Dec. 18, 1956 C. E. CHESSER 2,774,439

MUFFLER FOR LAWN MOWER

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Fig. 1.

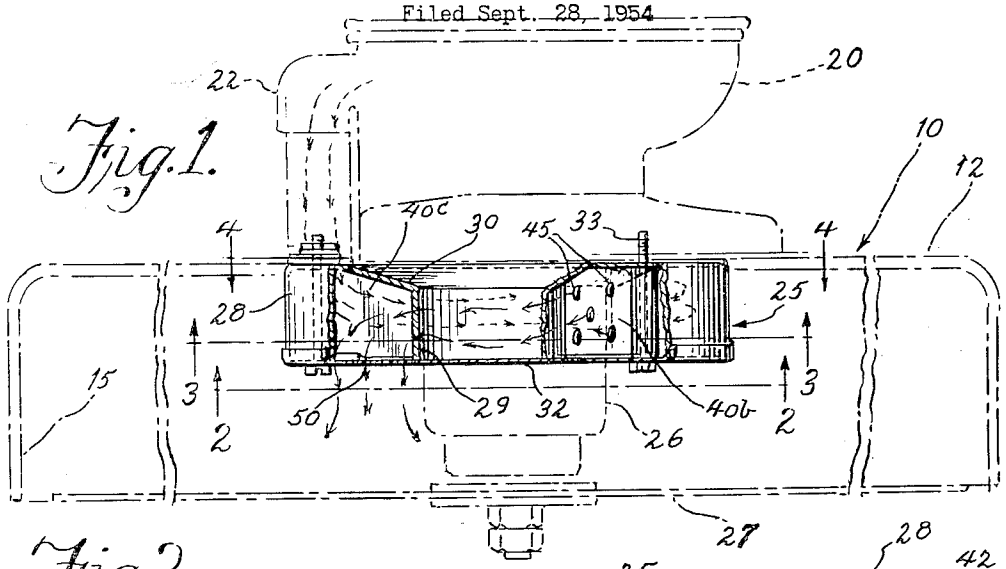
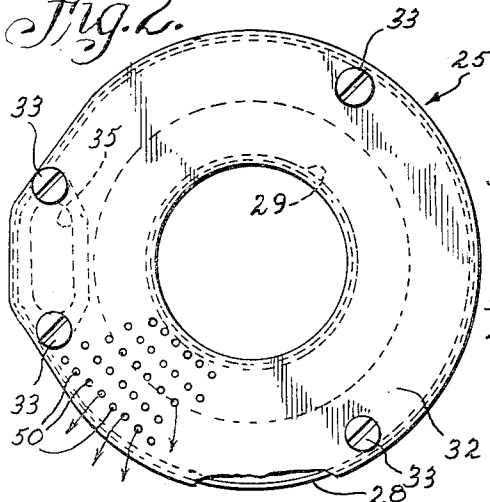


Fig. 2.



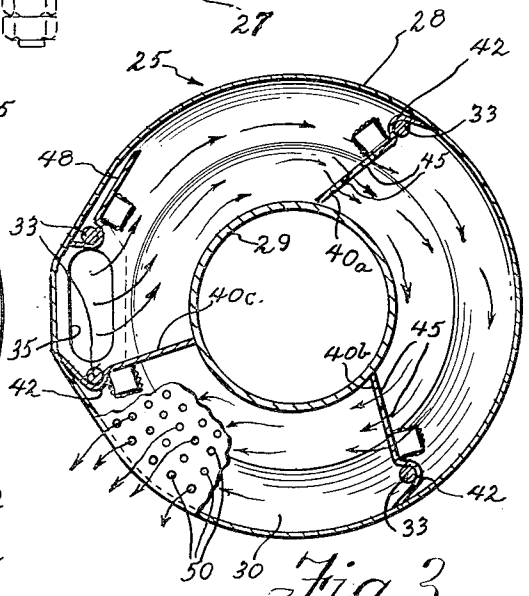


Fig. 3.

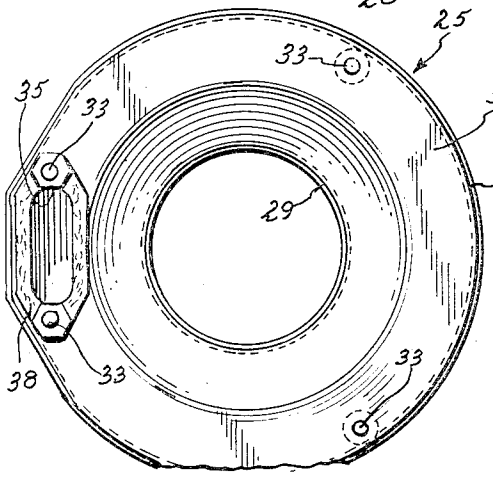


Fig. 4.

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MUFFLER FOR LAWN MOWER

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2 Claims. (Cl. 181—66)

My invention relates to lawn mowers of the type driven by internal combustion engines and has to do more particularly with the combination of such a lawn mower with a new and improved muffler. For purposes of classification, it may be said that my invention represents an improvement over the type of device shown in Kroll Patent #2,675,662 dated April 20, 1954.

Generally speaking, my invention contemplates a casing open at the bottom and closed at the top and sides, said casing supporting an internal combustion engine, the drive shaft of which engine extends downwardly through the casing and carrying a cutter blade at the lower end thereof, the muffler being disposed within the casing and receiving the exhaust gases from the engine and discharging said gases downwardly.

More specifically, the muffler construction, according to my invention, is such that the muffler constitutes substantially a separate and distinct unit and thus may for convenience be packed and shipped separately and may be readily removed from the mower, if desired, for purposes of cleaning, repair, etc.

My invention will be more easily understood by reference to the drawings forming a part hereof, wherein:

Fig. 1 is a fragmentary elevational view showing an improved muffler embodying my invention in association with a lawn mower, with parts broken away and shown in section;

Fig. 2 is a bottom plan view of a muffler embodying my invention, as seen from a position along line 2—2 of Fig. 1, with a portion broken away for clearness;

Fig. 3 is a fragmentary sectional view taken substantially along the line 3—3 of Fig. 1, a portion of the bottom plate being fragmentarily shown, and

Fig. 4 is a top plan view, with a portion broken away, taken from a position substantially along the line 4—4 of Fig. 1.

The lawn mower shown in Fig. 1 may be of a more or less conventional type, embodying a casing or housing 10 formed of stamped or drawn sheet metal or other suitable material, having a top plate 12 serving as a platform, with depending side walls 15 of any suitable configuration. Mounted on the platform 12 is a suitable internal combustion engine 20 having an exhaust or gas discharge conduit 22 leading downwardly to a muffler indicated generally by the numeral 25. The drive shaft of the motor extends axially downward through a suitable journal 26 and having mounted thereon a cutter blade 27.

The muffler 25 is substantially annular in configuration, comprising a body portion with a substantially circular outer wall 28, a circular inner wall 29 and an integral top wall 30, the body portion being closed at the bottom by means of a closure plate 32. Headed bolts 33 extending through the muffler secure the body portion and bottom plate together and also secure the muffler to plate 12. The top wall 30 has an aperture 35 registering with the gas discharge conduit and serving as a gas inlet to the muffler, a suitable gasket 38 being provided adjacent said inlet.

Secured within the body portion of the muffler is a plurality of baffles 40*a*, 40*b* and 40*c*, said baffles numbering 3 in the embodiment shown although, obviously, they may be of a greater or lesser number. These baffles extend between the walls 28 and 29 of the body portion and may be attached to either one of them as by welding or the like, or to both walls if desired, although for economy of construction attachment to one end is sufficient. Said baffles may conveniently be disposed adjacent the bolts and may be offset as at 42 to accommodate said bolts. These baffles may extend radially with reference to the axis of the annulus or may be offset from such radii, this being relatively immaterial. The baffles 40*a* and 40*b* are provided with a plurality of perforations punched therein as indicated at 45, for passage of gases, while the baffle 40*c* adjacent the opening 35 is imperforate.

A brace plate 48, likewise imperforate, but for convenience and economy of fabrication substantially identical in shape to the baffles and cut from the same stock, is provided adjacent the bolt on the opposite side of the inlet opening 35 from the baffle 40*c*.

The bottom plate 32 is provided with a plurality of apertures 50 for discharge of the gases from the muffler to the atmosphere therebelow.

It will be seen that I have provided an extremely simple and economical muffler which constitutes a complete and separate unit apart from the mower and may be readily mounted thereon by means of the bolts 33. Furthermore, by being of annular construction the inner wall thereof being spaced from the journal of the drive shaft, ventilation is permitted therebetween and overheating of the latter from the exhaust gases is avoided. It will be seen that the exhaust gases pass into the muffler through the inlet opening 35 and then flow in a circular path through the annulus to be ultimately discharged to the atmosphere through the apertures 50, the baffles serving to reduce the speed of flow of the gases and accordingly, to reduce the noise to a minimum.

Various changes coming within the spirit of my invention may suggest themselves to those skilled in the art. Hence, I do not wish to be limited to the specific embodiment shown and described or uses mentioned, but intend the same to be merely exemplary, the scope of my invention being limited only by the appended claims.

I claim:

1. A muffler especially adapted for a motor driven lawn mower, comprising a pair of circular plates arranged concentrically, constituting respectively inner and outer walls of an annular chamber, annular plates serving respectively as top and bottom walls of said chamber, a plurality of spaced partitions in said chamber comprising one imperforate partition and at least one partition having a plurality of perforations, said top wall having a gas inlet opening and said bottom wall having a group of perforations disposed on the opposite side of said imperforate partition from said inlet opening.

2. A muffler as defined in claim 1 wherein the side walls are unitary with one of the top and bottom walls, and means removably securing the other of said top and bottom walls to said one wall and also adapted to removably attach the muffler to a lawn mower.

References Cited in the file of this patent

UNITED STATES PATENTS

838,051	Palmer	Dec. 11, 1906
2,675,662	Kroll	Apr. 20, 1954