June 8, 1965 T. E. HOSKINS ETAL 3,187,922

FLUSH PANS

Filed May 18, 1962 2 Sheets-Sheet 1

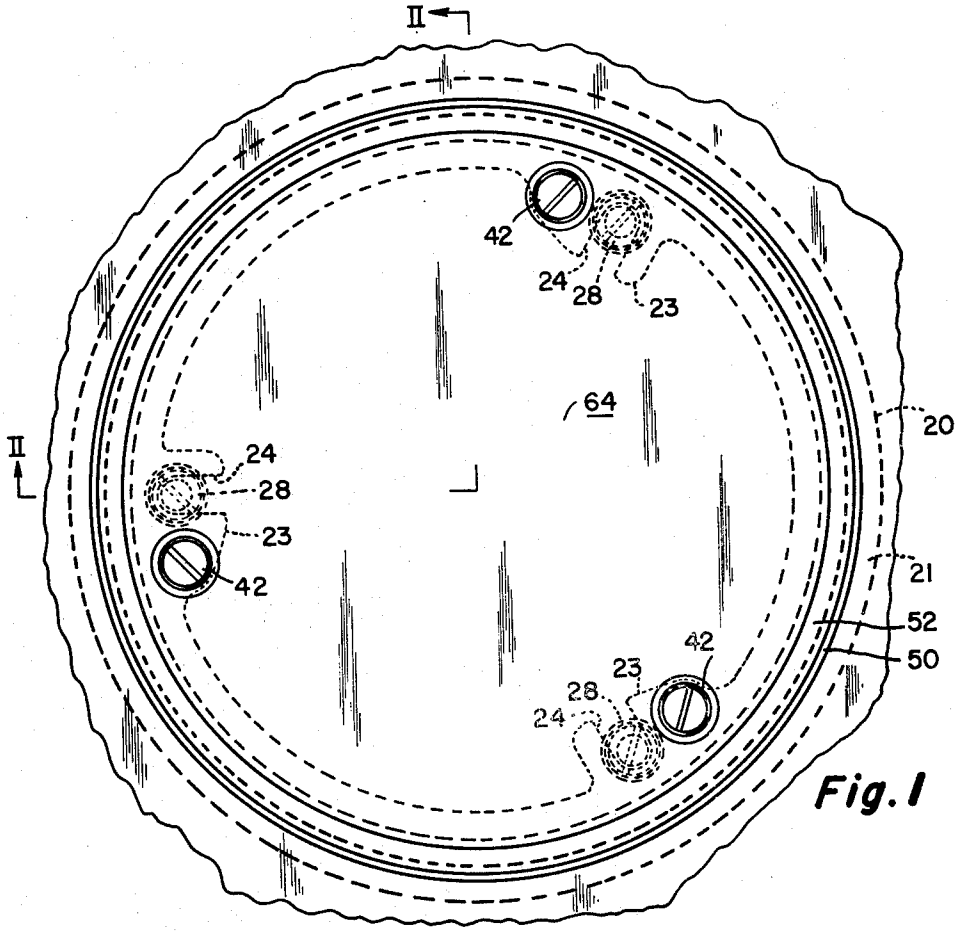


Fig. 1

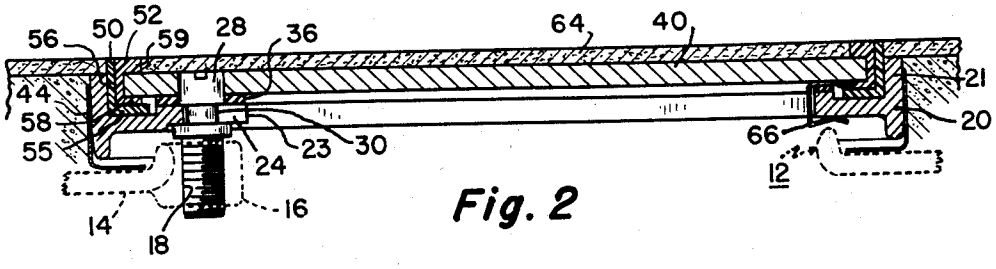


Fig. 2

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FLUSH PANS

Filed May 18, 1962 2 Sheets-Sheet 2

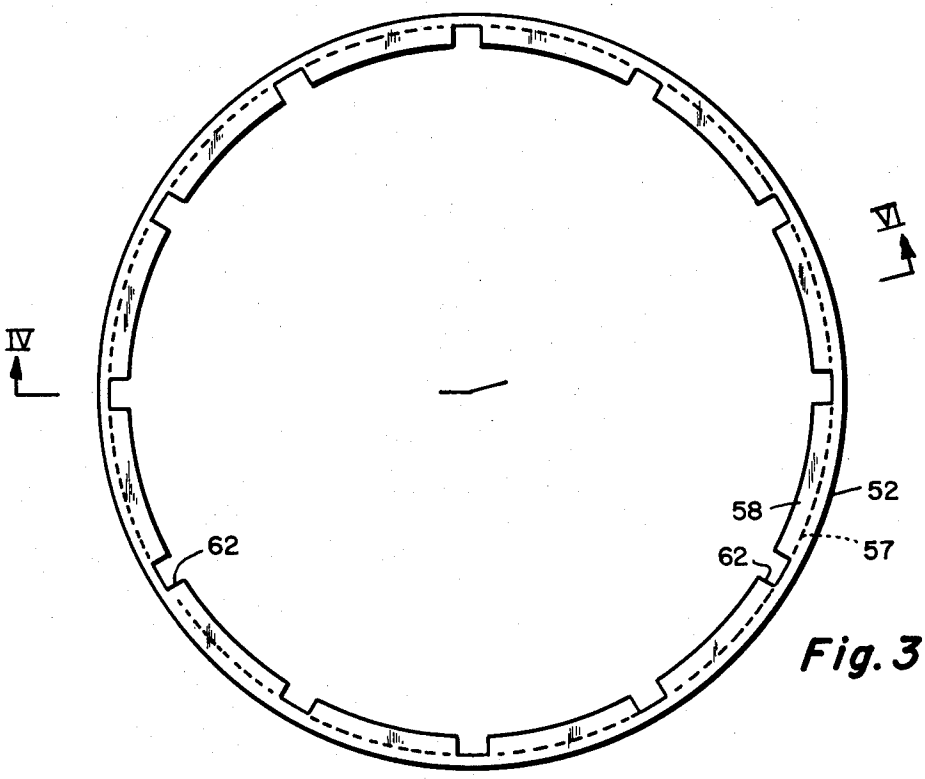


Fig. 3

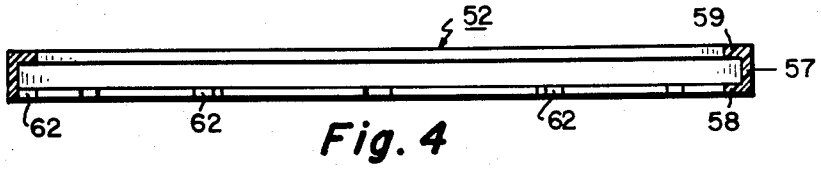


Fig. 4

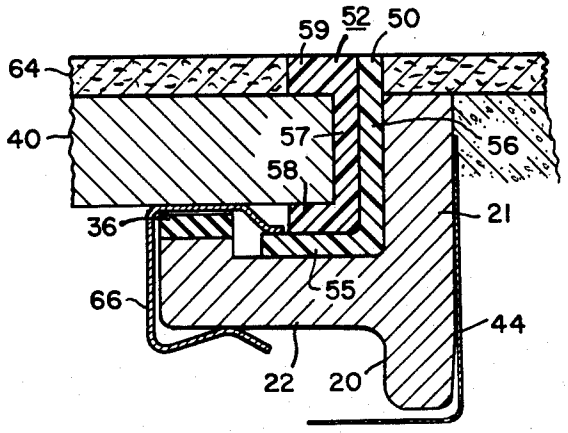


Fig. 5

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United States Patent Office 3,187,922 Patented June 8, 1965

3,187,922

FLUSH PANS

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Filed May 18, 1962, Ser. No. 195,788
4 Claims. (Cl. 220—3.4)

This invention relates to flush pans used in closures for underfloor wiring systems. More particularly, it relates to a two-piece flush pan assembly which protects the floor covering when the closure is open for access to the underfloor wiring system.

In modern buildings, particularly large office buildings, the use of underfloor wiring systems is very common. Such systems protect against electrical obsolesence by providing a means whereby electrical outlets can be made available at any location in the floor. Access openings or hand holes are spaced throughout the floor providing a plurality of vertical openings into the underfloor wiring system. These openings are generally provided with vertically adjustable closures which include a cover plate. The closure is designed so that the cover plate will be flush with the floor, usually concrete. Frequently, the concrete floor is covered with a finished flooring material of wood, linoleum, tile or other suitable flooring material. In such instances, it is desirable to have the finished flooring material covering as much of the access opening as is possible. However, the portion of the finished flooring material covering the access opening must be separate from the remainder of the flooring material if the opening is to be readily accessible.

It is now the general practice to lay the desired finished flooring material around the access opening. A flush pan is placed on top of the cover plate and a piece of the finished flooring material cut to fit inside the linoleum pan. However, to remove the cover plate, it is necessary to remove the flush pan. In removing the flush pan, the edges of the finished flooring material surrounding the access opening may be damaged. This invention provides a flush pan which protects the edges of the flooring material surrounding the access opening and the edges of the finished flooring material on the cover plate. Essentially, it consists of a two-piece flush pan. One piece of the flush pan protects the outer edges of the linoleum or other finished flooring material and is not removed when the closure is opened. A second piece or inner section fits around the cover plate. It is removed with the cover plate when the closure is opened and protects the edges of the finished flooring material covering the cover plate.

The present preferred embodiment of this invention is shown in the accompanying drawing wherein,

FIGURE 1 is a plan view of the flush pan of this invention positioned in a closure;

FIGURE 2 is a sectional view taken on line II—II of FIGURE 1;

FIGURE 3 is a bottom view of the inner section of the flush pan of this invention;

FIGURE 4 is a sectional view taken on line IV—IV of FIGURE 3; and

FIGURE 5 is an enlarged view of a portion of the section shown in FIGURE 2.

In the drawing, an access opening 12 into an underfloor wiring system is shown. Any conventional means may be used to provide an access opening into the underfloor wiring system, such as a junction box or a header duct. In the drawing, the access opening is shown through a junction box. A shoulder 14 on the junction box surrounds the access opening. A plurality of bosses 16 are formed integral with the shoulder and extend into the

access opening. Each boss has a threaded bore 18 through it.

A closure for use in such access openings with which this invention may be used is fully described in a co-pending application of Thomas E. Hoskins filed December 15, 1960, entitled "Closure for Access Openings and Method of Using the Same" bearing Serial No. 75,983 and now Patent No. 3,081,896. It comprises an annular adjusting ring 20 which is dimensioned to fit around the perimeter of the opening 12. The ring is T-shaped in section and has a vertical flange 21 and a horizontal web 22. A plurality of lugs 23 extend inwardly from the horizontal web 22 of the adjusting ring. Each lug has a slot 24, the ring and the lugs being so dimensioned and positioned that the slots 24 may be aligned with the bores 18 of the bosses 16.

Adjusting screws 28 engage the threaded bores 18. The heads of the screws 28 have grooves 30 dimensioned to receive and hold a portion of the lugs 23 from the adjusting ring. Thus, the adjusting ring can be raised or lowered by merely adjusting the screws. An annular gasket 36 rests on the outer portion of the horizontal web 22 and on the lugs extending from the web. A circular cover plate 40 rests on the gasket and is fastened to the adjusting ring by screws 42. An L-shaped ring sleeve 44 rests on the shoulder 14 surrounding the access opening and encircles the adjusting ring.

A flush pan made according to this invention rests on the inner portion of the web 22 of the adjusting ring and extends vertically to the surface of the finished floor covering. It is composed of two annular sections, an outer section 50 and an inner section 52. The flush pan sections can be made of metal or any other suitable material. However, it has been found most desirable from an expense standpoint, including both material costs and fabrication costs, to utilize molded plastic sections. Nylon has proven very satisfactory. Furthermore, a plastic flush pan can be furnished in a color to match the finished flooring material.

The outer section 50 of the flush pan of this invention is L-shaped in cross section. The horizontal leg 55 of this section rests on the horizontal web of the adjusting ring and the vertical leg 56 abuts the vertical flange of the adjusting ring and extends in a vertical direction above the vertical web a distance equal to the thickness of the finished floor covering.

The inner section 52 of the flush pan of this invention is U-shaped in cross-section. The base 57 of the U-shaped section abuts the vertical leg 56 of the L-shaped section and one leg 58 of the U-shaped section rests on the horizontal leg of the L-shaped outer section. The upper leg 59 of the U-shaped section has a thickness equal to the thickness of the finished flooring material. The legs 58 and 59 encompass the periphery of the cover plate 40. As shown in FIGURES 3 and 4, slots 62 are cut in the lower leg of the inner section. These slots provide a means whereby the inner section of the flush pan may be readily snapped over the cover plate 40 without bending or deforming the entire section as would be necesary if the lower leg was solid.

A piece of finished flooring material 64 is cut to fit over the cover plate inside the leg 59 of the inner section of the flush pan. The material is preferably cemented to the cover plate. In this manner, the cover plate 40, the inner section 52 of the flush pan, and the piece of flooring material 64 become a single unit of the assembly. The leg 59 of the flush pan will protect the edge of the material 64 from damage when the cover plate is removed.

The lower leg of the inner section of the flush pan of this invention is shorter than the horizontal leg of the

outer section of the flush pan. A U-shaped spring clip 66 is positioned on the exposed edge of the horizontal leg 55 of the outer section of the flush pan and holds the outer section to the adjusting ring 20. Thus, the outer section of the flush pan is not removed from the closure when the cover plate section, including the cover plate 40, the inner section 52 of the flush pan, and the flooring material 64, is removed for access to the underfloor system. The vertical leg 56 of the outer section of the flush pan protects the edges of the flooring material surrounding the access opening.

To install the flush pan of this invention in a closure as described above, the adjusting ring is positioned, by means of the adjusting screws, so that the top surface of the vertical flange is at the same level as the concrete flooring. The outer section of the flush pan is positioned on the horizontal web of the adjusting ring and the finished flooring may be laid around the edges of the vertical leg of the L-shaped outer section. The spring clip is positioned around the adjusting ring fastening the outer section of the flush pan to the adjusting ring. The inner section of the flush pan is positioned around the cover plate and the cover plate and the U-shaped section positioned on the adjusting ring. A piece of finished flooring is cut to fit inside the U-shaped section of the flush pan and on top of the cover plate is cemented thereto. The cover plate is then fastened to the adjusting ring.

The finished unit has the upper surface of the two sections of the flush pan and the floor covering terminating in the same horizontal plane so that a perfectly smooth floor covering is obtained with a minimum amount of the closure showing.

To remove the cover plate and obtain access to the underfloor wiring system, the cover plate, the inner section of the flush pan and the finished flooring material cemented to the cover plate are removed as a unit. The U-shaped section of the flush pan protects the edges of the portion of the finished flooring positioned inside thereof and prevents damage to the edges. The L-shaped section of the flush pan remains in position around the closure opening and protects the edges of the finished flooring material surrounding the opening from damage.

To facilitate removal of the cover unit, the bores through which screws 42 which hold the cover unit to the adjusting ring pass are generally larger than the diameter of the screws 42. The screws 42 are thus removed and larger screws are threaded into the bores. As these screws abut the adjusting ring, they elevate the cover unit sufficiently to enable a workman to readily lift the unit completely out of the access opening.

From the foregoing, it is readily apparent that the double ring construction of the flush pan of this invention provides a flush pan which protects the finished flooring material when the closure for the access opening is removed to obtain access into the underfloor wiring system. One section of the double ring flush pan remains in position protecting the edges of the finished flooring surrounding the opening and the other sections of the double ring pan is removed with the cover plate to the closure and protects the section of the finished flooring covering the cover plate.

While this invention has been described in terms of its present preferred embodiment, it should be understood that it may be otherwise embodied within the scope of the following claims.

We claim:

1. In a closure for access openings into underfloor wiring systems including an adjusting ring having a horizontal web and a vertical flange, an adjusting screw, a cover plate, and a floor covering, the improvement comprising: a flush pan having two sections, an outer section, L-shaped in cross-section, one leg of the outer section resting on the horizontal web of the adjusting ring and the other leg of the section abutting the vertical flange of the adjusting ring, and an inner section encompassing the periphery of the cover plate, U-shaped in cross-section, one leg thereof resting on the horizontal leg of the outer section and supporting the cover plate, one side of the base of the inner section abutting the vertical leg of the L-shaped outer section and the other side contacting the edge of the cover plate, the two sections terminating in the same horizontal plane and the same horizontal plane as the flood covering.

2. In a closure for access opening into underfloor wiring system including an adjusting ring having a horizontal web and a vertical flange, an adjusting screw, a cover plate, and a floor covering, the improvement comprising: a flush pan having two sections, an outer section, L-shaped in cross-section, one leg of the outer section resting on the horizontal web of the adjusting ring and the other leg of the section abutting the vertical flange of the adjusting ring, and a resilient inner section, U-shaped in section, encompassing the periphery of the cover plate, the lower leg thereof resting on the horizontal leg of the outer section and having a plurality of slots therein, the uppermost surface of the inner section and said other leg of the outer section terminating in the same horizontal plane as the top surface of the floor covering to provide a uniform flat surface.

3. In a closure for access openings into underfloor wiring systems including an adjusting ring having a horizontal web and a vertical flange, an adjusting screw, a cover plate, and a floor covering, the improvement comprising: a flush pan having two sections, an outer section, L-shaped in cross-section, one leg of the outer section resting on the horizontal web of the adjusting ring and the other leg of the section abutting the vertical flange of the adjusting ring, and a resilient inner section, U-shaped in section, encompassing the periphery of the cover plate, the lower leg thereof resting on the horizontal leg of the outer section and having a plurality of slots therein, the uppermost surface of the inner section and said other leg of the outer section terminating in the same horizontal plane as the top surface of the floor covering to provide a uniform flat surface, and a spring clip holding the outer section of the flush pan to the adjusting ring whereby the cover plate and inner section of the flush pan can be removed without removing the outer section of the flush pan.

4. In a closure of circular access openings into underfloor wiring systems including an adjusting ring having a horizontal web and a vertical flange, an adjusting screw, a circular cover plate, and a floor covering, the improvement comprising: an annular flush pan having two ring-like sections, an outer section, L-shaped in cross section, one leg of the outer section resting on the horizontal web of the adjusting ring and the other leg of the section abutting the vertical flange of the adjusting ring, and a resilient inner section, U-shaped in cross-section, encompassing the periphery of the cover plate, the lower leg thereof resting on the horizontal leg of the outer section and having a plurality of slots therein, the uppermost surface of the inner section and said outer leg of the outer section terminating in the same horizontal plane as the top surface of the floor covering to provide a uniform flat surface.

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THERON E. CONDON, *Primary Examiner.*

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,187,922 June 8, 19

Thomas E. Hoskins et al

It is hereby certified that error appears in the above numbered pat ent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 58, for "sections" read -- section --; column 4, line 9, for "flood" read -- floor --; line 10, for "opening" read -- openings --; line 11, for "system" read -- systems --; line 45, for "of" read -- for --; same column 4, line 58, for "outer leg" read -- other leg --.

Signed and sealed this 26th day of October 1965.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNE
Commissioner of Patents