

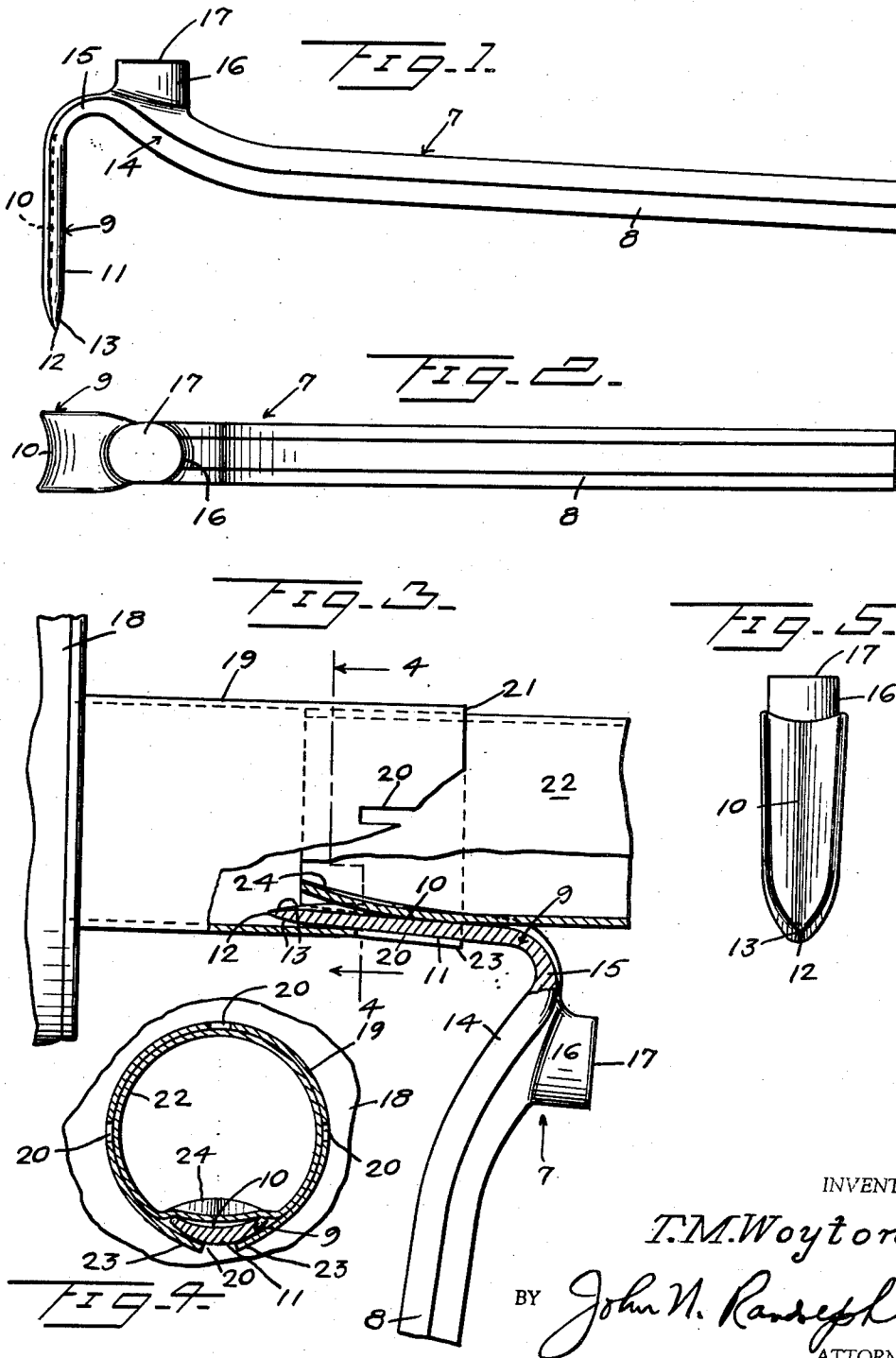
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MUFFLER TAIL PIPE REMOVING TOOL

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MUFFLER TAIL PIPE REMOVING TOOL

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2 Claims. (Cl. 29—275)

This invention relates to a tool of extremely simple construction adapted to materially facilitate the detachment of tail pipes from muffler nipples of automobile and truck mufflers.

Considerable difficulty is ordinarily encountered in disconnecting a tail pipe from the muffler nipple. Such operation is usually performed with a chisel or cutting tool and usually the tail pipe and frequently also the muffler nipple are damaged beyond repair in effecting the disconnection, so that both the muffler and tail pipe require replacement.

Accordingly, it is a primary object of the present invention to provide a novel tool which may be effectively employed to free or break the connection between a tail pipe and muffler nipple so that the tail pipe can be readily removed and without materially damaging either the tail pipe or muffler nipple, so that said parts may be re-used.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view of the tool;

Figure 2 is an edge elevational view thereof, looking from top to bottom of Figure 1;

Figure 3 is a fragmentary view partly in section showing a portion of the tool and in an applied position for breaking the connection between a muffler nipple and tail pipe;

Figure 4 is a cross sectional view, taken substantially along a plane as indicated by the line 4—4 of Figure 3, and

Figure 5 is an end elevational view looking toward the head of the tool or from left to right of Figures 1 and 2.

Referring more specifically to the drawing, the tool in its entirety is designated generally 7 and is of one piece construction. The tool 7 includes an elongated bar preferably of hexagonal shape in cross section forming the handle 8 and having a flattened lateral extension at one end forming an elongated blade 9 which is disposed with its longitudinal axis substantially crosswise to the axis of the handle 8.

The blade 9 is uniformly bowed in cross section from end-to-end thereof to provide a concave or longitudinally grooved outer side 10. The inner side of the blade 9 is convexly bowed in cross section from end-to-end thereof, as seen at 11. The blade 9 has a rounded free or leading end 12 and is beveled on opposite sides thereof as seen at 13 toward said free end 12. The leading end or tip 12 of the blade 9 is blunt, as best seen in Figures 1 and 3, and is disposed between the planes of the central portions of the sides 10 and 11.

The tool 7 includes a neck 14 which is disposed between the inner end of the handle 8 and the inner or rear end of the blade 9 and which forms a curved extension of the handle 8. The neck 14 curves relatively to the han-

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dle 8 in a direction away from the tip 12 of the blade 9 and its outer end is flattened and curved in the opposite direction as seen at 15 to merge with the inner end of the blade 9. The outer side of the neck 14 adjacent its reversely curved end 15 is provided with a projection 16 which extends in a direction away from the blade 9 and which has a flat outer surface 17 which is disposed in a plane substantially at a right angle to the longitudinal axis of the blade 9. Said surface 17 forms an anvil surface to receive the impart of a striking tool such as a hammer, not shown.

The rear end of a conventional automobile or truck muffler 18 is shown in Figures 3 and 4 having a nipple 19 extending therefrom and which is provided with circumferentially spaced longitudinally extending slots 20 which open outwardly of the open rear free end 21 thereof. The forward end 22 of a tail pipe is shown engaging in the nipple 19 to beyond the inner ends of the slots 20 thereof, as is conventional. The muffler portion 18 shown, including the nipple 19, and the tail pipe portion 22 are conventional. After the tail pipe has been connected to a muffler nipple for a considerable period of time, considerable difficulty is encountered in disconnecting the tail pipe from the nipple. The operation is usually performed with a chisel and/or a cutting tool, not shown, and as a result thereof the nipple 19 and the forward end of the tail pipe are usually damaged so badly that the muffler and tail pipe may not be re-used.

The tool 7 may be very effectively employed for breaking the connection between the nipple 19 and tail pipe end 22 and without materially damaging either part. To use the tool 7, the blunt leading end 12 of the blade is inserted into the nipple end 21 between said nipple and the tail pipe end 22 and so that the point 12 is in alignment with and enters above or inwardly with respect to one of the slots 20. Initial advancement of the blade 9 into the nipple 19 causes a spreading of the slot 20 adjacent to which the blade 9 is disposed and a slight expansion and outward bending of the nipple portions 23 which are disposed on either side of said slot 20, as seen in Figure 4. The blade 9 is advanced into the nipple 19 by striking the anvil surface 17 with a hammer or similar impact tool, not shown. After initial entrance of the leading end 12, the bevel surfaces 13 spread and expand the nipple portion located adjacent the blade 9 so that the end or tip 12 is supported out of contact with the nipple 19 and tail pipe end 22 to eliminate the possibility of either of said parts being torn or cut by the blade end 12. After the bevel portions 13 have reached the inner end of the expanded slot 20 further expansion of the nipple adjacent said slot and inwardly with respect thereto is substantially prevented by the solid circumferential construction of the nipple. Accordingly, as the bevel surfaces 13 move beyond the inner end of the expanded slot 20 and as said surfaces are then approaching the inner or forward end of the tail pipe 22, the wedging force exerted by the bevel surfaces 13 will bend the portion of the forward or inner end of the tail pipe, which is engaged by the blade, inwardly. Although the extent that the tail pipe is thus bent inwardly is relatively slight, as seen in Figures 3 and 4 at 24, it is nevertheless sufficient to shrink the inner or forward end of the tail pipe 22 beyond the inner ends of the slots 20 and which shrinkage of the tail pipe in combination with the expansion of the slotted portion of the nipple frees the tail pipe from the nipple so that when the blade 9 is withdrawn from engagement with the nipple and tail pipe, the tail pipe can be readily turned and withdrawn out of engagement with the nipple 19.

If necessary, the expanded nipple portion 23 and the shrunken tail pipe portion 24 can be readily bent back

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into shape so that neither the nipple nor tail pipe is damaged to any appreciable extent, so that both parts may be re-used.

Various modifications and changes are contemplated and may obviously be resorted to without departing from the function or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A tail pipe removing tool comprising an elongated blade of arcuate cross section adapted to conformably fit between a slotted rear end of a muffler nipple and a tail pipe end secured therein, said blade including a concave outer side adapted to engage the tail pipe and a convex inner side adapted to engage the nipple, the blade being of a length substantially greater than the width thereof and being adapted to be driven into the nipple longitudinally thereof and of the tail pipe and adjacent a slot of the nipple, said blade constituting the tool head and having a rounded leading end and being relatively thick and beveled toward the leading end thereof for expanding the slotted portion of the nipple and for shrinking the tail pipe end disposed inwardly of the slotted nipple

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portion, an elongated handle forming a part of said tool and joined to a rear end of said blade, said handle extending from the convex side of the blade and being disposed with its axis at substantially a right angle to the axis of the blade, and an anvil portion forming a part of the tool and projecting from the handle adjacent the blade and in a direction away from said blade, said anvil having an impact receiving surface disposed at substantially a right angle to the axis of the blade.

2. A tool as in claim 1, said leading end of the blade being blunt and disposed in a plane between and spaced from the planes of the concave and convex sides of the blade.

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