Aug. 2, 1949. C. J. WILLIAMS, JR 2,477,777

FLOOR WAXER

Filed July 5, 1947

Fig. 1.

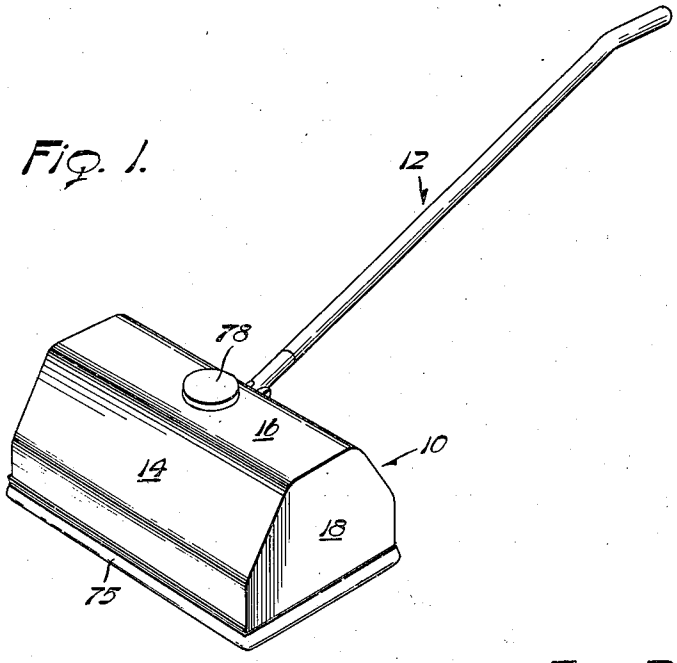
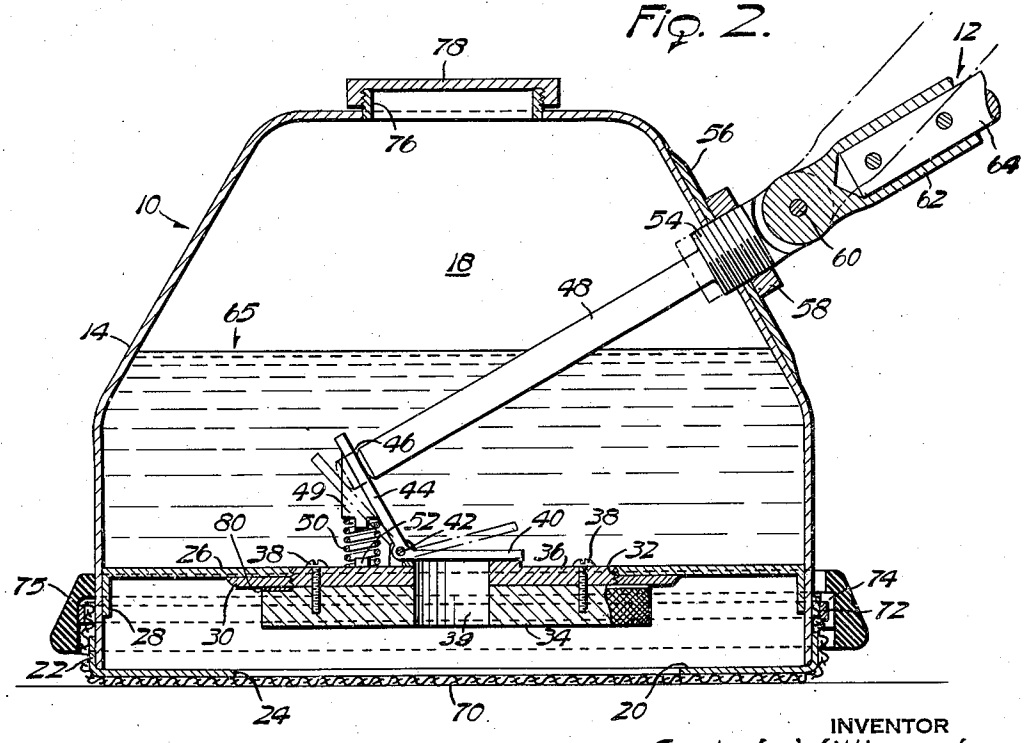


Fig. 2.



INVENTOR
Carl J. Williams, Jr.
BY
Bean, Brooks, Buckley & Bean
ATTORNEYS

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FLOOR WAXER

Carl J. Williams, Jr., South Burlington, Vt.

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5 Claims. (Cl. 91—39)

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This invention relates to an improved liquid wax applicator, for use for example in waxing linoleum or wood floors and the like.

One of the objects of the invention is to provide an improved wax applicator for the purpose described, which is of improved structural simplicity and ruggedness and relatively inexpensive to manufacture and maintain in perfect working condition.

Another object of the invention is to provide a device of the character described which incorporates an improved wax dispensing control valve arrangement.

Another object of the invention is to provide in a device of the character described an improved control arrangement for the valve mechanism which regulates the rate of application of wax from the device.

Another object of the invention is to provide in a device of the character described an improved valve unit which may be easily assembled and/or removed from the device for serviceing purposes.

Another object of the invention is to provide a device of the character described which embodies a relatively large wax reservoir while being at the same time of unusually compact and light weight construction.

Another object of the invention is to provide a device of the character described which is most convenient to use and to service.

Other objects and advantages of the invention will appear in the specification hereinafter.

In the drawing:

Fig. 1 is a top perspective view of a wax applicator of the invention; and

Fig. 2 is a transverse vertical section therethrough, on a larger scale.

The drawings illustrate the invention to comprise essentially a housing indicated generally at 10 which is attached to a handle 12 for convenient manipulation of the waxer. Thus, it will be understood that the handle 12 may be of any desired shape and dimension, and will be formed of any suitable material as may be preferred. The housing structure 10 comprises a box-like sheet metal fabrication having side and top wall portions 14—16 and end plates 18. The bottom of the housing 10 is partially enclosed by a flanged sheet metal bottom plate 20 which is generally rectangular in outer contour to complement the side and end wall marginal portions of the walls 14—18. The upturned side flange portions 22 of the bottom plate 20 may be spot-welded or soldered or otherwise suitably

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attached to the bottom edges of the wall plates of the housing 10. At the geometric center of the bottom plate 20 it is formed with a circular aperture 24.

Interiorly of the housing 10 a horizontal partition plate 26 is provided to extend in parallel spaced relation above the bottom plate 20, and is seam-welded or soldered or otherwise suitably attached to the side wall portions 14—18 of the housing 10, as by means of a depending flange 28 formed integrally with the partition plate 26. The plate 26 is centrally reinforced by a metal plate 30, and the plate elements 26—30 are circularly bored and threaded as indicated at 32, in line with the aperture 24 which is formed through the bottom plate 20. The valve unit is illustrated to comprise peripherally knurled base plate 34 having a diameter greater than the diameter of the aperture 32 through the partition plate. The base plate 34 mounts at its upper face and a peripherally threaded top plate 36 which is so dimensioned and threaded as to be adapted to screw into and out of connection with the partition plate elements 26—30. The top plate 36 may be attached to the plate 34 as by means of screws 38—38 or by welding, or any other suitable means.

The plates 34—36 are centrally bored to provide a valve port 39, and a valve plate 40 is pivotally mounted as at 42 upon the top plate 36, and is dimensioned so as to normally close the valve port 39. A crank arm 44 extends from the valve plate 40 and is forked and adapted at its upper end to receive in freely rotatable relation therein the reduced neck portion 46 of the valve control stem 48. The crank arm 44 is also formed with a tab portion 49 which engages against the upper end of a compression spring 50; the lower end of the spring 50 being disposed to bear downwardly against the top plate 36 and to be positioned thereon by means of an abutment 52. Thus, the spring 50 normally biases the valve plate 40 into valve port closing position.

The valve stem 48 extends obliquely upwardly through the interior of the housing 10 and through the side wall of the housing 10. At this point the stem 48 is formed with an enlarged externally threaded body portion 54, and the housing wall is suitably reinforced at this point by means of a metal plate 56 which is spot-welded or otherwise attached to the housing wall. A screwthreaded nut 58 is also shown as being welded or otherwise fixed to the reinforced housing wall portion. The housing wall structure and the nut 58 are suitably threaded so as to

engage the threaded body portion of the valve stem 48 so that rotation of the valve stem 48 in one direction from externally of the housing will cause the crank arm member 44 to be pushed down so as to open the valve plate 40 relative to the port 39. Upon reverse rotation of the valve stem 48 the latter retreats, thereby permitting the spring 50 to return the valve plate 40 to port-closed position.

At its outer end the valve stem 48 carries a pivot pin 60 which is connected to the handle structure 12 previously referred to; and as illustrated in Fig. 2 the handle construction may conveniently include a socket portion 62 into which is slip-fitted and pinned any desired form of handle 64. Thus, it will be appreciated that the operator of the waxer may pivot the handle 12 vertically to any preferred attitude for most convenient use of the device while pushing and pulling the applicator back and forth across a floor surface or the like. Also, it will be understood that simple rotations of the handle 12 in opposite directions will procure corresponding opening and closing movements of the valve device, so as to control the flow of liquid wax, a supply of which is indicated at 65, through the valve port 39.

A polishing pad of cloth or other porous fabric or the like as indicated at 70 is stretched across the bottom of the bottom plate 20 and thence upwardly around the side edges thereof. A band as indicated at 72 is then applied around the marginal edges of the pad 70 to clamp the latter firmly against the sides of the housing. A clamp 74 or some other suitable device is preferably employed to clamp the band 72 firmly against the fabric. Also, a rubber bumper band 75 is preferably slip-fitted over the band 72 to provide a perimetral bumper extending all around the housing 10 so as to enclose the assembly and prevent scarring of furniture and the like when the applicator is in use.

The fabric pad 70 is readily detachable from the housing, whereupon the larger opening 24 is uncovered so that the valve unit may be readily inserted or withdrawn through the opening 24. For filling the wax reservoir a filler-opening 76 and a screw cap 78 is provided in the top wall of the housing. Preferably, a gasket as illustrated at 80 will be employed to more perfectly seal the juncture between the valve unit and the partition plate 26. Thus, it will be appreciated that the invention provides a structurally simplified housing comprising a liquid wax reservoir having a horizontal partition plate in the bottom portion thereof; said plate being formed with a threaded aperture into which an externally threaded valve unit may be readily assembled and disassembled without disruption of the rest of the structure.

Although only one form of the invention has been shown and described in detail it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A liquid wax applicator comprising a housing forming a reservoir for a supply of liquid wax, said housing having a bottom plate formed with a central aperture, said housing also having a partition plate extending transversely and horizontally therewithin in parallel spaced relation above said bottom plate and defining the bottom limit of the wax reservoir within said housing, said partition plate having a circular opening therethrough in line with the bottom plate aperture, a valve unit, screwthreaded means mounting said valve unit in closure relation to said partition plate-opening, said bottom plate aperture being so dimensioned as to permit free access therethrough to said valve unit and passage of the latter through said aperture in connection with valve unit assembly and disassembly operations, said valve unit comprising a base plate larger than said opening and bored to provide therethrough a valve port, a valve plate pivotally mounted upon said base plate to close said valve port, a crank arm extending from said valve plate, spring means arranged between said base plate and said crank arm for normally biasing said valve plate into port-closed position, a valve stem connected at one end to said crank arm so as to be freely rotatable thereon but fixed so as to push against said crank arm to raise said valve plate to open said valve port, said valve stem being extended through a side wall portion of said housing in screwthreaded relation therein whereby rotations of said valve stem in opposite directions procure axial displacements of said valve stem in corresponding directions, handle means pivotally connected to the outer end of said valve stem whereby to be pivotable in vertical directions relative to said casing while at the same time said handle means may be employed to push and pull said device back and forth across a floor surface or the like, and whereby rotations of said handle about the longitudinal axis thereof will regulate the degree of opening of said valve and the rate of flow of wax from said reservoir through the valve and through the bottom plate aperture, a porous fabric stretched across the bottom of said bottom plate, band means encircling the marginal edges of said fabric and clamping the latter against said housing, and elastic bumper means extending around the side wall bottom edges of said housing.

2. A liquid wax applicator comprising a housing forming a reservoir for a supply of liquid wax, said housing having a bottom plate formed with a central aperture, said housing also having a partition plate extending transversely and horizontally therewithin in parallel spaced relation above said bottom plate and defining the bottom limit of the wax reservoir within said housing, said partition plate having a circular opening therethrough in line with the bottom plate aperture, a valve unit mounted in closure relation to said partition plate-opening, said bottom plate aperture being so dimensioned as to permit free access therethrough to said valve unit and passage of the latter through said aperture in connection with valve unit assembly and disassembly operations, said valve unit comprising a member bored to provide therethrough a valve port, a valve plate pivotally mounted upon said member to close said valve port, a crank arm extending from said valve plate, spring means arranged between said member and said crank arm for normally biasing said valve plate into port-closed position, a valve stem connected at one end to said crank arm so as to be freely rotatable thereon but fixed so as to push against said crank arm to raise said valve plate to open said valve port, said valve stem being extended through a side wall portion of said housing in screwthreaded relation therein whereby rotations of said valve stem in oppo-

site directions procure axial displacements of said valve stem in corresponding directions, and handle means pivotally connected to the outer end of said valve stem whereby to be pivotable in vertical directions relative to said casing while at the same time said handle means may be employed to push and pull said device back and forth across a floor surface or the like, and whereby rotations of said handle about the longitudinal axis thereof will regulate the degree of opening of said valve and the rate of flow of wax from said reservoir through the valve and through the bottom plate aperture.

3. A liquid wax applicator comprising a housing forming a reservoir for a supply of liquid wax, said housing having a bottom plate formed with a central aperture, said housing also having a partition plate extending transversely and horizontally therewithin in parallel spaced relation above said bottom plate and defining the bottom limit of the wax reservoir within said housing, said partition plate having a circular opening therethrough in line with the bottom plate aperture, a valve unit mounted in closure relation to said partition plate-opening, said bottom plate aperture being so dimensioned as to permit free access therethrough to said valve unit and passage of the latter through said aperture in connection with valve unit assembly-disassembly operations, said valve unit comprising a member bored to provide therethrough a valve port, a valve plate pivotally mounted upon said member to close said valve port, means arranged for normally biasing said valve plate into port-closed position, a valve stem connected at one end to said valve plate so as to be operable upon rotation to raise said valve plate to open said valve port, said valve stem being extended through a side wall portion of said housing and terminating in handle means employed to push and pull said device back and forth across a floor surface or the like, whereby rotations of said handle about the longitudinal axis thereof will regulate the degree of opening of said valve and the rate of flow of wax from said reservoir through the valve and through the bottom plate aperture.

4. A liquid wax applicator comprising a housing forming a reservoir for a supply of liquid wax, said housing having a plate formed with an opening, a valve unit mounted upon said plate-opening, said valve unit comprising a member bored to provide therethrough a valve port, a valve plate pivotally mounted upon said member to close said valve port, a crank arm extending from said member, spring means arranged between said member and said crank arm for normally biasing said valve plate into port-closed position, a valve stem connected at one end to said crank arm so as to be freely rotatable thereon but fixed so as to push against said crank arm to raise said valve plate to open said valve port, said valve stem being extended through a side wall portion of said housing in screwthreaded relation therein whereby rotations of said valve stem in opposite directions

procure axial displacements of said valve stem in corresponding directions, handle means pivotally connected to the outer end of said valve stem whereby to be pivotable in vertical directions relative to said casing while at the same time said handle means may be employed to push and pull said device back and forth across a floor surface or the like, and whereby rotations of said handle about the longitudinal axis thereof will regulate the degree of opening of said valve and the rate of flow of wax from said reservoir through the valve and through the bottom plate aperture, a porous fabric stretched across the bottom of said bottom plate, means encircling the marginal edges of said fabric for clamping the latter against said housing, and elastic bumper means extending around the side wall bottom edges of said housing.

5. A liquid wax applicator comprising a housing forming a reservoir for a supply of liquid wax, said housing having a bottom plate formed with an aperture, said housing also having a partition plate extending above said bottom plate and defining the bottom limit of the wax reservoir within said housing, said partition plate having a circular opening therethrough in line with the bottom plate aperture, a valve unit detachably mounted upon said partition plate opening, said bottom plate aperture being so dimensioned as to permit free access therethrough to said valve unit and passage of the latter through said aperture in connection with valve unit assembly-disassembly operations, said valve unit comprising a member bored to provide therethrough a valve port, a valve mounted upon said member to close said valve port, a valve stem connected at one end to said valve so as to be freely rotatable and fixed so as to open and close said valve when rotated, said valve stem being extended through a side wall portion of said housing in screwthreaded relation therein whereby rotations of said valve stem in opposite directions procure axial displacements of said valve stem in corresponding directions for operation of said valve, handle means connected to the outer end of said valve stem to be employed to push and pull said device back and forth across a floor surface or the like, and whereby rotations of said handle about the longitudinal axis thereof will regulate the degree of opening of said valve and the rate of flow of wax from said reservoir through the valve and through the bottom plate aperture, and a porous fabric stretched across the bottom of said bottom plate.

CARL J. WILLIAMS, JR.

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