McKenna

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements in and relating to Dust Pans, Crumb Trays, and the like

I, LEO ANDREW SMITH, a British Subject, of St. Anne's, North Drive, Wentworth, in the County of Surrey, do hereby declare the nature of this invention to be as follows:—

The present invention relates to dust pans, crumb trays and like devices for the collection of sweepings, and has for its primary object to provide a modified and improved form of such devices which facilitates the collection of the sweepings and the manipulation of the device.

According to one feature of the present invention the bottom of the device is shaped or disposed so as to cause the straight leading or collecting edge thereof to be brought firmly into line or edge contact with the surface upon which the device is rested, thus to prevent the sweepings from passing beneath the said edge.

According to another feature of the invention, the bottom or floor of the device is shaped or disposed so that a transverse frontal portion thereof is inclined downwards towards the leading or collecting edge of the device so that the brush or other sweeping means in passing thereover tends to press the said leading or collecting edge down upon the surface on which the device is rested and thus prevents the tray from retreating before the brush.

In the form at present preferred the under surface of the tray bottom is inwardly curved, inclined or inset from both front and rear edges thereof so that the device rests upon the said edges with the medial portion of the tray bottom held above the surface upon which the device is rested.

In carrying the invention into effect, the bottom of the device may be given a curved or angularly offset profile or a combined curved and angular profile and may be cut from the solid, bent from sheet material or built up in sections as desired.

The inclined or curved portion of the tray bottom in which the leading or collecting edge is embodied may be made as a separate unit which preferably can be readily attached to and released from the device for cleaning, repair or replacement as desired.

[Price 2/-]

In one constructional form of the device more particularly intended for use as a dust pan for collecting the sweepings from floors or carpets for example, a box-like container having its front side open constitutes the transverse rear part of the tray or pan. The top rear edge of the box-like container is provided with a forwardly projecting cover or flap, fixed or hinged as desired and the end walls thereof are extended forwards or have separate forward extensions attached thereto. The forward extensions or at least the under edges thereof are downwardly inclined towards their front ends and have a front collecting plate attached thereto, in such manner that the leading or collecting longitudinal edge of the plate is located at a substantially lower level than that of the container bottom. The rear longitudinal edge of the said plate abuts or rests upon the front longitudinal edge of the container bottom so that a ramped surface is provided to lead the sweepings from the collecting edge of the tray to the floor of the container, and only the front and rear longitudinal edges of the tray bottom contact the surface upon which the tray is rested.

Alternatively, the ends of the collecting plate may be slidably engaged in suitably disposed or inclined slots, grooves, brackets or fixtures provided in or carried by, or attached to, the extended end walls of the tray.

Any suitable material may be used in the construction of the device. For example, the container and end wall extensions may be constructed from wood or hard-setting plastic, and the collecting plate made of metal, for instance galvanised sheet steel or aluminium.

Alternatively, the entire device may be moulded or pressed from metal or plastic or a combination of such substances.

If required, handle means may be applied to the device, preferably to the rear wall of the container.

Furthermore, a front cover flap, preferably spring-loaded, may be hingedly fitted to cover the open front of the container. The flap may

13 SEP 1950

be arranged for manipulation by hand or by means of a foot pedal, or may be disposed so that it is deflected by the brush or other sweeping means, in order to admit the sweepings to the container.

Dated this 6th day of August, 1946.

McKENNA & CO.,

12, Whitehall, London, S.W.1.

COMPLETE SPECIFICATION

Improvements in or relating to Dust Pans, Crumb Trays, and the like

I, LEO ANDREW SMITH, a British Subject, of St. Anne's, North Drive, Wentworth, in the County of Surrey, do hereby declare the nature of this invention and the manner in which the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to dust pans, crumb trays and like devices for the collection of sweepings and has for its primary object to provide a modified and improved device of this kind which, when resting on the floor or other surface to be swept, resists displacement by the brush or other sweeping means and maintains the leading or collecting edge of the device firmly in contact with the said surface.

In the above connection, there are known forms of dust pans or similar devices wherein the bottom of the device is arched or otherwise suitably shaped or disposed to rest upon front and rear transverse edge portions, thereby bringing the flat leading or collecting edge of the device firmly into contact with the surface to be swept, and wherein the transverse frontal portion is inclined downwards towards the said leading or collecting edge of the device so that the brush or other sweeping means on passing thereover tends to press the leading or collecting edge downwards.

In such prior devices of which I am aware, the rear transverse edge portion of the bottom of the device is rounded in cross section so as to make contact with the surface to be treated along a line inwardly offset from the rear wall of the device, or the said transverse portion has a flat surface of appreciable area, so as easily to slide over the said surface and no attempt is made to prevent the device from retreating before the pressure of the brush or other sweeping means except by manually retaining the device in position. In one such prior device, however, it has been proposed to secure the device against retrograde movement under pressure from the brush or other sweeping means by providing the rounded rear edge of the arched bottom with a centrally arranged foot which is adapted frictionally to engage the surface upon which the device rests and thus to check the rearward sliding movement of the device as the sweeping means presses thereagainst.

It will be obvious that the last mentioned prior arrangement would possess disadvantages in practice in that it would be liable to rock about the rear central supporting foot and thus permit the leading or collecting edge of the device to lift at one end or the other from the surface upon which it is resting during the sweeping operation.

The present invention aims at overcoming the last mentioned disadvantage in providing means for securing dust pans, or like devices against retrograde movement other than by manual retention of the device and to this end according to the present invention, I provide a dust pan, crumb tray or like device for the collection of sweepings, having the bottom of the device arched or similarly shaped or disposed to provide a transverse frontal portion which is inclined downwards towards the leading or collecting edge of the device so that the brush or other sweeping means in passing thereover tends to press the said leading or collecting edge down upon the surface upon which the device is resting, and also to provide a transverse rear portion which is inclined downwards towards the rear wall of the device so as to form therewith a bottom rear edge of sharp angular form which lies at the extreme rear of the device and in the same plane as the leading or collecting edge of the device and is adapted to make sharp edge contact with the said surface across substantially the entire width of the device for the purpose set forth.

In order that the invention may be clearly understood and readily carried into effect constructional forms thereof will now be described by way of example with reference to the accompanying drawings in which:—

Figure 1 is a front perspective view of a dust pan constructed in accordance with the invention for collecting sweepings from floors and carpets for example;

Figure 2 is a cross sectional elevation thereof;

Figure 3 is a fragmentary, cross sectional view showing an alternative arrangement of the front collecting plate;

Figure 4 is a front perspective view of an alternative constructional form of dust pan embodying the invention;

Figure 5 is a development of a one piece blank from which the dust pan shown in

Figure 4 is produced by folding and ~~bending~~; while

Figure 6 is a cross sectional detail view of the dust pan shown in Figure 4.

As shown in the drawings, the dust pan is formed with spaced end walls 1 joined by a transverse rear wall 5, a bottom floor member 2 and a forwardly projecting cover flap 3 which together constitute a box-like container having its front open. The flap 3 may be fixed or hingedly connected to the top edge of the rear wall 5, while the bottom member 2 is upwardly inclined towards its front transverse edge.

The end walls 1 have extensions 1*a* projecting forwards from the open front of the container and a bottom transverse collecting plate 4 attached to the extensions 1*a* in such a manner as to form a front extension of the bottom floor member 2 and so that the leading transverse collecting edge 4*a* of the plate 4 is located at a substantially lower level than that of its rear transverse edge 4*b* which rests upon or is attached to the raised forward transverse edge of the bottom member 2. The bottom and floor of the dust pan is thus in effect arched and the collecting plate 4 provides a ramped surface to lead the sweepings from the collecting edge 4*a* of the tray towards the rearwardly and downwardly inclined floor of the tray container formed by the member 2, while the rear edge of the bottom lies at the extreme rear of the device and makes an edge contact with the surface upon which the device rests.

In the form shown in Figures 1, 2 and 3, the dust pan is of section built construction with the members 1, 2, 3 and 5 formed for example of wood, a hard-setting plastic or metal or a combination of such materials and secured together edge to edge for example by screws, nails and/or adhesive when of wood or plastic, and by screws, rivets and/or welding when of metal.

The lower edges of the end wall members 1 are upwardly inclined towards the transverse front edge of the member 2 and the latter is secured to the inclined edges of the end walls so as to lie at an inclination as shown and form with the rear wall 5 an acute corner 5*a* which lies at the extreme rear of the device in the same plane as the leading or collecting edge 4*a*.

The lower edge of the end plate extensions 1*a* are upwardly inclined towards the forward raised edge of the bottom member 2 which may be rebated in order snugly to receive the rear transverse marginal edge of the collecting plate 4 which is secured at its ends, e.g. by nails or screws, to the inclined lower edges of the end wall extensions 1*a*.

The collecting plate 4 is thus inclined downwards in the forward direction so that its forward collecting edge 4*a* makes a firm edge or line contact with the surface upon which the dust pan is rested as shown in Figure 2.

Alternatively, as shown in Figure 3, the marginal portion of the forward collecting edge 4*a* of the plate 4 may be bent inwards so as to lie substantially in the plane containing the lowermost rear transverse edge of the bottom member 2 and the forward ends of the end wall extensions 1*a*.

The collecting plate 4 could be made of any of the materials mentioned above or of suitably tough glass for example, but may, with advantage, be made of a sheet of metal such as steel, copper, brass or aluminium suitably treated if desired as a protection from rust or corrosion.

As an alternative or in addition to the arrangement above described the ends of the collecting plate 4 may be slidably engaged in suitably disposed and inclined slots, grooves, guides, brackets or other fixtures provided in or carried by the end plate extensions 1*a*, and in either form the said plate is adapted to be readily removed for adjustment, repair or replacement.

Alternatively, the entire dust pan with or without the collecting plate 4 may be formed in one piece by moulding, pressing or casting from metal or a hard-setting plastic or a combination of such materials.

In the form shown in Figures 4 and 6 the dust pan is produced as a one piece bent metal construction from the sheet metal blank shown in Figure 5 upon which figure are indicated by like references the parts of the article shown in Figure 4. The members 2 and 4 may be provided with bent over tongues 2*a*, 4*c* respectively, which form flanges for securing the said members to the end walls 1. If desired, the parts of the blank when folded and bent may be secured in place by means such as rivets and/or by welding e.g. seam or spot welding along the meeting edges of the members.

The dust pan may be provided with handle means and in the form shown in the drawings, such handle means comprise an internally threaded socket 6 attached to or formed integral with a mounting flange 7 which is secured to the rear wall 5 of the pan and serves to receive the lower threaded end of a handle 8. The socket 6 may be inset as shown so that the handle 7 is inclined forwards thus to cause the weight thereof to apply a forwardly and downwardly acting pressure upon the pan in use.

In the operation of the dust pan above described, when the pan is applied to the floor, carpet or other surface to be swept it is supported upon the front edge or marginal portion 4*a* of the collecting plate and the rear transverse edge of the bottom member 2 so that the said front edge rests firmly upon

the floor and need not be pushed downwards to collect dust. Further, in sweeping dust or the like into the pan the brush or broomhead presses upon the inlined surface of the plate 4 and causes the edge or marginal edge portion 4*a* of the plate and lower rear edge of the member 2 to contact even more firmly with the floor surface or carpet. The sharp edge or line contact of the rear transverse edge 5*a* of the bottom member 2 with the floor at the extreme rear of the device serves to resist the rearward displacement of the pan by the pressure of the brush or broomhead whilst keeping the front edge or marginal portion 4*a* from lifting or rocking either endwise or longitudinally. Thus, the dust pan may be left freely resting upon the floor or carpet whilst the user applies both hands to the manipulation for example of a long handled broom and so avoids the inconvenience of stooping or kneeling in performing the sweeping operation. When using one hand for the manipulation of the brush or broom the handle of the pan may be held by the other hand of the user and additional downward pressure thus applied to the pan.

Furthermore, a front cover flap, preferably spring loaded, may be hingedly fitted to act as a closure for the open front of the tray container. The flap may be arranged for manipulation by hand or by means of a foot pedal, or may be disposed so that it is deflected by the brush or other sweeping means, in order to admit the sweepings to the container.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A dust pan, crumb tray or like device for the collection of sweepings, having the bottom of the device arched or similarly shaped or disposed to provide a transverse frontal portion which is inclined downwards towards the leading or collecting edge of the device so that the brush or other sweeping means in passing thereover tends to press the said leading or collecting edge down upon the surface on which the device is resting, and also to provide a transverse rear portion which is inclined downwards towards the rear wall of the device so as to form therewith a bottom rear edge of sharp angular form which lies at the extreme rear of the device and in the same plane as the leading or collecting edge of the device and is adapted to make sharp edge contact with the said surface across substantially the entire width of the device for the purpose set forth.

2. A device as claimed in claim 1, wherein the downwardly inclined frontal portion of the bottom of the device in which the leading or collecting edge is embodied is made as a separate unit which is adapted to be readily attached to the device and removed therefrom for cleaning, repair or replacement as desired.

3. A device as claimed in claim 1 or 2, wherein the entire body of the device, including the rear transverse supporting edge and with or without the frontal portion embodying the leading or collecting edge, is formed in one piece by moulding, pressing or casting.

4. A device as claimed in claim 1, 2 or 3, provided with handle means which are so disposed that the weight thereof and/or pressure upon the handle tends to force the leading or collecting edge of the bottom of the device into closer contact with the surface upon which the device is supported.

5. A device as claimed in any of the preceding claims, having a front cover flap, e.g. a spring-loaded flap, which is hingedly mounted so as to form a closure for the open front of the tray and wherein the flap is arranged for deflection by the brush or other sweeping means in order to admit the sweepings into the device.

6. A dust pan, crumb tray or like device for the collection of sweepings, substantially as described with reference to Figures 1, 2 and 3 or with reference to Figures 4, 5 and 6 of the accompanying drawings.

Dated this 29th day of September, 1947.

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Applicant's Solicitors.

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the floor and need not be pushed downwards to collect dust. Further, in sweeping dust or the like into the pan the brush or broomhead presses upon the inlined surface of the plate 4 and causes the edge or marginal edge portion 4*a* of the plate and lower rear edge of the member 2 to contact even more firmly with the floor surface or carpet. The sharp edge or line contact of the rear transverse edge 5*a* of the bottom member 2 with the floor at the extreme rear of the device serves to resist the rearward displacement of the pan by the pressure of the brush or broomhead whilst keeping the front edge or marginal portion 4*a* from lifting or rocking either endwise or longitudinally. Thus, the dust pan may be left freely resting upon the floor or carpet whilst the user applies both hands to the manipulation for example of a long handled broom and so avoids the inconvenience of stooping or kneeling in performing the sweeping operation. When using one hand for the manipulation of the brush or broom the handle of the pan may be held by the other hand of the user and additional downward pressure thus applied to the pan.

Furthermore, a front cover flap, preferably spring loaded, may be hingedly fitted to act as a closure for the open front of the tray container. The flap may be arranged for manipulation by hand or by means of a foot pedal, or may be disposed so that it is deflected by the brush or other sweeping means, in order to admit the sweepings to the container.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A dust pan, crumb tray or like device for the collection of sweepings, having the bottom of the device arched or similarly shaped or disposed to provide a transverse frontal portion which is inclined downwards towards the leading or collecting edge of the device so that the brush or other sweeping means in passing thereover tends to press the said leading or collecting edge down upon the surface on which the device is resting, and also to provide a transverse rear portion which is inclined downwards towards the rear wall of the device so as to form therewith a bottom rear edge of sharp angular form which lies at the extreme rear of the device and in the same plane as the leading or collecting edge of the device and is adapted to make sharp edge contact with the said surface across substantially the entire width of the device for the purpose set forth.

2. A device as claimed in claim 1, wherein the downwardly inclined frontal portion of the bottom of the device in which the leading or collecting edge is embodied is made as a separate unit which is adapted to be readily attached to the device and removed therefrom for cleaning, repair or replacement as desired.

3. A device as claimed in claim 1 or 2, wherein the entire body of the device, including the rear transverse supporting edge and with or without the frontal portion embodying the leading or collecting edge, is formed in one piece by moulding, pressing or casting.

4. A device as claimed in claim 1, 2 or 3, provided with handle means which are so disposed that the weight thereof and/or pressure upon the handle tends to force the leading or collecting edge of the bottom of the device into closer contact with the surface upon which the device is supported.

5. A device as claimed in any of the preceding claims, having a front cover flap, e.g. a spring-loaded flap, which is hingedly mounted so as to form a closure for the open front of the tray and wherein the flap is arranged for deflection by the brush or other sweeping means in order to admit the sweepings into the device.

6. A dust pan, crumb tray or like device for the collection of sweepings, substantially as described with reference to Figures 1, 2 and 3 or with reference to Figures 4, 5 and 6 of the accompanying drawings.

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