May 6, 1969 D. M. GOWDEY 3,441,971

HAND-OPERATED BUFFER AND METHOD OF DEVELOPING SAME

Filed Feb. 6, 1967 Sheet 1 of 2

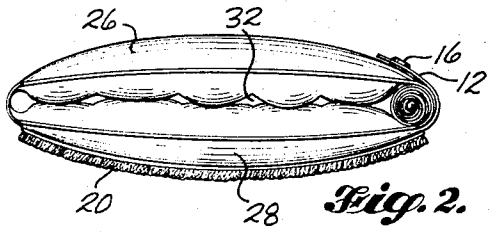


Fig. 2.

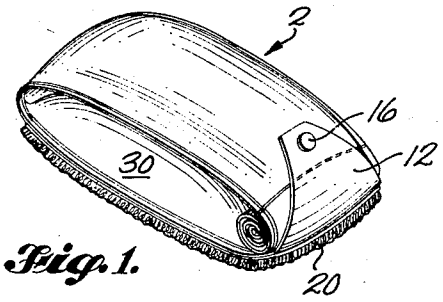


Fig. 1.

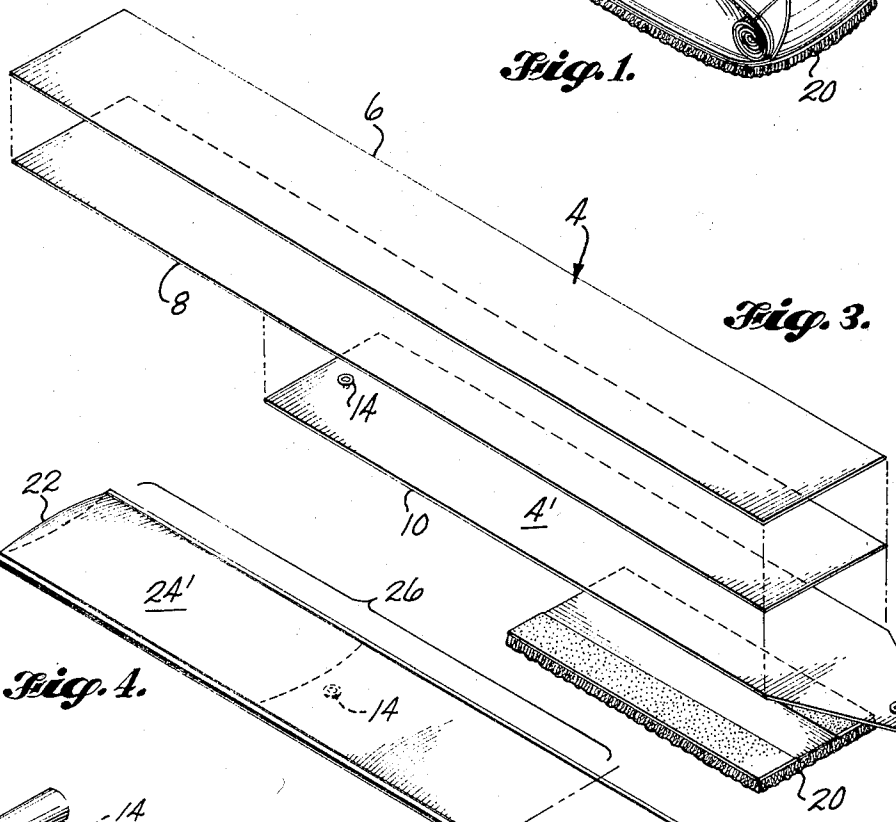


Fig. 3.

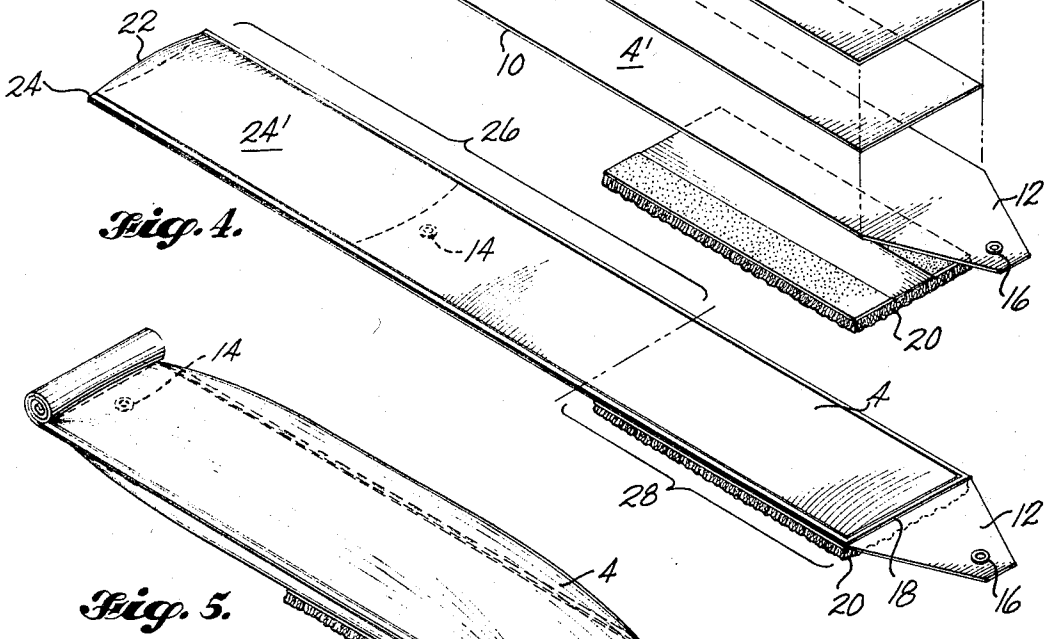


Fig. 4.

Fig. 5.

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Fig. 9.

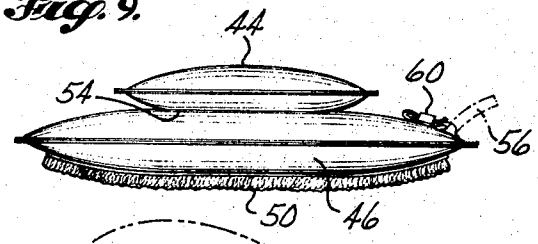
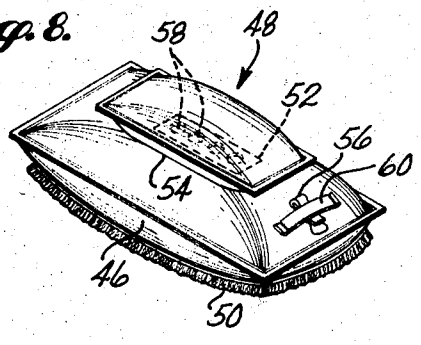


Fig. 8.



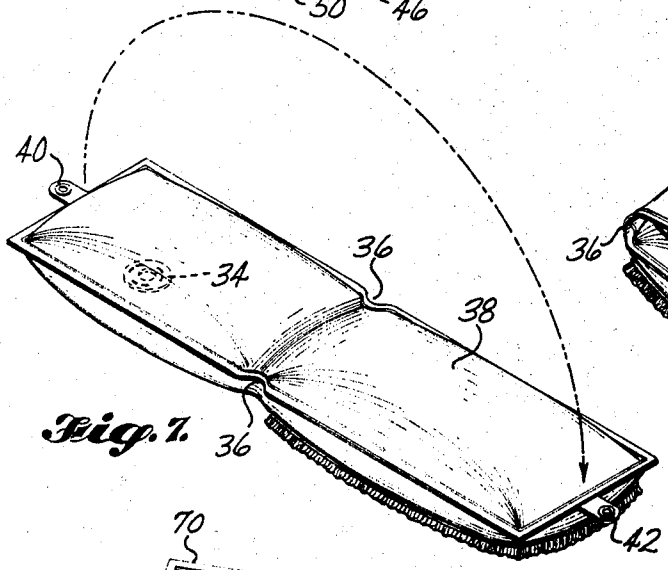


Fig. 7.

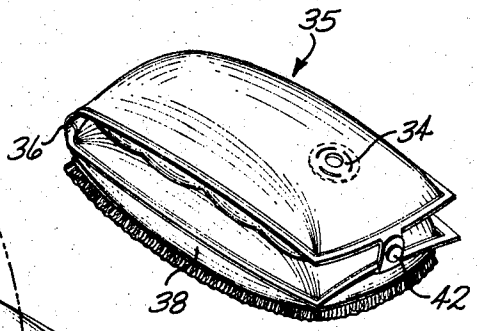


Fig. 6.

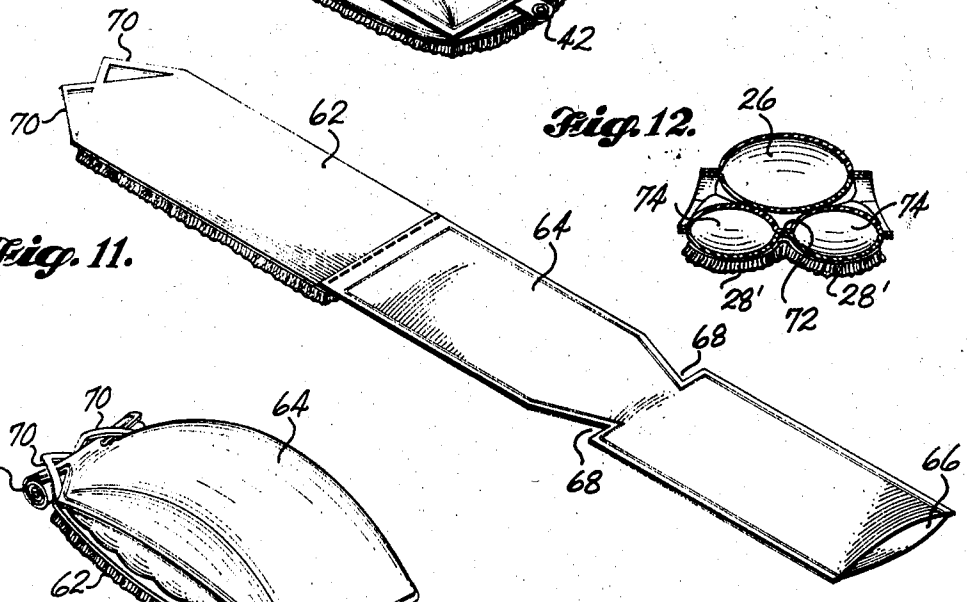


Fig. 11.

Fig. 12.

Fig. 10.

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HAND-OPERATED BUFFER AND METHOD OF DEVELOPING SAME

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Int. Cl. A47l 23/08, 23/10, 17/00
U.S. Cl. 15—210 17 Claims

ABSTRACT OF THE DISCLOSURE

A hand-operated buffer is disclosed which is comprised of a buffer pad and an inflatable bladder that is superposed over the pad and interconnected with it so as to make the two conjointly shiftable. A pair of recesses on opposite sides of the buffer, between the bladder and the bottom of the pad, make it possible to grip the bladder with the hand for purposes of lifting and shifting the buffer about on the surface to be buffed. Certain additional features, and certain disclosed methods for making the buffer, also make it possible to partially disassemble the buffer and then, if desired, to reshape it into a more compact form for storage.

Field of the invention

This invention relates to buffers, and more particularly to a hand-operated buffer, such as a shoe buffer, which is readily storable in a small, confined space, such as a bureau drawer, a traveling bag, a small case for business and legal papers, or even the pocket of one's pants.

Discussion of the prior art

Pneumatically inflatable brushes are known, as for example that disclosed in the Hardy 793,657 U.S. patent. However, all require a rigid backing which defeats the objects and advantages of the present invention.

Summary of the invention

One object of the invention is to provide a shoe buffer or the like which can be easily gripped in the hand and comfortably applied to a shoe or other surface to be buffed, yet readily collapsed in size when not in use, and, if desired, rolled, folded or otherwise reshaped into a more compact form for storage.

Another object is to provide a shoe buffer or the like which has these features but which, in addition, can be partially disassembled to facilitate reshaping it into a more compact form.

A still further object is to devise methods and techniques for making a buffer which has these features and which, if desired, can be sold in kit form for assembly by the purchaser.

Still other objects of the invention include providing a buffer of this nature which is cheap and easy to manufacture, which can be quickly and reliably assembled, even by the purchaser himself, and which is durable to frequent use.

Other objects will become apparent from the description of the invention which follows.

These objects and advantages are realized by a hand-operated buffer of my invention which is formed by superposing an inflatable bladder over a pad of buffer material; interconnecting the bladder and the pad so that they are conjointly shiftable; inflating the bladder with a fluid; and forming a pair of recesses on opposite sides of the buffer, between the bladder and the bottom of the pad, so that the bladder can be gripped with the hand to apply the pad to the surface to be buffed.

The pad may form the bottom of the bladder; or it may be a separate and distinct item which is secured to the bladder so as to be conjointly shiftable therewith. In the latter case, the pad may be secured to the bladder before it is inflated; or it may be secured at a subsequent time. Preferably, the pad is also inflatable, and is inflated with the bladder so that the hand is cushioned by the pad when the pad is applied to the surface to be buffed.

The recesses may be formed by the manner in which the pad is secured to the bladder. For example, the pad may be secured to the bladder so that the mutually opposing faces of the bladder and the pad are separated from one another at the edges when the bladder is inflated. In fact, certain preferred embodiments of the invention employ an arrangement wherein the faces are spaced apart from one another across the entire width of the buffer, from one side to the other, so that an opening is formed into which the thumb and/or fingers of the hand can be inserted to take a handle grip on the bladder.

The invention also contemplates that the pad and the bladder may both be flexible in construction and wholly or partially detachable from one another to facilitate storing the buffer in a more compact form. For example, certain of the preferred embodiments employ an arrangement wherein the pad and the bladder are hingedly interconnected with one another at one end, and otherwise detachably connected so that they can be pivoted into general alignment with one another, and then folded, rolled, or otherwise reshaped into a more compact form when the bladder is deflated.

Other features of the invention relate to certain means I have devised for maintaining the inflated condition of the bladder. If desired, the pad may be employed to retain the fluid in the bladder. For example, certain of the aforesaid hingedly interconnected constructions employ a bladder which is ported at the other end. When assembling the buffer, this other end is partially rolled up to close the port, and then, after the bladder is folded over the pad, a portion of the pad is clamped about the rolled end to prevent it from unrolling. The clamping arrangement may also serve to detachably interconnect the bladder to the pad at this end. When given the two functions, the arrangement makes the assembly exceptionally easy and inexpensive to manufacture.

Still other features of the invention relate to the shape of the pad when it is inflated. For example, a recess may be formed in the bottom of the pad when it is inflated, to lend flatness or concave contour to the bottom as the pad is applied to the surface to be buffed. Thus, the pad can achieve a better buffing effect on rimmed or edged surfaces such as the raised seam of a shoe.

Brief description of the drawings

These and other features of the invention will be better understood by reference to the accompanying drawings which illustrate several of the preferred embodiments, and also, certain methods by which they may be assembled. In the drawings:

FIGURE 1 is a perspective view of the hingedly interconnected roll-up version after the buffer has been fully assembled for use;

FIGURE 2 is a side elevational view of this version;

FIGURE 3 is an exploded view of the version showing the various elements which go into its manufacture;

FIGURE 4 is a perspective view of the version after the elements in FIGURE 3 have been assembled;

FIGURE 5 is a perspective view of the version after the bladder has been inflated;

FIGURE 6 is a perspective view of another version, again after it has been fully assembled for use;

FIGURE 7 is a perspective view of this latter version in the partially assembled condition;

FIGURE 8 is a perspective view of a third version;

FIGURE 9 is a side elevational view of this third version;

FIGURE 10 is a perspective view of still another version which employs a noninflatable pad;

FIGURE 11 is a partially assembled view of the noninflatable version in FIGURE 10; and

FIGURE 12 is a cross-sectional view of a contoured version of the FIGURES 1–5 embodiment.

Description of the preferred embodiments

Referring to FIGURES 1–5, it will be seen that the buffer **2** comprises an elongated tubular baldder **4** of polyethylene or other heat fusible material which is cut into three strips and assembled and joined in the manner of FIGURES 3 and 4. Two of the strips **6** and **8**, correspond to one another in length and width, while the third **10** is shorter, and shaped at one end to from a tab **12**. The third strip **10** is also equipped with a pair of cooperating male and female snap fastener attachments **14** and **16** which are fixed to the ends of the strip, including the end formed by the tab **12**.

At the time of assembly the longer strips **6** and **8** are laid face-to-face with one another, and then superposed over the third strip **10** so that their right-hand ends coincide with the line of juncture **18** between the tab **12** and the main body of the third strip **10**. Then, the longitudinal edges of all three strips are heat sealed to one another and, in addition, a heat seal is developed among the three strips along the line of juncture **18** of the tab. This, in effect, produces a pair of tubular bladders, but only the bladder **4** formed between the longer strips is essentail to the invention. If desired, however, the other bladder **4'** can be used to hold padding or cushioning material (not shown) for additional comfort to the hand.

Having assembled the bladder **4**, a strip of adhesive-backed buffer material **20** is applied to the underside of the bladder at a location adjacent the right-hand or tabbed end **12** of the same. The strip **20** may be applied prior to inflating the bladder, or it may be applied at some subsequent time. In all events, the buffer is further assembled by inflating the bladder **4** through the opening or port **22** in the left-hand end **24** of the same; then rolling up that portion **24'** of the end which outlines the nearby snap attachment **14** on the third sheet; then folding the greater left-hand section **26** of the bladder over the right-hand section **28**; and then clamping the tab **12** over the rolled end **24'** of the bladder and engaging the snap attachments **14** and **16** in the manner of FIGURE 1.

As seen in FIGURES 1 and 2, this produces an assembly in which a pair of recesses **30**, in fact an opening **32**, is formed between the upper and lower sections **26** and **28** of the bladder, so that a user may grip the buffer by passing his thumb and fingers around the upper section **26** and into the opening **32** between the sections. The upper section **26** thus becomes a handle for the buffer, whereas the lower section **28** functions as the buffer pad. While a certain amount of air may escape from the ported end **24** of the bladder, the rate of escape is so small that the user has ample opportunity to complete the buffing operation before the bladder is deflated. In fact, in most instances, the bladder is not deflated until the snap attachments are disengaged and the tab is released.

Should the user desire to store the buffer in a more compact form, he can disengage the attachments and release the tab, and then unfold the buffer to the condition of FIGURE 5; whereupon the whole of the buffer can be rolled up from one end to the other to reshape it into an easily storable item. A rubber band assists in preserving the roll.

Another method of forming the buffer is to inflate, fold, and engage the ends of the bladder **4** in the manner described, but absent the buffer strip **20**; and then to slip a sock (not shown) of buffer material over the bladder until the bladder is substantially enclosed in the sock. As before, recesses are provided on the sides of the buffer, although the user must press in the sides of the sock to detect them for his grip.

The buffer **35** in FIGURES 6 and 7 varies from that in FIGURES 1–5 in that it is ported through a conventional diaphragm valve **34** and has a pair of opposed notches **36** formed along the line of the bladder **38** at which the fold is made. The diaphragm valve **34** operates in conventional manner to admit air at several openings around the diaphragm when the mouth is applied, but to close under the pressure of the captive air charge, when the pressure of the mouth is released from the diaphragm. After the two sections of the bladder to either side of the notches **36** are folded over and onto one another, a pair of snap attachments **40** and **42** are mated to connect the sections in the manner of FIGURE 6.

In the embodiment of FIGURES 8–9, the two sections **44** and **46** of the bladder **48** are stacked on top of one another at the time of manufacture. As seen, the bladder has a relatively enlarged lower pad section **46**, carrying the buffer strip **50**, and a relatively reduced upper section **44** which is available as a handle for the buffing operation. The two sections are secured by a rectangular seam **52**, and in use the thumb and fingers are inserted into the recesses **54** on the opposite sides of the buffer between the sections **44** and **46**. Preferably, rubber is employed in making up the sections, and the lower section carries a rubber nipple **56**, through which the air charge is admitted to the bladder. Apertures **58** within the seam **52** enable the charge to move into the upper section **44**. After the bladder is inflated, the nipple **56** is folded and inserted under a strap **60** affixed to the lower section **46**.

The embodiment in FIGURES 10 and 11 illustrates a version of the invention in which the buffer pad is non-inflatable. Instead, the lower section (the left-hand section **62** in FIGURE 11) is formed from a strip of foam-backed buffing material which is hingedly interconnected to a polyethylene bladder **64**, in somewhat similar fashion to the version in FIGURES 6 and 7.

The embodiment in FIGURES 10 and 11 also illustrates a different mechanism for detachably interconnecting the two sections. In this case, the ported end **66** of the bladder is rolled up to a pair of notches **68** in the sides of the bladder, and then the bladder is folded over onto the buffer strip **62**, and the roll **66'** of bladder material is used as part of the means for connecting the bladder to the strip at the other end. As seen, the far end of the strip is fashioned with a pair of loops **70** into which the ends of the roll **66'** can be inserted to make the connection. The loops, of course, also prevent the roll from unrolling.

In FIGURE 12, a longitudinal seam **72** is formed in the lower pad section **28'** of the bladder **4** in FIGURES 1–5, to lend a flatter or more concave contour to the bottom of the pad. The seam also has the effect of dividing the section into two chambers **74**, which increases the pressure of the gas charge when it is blown into the bladder. Of course, in all embodiments, the acts of rolling and folding the bladder have a similar effect, so that in most instances, it is necessary to blow very little air into the bladder to inflate it.

When a buffer pad or strip becomes worn, it may be replaced with another. The term "buffer" encompasses many actions other than polishing, as for example, sanding, rubbing, and brushing.

It is also contemplated that an annular buffer strip may be slipped loosely over the lower section of the bladder in, for example, the embodiment of FIGURES 1–5, to form the section into a buffer pad. In such a case, the strip can be rotated from time to time, to renew the buffing surface of the pad.

The buffer may also be equipped with a strap and snap attachments, to maintain the fully rolled, storable condition of the same when the bladder is deflated. Such a combination is commonly used on umbrellas, to fold them into tightly clasped units. However, in the present circum-

stances, the strap and snap attachments may also perform the function of the tab **12** and the attachments **14** and **16**, in FIGURES 1–5, when the buffer is put to use.

It will also be understood that many other changes and additions can be made in and to the invention without departing from the scope and spirit of the same as defined in the claims following.

I claim as my invention:

1. In a hand-operated buffer which is applied so that one face thereof is directly contacted with the surface to be buffed, a buffer pad which is disposed in the contact face of the buffer and has a buffing surface thereon extending over substantially the entire area of the face, and an inflatable bladder which is disposed on the opposite side of the pad from the face of the buffer and interconnected with the pad so that the bladder and pad are conjointly shiftable, there being a pair of recesses formed in opposite sides of the buffer, between the bladder and the face of the buffer, whereby the bladder is gripped with the hand to apply the pad to the surface to be buffed.

2. The buffer according to claim **1** wherein the buffer pad is capable of flexing in the one face of the buffer.

3. A hand-operated buffer according to claim **1** wherein the pad is also inflatable.

4. A hand-operated buffer according to claim **1** wherein the pad is secured to the bladder so that the mutually opposing faces of the bladder and the pad are separated from one another at the edges when the bladder is inflated.

5. A hand-operated buffer according to claim **4** wherein the faces of the bladder and the pad are spaced apart from one another across the entire width of the buffer, from one side to the other, so that an opening is formed into which the thumb and/or fingers of the hand can be inserted to take a handle grip on the bladder.

6. A hand-operated buffer according to claim **1** wherein the bladder and the pad are each flexible in construction.

7. A hand-operated buffer according to claim **6** wherein the bladder and the pad are detachable from one another to facilitate storage in a more compact form.

8. A hand-operated buffer according to claim **7** wherein the bladder and the pad are hingedly interconnected with one another at one end, and otherwise detachably connected so that they can be pivoted into general alignment with one another.

9. A hand-operated buffer comprising a buffer pad, and an inflatable bladder superposed over the pad and interconnected with the same so that the bladder and the pad are conjointly shiftable, there being a pair of recesses formed on opposite sides of the buffer, between the bladder and the bottom of the pad, whereby the bladder can be gripped with the hand to apply the pad to the surface to be buffed, and the bladder and the pad each being flexible in construction, and hingedly interconnected with one another at one end, the other end of the bladder being partially rolled up and having a portion of the pad clamped thereabout to detachably interconnect the bladder and the pad at this other end.

10. A hand-operated buffer according to claim **9** wherein the aforesaid other end of the bladder is ported when unrolled.

11. A hand-operated buffer comprising a buffer pad, and an inflatable bladder superposed over the pad and interconnected with the same so that the bladder and the pad are conjointed shiftable, there being a pair of recesses formed on opposite sides of the buffer, between the bladder and the bottom of the pad, whereby the bladder can be gripped with the hand to apply the pad to the surface to be buffed, and the pad also being inflatable and having a recess formed in the bottom thereof when it is inflated, to lend flatness or concave contour to the bottom as the pad is applied to the surface to be buffed.

12. A kit for assembling a hand-operated buffer which is applied so that one face thereof is directly contacted with the surface to be buffed, comprising means for forming a buffer pad which is adapted to be disposed in the contact face of the buffer and has a buffing surface thereon to extend over substantially the entire area of the face, an inflatable bladder, means for interconnecting the bladder and the pad so that the bladder is positionable on the opposite side of the pad from the face of the buffer, and secured to the pad so that the bladder and pad are conjointly shiftable, and means operable when the bladder is so positioned in relation to the pad, to form a pair of recesses in opposite sides of the buffer, between the bladder and the face of the buffer, whereby the bladder can be gripped with the hand to apply the pad to the surface to be buffed.

13. The buffer kit according to claim **12** wherein the buffer pad is capable of flexing in the one face of the buffer.

14. A hand-operated buffer kit according to claim **12** wherein the bladder and the pad are interconnected in two sections which are superposable over one another, there being a pair of recesses formed between the sections, whereby the upper bladder section can be gripped with the hand to apply the lower pad section to the surface to be buffed.

15. A method of developing a buffer which can be operated with the hand, comprising superposing an inflatable bladder over a pad of buffer material, interconnecting the bladder and the pad so that they are conjointly shiftable, inflating the bladder with a fluid, and gripping the bladder with the hand to apply the pad to the surface to be buffed, there being a pair of recesses formed in opposite sides of the buffer, between the inflated bladder and the bottom of the pad.

16. A method of developing a buffer which can be operated with the hand, comprising superposing an inflatable bladder over a pad of buffer material, interconnecting the bladder and the pad so that they are conjointly shiftable, inflating the bladder with a fluid, and gripping the bladder with the hand to apply the pad to the surface to be buffed, the pad being secured to the bladder so that the mutually opposing faces of the bladder and the pad are spaced apart from one another across the entire width of the buffer, from one side to the other, so that an opening is formed into which the thumb and/or fingers of the hand can be inserted to take a handle grip on the bladder.

17. A method of developing a buffer which can be operated with the hand, comprising superposing an inflatable bladder over an inflatable pad of buffer material, interconnecting the bladder and the pad so that they are conjointly shiftable, inflating the bladder with a fluid, and gripping the bladder with the hand to apply the pad to the surface to be buffed, the pad also being inflated with the bladder so that the hand is cushioned by the pad when the pad is applied to the surface to be buffed.

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U.S. Cl. X.R.

15—258; 51—373; 300—21