Abstract Title: A paint roller handle

A paint roller handle comprises two gripping regions (103, 105) and is of a length operable to be simultaneously gripped by a respective hand (160, 162) of a user at the said gripping regions to allow a two-handed operation. The paint roller handle comprises a primary handle with a primary gripping region 103 and an auxiliary handle with an auxiliary gripping region 105, the auxiliary handle being separate from and attachable to the primary handle (figures 4A and 4B). In an alternative example, the two gripping regions (103, 105) may be present in a unitary handle (figure 5). The paint roller handle may be held with both hands and yet not significantly increase the reach of the user, but affords greater control over a paint roller 117 attached thereto.
FIG. 1A

FIG. 1B
A Paint Roller Handle

The present invention generally concerns a paint roller handle. More particularly, the present invention relates to a paint roller handle which facilitates a comfortable two-handed working position.

Conventional paint rollers are provided with a short primary handle intended to be gripped by a user with a single hand. It is known to attach extension poles to the end of a primary paint roller handle to increase the reach of a user. During such use, a user would normally grip the extension pole with one or both hands towards or at the end of the extension pole remote from the primary handle, thereby maximising the possible reach. In other words, the object of attaching such extension poles to a paint roller is to extend the reach of a user.

According to a first aspect of the present invention there is provided a paint roller handle comprising a primary handle, having a primary gripping region, and an auxiliary handle, having an auxiliary gripping region, the auxiliary handle being separate from and attachable to the primary handle such that the primary gripping region can be gripped for one handed operation, and both the primary and auxiliary handles are of fixed length and are of such length that when the primary and auxiliary handles are joined together the primary and auxiliary gripping regions can be gripped simultaneously by a respective hand of a user to allow a two-handed operation.
Unlike conventional paint roller handles the present invention is intended to provide a handle which is held with both hands and yet does not significantly increase the reach of the user. Rather, it is an object of the present invention to provide a comfortable two-handed operating position close to the user. Hence the gripping regions must be grippable at least partly separately and simultaneously by the hands of a user.

The length of the handle must be such that a user is able simultaneously to grip, with a leading hand, the paint roller handle and, with a lagging hand, the auxiliary handle attached to the paint roller handle. This two-handed grip affords greater control over the paint roller and reduced user fatigue as it is intended to be used in close proximity to the body of the user. It is not intended to increase the reach of the user to inaccessible regions such as high ceilings.

The handle may be of a fixed length and this dictates the operation of the roller handle.

The gripping regions may be so spaced to provide for a non-overlapping two-handed grip. In other words the handle is long enough for two hands to grip simultaneously without needing to overlap.

The gripping regions may be so spaced to provide for a non-contacting two-handed grip. In other words the handle is long enough for two hands to grip simultaneously and be spaced apart along its length. Of course the spacing of the
gripping regions should not exceed the maximum arm span of a user so that they can be gripped simultaneously.

In this way the primary handle could form a permanent part of a paint roller and the auxiliary handle could be selectively attached to allow switching between one- and two-handed operation.

In addition to providing greater control over the paint roller, handles formed in accordance with the present invention allow the user to apply a greater force on the surface being painted by the paint roller by virtue of the two-handed operating configuration, which allows the roller to be levered against a surface.

Further, a two-handed operation offers the benefit of distributing the weight of the paint roller assembly between two hands of the user as opposed to a one-handed operation. Although extension poles may be gripped with both hands by the user this is only in situations where the user requires a greater reach; in this case the hand of the user which was originally on the primary handle must be moved down to the bottom of the extension pole together with their other hand i.e. they cannot retain their hand on the primary handle at the same time their other hand is at the end of the extension pole. In contrast, substantially the entire length of the handle of the present invention may be easily spanned by the user's hands during normal use, that is when a user is painting a surface in close proximity to their body. The user can, therefore, benefit from a less strenuous and more comfortable working position.
Furthermore, with conventional one-handed operations by a user with known rollers, it is often the case that in order to alleviate the problem of tiring from continued use with one hand, a user will either require a rest, during which time work is suspended, or will opt to change the operating hand from left to right, or vice versa. In the case of the latter, unless the user is ambidextrous the transfer of the paint roller to the opposite and less preferred hand may result in deterioration of the quality of the paint application. However, because the present invention makes it possible for the user to grip the paint roller assembly with both hands and therefore to select the distribution of the weight of the paint roller assembly between the hands, if the user’s hand/arm, which may bear a slightly biased and greater proportion of the weight, becomes tired the user may switch the positions of the leading and lagging hands without substantially affecting the quality of the paint application. The quality of the paint application can be retained because the preferred hand is always in contact with the handle assembly.

It may be that at least a proximal end of the auxiliary handle is provided with attachment means for attachment to a primary paint roller handle. The attachment means may be permanent, semi-permanent or temporary. For example the attachment means may be provided by a screw thread engagement, a latch, strap or the like.

At least part of the handle may be ergonomically shaped for a comfortable grip. For example, by designing an auxiliary handle and/or a primary handle in this
manner, in that the said handles are provided with appropriate curvature which corresponds to the contours of the hand, there is provided comfortable but strong gripping regions for the user. In some embodiments the grip regions comprise undulations.

In preferred embodiments the primary bundle may have a swan-neck shape which defines a concave surface on one side of the handle and a convex surface on the other side. The convex surface may have one or more, preferably two undulations for gripping the handle.

The proximal end of the handle is preferably joined to the stem of a roller frame and the primary handle may be cranked so that when the primary and auxiliary handles are joined together the longitudinal axis of the stem is offset with respect to the longitudinal axis of the auxiliary handle.

Preferably, the auxiliary handle comprises a plurality of gripping regions more preferably a pair of gripping regions which are spaced apart along the length of the auxiliary handle, and which can be gripped simultaneously by the respective hands of the user.

The length of one-piece handles may be fixed and may be in the range of 20cm to 100cm, preferably 30cm to 80cm and more preferably 30cm to 50cm. In one embodiment the length is approximately 40cm. For two-piece handles the length of
the primary handle may be in the range of 10cm to 50cm, preferably 10cm to 30cm and more preferably 10cm to 20cm. In one embodiment the length is 15cm.

The length of the auxiliary handle may be fixed and may be in the range of 10cm to 50cm, preferably 15cm to 40cm and more preferably 20cm to 30cm. In one embodiment the length is 25cm.

The auxiliary handle and primary handle may be the same length or may be different lengths.

Handles comprising more than two parts are, of course, possible as long as the assembled handle fulfils the requirements of two gripping regions which allow both hands to operate a paint roller simultaneously.

The gripping regions may be at or in the region of opposite ends of the handle. Alternatively one or both of the gripping regions may be spaced from the handle ends.

Various embodiments of the present invention will now be described more particularly, by way of example, with reference to the following drawings, in which:

Figure 1A is a side elevation of two separate components making up a paint roller handle according to an embodiment of the present invention;
Figure 1B is a side elevation of two separate components making up a paint roller handle according to another embodiments of the present invention;

Figure 2A is a front elevation of the paint roller handle assembly of Figure 1A in an assembled configuration;

Figure 2B is a side elevation of the paint roller handle assembly of Figure 1A;

Figure 2C is a front elevation of the paint roller handle assembly of Figure 1B in an assembled configuration.

Figure 2D is a side elevation of the paint roller handle assembly of Figure 1B;

Figure 3A shows a primary handle and an auxiliary handle formed according to an alternative embodiment of the present invention;

Figure 3B shows the handles of Figure 3A in an assembled configuration;

Figure 4A shows a paint roller apparatus incorporating the handle of Figure 3B;

Figure 4B shows the paint roller apparatus of Figure 4A with its auxiliary handle detached;

Figure 5 shows a paint roller handle formed according to an alternative embodiment; and

Figure 6 shows diagrammatically a paint roller formed according to the present invention in use.

Figure 7 is a diagrammatic perspective view of the paint roller of Figures 4A and 4B in use, as held by a user in a preferred holding position.
Referring first to Figure 1A, there is shown a paint roller handle assembly generally indicated 1. The assembly 1 comprises a primary handle 3 and an auxiliary handle 5. Both the primary handle 3 and auxiliary handle 5 are rod-shaped, the length of both components being substantially equal.

The primary handle 3 has a proximal end 4a and a distal end 4b. The proximal end 4a is intended for attachment to a paint roller support frame (not shown).

The primary handle 3 has a 'swan neck' shape which provides a dished primary gripping region. The primary handle has a main central section which has a concave surface 12 on one side and convex surface 13 on the other which accommodates the palm of the users hand when held for use. The concave surface likewise accommodates the fingers of the users hand as will be further explained with reference to Figure 7.

The auxiliary handle 5 has a proximal end 7 and a distal end 9. The auxiliary handle 5 is shaped to provide an auxiliary gripping region.

A screw-threaded projection 11 extends axially from the proximal end 7. The screw threaded projection 11 is externally threaded and is intended for engagement within an internally threaded recess (not shown) formed in the distal end 4B of the primary handle 3, thereby securely attaching the auxiliary handle 5 to the primary handle 3 during assembly.
The proximal end 7 of the auxiliary handle 5 and the distal end 4B of the primary handle 3 terminate with substantially flat and parallel surfaces so that, upon assembly, the resulting edges at the joint provide a substantially smooth and continuous surface.

The paint roller handle assembly in the drawing of Figure 1B is substantially the same as that shown in Figure 1A, however the curvature of the primary handle in the embodiment of 1B is less than that of the primary handle in the embodiment of Figure 1A. In this respect the swan-neck shape is less pronounced in the embodiment of Figure 1B and the convex surface 13 is provided with a series of undulations to more closely match the contours of the palm of a user's hand when gripped in the appropriate way.

Now referring also to Figure 2A, there is shown the paint roller handle assembly of Figure 1A in an assembled configuration. The paint roller assembly 1 is symmetrical about its longitudinal axis when viewed in the plan view of Figure 2A. Both the primary handle 3 and the auxiliary handle 5 are provided with a series of curves along their surface. The curves are intended ergonomically to match the contours of the user's hands, thereby providing comfortable primary and auxiliary gripping regions towards the proximal end of the primary handle and the distal end of the auxiliary handle respectively.

Now referring also to Figure 2B there is shown a side elevation of the paint roller handle assembly 1 of Figure 1 in an assembled configuration. This side elevation
shows that there is no line of symmetry along the longitudinal axis of the paint roller handle assembly 1 when viewed in this direction. This is because of the swan neck shape of the primary handle 3, which includes a greater curvature along one side of the primary handle 3 than the other for the purpose of providing an ergonomic design.

The drawings of Figures 2C and 2D show the paint roller handle assembly of Figure 1B in an assembled configuration. As the only difference between the handles of Figures 1A and 1B is the curvature of the swan-neck of the primary handle the assembled paint roller handle shown in Figure 2C and 2D is identical in all other respects to the assembled handle shown in Figures 2A and 2B.

Now referring to Figure 3A, there is shown a paint roller handle assembly 101 formed according to an alternative embodiment of the present invention. The paint roller handle assembly 101 comprises a primary handle 103 and an auxiliary handle 105, similar to that shown in Figure 1. However, in this embodiment, the length of the auxiliary handle 105 is approximately twice the length of the primary handle 103. The difference in length between the auxiliary handle 105 of Figure 3A and the auxiliary handle 5 of Figure 2A determines the operating position of the user i.e. the spacing of the gripping regions. In the embodiment shown in Figure 3A, the hands of the user would be positioned on the paint roller handle assembly 101, once assembled, at a greater distance apart during use than with the paint roller handle assembly 1 of Figure 1.
Now referring also to Figure 3B, there is illustrated the paint roller handle assembly 101 of Figure 3A, in an assembled configuration. The elongate body of the paint roller handle assembly 101 is provided with an ergonomically curved surface, similar to that shown in Figures 2A and 2B.

In the illustrated embodiment of Figure 3A and Figure 3B the primary handle 103 is substantially similar in size and shape to the primary handle 3 of the handle shown in Figures 1B and 2C and 2D, and has a length dimension as measured from its proximal to distal end of approximately 14cm. The auxiliary handle 105 has a length dimension of approximately 25cm and comprises a generally rounded distal end portion 109.

Referring now to Figures 4A and 4B a paint roller assembly 150 is shown in assembled and disassembled states respectively. The proximal end 104a of the primary handle 103 is permanently fixed to an elongate stem portion 118 of a support frame 115 which supports a roller sleeve element 117 in a manner well known in the art of paint roller manufacture.

Referring now to Figure 5 there is shown a handle 201 according to another arrangement. The overall shape of the handle 201 is identical to the handle 1 shown in Figure 2. Whereas the handle 1 is formed from two pieces, the handle 201 is formed as a one-piece construction. The proximal end 201a of the handle 201 provides a primary gripping region A and the distal end 201b of the handle
provides an auxiliary gripping region B. The proximal end 201a receives a roller frame 215.

Now referring to Figure 6, there is shown the paint roller assembly 150 of Figures 4A and 4B, in use.

During use, the user 127 places his lagging hand 125, here shown as his left hand, towards the distal end 109 of the auxiliary handle 105 and his leading hand 123, here shown as his right hand, towards the proximal end 104a of the primary handle 103. The position for the leading hand 123 is unchanged on the primary handle 103 when compared to use of the handle 103 without the auxiliary handle 105. The user’s lagging hand 125 is spaced from the leading hand and is closer to the user’s body 127; therefore, the paint roller handle assembly 101 is inclined at an angle of roughly 45° to the painting surface 119.

To apply paint from the paint roller head 117 to the painting surface 119, the paint roller head 117 is pressed against the painting surface 119 by application of force on the paint roller handle assembly 101 by the user 121. Both the user’s leading hand 123 and lagging hand 125 are always in contact with the paint roller handle assembly 101 during use so that the user may control the amount of force that is applied on the paint roller head 117. The user 121 is also able to select how he distributes the weight of the paint roller handle assembly 101 between his leading hand 123 and lagging hand 125. If, after a period of time, one of these hands becomes tired then the user 121 may switch the positions of the leading hand 123
and lagging hand 125 so that the opposite hand may bear the greater weight. The
switching of the hands 123 and 125 does not substantially affect the quality of the
paint application because both hands 123 and 125 remain in contact with the
primary handle 103 and auxiliary handle 105, albeit in reverse positions.

Referring now to Figure 7 which shows the paint roller assembly of Figures 4A
and 4B being held in the hands of a user. In the drawing of Figure 7 the gripping
region of the primary handle is gripped by the user’s leading hand, shown here as
the user’s left hand 160 and the distal end of the auxiliary handle is gripped at its
distal end by the lagging hand of the user, in this case the user’s right hand 162.

The user’s left hand is placed palm down on the upper surface of the primary
handle, that is to say on the generally convex surface of the handle so that the
undulations of the handle comfortably accommodate the palm of the user’s left
hand. The user then applies pressure to the surface being painted by the leading
hand and uses the lagging hand to provide motion and directional control to the
paint roller. In this respect the two part handle allows the user to apply pressure
with one hand, whilst leaving the other hand free to direct the roller effortlessly
over the surface being painted resulting in less strain on the muscles of the user’s
arms so that the user experiences less fatigue when using the two handed roller of
the present invention. When it is desired to use the roller for one-handed
operation, for example when painting around formations such as window or door
frames, the auxiliary handle may be detached by unscrewing it from the primary
handle as previously described so that the user may use the roller in a conventional
one-handed way.
Claims

1. A paint roller handle comprising a primary handle, having a primary gripping region, and an auxiliary handle, having an auxiliary gripping region, the auxiliary handle being separate from and attachable to the primary handle such that the primary gripping region can be gripped for one handed operation, and both the primary and auxiliary handles are of fixed length and are of such length that when the primary and auxiliary handles are joined together the primary and auxiliary gripping regions can be gripped simultaneously by a respective hand of a user to allow a two-handed operation.

2. A handle as claimed in Claim 1, in which the gripping regions are spaced to provide a non-overlapping two-handed grip.

3. A handle as claimed in Claim 1 or Claim 2, in which the gripping regions are spaced to provide a non-contacting two-handed grip.

4. A handle as claimed in any of Claims 1 to 3, in which the auxiliary handle is attachable to the primary handle by attachment means.

5. A handle as claimed in Claim 4, in which the attachment means is of the screw thread engagement type.
6. A handle as claimed in any preceding claim wherein the auxiliary handle comprises a plurality of gripping regions.

7. A handle as claimed in Claim 6 wherein the auxiliary handle comprises a pair of gripping regions which can be gripped simultaneously by the respective hands of a user.

8. A handle as claimed in any preceding claim, in which the gripping regions are defined by surface undulations.

9. A handle as claimed in any preceding Claim wherein the primary handle is generally curved.

10. A handle as claimed in Claim 9 wherein the primary handle has a swan-neck shape having a generally concave surface on one side thereof and a generally convex surface on the other side thereof.

11. A handle as claimed in Claim 10 wherein the said convex surface includes a pair of undulations.

12. A handle as claimed in Claim 1, in which the primary handle forms part of a paint roller.
13. A handle as claimed in Claim 12 wherein the proximal end of the primary handle is joined to a stem of a roller frame and the primary handle is cranked to that the longitudinal axis of the said stem is offset from the longitudinal axis of the said auxiliary handle.

14. A handle as claimed in any preceding claim wherein the length of the primary handle is in the range of 10 to 50cm, preferably 10 to 30cm, and more preferably 10 to 20cms and more preferably 13 to 17cm.

15. A handle as claimed in any preceding claim wherein the length of the auxiliary handle is in the range of 10 to 50cm, preferably 10 to 30cm, more preferably 20 to 30cm and most preferably 23 to 27cm.

16. A handle as claimed in any preceding claim wherein one or both of the primary handle and auxiliary handle are of plastics material.

17. A handle as claimed in Claim 16 wherein outer surface of one or both of the said primary and auxiliary handles comprises a thermoplastic elastomeric material.

18. A paint roller comprising a handle as claimed in any preceding claim.
Application No: GB0716063.3
Claims searched: 1-18
Examiner: Dr Steven Chadwell
Date of search: 27 September 2007

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

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