July 1, 1958 A. J. BENEDETTI 2,840,839

COMBINATION LIQUID AND PASTE WAX APPLIER AND BUFFER

Filed Aug. 27, 1953

Fig. 1.

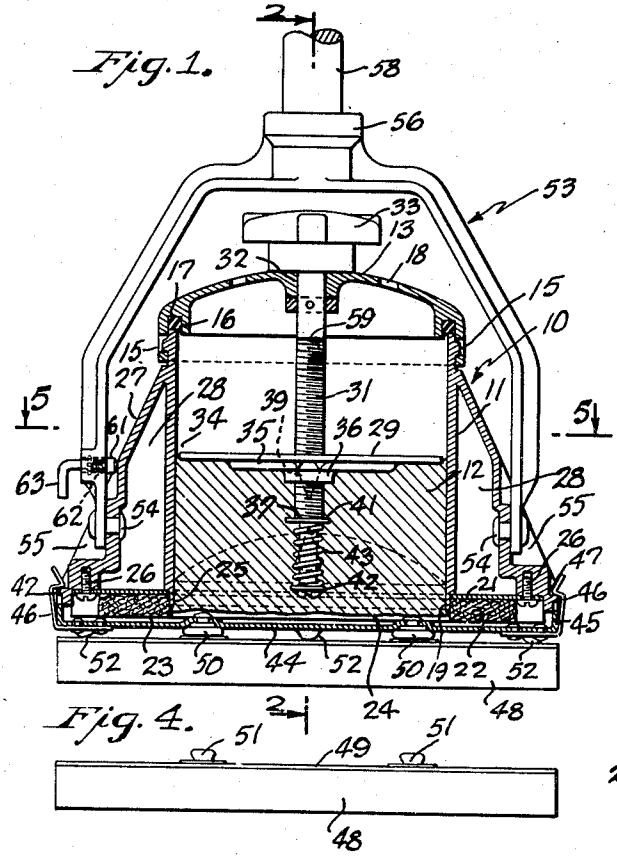


Fig. 2.

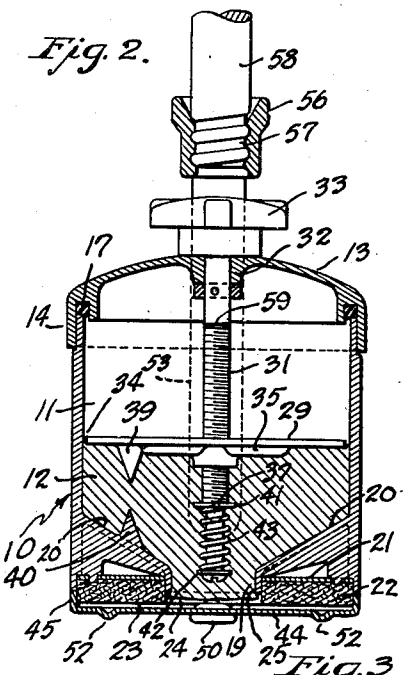


Fig. 3.

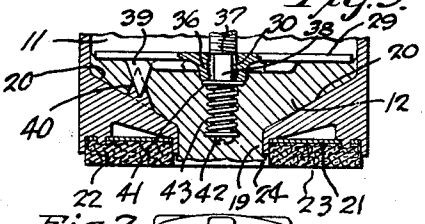


Fig. 4.

Fig. 5.

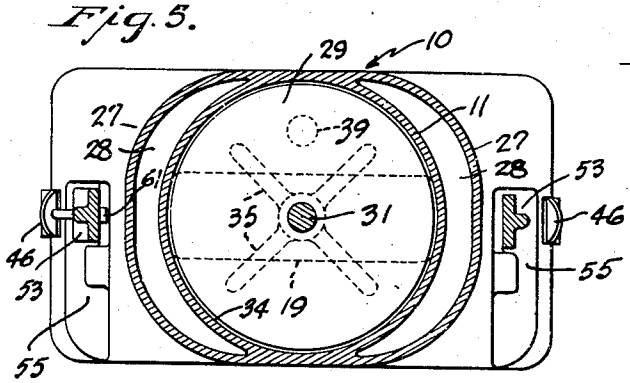


Fig. 6.

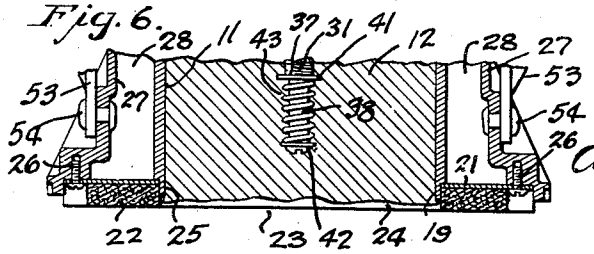
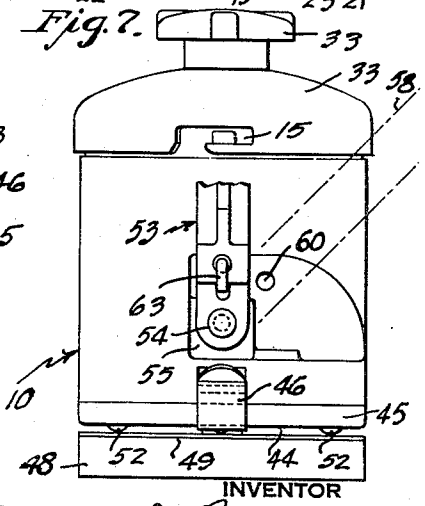


Fig. 7.



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COMBINATION LIQUID AND PASTE WAX APPLIER AND BUFFER

Amerigo J. Benedetti, Fairfield, Conn.

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6 Claims. (Cl. 15—124)

This invention relates to a combination liquid and paste wax applier and buffer, and has for an object to provide a simple and effective device for applying wax of a paste consistency evenly and smoothly to a surface, such, for example, as a floor surface, in waxing these floors and in preparation for polishing with a suitable means, such, for example, as a rotary brush type or other floor or surface polisher.

It is also an object to provide a device of this character with means whereby a polishing pad or the like may be secured to the under side of this device for polishing the surface to which the wax has been applied, so that this device may be used not only as the means of applying the wax to the surface but also as the means for polishing this surface.

Devices have been provided for applying liquid wax fairly evenly to floor surfaces and the like, but it has been difficult to secure a uniform, even application of a paste type of wax. It is therefore an object of this invention to provide a structure which will apply the paste type of wax uniformly and smoothly to the surface and provide a more even application of the wax, and also to perform this operation more easily and efficiently.

Another object is to provide a device of this character with means for more easily and uniformly supplying and feeding the wax to the applying point, and also providing an improved feeding means for the wax which will automatically indicate when the supply of wax in the container has been exhausted, and will prevent further operation of the feeding means and therefore protect the device against injury or breakage to any vital part thereof.

A further object is to provide means to prevent drying out and hardening of the wax during the time when the device is not in use.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown but may embody various changes and modifications within the scope of the invention.

In this drawing:

Fig. 1 is a partial side elevation and partial section of the device;

Fig. 2 is a section substantially at right angles to Fig. 1 and substantially on line 2—2 of Fig. 1;

Fig. 3 is a section similar to Fig. 2 of the lower part of the container showing the feeding means in its lower position;

Fig. 4 is a side elevation of the buffer removed from the device;

Fig. 5 is a transverse section substantially on line 5—5 of Fig. 1;

Fig. 6 is a longitudinal section of the lower portion of the device with the protective cover removed, and

Fig. 7 is a side elevation looking from the left of Fig. 1 and with the upper portion of the handle broken away.

This application is a continuation in part of my copending application Serial No. 232,187 filed June 18, 1951, and now abandoned, for patent for Paste Wax Applier.

This wax applier or applicator comprises a body 10 including an upright container 11 for the paste type of wax indicated at 12 to be applied to a suitable surface. The body may be made of any suitable material, such, for example, as metal or molded plastic, and the container 11 is preferably circular in cross section, although it could be of other shapes if desired. It is open at the top and closed by a suitable closure or cover 13 having a lower peripheral flange 14 telescoped with the upper end of the container and secured to it by any suitable means, preferably bayonet slot connections 15 as this type of connection may be more quickly and easily operated than a screw type connection, although this latter type may be used if desired. The cover is also provided with an internal groove 16 with a suitable gasket or packing 17 at the upper rim of the container to make a tight connection and also a yieldable connection for better operation of the bayonet slot securing means. The closure may also be provided with one or more openings 18 for passage of air.

In the bottom or lower wall of the body or container is an elongated and enlarged discharge or feed passage or opening 19 for feeding the wax from the container to the applying point, and at the lower part of the container the bottom wall includes surfaces 20 at the opposite longitudinal side edges of the opening or passage 19 and inclined upwardly and outwardly from these edges so that these surfaces incline downwardly and inwardly to the opposite longitudinal edges of this opening or passage to direct the wax to this passage and facilitate feeding of the wax from the container to the point of application. At the under side of the body is a base 21 to the under side of which is secured a fiber pad 22 having a flat under surface 23 for applying the wax to the floor or other surface, and this pad is provided with an enlarged elongated cavity 24 extending through it in alignment with the passage or opening 19 to receive the wax fed from the container. As will be seen in Figs. 2 and 3, the passage or opening 19 is a relatively wide passage, and as shown in Figs. 1, 5 and 6, it preferably extends the full width of the container, and therefore is a relatively large opening or passage for flow and feed of the wax to the cavity 24 in the applying pad 22. This cavity is also substantially the size of the passage, or it could be even larger, to provide a large cavity to hold a relatively large amount of the wax and also provide a large exposed surface of the wax in this cavity at the lower side of the pad 22 and substantially in the plane of the lower surface of this pad, so that there is a large surface of the wax in contact with the floor or other surface to which the wax is being applied and supplied from the capacity of the cavity 24 as the pad 22 yields or compresses for rapid and uniform application of the wax to the surface being treated. Preferably the sides of the opening 19 comprise a downwardly extending flange 25 extending into the upper part of the cavity 24. The base 21 carrying the pad may be permanently secured to the bottom of the body or be made an integral part of it, but is preferably secured thereto by detachable means, such, for example, as the screws 26, so that the pad may be changed or renewed if desired. It is preferred to provide the body with double walls for the container, those shown being outer inclined walls 27 at opposite sides of the container and spaced therefrom to provide spaces 38 forming a heat insulating means for the wax in the container to keep it cool and prevent it from heating up and becoming too soft or melting during use of the device; in other words, to maintain for a greater length of time the proper hard-

ness and consistency of the wax for most effective application.

An improved means is provided in the container for feeding the wax from this container through the opening or passage **19** to the application cavity **24** in the pad **22**. This comprises a follower or plunger **29** having a tapped or threaded opening **30** by which it is threaded onto a screw threaded rod **31** forming an adjusting and feed screw for the plunger. This feed screw is mounted in a bearing **32** in the cover or closure **13** and may be operated by any suitable means, such, for example, as a hand knob **33** on the top of the cover. The plunger is preferably a plate of suitable thickness somewhat smaller than the inside of the container to provide a space or clearance **34** for passage of air in retracting the plunger, and it is provided on its under side with a suitable number of radial ribs **35** for strengthening the plate portion of the plunger and also to embed themselves in the wax **12** to increase the grip of the plunger thereon and prevent turning of the plunger by operation of the adjusting screw. The plunger is provided with a boss **36** for the threaded opening **30** to provide sufficient length of thread for proper connection and operation with the screw. This threaded connection, however, is not a tight connection, but the thread of the screw **31** is a loose, sloppy fit in the plunger so that there is practically no friction between the two, to reduce to a minimum the tendency of the adjusting screw to turn or rotate the plunger as it is shifted downwardly or upwardly by operation of the screw.

Means is provided for indicating to the operator when the supply of wax in the container is exhausted, or depleted sufficiently so as to no longer feed through the feed or discharge opening, and also to prevent further operation of the plunger to cause a jamming which might injure or break some vital part of the device. For this purpose the lower end of the threaded portion of the adjusting screw **31** terminates at a point **37** which is substantially at the level of the top surface of the plunger **29** when this plunger reaches its lowest position, as indicated in Fig. 3, and the portion of the screw or rod **31** below this shoulder is reduced and plain or not threaded, as indicated at **38**, so that when the plunger **29** reaches this point it is disconnected from the threads of the screw **31** and further rotation of the screw **31** in a direction to feed it downwardly will have no further feeding action on the plunger. Therefore this position, as shown in Fig. 3, at the bottom of the container is the lowest position to which it may be fed or forced by the feeding screw, and as it is no longer threadedly connected to the feeding screw it cannot be jammed against the bottom of the container to injure or break any of the associated parts. To insure that any possible rotation of the plunger is prevented at this point, suitable cooperating stop means is provided on the under side of the plunger and the upper side of the lower or bottom wall of the container. These comprise a downwardly extending conical lug or point **39** on the under side of the plunger and a similarly upwardly extending conical lug or point **40** at the bottom of the container and spaced the same distance from the axis of the plunger so that when the plunger reaches its lower position the lug **39** engages the lug **40** to prevent turning of the plunger. By making these lugs tapered and pointed there is no danger of their free ends engaging in alignment to bind and prevent downward movement of the plunger to its lowest position. Mounted on the reduced unthreaded portion **38** of the adjusting screw is a washer **41** slidable on this portion, and at the lower end is a stationary washer **42** with a suitable coil spring **43** on this portion of the screw between the washers. When the plunger is above its lowest position in the container, upward movement of the washer **41** under action of the spring **43** is limited by the washer engaging the shoulder **37**, and as the plunger **29** reaches its lower position and passes off the threads on the feed screw and to the position of Fig. 3 below the shoulder **37** the lower end of the boss **36** engages this washer and forces it downwardly to compress the spring **43**, as shown in Fig. 3. In this position, as previously indicated, the plunger is disconnected from the threads of the feeding screw and further operation of this screw will have no further effect on the plunger, and therefore feed of wax will stop at this point. The feel of operation of the feeding screw will indicate to the operator that this point has been reached, and also there will be a sort of low click which will indicate this condition and inform the operator that the supply of wax has been exhausted and should be replenished.

On reverse operation of the adjusting screw the force of the spring **43** will press the plunger against the threaded part of the screw **31** and will catch or start the threaded connection between the plunger and the feed screw to shift the plunger upwardly in the container to its upper position, so that after more wax has been placed in the container the plunger is in its upper position and can be forced downwardly for feeding the wax, as previously described. If on reverse rotation of the feeding screw there should be a tendency for the plunger to turn in the reverse direction, the tapered lug **39** will engage the opposite side of the lug **40** and prevent this rotation until the threaded connection between the plunger and the screw has been established. The loose or sloppy fit of the threads will not provide sufficient friction to rotate the plunger and it will be retracted or shifted to its upper position by reverse action of the screw. It is preferred to make the thread on the screw a left-handed thread so that the feeding operation will be secured by turning the knob **33** clockwise or to the right, as this is a more natural operation for effecting the feeding operation. It is not necessary that the spring **43** for forcing the plunger upwardly to effect the engagement of the threads on the reverse operation of the feed screw be located on the lower end of this screw, but this is the preferred location as it is easier to mount it on the screw and also at less cost, but it could be located anywhere in the lower part of the container to provide this upper pressure on the plunger, as, for example, mounting it in the lower wall of the container. After the plunger has been shifted to its upper position at the top of the container and at the under side of the cover **13**, it will be removed with the cover to permit replenishing of the wax in the container.

A cover is provided to cover and protect the pad **22** and the lower side of the wax applying cavity **24** when the device is not in use, to prevent hardening of the pad by evaporation of the volatile liquids in the wax and also to prevent drying and hardening of the wax in the cavity **24** for the same reason. The device shown comprises a cover **44**, preferably an aluminum casting, including peripheral flanges **45** telescoped with the lower part of the body and the pad. This cover therefore encloses the exposed portions of the pad as well as the lower open side of the cavity **24** and prevents drying out and hardening of the wax both in the cavity and on the pad, and thus maintains the pad and the wax in the cavity in the proper working condition. This cover is detachably secured on the lower side of the body by any suitable means, such, for example, as the spring clips **46** secured to the cover and engaging over the shoulders **47** at the opposite sides of the body. This cover is normally kept in place during non-use of the applicator, and may be readily and quickly removed when desired.

There is also provided a detachable buffer **48** of any suitable material, such as felt or other fibrous material, secured on the under side of a plate **49**, and means is provided for easily and quickly detachably connecting this buffer to the under side of the cover **44**. The preferred means is a pair of snap fasteners each comprising a socket or a female member **50** and a male or stud member **51** mounted one in each of the members **44** and **49**. In the arrangement shown the member **50** is mounted on the

cover and 51 on the plate, but they could be reversed if desired. As such a snap fastener requires some space between the two members 44 and 49, spacing lugs or bumps 52 are provided on the under side of the cover 44 to engage the plate 49 and provide a rigid support for the buffer and prevent it rocking on the snap fasteners 50, 51.

A suitable operating handle is provided, that shown comprising a forked member 53 of substantially inverted U shape having the free ends of its side arms pivotally connected to the body at the opposite sides thereof, as indicated at 54, in notches or recesses 55 provided in the side wall, and it has a socket in its upper connecting portion 56 and preferably threaded as indicated at 57 to receive the lower end of a suitable handle 58 which is of sufficient length to permit operation of the device while the person is standing in an erect position. To permit proper operation of the device and prevent it from rocking or tipping over due to its friction against the floor or surface being treated, as the wax is sufficiently hard to require considerable pressure in its application, the pivotal connections 54 are located low on the body and as near the application pad and buffer as possible, and they are also located on diametrically opposite sides of the axis of the container and in substantially the plane of this axis, as this is the position having the minimum leverage tending to overturn the device.

In use, cover 13 is removed after the plunger has been retracted and raised to its upper position immediately on the under side of the cover. The upper ends of the threads 31 terminate at a stop shoulder 59 so located that the upward movement of the plunger is arrested before it can jam against the under side of the cover and its associated parts be injured or broken. After the cover and plunger are removed, the desired quantity of wax is placed in the container and the cover and plunger replaced, after which the plunger may be operated by manipulation of the hand knob 33 to feed the wax to the cavity 24 and apply it as indicated. When not in use, the protective cover 44 and the buffer 48 may be applied to the under side of the body so that the whole device and all the parts thereof are readily available for use, and the wax and the applicator pad are suitably protected. When it is desired to use the device for applying wax the buffer and the cover are easily and quickly removed, and then may be reapplied for the buffing or polishing operation. The buffer could also be used for polishing or buffing liquid wax which may have been applied to the floor or other surface by first pouring it onto the surface and then spreading it by suitable means.

Means may be provided for locking the handle in either the vertical or the inclined position, indicated by the broken lines in Fig. 7. For this purpose suitable sockets 60 may be provided in one of the recesses 55 and a spring pressed retractible pin 61 mounted in one arm of the handle to seat in these recesses, and held therein by means of the spring 62, and it is provided with a finger grip 63 to permit its withdrawal and release of the handle.

The detachable snap fastener means 50, 51 for securing the buffer to the cover could be used for other devices. Thus, for example, instead of the fibre buffer pad 48, a cellulose or similar sponge could be applied to plate 49 and when applied to the cover used for spreading liquid wax previously poured on the floor. While using this sponge the handle can be locked in the inclined position to prevent the device from rolling as the sponge has the tendency to grip the surface of the floor to resist free back and forth motion of the device.

Having thus set forth the nature of my invention I claim:

1. A device for applying paste wax to a surface comprising a body including an upright cylindrical container provided with a discharge passage at its lower end, a fibre pad at the under side of the body for spreading wax on said surface and provided with a cavity opening through its underside to hold a quantity of wax exposed at the underside of the pad for application to said surface, said cavity communicating with said passage to receive wax therefrom, means in the container for forcing wax into the cavity comprising a reciprocable circular plunger, an upright feed screw passing through the center of and having threaded connection with the plunger to shift it in opposite directions by operation of the screw, the threads on the screw terminating adjacent the lower end thereof so that the plunger is disconnected from the screw as it reaches its lower position by operation of the screw in one direction to prevent further action of the screw on the plunger by further operation of the screw in that direction, and means whereby the plunger is shifted upwardly to become reconnected with the screw on operation of the screw in the opposite direction to retract the plunger, a downwardly extending pointed lug on the under side of the plunger and an upwardly extending pointed lug on the bottom of the container cooperating with the first lug when the plunger is in its lower position to prevent turning of the plunger with the screw, and means for operating the screw to shift the plunger.

2. A device for applying paste wax to a surface comprising a body including an upright cylindrical container provided with a discharge passage at its lower end, a fibre pad at the under side of the body for spreading wax on said surface and provided with a cavity opening through its under side to hold a quantity of wax exposed at the under side of the pad for application to said surface, said cavity communicating with said passage to receive wax therefrom, means in the container for forcing wax into the cavity comprising a reciprocable circular plunger, an upright feed screw passing through the center of and having threaded connection with the plunger to shift it in opposite directions by operation of the screw, and means whereby the plunger becomes disconnected from the threads of the screw as it reaches its lowest position by manipulation of the screw in one direction, and means for lifting the plunger upwardly to become reconnected with the threads on manipulation of the screw in the opposite direction, a downwardly extending tapered and pointed lug on the under side of the plunger and an upwardly extending tapered pointed lug on the bottom of the container cooperating with the first lug when the plunger is in its lower position to prevent turning of the plunger with the screw, and means for operating the screw to shift the plunger.

3. A device for applying paste wax to a surface comprising a body including an upright cylindrical container provided with a discharge passage at its lower end, a fibre pad at the under side of the body for spreading wax on said surface and provided with a cavity opening through its under side to hold a quantity of wax exposed at the under side of the pad for application to said surface, said cavity communicating with said passage to receive wax therefrom, means in the container for forcing wax into the cavity comprising a reciprocable circular plunger, an upright feed screw passing through the center of and having threaded connection with the plunger to shift it in opposite directions by operation of the screw, ribs on the under side of the plunger extending downwardly therefrom to embed themselves in the wax to prevent turning of the plunger, the threads on said screw terminating adjacent its lower end at a level at which the plunger reaches its lowest position to disconnect the plunger from the threads of the screw, a spring on the screw below the lower ends of the threads and positioned to be compressed by the plunger as it reaches its lower position so this spring tends to shift the plunger upwardly to engage the threads on the screw, a downwardly extending tapered pointed lug on the under side of the plunger and an upwardly extending tapered pointed lug on the bottom of the container cooperating with the first lug to prevent

turning of the plunger when disconnected from the thread on the screw and means for operating the screw to shift the plunger.

4. A device for applying paste wax to a surface comprising a body including an upright container provided with a discharge passage at its lower end, a fibre pad at the under side of the body for spreading wax on said surface and provided with a cavity opening through its under side forming a reservoir to hold a quantity of wax exposed at the under side of the pad for application to said surface, said cavity communicating with said passage to receive wax therefrom, means in the container for forcing wax into the cavity to fill it, a cover at the under side of the pad covering the exposed bottom surfaces of the pad and the exposed wax in the cavity to prevent drying and hardening of the pad and wax, means detachably securing the cover to the body, a buffing pad comprising a plate and a fibre pad secured to the under side of the plate, and means detachably securing the plate of the buffing pad to the under side of the cover comprising cooperating snap fasteners on the under side of the cover and upper side of the plate.

5. A device for applying paste wax to a surface comprising a body including an elongated rectangular lower portion and an upright container provided with a discharge passage at its lower end, a fibre pad at the under side of the body of substantially the size and shape of the rectangular lower portion of the body for spreading wax on said surface and provided with an elongated substantially rectangular central longitudinal cavity opening through its under side forming a reservoir to hold a quantity of wax exposed at the under side of the pad for application to said surface, said cavity communicating with said passage to receive wax therefrom, means in the container for forcing wax into the cavity to fill it, said body including inclined outer walls at the opposite sides of the container and spaced therefrom forming insulating spaces, said inclined walls provided with recesses in their outer sides at the opposite ends of the body and extending inwardly from one side of the body, a handle for operating the device including a forked member having laterally spaced legs, and means pivotally connecting said legs to the body in said recesses on substantially the longitudinal center line of the body.

6. The construction and arrangement of claim 5 in which there is a retractable locking pin in one leg of the handle member arranged to seat in a socket in the adjacent recess to lock the handle in an inclined operating position.

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