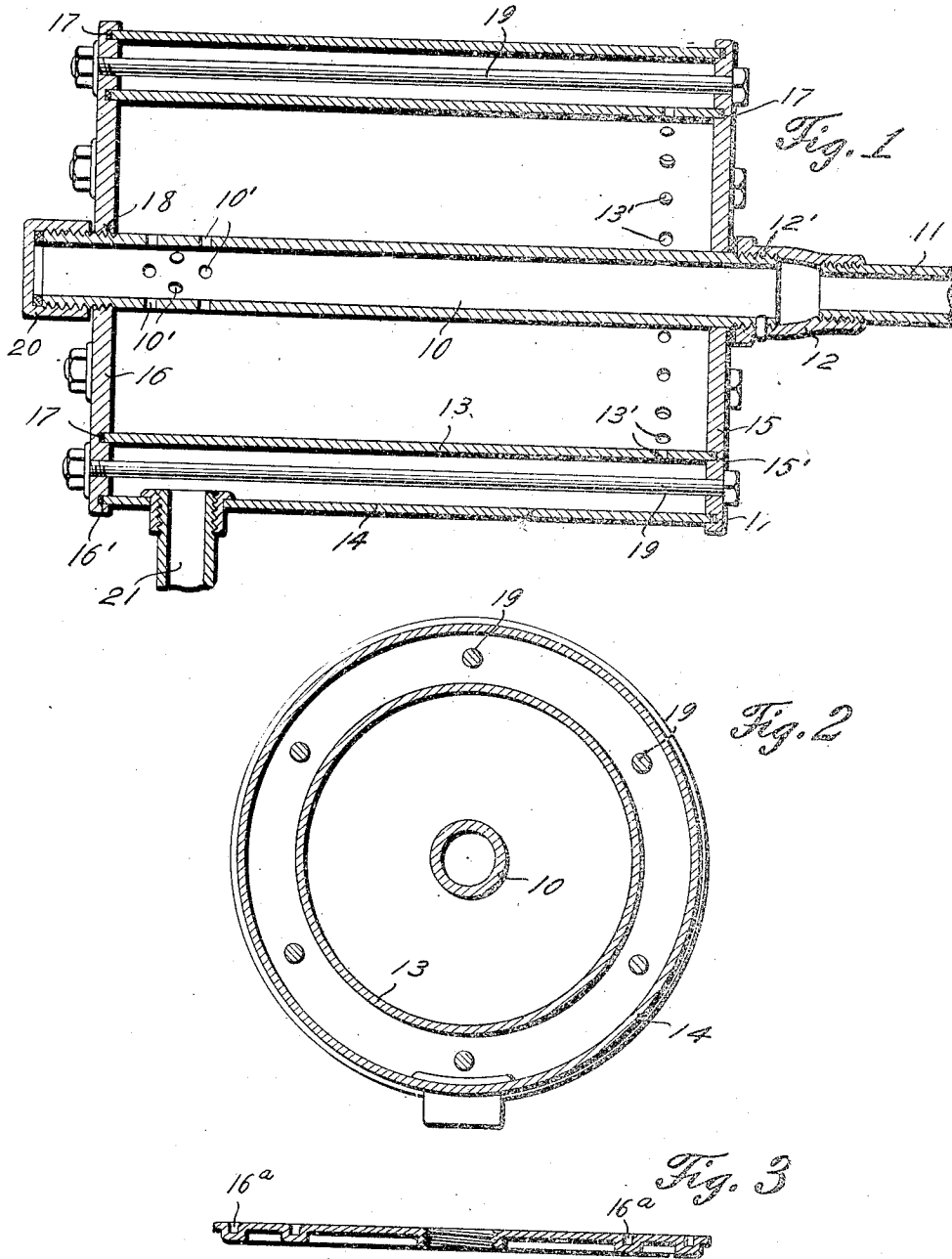


E. TROIKE.
ENGINE MUFFLER.
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950,215.

Patented Feb. 22, 1910.



Witnesses

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UNITED STATES PATENT OFFICE.

ERNST TROIKE, OF SANDUSKY, OHIO, ASSIGNOR OF ONE-FOURTH TO PAUL TROIKE,
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ENGINE-MUFFLER.

950,215.

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To all whom it may concern:

Be it known that I, ERNST TROIKE, a subject of the Emperor of Germany, residing at Sandusky, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in Engine-Mufflers, of which the following is a specification.

This invention relates to mufflers for explosion engines, and the same consists in the specific details of construction hereinafter fully described and claimed and illustrated in the accompanying drawing, in which—

Figure 1 is a vertical longitudinal section; Fig. 2 is a vertical transverse section, and Fig. 3 is a sectional detail of a modification to be described.

Throughout the following description and on the several figures of the drawing similar parts are referred to by like reference characters.

The invention comprises a piece of tubing 10, adapted to be connected permanently to an exhaust pipe 11 of an engine in any suitable manner, the means shown being a union 12, the enlarged end 12' thereof being secured rigidly and permanently to the inlet end of the tube 10. The form of the union 12 is such as to accommodate the connection with the exhaust pipe 11 of a muffler tube 10 of larger diameter than the exhaust pipe, at least the muffler pipe should be as large in its internal diameter as the exhaust pipe. Surrounding the tube 10 are concentric hollow casings or cylinders 13 and 14, spaced from each other and from the tube 10. The said cylinders are of substantially the same length and their ends are closed and sealed by means of a pair of disks 15 and 16, surrounding the tube 10. The disk 15 is channeled at 15' and the disk 16 is channeled likewise at 16', and the ends of the cylinders 13 and 14 are seated snugly in said channels. A packing 17 of fibrous material of any suitable character may be employed in order to more completely deaden the sound and prevent any possibility of rattling of the device. The disk 15 has a slidable fit on the tube 10 and rests snugly against the end 12' of the union. The disk 16 however has screw threaded connection at 18 with the outer end of the tube 10 for a particular purpose hereinafter set forth. A plurality of binding rods 19 are employed to secure the outer edges of the disks properly seated against the ends of the cylinders and said rods pass

through the outer cylinder longitudinally and between the same and the inner cylinder 13. In devices of this character it is essential that the material employed be as light as possible consistent with the service to be performed, and by the construction illustrated the disks and cylinders may be made of comparatively light and thin metal. To this end the disks instead of being channeled in the manner indicated may be stamped in the form shown in Fig. 3. By virtue of the binding rods 19 the disks are bound primarily to the cylinders at some distance remote from the tube 10, but by virtue of the aforesaid connection between the disks and the said tube, the tube constitutes not only a means for securing the entire device to the exhaust pipe but also the tube 10 constitutes a means for securing the central portions of the disks in proper spaced relation. The extreme outer end of the tube 10 is adapted to be closed by a cap nut 20 when the device is in full working order and used as a muffler, but when it is desired for any particular reason to throw the muffler out of use the cap nut 20 may be removed without affecting the adjustment or function of the securing means above set forth, the threaded connection between the disk 16 and the tube 10 maintaining said parts in proper position.

The tube 10 within the cylinders and substantially close to the inner surface of the disk 16 is provided with a large number of small ports 10' extending preferably all the way around the tube and whereby the gases of explosion may pass into the interior of the cylinder 13. Likewise the inner cylinder 13 is provided with a corresponding set of exhaust ports 13' substantially close to the disk 15, whereby the gases pass from the interior of the cylinder 13 into the chamber formed between the two cylinders. By this time the force and effect of the report of the explosion will have become dissipated, and the gases will pass thence out through the outlet port 21 to any desired distance or location. The several sets of ports 10' and 13' may be variously arranged, but the combined area of either set should not be less than the cross sectional area of the exhaust pipe 11.

In the form of the disk shown in Fig. 3 the same may be made of sheet metal stamped so as to provide stamped channels 16^a, less weight of material being employed in this application of the device than if the

disks be made of cast metal and machined to form the channels described heretofore.

I claim:

1. In a muffler of the class set forth, the combination of a pair of concentric cylinders, a pair of disks closing the ends of said cylinders, binder rods passed longitudinally through the outer cylinder between the same and the inner cylinder and connecting the disks rigidly and permanently to the ends of the cylinders, a tubular member extending through the centers of the disks and having slidable connection with one of the disks and threaded connection with the other disk, said tube being provided with a set of exhaust ports adjacent the last mentioned disk and the inner cylinder being provided with a corresponding set of ports adjacent the first mentioned disk, and detachable means closing the outer end of said tube.

2. In a muffler of the class set forth, the combination of a pair of disks, a central tube having at one end a fixed member

against which one of said disks is slidably fitted and the other end of said tube being screw threaded for threaded connection with the other of said disks, each of said disks being channelled on its inner surface, a pair of concentric cylinders surrounding the tube and fitted into the aforesaid disk channels, means securing the disks rigidly to the ends of the cylinders, the central tube being provided with a plurality of ports near its outer end leading to the interior of the inner cylinder and said inner cylinder being provided at its opposite end with a corresponding set of ports leading into the outer cylinder, and a removable cap nut screwed upon and closing the outer end of the central tube on the outside of the adjacent disk.

In testimony whereof I affix my signature in presence of two witnesses.

ERNST TROIKE.

Witnesses:

PHILIP BUERHEL,
AL. C. LERMAN.