July 26, 1960 B. O. OVERLAND 2,946,395

MUFFLER REPAIR KIT

Filed Sept. 3, 1958

Fig.1

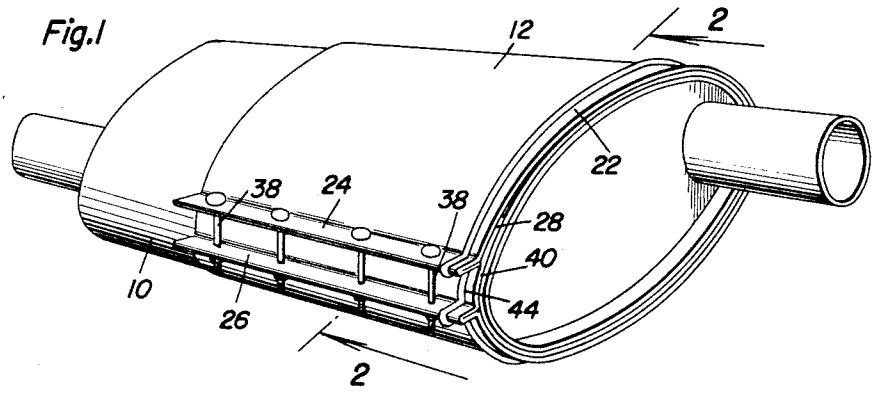


Fig.2

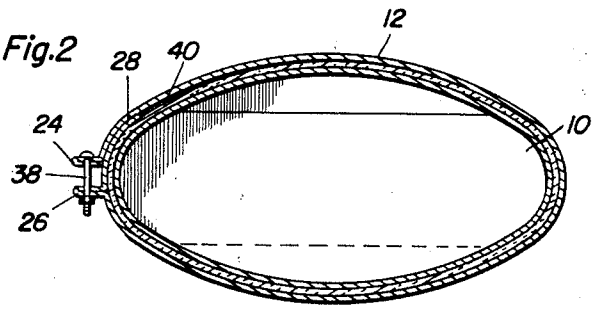


Fig.3

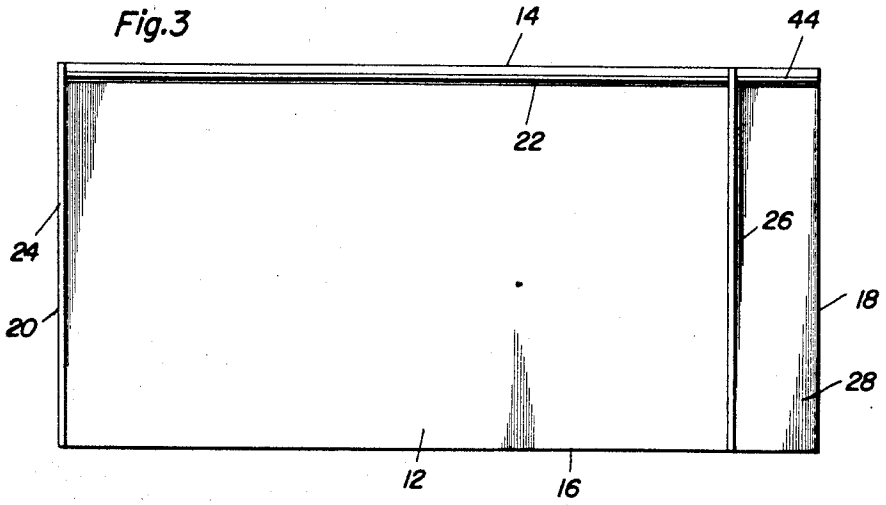
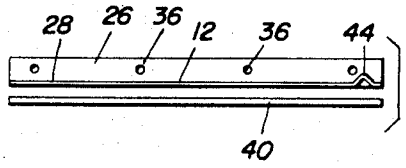


Fig.4



Bernard O. Overland

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

United States Patent Office 2,946,395 Patented July 26, 1960

2,946,395

MUFFLER REPAIR KIT

Bernard O. Overland, 2939 Rockrim Lane, Billings, Mont.

Filed Sept. 3, 1958, Ser. No. 758,738

4 Claims. (Cl. 181—72)

This invention relates to repair devices and more particularly to a muffler repair kit which is adapted to fit practically all commercial available and presently used mufflers.

An object of this invention is to provide a muffler repair kit which is capable of being used with substantially all types and models of mufflers that are in current use at the present time.

It is a further object of this invention to provide a muffler repair kit capable of being used by amateurs to make temporary or permanent repairs on mufflers, since the application of the parts of the muffler repair kit is quite simple.

A further and important object of the invention is to provide a new and improved muffler repair kit possessing certain features making it superior to any others. One of these features is an approximately V-shaped ridge that extends longitudinally along one edge of the main repair panel in order to seal against end leaks when the repair kit is applied to a muffler.

There are prior muffler repair kits or pipe repair kits which have flexible metal panels adapted to be bolted or otherwise fastened in place on a muffler or pipe. However, no concern is evident over the tight sealing of the flexible panel on the muffler. This invention has a ridge so shaped and dimensioned that when compressed tightly on the liner of the muffler repair kit, it forms a very effective seal to prevent end leakage of gases.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of a typical muffler repaired with a kit constructed in accordance with the invention.

Figure 2 is a cross-sectional view taken approximately on the line 2—2 of Figure 1.

Figure 3 is a plan view of the flexible metal panel constituting a part of the repair kit.

Figure 4 is an exploded edge view of the flexible panel and liner of the kit.

In Figure 1 there is a conventional muffler **10** which schematically represents any manufacturer's make or type of muffler capable of being repaired by the parts of the repair kit of this invention. Ordinarily, mufflers become defective by leaking from openings that rust out or otherwise become formed in the side walls of the muffler. The repair kit of this invention is made of a substantially rectangular flexible panel **12** which may be of sheet metal, for instance galvanized sheet iron that is thin enough to be flexible and pliable to be curved around muffler **10** or any other conventional muffler. Panel **12** has two longer edges **14** and **16** and two shorter edges **18** and **20**. A substantially V-shaped longitudinal ridge **22** is spaced slightly from edge **14** and is formed in the metal of panel **12**. Edge **18** is unobstructed as is edge **16**. Edge **20** has a rib **24** extending its full length. A

similar rib **26** extends transversely across the panel **12** and is spaced slightly from edge **18**, leaving flap **28** which is defined as the portion of panel **12** between rib **26** and edge **18** of the panel. Both ribs are formed in the same way; namely by having two strips made of return bends in portions of panel **12** (Figure 2).

A plurality of bolt holes **36** are in each of the ribs in order to accommodate bolt and nut assemblies **38**. Four such assemblies are shown, although this number may vary.

The final part of the kit is an asbestos or other non-burnable, flexible sheet **40** that is preferably of the same outside dimensions as panel **12**. In use the non-burnable liner or panel **40** is placed around the muffler side walls and the flexible metallic panel **12** is placed thereover. Flange **28** is tucked under edge **24** and a part of panel **12** immediately adjacent to edge **24**. At the same time the portion **44** of ridge **22** in flange **28** nests within the opposite end portion of the same ridge **22** as the rib **24** is drawn to an approximately parallel position with respect to rib **26**. The bolt and nut assemblies are then fastened in place and tightened. In tightening the four bolt assemblies, an even distribution of tension is applied to metal panel **12** pulling it toward the muffler. Ridge **22** cooperating with the liner **40** forms an effective seal at the downstream end of the muffler.

Although Figure 1 shows the repair kit used at one end of the muffler, it may be used in the middle or at the opposite end of the muffler with equal effectiveness. Furthermore, only one ridge **22** is shown but this ridge may be duplicated adjacent to the opposite longitudinal edge of panel **12** or in any other place in the panel.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A muffler repair kit comprising the combination of a non-burnable liner adapted to be placed directly against the side walls of a defective muffler and to cover the defect thereof, a flexible and pliant panel of non-burnable material adapted to be placed over said liner, said panel having a pair of ribs with bolt holes therein, one of said ribs located at one edge of said panel, the other of said ribs spaced therefrom and located in spaced relationship to the opposite edge of said panel thereby leaving a flange between said other of said ribs and the said opposite edge of said panel, said flange adapted to underline a portion of the of the first mentioned edge of said panel, and a ridge in said panel extending longitudinally near one edge thereof.

2. A muffler repair kit comprising the combination of a non-burnable liner adapted to be placed directly against the side walls of a defective muffler and to cover the defect thereof, a flexible and pliant panel of non-burnable material adapted to be placed over said liner, said panel having a pair of ribs with bolt holes therein, one of said ribs located at one edge of said panel, the other of said ribs spaced therefrom and located in spaced relationship to the opposite edge of said panel thereby leaving a flange between said other of said ribs and the said opposite edge of said panel, said flange adapted to underlie a portion of the first mentioned edge of said panel, and a ridge in said panel extending longitudinally near one edge thereof, a portion of said ridge nesting within another portion of said ridge when said panel is applied to a muffler.

3. The muffler repair kit of claim 2 wherein said ridge is substantially V-shaped in cross section and is located

adjacent to one of the longer edges of said panel, said panel being substantially rectangular when developed on a flat surface, and said ribs extending transversely across said panel.

4. A muffler repair kit comprising a sheet metal panel of substantially rectangular shape when developed on a flat surface, said panel having longer edges and shorter edges, bolting ribs extending transversely across said panel and constituting an integral part thereof and adapted to be brought into approximately parallel relationship to each other when said panel is placed around the side walls of a defective muffler, a leak sealing ridge extending longitudinally of said panel, one of said ribs spaced from one of the shorter edges of said panel thereby leaving a

flange which is constructed of the portion of said panel between one of said shorter edges of said panel and said ridge that is spaced therefrom, said flange fitting in superposition with the opposite shorter edge of said panel and at least a small part of said panel adjacent to said opposite shorter edge when said panel is placed around a defective muffler.

References Cited in the file of this patent

UNITED STATES PATENTS

1,360,311	Padgett	Nov. 30, 1920
2,107,588	Smith	Feb. 8, 1938
2,834,427	Powers	May 13, 1958