Oct. 22, 1963 I. JEPSON ETAL 3,107,378

FLOOR CONDITIONER

Filed Oct. 13, 1961 4 Sheets-Sheet 1

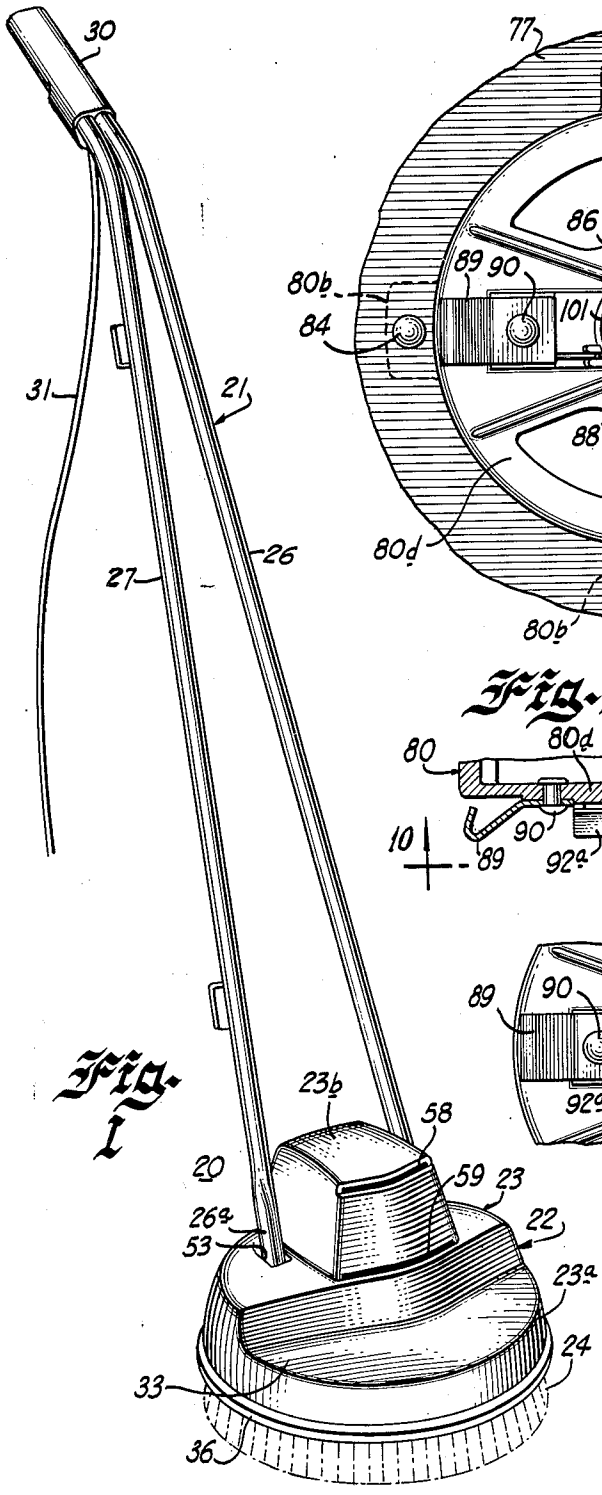


Fig. 1

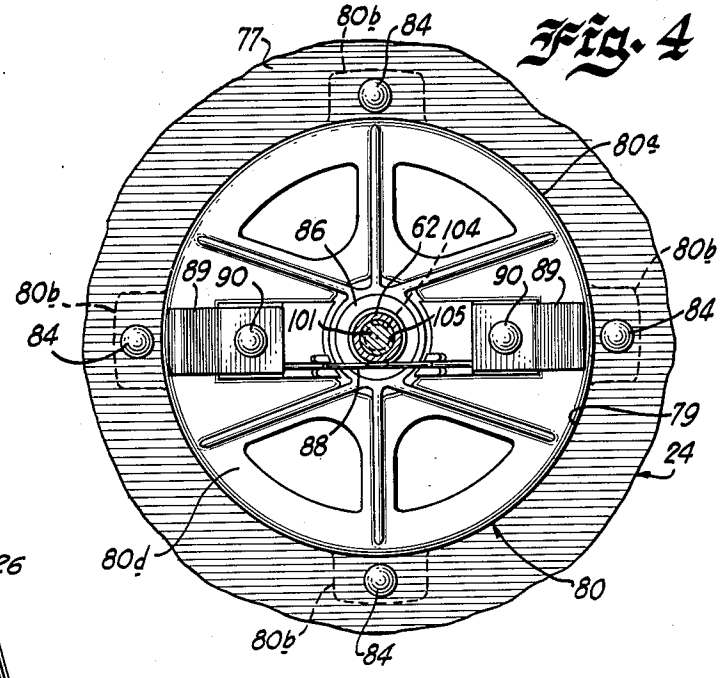


Fig. 4

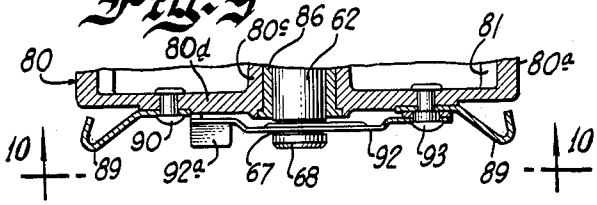


Fig. 9

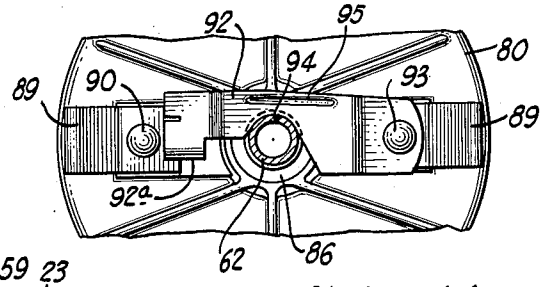


Fig. 10

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Oct. 22, 1963 I. JEPSON ETAL 3,107,378

FLOOR CONDITIONER

Filed Oct. 13, 1961 4 Sheets-Sheet 2

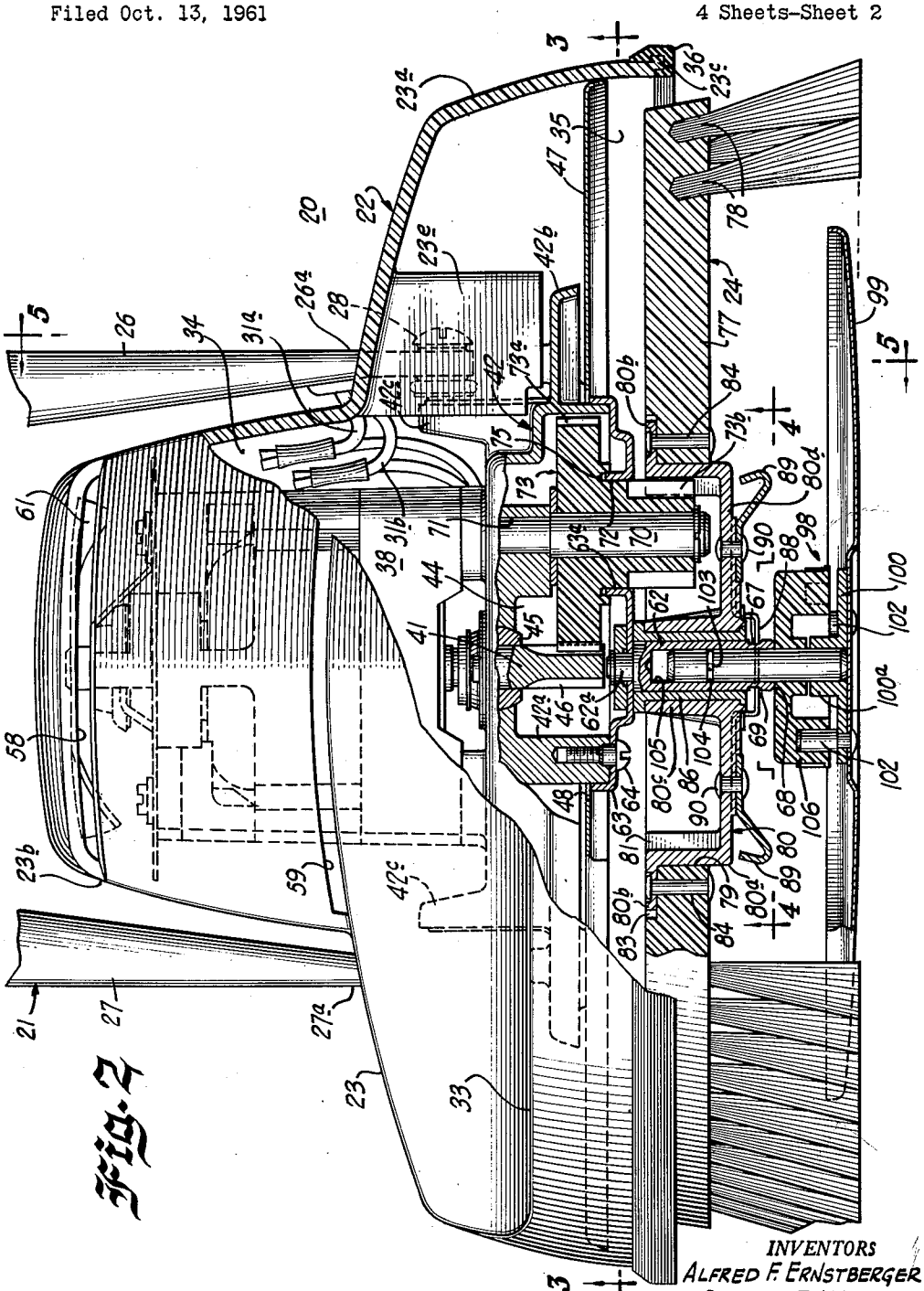


FIG. 2

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Filed Oct. 13, 1961 4 Sheets-Sheet 3

Fig. 3

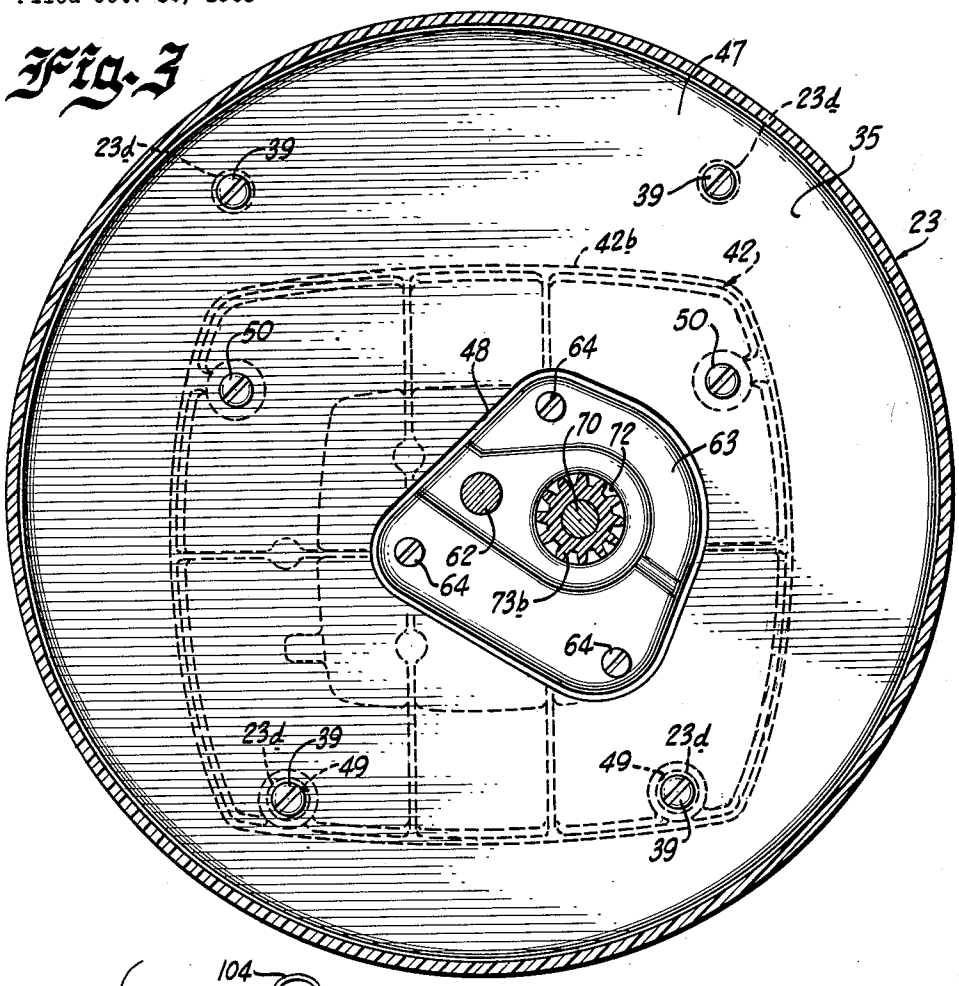
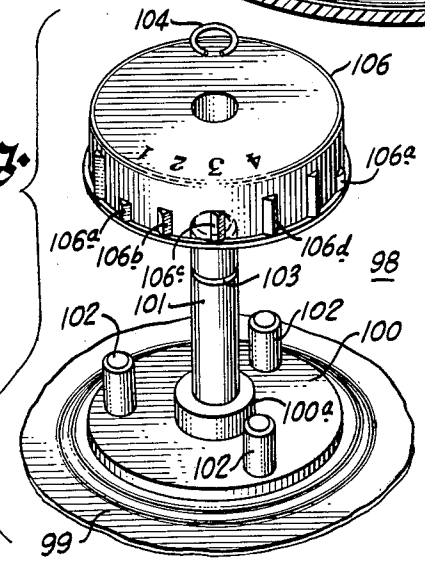


Fig. 7



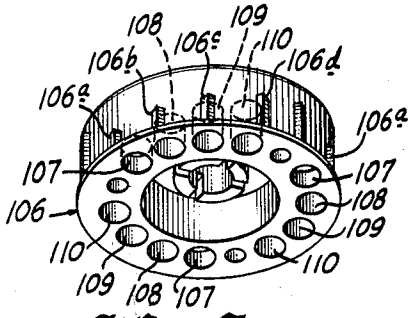


Fig. 8

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Oct. 22, 1963 I. JEPSON ETAL 3,107,378

FLOOR CONDITIONER

Filed Oct. 13, 1961 4 Sheets-Sheet 4

FIG. 5

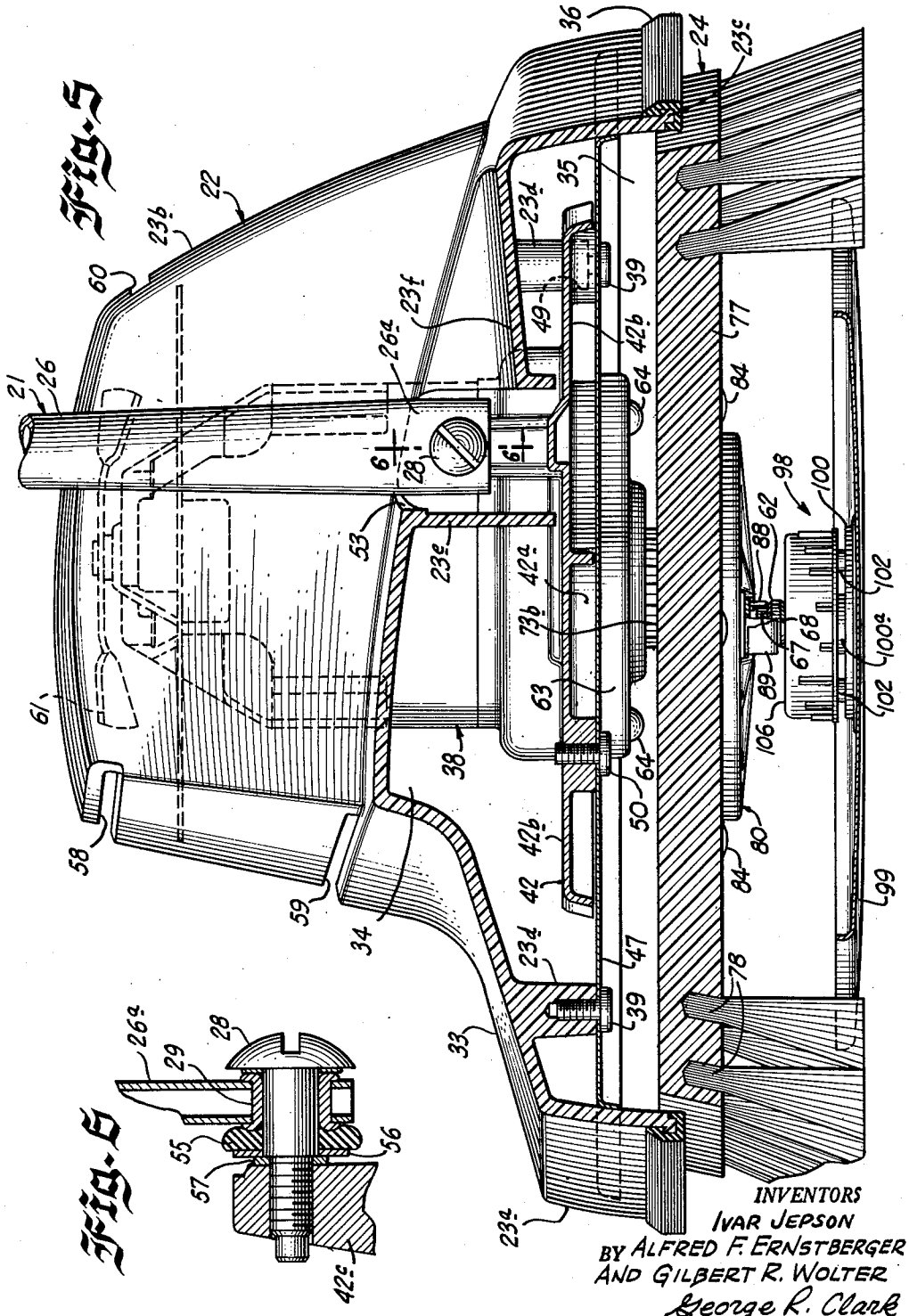


FIG. 6

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United States Patent Office 3,107,378 Patented Oct. 22, 1963

3,107,378

FLOOR CONDITIONER

Ivar Jepson, Oak Park, Alfred F. Ernstberger, Broadview, and Gilbert R. Wolter, Elmhurst, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 13, 1961, Ser. No. 144,890
14 Claims. (Cl. 15—49)

The present invention relates to a combined floor conditioner and rug cleaner, and more particularly to a single brush type floor conditioner.

Until a few years ago, it was common practice to get professional rug cleaners to clean the rugs in homes. In fact, it was common practice to get professionals to condition all sorts of floors. In recent years, however, there have become available various types of floor conditioners, and more recently combined floor conditioners and rug cleaners. It will readily be appreciated that most homes today have a number of different types of floors to be conditioned when one considers that some floors are covered with rugs, others with various tiles, such as vinyl or plastic tile or linoleum, and still others are in natural wood. It would be desirable to provide an all-purpose floor conditioner which can be used to clean, wax or polish floors whether they be of wood, tile, linoleum or the like, and furthermore which conditioner is also capable of cleaning rugs and carpets. It would furthermore be desirable that such rug cleaner and floor conditioner be capable of bringing professional type floor care methods to the home at a cost which is substantially lower than has heretofore been available.

Accordingly, it is an object of the present invention to provide a new and improved, inexpensive, all-purpose floor conditioner which is simple and compact, which is of sturdy construction, and which will give long years of satisfactory operation.

It is another object of the present invention to provide an improved floor conditioner and rug cleaner having a single rotating brush.

Still another object of the present invention resides in the provision of an improved single brush floor conditioner and rug cleaner which can be manufactured and sold at such a low cost as to be available for use by substantially every household.

A still further object of the present invention resides in an improved rug cleaning attachment which insures proper cleaning for all types of rugs.

Further objects and advantages of the present invention will become apparent as the following description proceeds and the features of novelty which characterize the invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of the present invention reference may be had to the accompanying drawings in which:

FIG. 1 is a perspective view of the single brush all-purpose floor conditioner and rug cleaner of the present invention;

FIG. 2 is an enlarged front elevational view of the lower portion of the floor conditioner of FIG. 1 with certain portions thereof cut away more fully to illustrate the invention and with the removable rug cleaning attachment shown associated with the floor conditioner;

FIG. 3 is a sectional view to a slightly reduced scale taken on line 3—3 of FIG. 2, assuming that FIG. 2 shows the complete structure;

FIG. 4 is a sectional view taken on line 4—4 of FIG. 2, again assuming that FIG. 2 shows the complete structure;

FIG. 5 is a sectional view taken on line 5—5 of FIG. 2, again assuming that FIG. 2 shows the complete structure;

FIG. 6 is a fragmentary sectional view taken on line 6—6 of FIG. 5;

FIG. 7 is an exploded perspective view of the removable rug cleaning attachment of the present invention with a portion thereof cut away;

FIG. 8 is a perspective view of one element of FIG. 7 shown in a different perspective from that of FIG. 7;

FIG. 9 is a fragmentary sectional view of a portion of FIG. 2 illustrating a modification of the present invention; and

FIG. 10 is a fragmentary view looking in the direction of the arrows 10—10 of FIG. 9, assuming that FIG. 9 shows the complete structure.

Briefly, the present invention is concerned with a single brush type floor conditioner which requires a circular housing, but which has at the forward portion thereof a very low design so that it may readily reach under low furniture and cabinet extensions. Furthermore, the device is provided with a protective vinyl bumper to prevent marring furniture. An improved means for removably locking the single brush in position is provided, and an improved rug cleaning attachment is also provided which will insure proper cleaning of any type of rug. Adjustment of the rug cleaning attachment for different types of rugs can be made in a matter of seconds. Furthermore, the floor conditioner is designed to support an automatic liquid dispenser for various purposes, which liquid dispenser may be identical with that disclosed and claimed in copending Jepson et al. application, Serial No. 106,085, filed April 27, 1961 and Design Patent 191,195, Corwall, Jr., both assigned to the same assignee as the instant application.

Referring now to the drawings, there is illustrated a floor conditioner generally designated by the reference numeral 20, which floor conditioner comprises a handle assembly generally designated by the reference numeral 21 pivotally mounted to a housed power unit generally designated by the reference numeral 22, which unit is enclosed in a housing 23. Associated with the unit 22 is a large circular rotating brush, best shown in FIGS. 2 and 5, designated by the reference numeral 24. The handle assembly 21 above the power unit 22 is adapted to removably support a liquid dispenser, not shown in the drawings but identical with that disclosed in the above-mentioned patent, Des. 191,195 granted August 29, 1961, the mechanical details of which are disclosed and claimed in the above-mentioned copending Jepson et al application.

The handle assembly 21 is preferably identical in every respect with the handle assembly disclosed in the above-mentioned copending Jepson et al. application, and identical with that disclosed in Des. 191,097, granted August 15, 1961, and assigned to the same assignee as the instant application. Briefly, it comprises a pair of tubular members 26 and 27, the upper ends of which are preferably secured together by welding, and the lower portions of which diverge and terminate in flattended portions 26*a* and 27*a*, best shown in FIGS. 2, 5 and 6 of the drawings. The lower ends of the handle assembly 21 diverge sufficiently to receive therebetween a portion of the power unit 22, to which the handle assembly 21 is pivotally mounted as by shouldered pivot bolts 28 (FIGS. 5 and 6). Preferably a tubular bearing member 29 (FIG. 6) is supported in aligned openings formed in the walls of each of the flattened ends 26*a* and 27*a* of the handle assembly 21 to provide bearings for the pivot bolts 28.

The upper ends of the tubular members 26 and 27 of the handle assembly 21 are enclosed within a molded sleevelike handle grip member 30 which, as is disclosed in the abovementioned copending Jepson et al. application, also houses a suitable control switch, not shown, for controlling the electric energy supplied from the power cord 31 to the power unit 22. Actually, this

power cord **31**, suitably connected to the switch housed within the handle grip member **30**, extends through the hollow tube **26**, and at the lower end thereof the power cord **31** is illustrated as coming out through a suitable opening in the wall of the tubular member **26** so as to enter the housing **23**, the two conductors of the power cord being designated as **31***a* and **31***b* in FIG. 2 of the drawings. This arrangement forms no part of the present invention but is identically disclosed in the copending Jepson et al. application referred to above. It should be understood that the handle assembly **21** is designed to support the liquid dispenser disclosed in patent, Des. 191,195, referred to above, in exactly the same manner illustrated in the aforesaid copending Jepson et al. application.

Considering now the power unit **22**, which, as mentioned above, includes the housing **23**, the latter is preferably molded from a suitable plastic but it might also comprise a die casting of a light metal. For the purpose of accommodating the single circular brush **24**, which is at least partially housed within the housing **23** and driven from the power unit **22**, the lower portion of the housing **23** is a circular housing portion designated as **23***a* open at the bottom and at the front having a very shallow depth so as to define what has sometimes been characterized as a "low toe," best shown in FIGS. 1 and 5 and designated by the reference numeral **33**. The housing **23** also includes an upper housing portion **23***b* of much smaller cross-sectional area, as clearly shown in FIG. 1 of the drawings. These two housing portions **23***a* and **23***b* are preferably formed as a unitary structure. The housing **23** thus defines a motor chamber **34** primarily defined by the upper smaller housing portion **23***b* and part of housing portion **23***a* and a brush chamber **35** (FIGS. 2, 3 and 5) defined solely in the housing portion **23***a*.

The periphery of the open bottom of the housing portion **23***a* is provided with a bumper strip or ring **36** of a suitable molded plastic or other material in the form of an endless ring. Preferably the housing portion **23***a* is provided with an interlocking rim portion **23***c* which interlocks with the bumper ring **36** to hold the same in assembled relationship therewith. It will be appreciated that the bumper strip **36** is the most projecting portion of the power unit **22** and, hence, the portion that engages furniture and the like. By virtue of the low silhouette **33** of the front portion of housing **23**, it will be appreciated that the floor conditioner may reach recessed areas such as the toe spaces under various cabinetry and the like. Actually, the resilience of housing portion **23***a* also acts as a cushion when the conditioner **20** bumps into solid objects.

For the purpose of securing a suitable electric motor unit, generally designated by the reference numeral **38** (FIGS. 2 and 5), within the housing **23**, the latter is provided with a plurality of spaced integral tubular projections such as **23***d* (four being shown in FIGS. 3 and 5) containing openings to receive suitable self-tapping screws **39** for clamping the motor unit **38** in assembled relationship with the housing **23**.

The motor unit **38** forms no part of the present invention and may comprise any suitable electric motor mounted so that the axis of its armature shaft, designated as **41** (FIG. 2), is vertically disposed. Moreover, the lower end of motor unit **38** is secured by suitable fastening means, not shown, to motor base **42**, the latter being in the form of a die casting having a somewhat centrally disposed depending wall portion **42***a* defining a recess **44** on the under side thereof serving as a gear chamber. The motor base has a skirt portion **42***b* extending beyond the motor unit **38** but spaced from the walls of the circular housing portion **23***a* so as not to interfere with the cushioning action of housing **23***a*. The base **42** has an opening leading to gear chamber or recess **44**, and a bearing **45** for the lower end of motor shaft **41** is supported in this opening. Thus, the lower end of motor shaft **41**, which has a helical spur gear **46** defined thereon, extends into gear chamber **44**.

In order to divide the housing **23** into a motor chamber **34** and brush chamber **35**, there is provided a bottom plate **47**. This bottom plate **47** has a central opening **48** through which the walls **42***a* defining the gear chamber **44** may protrude. The screws **39** described above hold the forward portion of the bottom plate **47** directly to the projection **23***d*, while the rear screws **39**, best shown in FIG. 3 of the drawings, clamp the bottom plate **47** and the skirt portion **42***b* of base plate **42** to the rear projections **23***d*. As best shown in FIG. 5 of the drawings, the skirt portion **42***b* has a pair of spaced recesses **49** (only one visible in FIG. 5) on the upper side thereof for receiving the ends of rear projections **23***d*. Two additional screws **50** are provided (FIGS. 3 and 5) to secure the forward portion of the skirt **42***b* of the base plate **42** to the bottom plate **47**.

The base **42** of the motor unit **38** also includes integral upwardly directed projections or ears **42***c* on either side thereof (FIGS. 2 and 6). These upwardly directed projections **42***c* are provided with tapped openings for receiving the pivot bolts **28**, whereby the handle assembly is effectively pivoted to the motor unit **38** rather than to the housing **23**. This arrangement permits the housing **23** to be molded of an inexpensive plastic since it does not function as a support for the handle, which, instead, is directly secured to the motor unit **38**. In order that the flattened portions **26***a* and **27***a* of the handle assembly **21** may be pivotally related to the ears **42***c*, the housing **23** is provided on either side with suitable openings **53** (FIGS. 1 and 5). Moreover, the housing **23** is provided with integral depending projections **23***e* partially surrounding the openings **53**, as best shown in FIGS. 2 and 5 of the drawings.

To provide frictional resistance between the handle assembly **21** and the motor base **42**, there preferably is interposed between the flattened portions **26***a* and **27***a* of the handle assembly **21** and each of the ears **42***c* a resilient washer or handle pad **55** and metal washers **56** and **57** (FIG. 6), the resilient washer **55** being compressed so as to provide a certain amount of friction against pivotal movement of the handle assembly **21**. The forward portions of the openings **53** limit the forward movement of the handle assembly **21** so that the handle cannot pivot in a counterclockwise direction as viewed in FIG. 5 of the drawings about the axis of pivot screws **28** to a much greater extent than that shown. In a rearwardly direction, however, the handle assembly **21** may pivot until it engages an integral wall portion **23***f*, best shown in FIG. 5 of the drawings, whereby the handle assembly may be pivoted so that the longitudinal axis thereof is substantially parallel with the plane of the base plate **47**. This is desirable for storage purposes so that the floor conditioner **20** will not be required to rest on the brush **24**.

So that cooling air for cooling the motor unit **38** may readily enter and exhaust from the housing **23**, the latter is preferably provided with suitable openings such as slits **58**, **59** and **60** (FIG. 5), the openings **58** and **59** being at the front of the housing **23** and the opening **60** being at the rear of the housing **23**. The motor unit **38** preferably includes a cooling fan **61** (FIGS. 2 and 5) which causes air to flow through these openings for cooling the motor windings.

For the purpose of rotatably supporting the brush **24**, there is provided a tubular stub shaft **62** (FIGS. 2, 4, 9 and 10) which has a solid portion of reduced cross section **62***a* at one end thereof, which portion **62***a* extends through a cover member **63** for the gear chamber **44**. The shaft **62** is suitably secured to cover member **63** as by staking or the like, as best shown in FIG. 2 of the

drawings, so as to provide a rigid stationary tubular depending shaft when cover member **63** is secured to base **42** by suitable screws **64** thereby to close the open bottom of the gear chamber **44**. The tubular shaft **62** thus provides a vertical axis about which the brush **24** rotates as described hereinafter. This shaft **62** includes at the lower end thereof an annular recess **67** which is in effect an annular brush retaining groove. Moreover, the lower end of the shaft **62** is provided with a circular bevel or chamfer **68**, and the side wall of the brush retaining groove **67** most closely adjacent the chamfer **68** is also bevelled as indicated at **69**, the purpose of which will become apparent from the ensuing description.

In order that motor unit **38** may be drivingly related to brush **24** to rotate the same about the axis of tubular shaft **62**, there is provided a stub shaft **70** disposed in spaced parallel relationship with motor shaft **41** and having one end thereof secured to motor base **42** within gear chamber **44**. Shaft **70** is preferably a stationary shaft just like tubular shaft **62**, and may be press-fitted into a suitable opening **71** (FIG. 2) in motor base **42**. The other end of shaft **70** projects through a flanged opening **72** in gear cover **63**. A suitable step gear **73** of nylon or the like is rotatably mounted upon stationary shaft **70**. This step gear **73** has a large diameter gear portion **73***a* in driving engagement with the gear **46** on the end of motor shaft **41**, and an integral small diameter gear portion **73***b* which projects through the flanged opening **72** in cover **63** into the brush chamber **35** for driving the brush in a manner which will be described hereinafter. In order that lubricant contained within gear chamber **44** will not escape through the opening **72**, the cover **63** is provided with an annular flange **63***a* around opening **72**, which flange is received in a cooperating annular groove **75** in the lower face of large diameter gear portion **73***a* of step gear **73**.

The brush **24**, as is best shown in FIGS. 2, 4 and 5 of the drawings, comprises an annular backing member **77** which may be formed of wood, plastic, pressed wood or the like. The bristles of the brush **24** are arranged in the form of tufts **78**. In an embodiment built in accordance with the present invention, two annular rows of tufts **78** were provided for the single brush, as clearly shown in FIGS. 2 and 5 of the drawings. The annular backing member **77** has an outer diameter somewhat smaller than the diameter of brush chamber **35**, and has a center opening **79** (FIG. 2) for receiving therein a combined gear and support member **80** preferably comprising a die casting in the form of an annular ring **80***a* having internal gear teeth **81** defined on the inside of the ring. A plurality of laterally projecting ears **80***b* (FIGS. 2 and 4) integrally formed with the die casting **80** are received in cooperating recesses **83** defined in the top surface of the backing member **77**. Suitable rivets or other fastening means **84** secure the die casting **80** to the backing member **77**. The die casting **80** also comprises a central hub portion **80***c* concentrically disposed with the ring portion **80***a* supporting the gear teeth **81** and integrally connected thereto by a central spider portion **80***d*. Preferably a suitable bearing **86** is disposed within the opening defined by the tubular hub portion **80***c*, the bearing **86** being adapted to receive therein stationary tubular shaft **62**. It will be apparent from the above description that when the tubular shaft **62** is received within the bushing **86** of brush **24**, the gear portion **73***b* of gear **73** drivingly engages the gear teeth **81** so that energization of the motor unit **38** will cause rotation of brush **24**.

In order removably to secure the brush **24** to the tubular stationary shaft **62**, as shown in FIGS. 2 and 4 of the drawings, there is provided a wirelike spring brush retainer **88** suitably secured to the spider portion **80***d* of die casting **80**. This brush retainer, as best shown in FIG. 2 of the drawings, has a central depending U-shaped portion, the bight of which U-shaped portion is adapted to be received in the brush retaining groove **67** in stationary shaft **62**. It will be apparent that the bevel or chamfer **68** will cause the brush retainer **88** to be deflected when the brush is applied to the shaft **62** and the inherent resilience of the spring brush retainer **88** will cause it to enter the groove **67** as clearly indicated in FIG. 5 of the drawings. The beveled edge **69** of the groove **67** will, of course, cause deflection of the brush retainer when a force is applied tending to move the brush along the longitudinal axis of the stub shaft **62** in a direction to remove the brush from such stub shaft.

So that the user may readily grasp the brush for removing the same, a pair of diametrically opposed finger grip portions **89** are provided which are suitably riveted as by fastening means **90** to the die casting **80** as best shown in FIGS. 2 and 4 of the drawings. As illustrated in the drawings, the finger grip portions **89** may actually be used to secure the brush retainer **88** to the brush **24**. The particular brush retainer described is very similar to that disclosed and claimed in copending Jepson et al. application referred to above.

In certain situations it may be desirable to have a more positive brush retaining means than that described and in FIGS. 9 and 10 of the drawings there is illustrated a modification of the brush retainer of the present invention. The corresponding parts of FIGS. 9 and 10 are designated by the same reference numerals as in the preceding embodiments. As there illustrated, the wire brush retainer **88** has been omitted and in its stead there is provided a pivotal brush retaining member **92** which is pivoted to a shouldered rivet **93** which secures one of the finger grip members **89** to the die casting **80**. The pivotal brush retainer **92** is provided with a semi-circular recess **94**, the edges of which are receivable in the annular brush retaining groove **67** of stationary shaft **62** in the same manner as the spring brush retainer **88** of the preceding embodiment was received therein. Preferably, brush retainer **92** is provided with a finger engaging depending portion **92***a* which may readily be actuated by the user of the floor conditioner **20** to pivot the brush retainer **92** out of its retaining position when it is desired to remove the brush **24** from the floor conditioner. Preferably suitable spring means **95** or the like are provided to bias the retainer into its brush retaining position shown in FIGS. 9 and 10 of the drawings.

An important feature of the present invention resides in the rug cleaning attachment, best shown in FIG. 7 of the drawings and generally designated by the reference numeral **98**. A rug cleaning attachment is effectively a support for supporting the floor conditioner so that the brush **24** is disposed in a predetermined relationship with respect to the rug being cleaned. Actually, the brush **24** during a rug cleaning operation should lightly touch the rug and it will be appreciated that with the many different types of rugs available, such as deep pile rugs and short pile rugs, such a rug cleaning attachment must be readily adjustable for supporting the floor conditioner and particularly the brush **24** at the desired position. As best shown in FIGS. 2, 5, 7 and 8 of the drawings, the rug cleaning attachment **98** comprises a generally circular support plate **99** of a diameter slightly smaller than the diameter of the inner ring of tufts **78**. Secured to the center of circular support plate **99** is a rigid pin supporting plate **100** having a central hub **100***a* defining an opening for receiving a suitable rodlike member or shaft **101** which may be press-fitted or otherwise secured therein. A plurality of uniformly spaced pins or projecting members **102** all equidistant from the shaft **101** project from the plate **100** in the same direction as the central shaft **101**. Preferably, the pins **102**, best shown in FIG. 2 of the drawings, are in the form of rivets which also function to secure the central rigid plate **100** to the support plate **99**. Preferably, the shaft **101** is provided with an annular recess **103** for receiving a suitable C-shaped

friction ring **104**. The central shaft **101** is adapted to be slidably received within the central opening or recess **105** (FIG. 2) defined by tubular shaft **62**. The spring retainer **104** provides sufficient friction so that the shaft **101** can readily be moved to different positions in recess **105** but will not fall out when the floor conditioner **20** is lifted and moved to different positions.

For the purpose of changing or adjusting the height at which the rug cleaning attachment **98** supports the brush **24** from the surface to be cleaned, there is provided selectively adjustable means in the form of an adjustment ring **106** which is preferably formed of a molded plastic and which is adapted to be mounted on the shaft **101** to change the spacing between the lower end of tubular shaft **62** and the support means comprising plates **99** and **100**. The retaining ring **104** also prevents the adjustment ring **106** from sliding off the shaft **101**. The adjustment ring **106** includes a plurality of recesses of four different depths defined in the surface thereof adjacent the pins **102** for receiving these pins therein. These recesses are designated as **107**, **108**, **109** and **110**, respectively, the recesses **107** being the most shallow, the recesses **108** being slightly deeper, the recesses **109** being still deeper and the recesses **110** being the deepest recesses. Preferably suitable means in the form of projections **106***a*, **106***b*, **106***c* and **106***d* of various heights are provided on the periphery of ring **106** so the operator may readily grasp and rotate the ring. These projections, moreover, are disposed adjacent to openings **107**, **108**, **109** and **110**, respectively, readily to indicate the depth of the associated recess **107**, **108**, **109** or **110** by the height of the associated projection **106***a*, **106***b*, **106***c* or **106***d*, respectively. If desired, suitable indicia such as "1," "2," "3," and "4" may also be provided on the top of the ring **106**, as indicated in FIG. 7 of the drawings, to further indicate the recess depths. When the operator wishes to adjust the rug cleaning attachment, the adjustment ring **106** is lifted to remove the pins **102** from the recesses and then rotated so that the desired recesses **107**, **108**, **109** or **110** receive the pins **102** to give the desired height. Obviously, when the shallowest recesses **107** are used, the rug cleaning attachment will support the brush **24** at the maximum distance above the rug. This adjustment will be used for very deep pile rugs since the support or attachment **98** will sink into the deep pile and it is desirable to support the brush so it just lightly touches the rug. On the other hand, for the very short pile rugs the adjustment ring **106** is positioned so the deepest recesses **110** are effective to receive the pins **102**. It will be apparent that the rug cleaning attachment **98** can readily be removed or applied to the floor conditioner **20** by merely removing the shaft **101** or inserting the same into the recess **105** defined in the tubular stub shaft **62**. The end of the stub shaft **62** will engage the top of the adjusting ring **106** and give the desired spacing of the brush **24** above the rug to be cleaned.

In view of the detailed description included above, the operation of the floor conditioner **20** of the present invention and the rug cleaning attachment **98** therefor will readily be understood. It will also be appreciated that the liquid dispenser identical with that disclosed in the above-mentioned Jepson et al. application can readily be applied for dispensing the desirable liquids for cleaning floors and rugs. It will, furthermore, be appreciated that there has been provided a floor conditioner which is inexpensive to manufacture, which is of simple sturdy construction and which will give long years of satisfactory service.

While there have been illustrated and described particular embodiments of the present invention, numerous changes and modifications are likely to occur to those skilled in the art, and it is aimed in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the present invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A floor conditioner comprising a power unit, a tubular stationary shaft depending from said power unit, a removable brush rotatably mounted on said tubular shaft and drivingly connected to said power unit when mounted on said shaft, a rug cleaning attachment for supporting said conditioner including said brush on a rug to be cleaned with said brush engaging the surface of said rug in a predetermined manner, said rug cleaning attachment including a readily removable incompressible rigid rodlike member insertable into the opening in said tubular shaft.

2. A floor conditioner comprising a power unit, a handle assembly pivoted to said power unit, a tubular stationary shaft depending from said power unit, a removable brush rotatably mounted on said tubular shaft and drivingly connected to said power unit when mounted on said shaft, a rug cleaning attachment for supporting said conditioner including said brush on a rug to be cleaned with said brush lightly engaging the surface of said rug regardless of the type of rug to be cleaned, said rug cleaning attachment including a rodlike member insertable into said tubular shaft, and selectively adjustable means on said rodlike member for selectively determining the height at which said floor conditioner is supported above a rug to be cleaned.

3. The floor conditioner of claim 1, wherein support means are secured to the lower end of said rodlike member, said support means including projecting members disposed in spaced parallel relationship with said rodlike member, and adjustable means rotatably mounted on said rodlike member including recesses of various depths for selectively receiving said projecting member.

4. A floor conditioner comprising a power unit, a handle assembly pivoted to said power unit, a tubular stationary shaft depending from said power unit, an annular brush rotatably mounted on said tubular shaft and drivingly connected to said power unit when mounted on said shaft, a rug cleaning attachment for supporting said conditioner including said brush on a rug to be cleaned with said brush engaging the surface of said rug in a predetermined manner, said rug cleaning attachment including a rodlike member insertable into the opening in said tubular shaft, support means secured to said rodlike member, an adjusting ring rotatable about said rodlike member and interposed between the lower end of said tubular shaft and said support means, and cooperating means on said support means and said ring for selectively adjusting the spacing between said support means and said tubular shaft.

5. The floor conditioner of claim 4, wherein said adjusting ring is provided with recesses of different depths for selectively receiving a projecting member on said support means.

6. For use with a floor conditioner of the type comprising a power unit having a tubular stationary shaft depending therefrom and an annular brush rotatably mounted on said tubular shaft and drivingly connected to said power unit when mounted on said shaft; the combination of a rug cleaning attachment for supporting said conditioner including said brush on a rug to be cleaned with said brush engaging the surface of said rug in a predetermined manner, said rug cleaning attachment including a rodlike member insertable in the opening in said tubular shaft, support means secured to said rodlike member, an adjusting ring rotatable about said rodlike member and interposed between the lower end of said tubular shaft and said support means, and cooperating means on said support means and said ring for selectively adjusting the spacing between said support means and said end of said tubular shaft.

7. For use with a floor conditioner of the type comprising a power unit, a handle assembly pivoted to said

power unit, a tubular stationary shaft depending from said power unit and an annular brush rotatably mounted on said tubular shaft and drivingly connected to said power unit when mounted on said shaft; the combination of a rug cleaning attachment for supporting said conditioner including said brush on a rug to be cleaned with said brush lightly engaging the surface of said rug regardless of the type of rug, said rug cleaning attachment including a rodlike member insertable into the opening in said tubular shaft, support means secured to said rodlike member, an adjusting ring rotatable about said rodlike member and interposed between the lower end of said tubular shaft and said support means, and cooperating means on said support means and said ring for selectively adjusting the spacing between said support means and said end of said tubular shaft including a plurality of pins projecting from said support means and recesses of different depths for receiving said pins defined in said ring.

8. The rug cleaning attachment of claim 6, wherein said rodlike member is provided with friction means to permit movement thereof when disposed within said opening and yet to prevent undesired separation of said attachment from said floor conditioner.

9. The rug cleaning attachment of claim 7, wherein the periphery of said ring is provided with finger engaging projections of different heights, the heights corresponding to the depths of adjacent recesses.

10. A floor conditioner comprising a power unit including an electric motor and an output gear driven by said electric motor, a gear chamber in said power unit including an access opening leading to said chamber, said output gear being disposed outside said gear chamber, a cover for said access chamber, a stationary shaft secured to said cover and depending below said power unit, and a circular brush rotatably mounted on said shaft and including means drivingly connected to said output gear when said brush is mounted on said shaft.

11. A floor conditioner comprising a power unit, a handle assembly pivoted to said power unit, said power unit including an electric motor and an output gear driven by said electric motor, a gear chamber in said power unit for at least partially housing said output gear including an access opening leading to said gear chamber, a cover for said opening, said cover including means defining a cover opening in said cover through which at least a portion of said gear may project, cooperating means on said last-mentioned means and said gear for preventing the escape of lubricant contained in said gear chamber through said cover opening, a tubular stationary shaft secured to said cover and depending below said power unit, and a circular brush rotatably mounted on said tubular shaft and drivingly connected to said output gear when mounted on said shaft.

12. The floor conditioner of claim 11, wherein said brush is provided with a gear portion engageable with said output gear.

13. A floor conditioner comprising a power unit, a handle assembly pivoted to said power unit, a housing formed of a plastic material enclosing said power unit, said housing having a large circular lower portion defining a brush chamber and an upper portion of smaller cross-sectional area defining a chamber for said power unit, said power unit including an electric motor and an output gear driven by said electric motor, a base member for said power unit including an extending skirt of substantially less area than the cross-sectonal area of said circular housing portion, a circular bottom plate secured to said skirt and said housing to support said power unit in said housing, a stationary shaft secured to said power unit and depending therefrom, an annular brush rotatably mounted on said shaft and drivingly connected to said output gear when said brush is mounted on said shaft.

14. The floor conditioner of claim 13, wherein the top of the front of said circular housing portion is of low height to permit the front of said conditioner to enter toe spaces commonly provided in cabinetry.

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