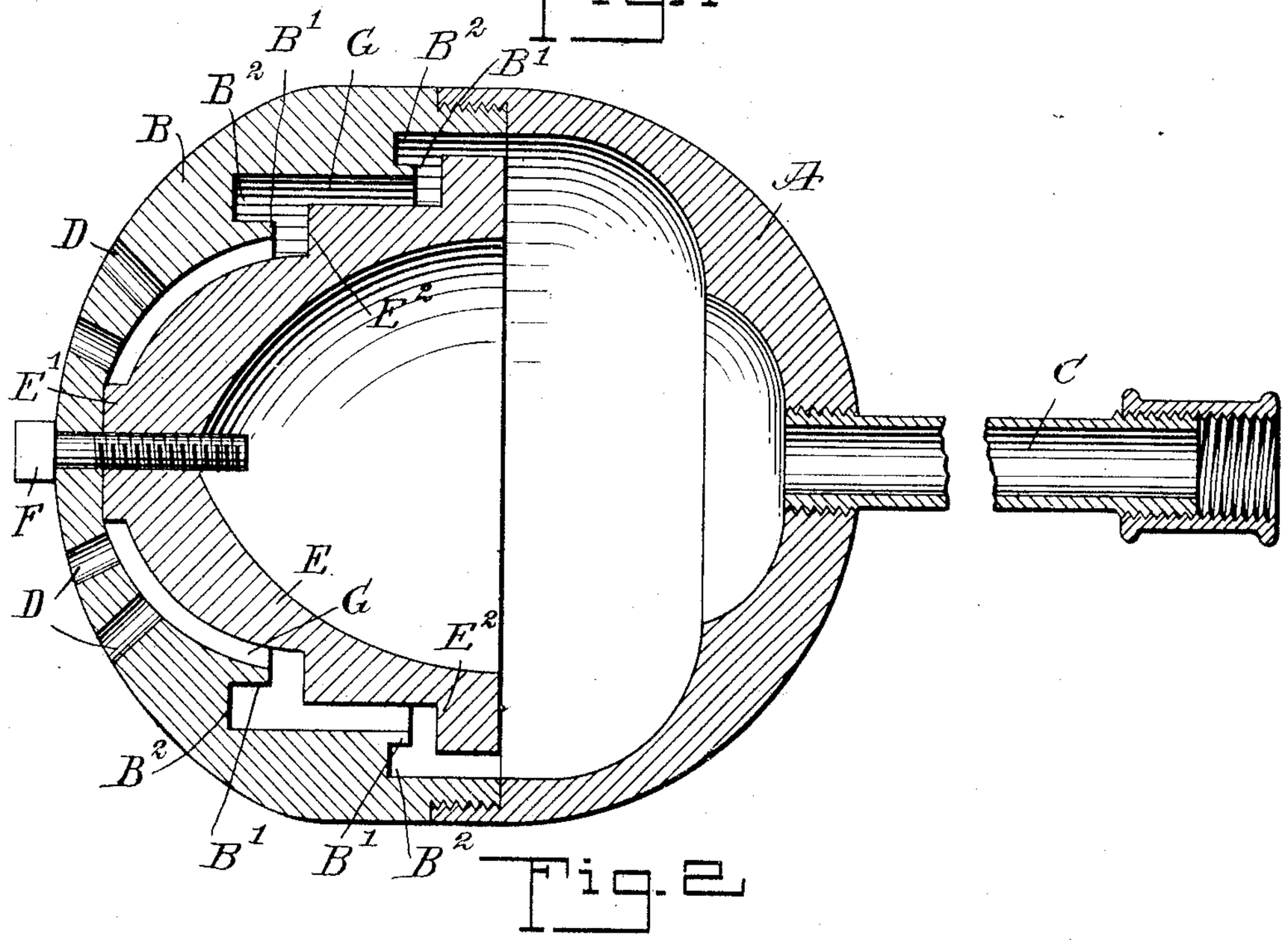
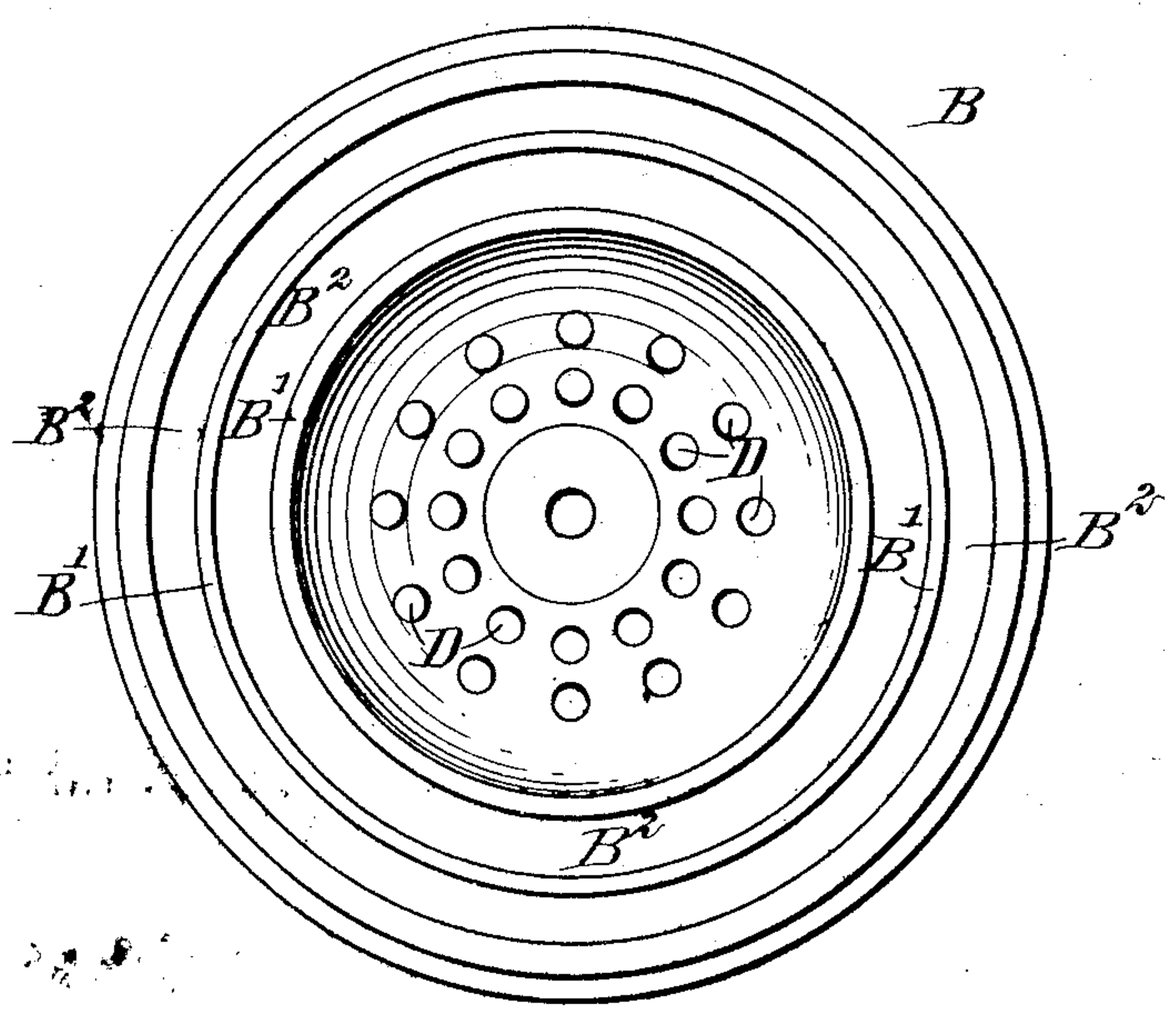


Fig. 2



WITNESSES

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MUFFLER.

No. 859,414. Specification of Letters Patent. Patented July 9, 1907.

Application filed October 13, 1906. Serial No. 338,772.

To all whom it may concern:

Be it known that I, WILLIAM H. SMITH, a citizen of the United States, and a resident of Wichita, in the county of Sedgwick and State of Kansas, have invented a new and Improved Muffler, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved muffler, more especially designed for use on gasolene and like explosive engines, and arranged to deaden the exhaust at the same time allowing comparatively free escape of the exhaust gases without producing undue back pressure.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a sectional side elevation of the improvement, and Fig. 2 is a face view of the discharging section of the shell of the muffler.

The shell of the muffler is made in two sections A and B of spherical or cup shape, and screwed or otherwise fastened together at their bases, as plainly indicated in Fig. 1. The section A is the receiving section and is connected at its apex with the exhaust pipe C of the engine on which the muffler is used, and the section B is the discharging section and is provided near its apex with outlets D for the escape of the exhaust gases to the outer air. Within the discharging section B is arranged a deflector E, made approximately cup-shape and having its base opening into the base end of the section A (see Fig. 1), so as to form with the section A a large space for the reception of the exhaust gases coming from the engine. The apex end of the deflector E is provided with an offset E′ fitting the inside of the section B at the apex thereof, and the said deflector E is fastened to the discharging section B by a screw or bolt F engaging the apex ends of the section B and the deflector E, as plainly shown in Fig. 1. The external surface of the deflector E is provided with a series of annular steps E^2, and similar steps B′ are formed on the inner surface of the discharging section B, so as to provide a devious passage G between the external stepped surface of the deflector E and the inner stepped surface of the discharging section B of the muffler shell. Now by reference to Fig. 1 it will be seen that this devious passage opens into the base end of the section A and leads to the outlets D, and hence the exhaust gases passing into the interior of the shell section A and the deflector E can finally pass into the devious passage and through the same to the outlets D, to finally pass to the outer air. As shown in Figs. 1 and 2 the steps B′ of the discharging section B are provided with undercuts B^2, so as to somewhat retard the outflowing exhaust gases, thus reducing the noise incident to the passage of the exhaust to a minimum. It will further be noticed that by providing a large space for the exhaust gases to first pass into after leaving the pipe C, and then providing the devious passage before the gases reach the outlets D, it is evident that the exhaust is deadened, and consequently the muffler renders the exhaust of the engine comparatively noiseless.

The muffler shown and described is very simple and durable in construction, and composed of but few parts not liable to easily get out of order.

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

1. A muffler, comprising a shell made in sections, one of the sections being connected with the engine exhaust, and the other section being the discharging section having outlets for the exhaust, the said discharging section having its interior surface in step form, the steps being provided with undercuts, and a deflector within the shell and having its exterior surface in step form and spaced from the stepped surface of the said discharging section.

2. A muffler comprising an approximately spherical shell made in cup shape sections fastened together at their bases, one of the sections being the exhaust receiving section connected with the exhaust of the engine, and the other section being the discharging section having outlets for the exhaust, and a cup-shaped deflector within the said exhaust section and having its base at the base of the receiving section the apex end of the deflector being provided with an offset fitting the inside of the discharging section at the apex thereof, the said deflector forming at its exterior face with the interior face of the said discharging section, a devious passage leading to the said outlets.

3. A muffler comprising an approximately spherical shell made in cup shape sections fastened together at their bases, one of the sections being the exhaust receiving section connected with the exhaust of the engine, and the other section being the discharging section having outlets for the exhaust, and a cup-shaped deflector within the said exhaust section and having its base at the base of the receiving section, the said deflector having its exterior surface in step form, and spaced from the step like interior surface of the said discharging section to form a devious annular passage leading to the said outlets.

4. A muffler comprising an approximately spherical shell made in cup-shape sections fastened together at their bases, one of the sections being the exhaust receiving section connected with the exhaust of the engine and the other section being the discharging section having outlets for the exhaust, a cup-shaped deflector within the said exhaust section and having its base at the base of the receiving section, the said deflector having its exterior surface in step form, and spaced from the step like interior surface of the said discharging section to form a devious annular passage leading to the said outlets, and means for securing the raised apex of the said deflector to the apex of the said discharging section.

5. A muffler, comprising a shell made in sections secured together at their bases, one of the sections being the ex-

haust receiving section connected with the engine exhaust, and the other section being the discharging section having outlets for the exhaust in its apex portion, a cup-shaped deflector within the said shell, the apex end of the deflector being provided with an offset fitting the inner surface of the discharging section at the apex thereof, means for fastening the deflector to the discharging section at their apex ends, the external surface of the deflector from the said offset to the base being spaced from the inner surface of the discharging section, and forming therewith a devious passage for the exhaust to conduct the latter to the said outlets.

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

WILLIAM H. SMITH.

Witnesses:
F. E. ELDER,
F. W. BROSE.