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[54] **RELEASABLE HOLDER FOR CONTAINER**
4 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **248/313,** 211/71, 348/230
[51] **Int. Cl.** **A47k 1/08**
[50] **Field of Search** 248/316, 309, 311, 313, 229, 230; 24/257; 211/74, 71, 75, 107, 89

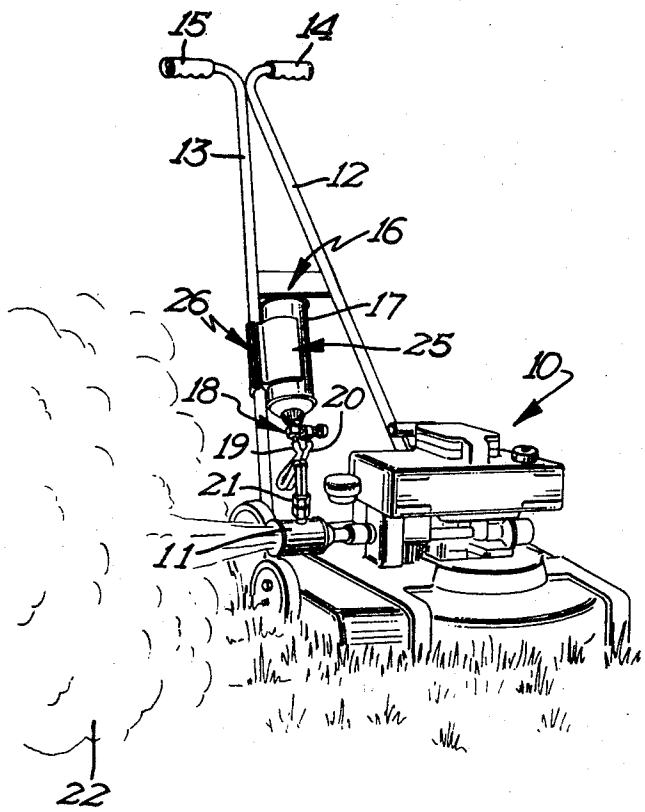
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ABSTRACT: A holder for securing an elongated cylindrical container to a tubular member, the holder consisting of two parts which are clamped about the container, at least one of these two parts being of yieldable material and one of the two parts having yieldable curved gripping walls. The opposed faces of the two clamping members have longitudinal recesses, the walls of which engage the tubular member. The nuts and boltheads of the fastening members are disposed in slots so as not to project beyond the outside walls of the holder. The holder is particularly adapted for holding a can of insecticide on the handle bar of a power operated implement.



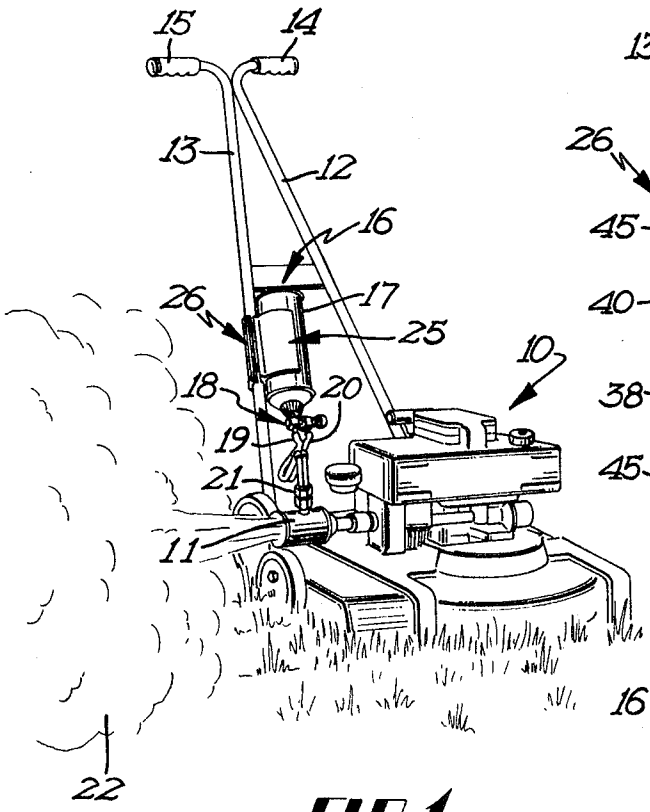


FIG 1

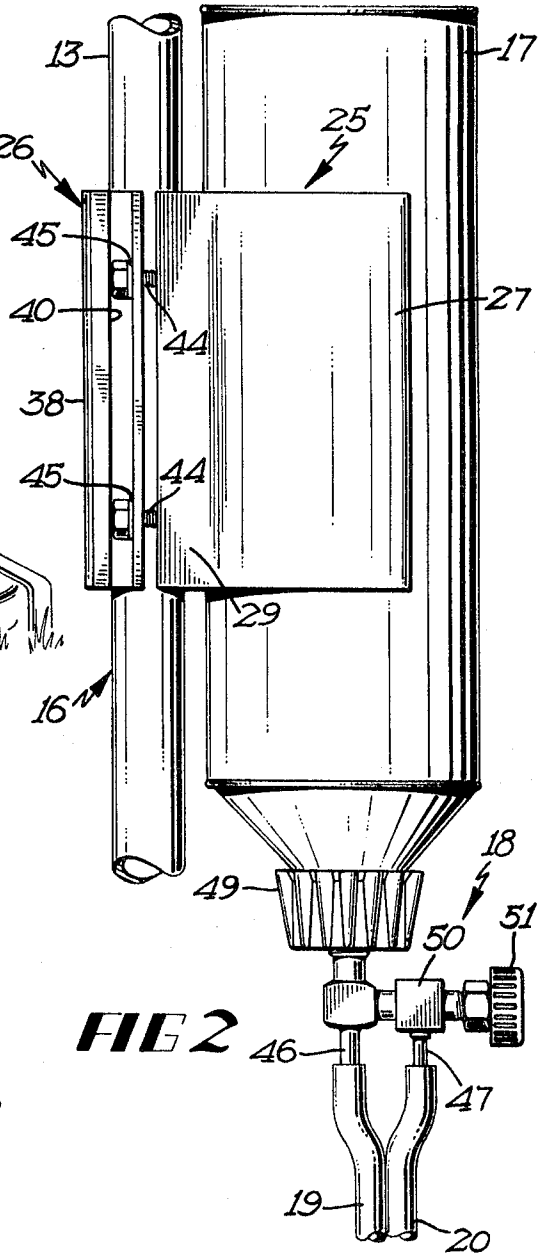


FIG 2

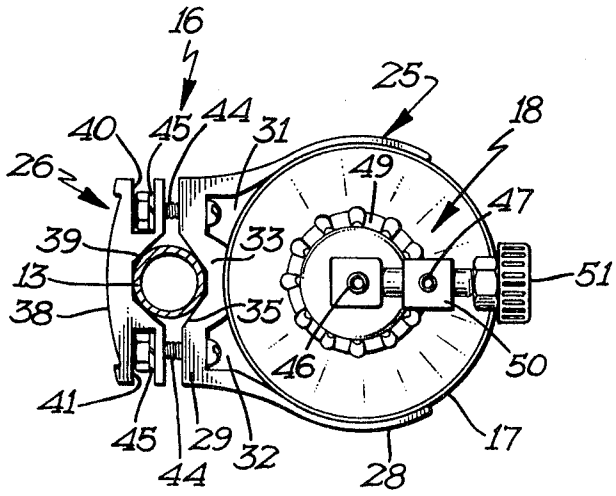


FIG 3

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RELEASABLE HOLDER FOR CONTAINER

BACKGROUND OF THE INVENTION

There are many occasions in which it is desirable to releasably secure a container to a tubular member. One particular application is that of securing a can of insecticide to the handle bar of a power-operated implement where it is desired to feed the insecticide to some vaporizer, such as the muffler of the engine of the implement. It is desirable that the holder can be secured to the tubular member with a minimum of mechanical skill and the least amount of tools. Furthermore, since the owner's clothing may come in contact with the handle bar and the container secured thereto, it is highly desirable that there be no projecting fastening elements which might engage and tear the owner's clothing. It is also desirable, in view of the fact that in some situations such as that of attaching a can of insecticide to a power operated implement there is considerable vibration, that the holder securely hold the container with no contact between metal parts which might result in an irritating noise.

SUMMARY OF THE INVENTION

The present invention is concerned with a holder for releasably securing an elongated container to a tubular member in which there are two parts, the first part being of yieldable material and having a base portion with yieldable container gripping arms projecting from one face thereof and a longitudinal recess on the opposite face thereof adapted to engage a tubular member, the second part having a longitudinal recess in one face thereof facing said longitudinal recess in the first part, there being a plurality of clamping means extending between the first and second parts inwardly of the outer edges thereof to clamp the two parts against such a tubular member with said recesses oppositely engaging the tubular member.

The gripping walls are preferably curved with a radius of curvature approximating that of a container of circular cross section so that the gripping arms are able to firmly retain the can. Both parts are preferably formed of a yieldable plastic material to firmly grip the container and the tubular member without providing any metal-to-metal contact such as would cause appreciable noise if the tubular member is subject to vibration as would be the case if the tubular member is a handle bar of a power operated implement.

The clamping means preferably has opposed relatively adjustable abutment portions and the second part is provided with at least one longitudinal slot in the side thereof in which one of the abutment portions of each clamping means is secured, the slot being sufficiently deep and the abutment portions being disposed inwardly of the outer edges of the slot sufficiently that the abutment members do not project beyond the adjacent outer edge of the part. The first part has at least one slot adjacent the base of the gripping walls so as to be disposed behind a container secured in the gripping walls, one of the abutment portions of each clamping means being disposed in the slot beneath the outer edges of the slot so as to be disposed beneath the container secured in the gripping walls. More specifically, each clamping means takes the form of a headed bolt and nut in which the nuts are disposed in the slot or slots of the first part and the heads of the bolts are secured in the slot or slots beneath the outer edge of the slot or slots. In the specific form shown, there are two slots in each part so that the two parts may be completely separated from one another for attachment to the tubular member.

Further objects of the invention will be apparent from the accompanying specification, claims and drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of a lawn mower showing my improved holder being employed to secure a can of insecticide to one handle bar of a mower;

FIG. 2 is an elevational view of my improved holder shown as retaining a can on a tubular member only a portion of the latter of which is shown; and

FIG. 3 is a bottom plan view of my improved holder, a can secured thereto, and a tubular member to which the holder is secured, the tubular member being shown in section.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, there is shown in perspective a typical application for the holder of the present invention. The numeral **10** indicates the operative part of a power mower driven by a four-cycle internal combustion engine having a muffler **11**. Secured to the carriage of the mower **10** is a handle bar consisting of two tubular rods **12** and **13** which are pivotally secured at their bottom to the carriage of the mower and which are bent outwardly at their upper ends and provided with handle grip members **14** and **15**. The tubular rods **12** and **13** are preferably secured together near their upper ends in any suitable manner.

In FIG. 1, the improved holder is generally indicated by the reference numeral **16**. Secured in this holder is a can **17** which contains a volatile solution of insecticide. The can has a fitting **18** in its lower end into which two conduits **19** and **20** are connected, these conduits being connected to a fitting **21** which extends into the muffler **11**. The conduit **20** is provided for supplying insecticide solution to the interior of the muffler and the conduit **19** for permitting air pressure to enter the can **17** to replace the fluid which is drawn from can **17**. In devices of this type, the insecticide passes at a controlled rate into the muffler **11** where it is vaporized due to the extremely high temperature within the muffler to generate a dense fog **22** of insecticide. Arrangements of this general type are known and are very effective for killing insects while the lawn is being mowed. It will be readily apparent that in applications such as this, it is necessary the the holder **16** be capable of being readily applied to the tubular member **13** and that it hold a can **17** in such a manner that there is no vibration. It is also desirable that there be no projecting fastening members that might catch on clothing or the hands. The improved holder of my invention has these advantages and will now be described in detail.

Referring now to FIGS. 2 and 3, it will be noted that the holder consists of two main parts **25** and **26**. The part **25** is the part which actually grips the can and as best shown in FIG. 3, has a pair of gripping walls **27** and **28**. These gripping walls **27** and **28** project from a base portion **29**. A pair of slots **31** and **32** are formed in the base portion **29** adjacent the base of the gripping walls, leaving a central portion **33** with a curved outer face adapted to receive the base of the can **17** when such a can **17** is disposed between the resilient gripping walls **27** and **28**. A recess **35** is formed in the opposite wall of the base member **29** and is adapted to engage the tubular support member **13**. This recess is preferably formed of three flat surfaces so as to accommodate themselves to tubular support members of varying radii. If the recess **35** had a cylindrical surface, it would not fit properly against a cylindrical member having a smaller or larger radius of curvature than the curvature of the recess.

The member **25** is preferably formed of a plastic material having a relatively high modulus of elasticity, considerable strength, and resistance to weathering. A plastic suitable for this purpose is a rigid polyvinyl chloride resin, a typical resin of this type being Geon 8700A Resin manufactured by the B. F. Goodrich Chemical Company. Because of its high modulus of elasticity and its high strength, the can **17** may be forced between the two arms **27** and **28** and securely retained therein. The arms **27** and **28** preferably have an inner radius of curvature substantially conforming with that of the can **17**.

The second part **26** of the holder has an outer wall **38** having a very large radius of curvature. A recess **39** is formed on the opposite face. Like recess **35**, this is formed of three flat surfaces so as to conform with tubular members of varying radii of curvature. Slots **40** and **41** are formed in the two

sidewalls of the second part **26** for a purpose to be described later. The second part **46** may likewise be formed of a polyvinyl chloride plastic of the same type as has been described in connection with the first part **25**.

As is evident from FIGS. **2** and **3**, the two parts **25** and **26** are clamped to the tubular member **13** with the walls of the recesses **35** and **39** engaging and firmly gripping the tubular member **13**. In order to clamp the members **25** and **26** together about the tubular member **13**, there are provided a plurality of fastening means **44** each of which consists of a headed bolt and a nut. In the example shown, the heads of the bolts are disposed in the slots **31** and **32** and the nuts are disposed in the slots **40** and **41**. Suitable aligned apertures are provided in the base of member **25** and the base of member **26** to provide for the passage of the bolts of fastening means **44** therethrough. Lock washers **45** are preferably disposed adjacent the nuts to secure them in position. The nuts of the fastening means **44** are of sufficient size with respect to the slots **40** and **41** that they do not project beyond the outer edges of the slots. It is preferable that the position of the apertures through which the bolts of fastening means **44** extend, the depth of the slots **40** and **41**, and the side of the nuts be so related that the inner edges of the nuts engage the inner walls of the slots **40** and **41** so that the nuts are not able to turn. It is thus possible without holding the nuts of the fastening means to tighten the nut and bolt together by the use of a screwdriver inserted in the screwdriver slots of the heads of the bolts. As previously indicated, the heads of the bolts are disposed in the slots **31** and **32** and the heads are of such size with respect to the slots that they do not project beyond the upper edges of the slots. Thus, these heads do not engage the can **17** and are concealed behind the can when the can is in position. While I have shown a nut and bolt as a fastening means, it is to be understood that other suitable clamping means employing relatively adjustable abutment portions could be used. In the specific example of the nut and bolt, the head of the bolt constitutes one of the abutment portions and the nut the other of the abutment portions. It will be readily apparent that when the nuts and bolts are all tightened, the two parts **25** and **26** firmly grip the tubular member **13** and retain the holder **16** securely in place. Because of the high modulus of elasticity of the plastic material of which member **25** is formed, the can **17** is held firmly in place. It will be noted that there is no metal-to-metal contact even though the can **17** is formed of metal. The heads of the bolts of fastening members **44** do not contact the can and the gripping walls **27** and **28** are of nonmetallic material. Thus, any vibration imparted to the tubular member **13**, such as would occur with a power operated lawn mower, does not result in any noisy vibration such as would be present if walls **27** and **28** were formed of metal.

While the specific connections of the can **17** to the muffler form no part of the present invention, it is to be noted from FIG. **2**, that the two hoses **19** and **20**, previously referred to, are connected to pipes **46** and **47** of the fitting **18** connected by a screw thimble member **49** to the threaded outlet of the can **17**. The pipe **46** is connected to a pipe which preferably extends up into the can **17** for supplying air to the top thereof as insecticide is released. The pipe **47** is connected through a valve **50** to a passageway leading to the bottom of can **17** so that insecticide may pass to the conduit **20** and hence to the muffler **11** when the valve **50** is opened. The valve **50** has a manual knob **51** for opening and closing the same.

It will be seen that I have provided a holder for a container which is extremely simple and can be readily secured to the tubular conduit by the use only of a screwdriver or its equivalent. The holder is free of any projecting parts that might be injurious to the clothing or to the hands. It will also be noted that the holder can be used where there is a large amount of vibration because there is a complete absence of any metal-to-metal contact and due to the resiliency of the gripping walls, the container is resiliently held.

I claim:

1. A holder for releasably securing an elongated container to a tubular member such as a handle bar of a power-operated implement, said holder comprising:

a first part of yieldable material having a base portion and yieldable container gripping walls projecting from one face thereof, said base portion having a central raised longitudinal portion thereof designed to engage a container held between said gripping walls, said central raised portion being spaced transversely from said gripping walls to provide two spaced slots therein, said first part further having a longitudinal groove in the opposite face thereof and adapted to engage such a tubular member,

a second part having a longitudinal groove in one face thereof facing said longitudinal groove in the first part thereof, and a pair of longitudinal edge slots in the opposite sides thereof and designed opposite to the spaced slots in said first part, and

two pairs of clamping means extending between said first and second parts inwardly of the outer edges thereof to clamp the same against such a tubular member with said recesses oppositely engaging the tubular member, each of said clamping means having opposite, relatively adjustable abutment portions, corresponding abutment portions of each of said clamping means being disposed in said spaced slots of said first part beneath the outer edges of said slots so that they are disposed behind a container secured in said gripping walls, and the opposite abutment portions of each of said clamping means being disposed in said edge slots, said opposite abutment portions being sufficiently small in a transverse direction that they do not extend beyond the adjacent outer edges of said second part.

2. The holder of claim **1** in which the container engaging surface of the central raised longitudinal portion of the first part and the gripping walls are curved with a radius of curvature approximating that of a container of circular cross section to be retained therein.

3. The holder of claim **1** in which both said first and second parts are formed of a polyvinyl chloride plastic having a high modulus of elasticity.

4. The holder of claim **1** in which the relatively movable abutment portions of each clamping means are a slotted bolthead and a nut, respectively, and in which the boltheads are disposed in the slots in said first part and the nuts are disposed in the edge slots in said second part.