Nov. 20, 1962 W. E. KELLY, JR 3,064,850

ADJUSTABLE OUTLET BOX

Filed May 29, 1961

Fig. 1

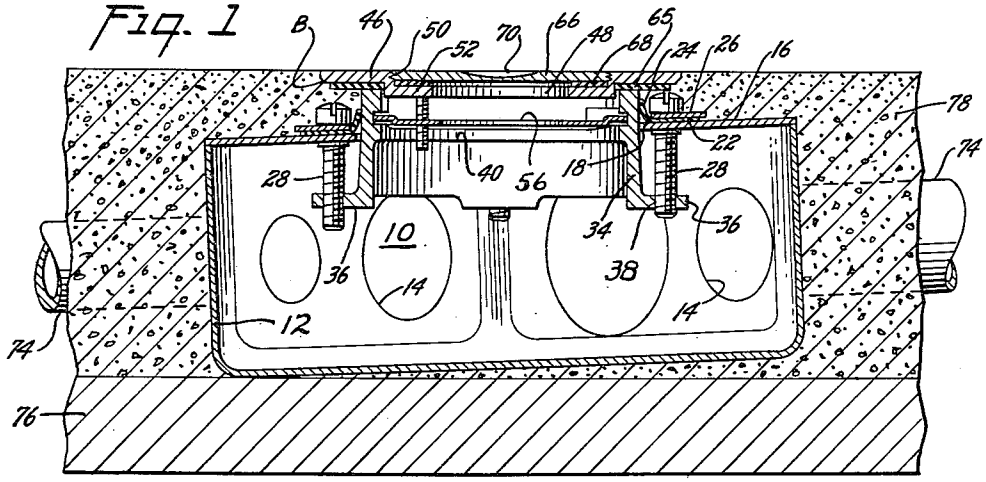


Fig. 2

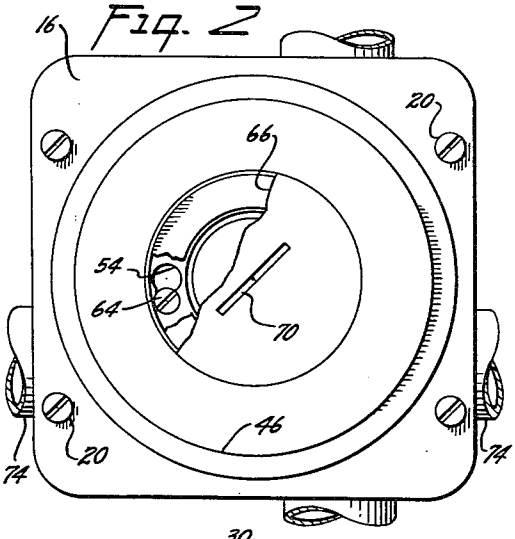


Fig. 3

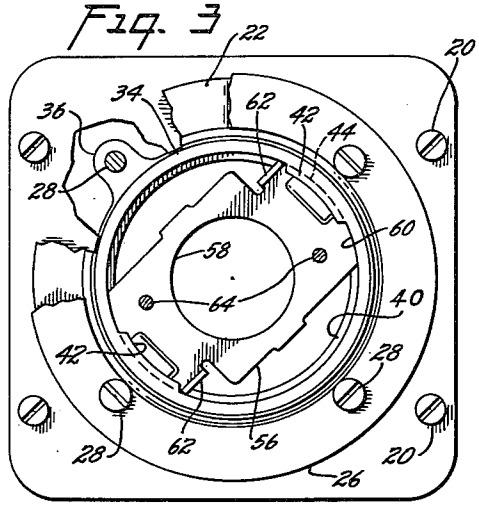


Fig. 6

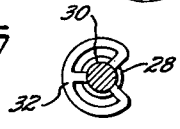


Fig. 4

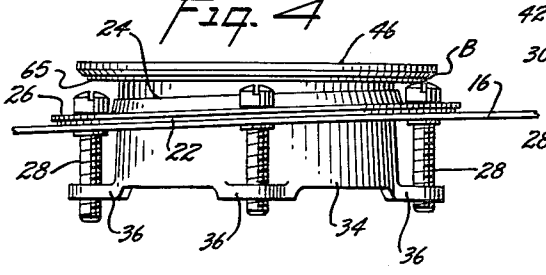
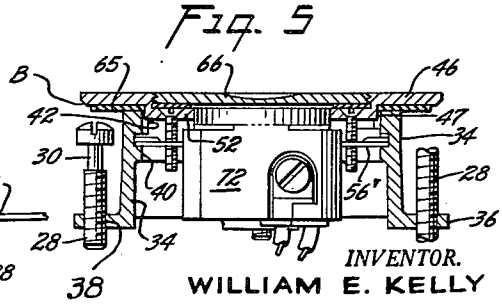


Fig. 5



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ADJUSTABLE OUTLET BOX

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The invention relates to junction or outlet boxes for electrical raceway systems and more particularly to adjustable outlet boxes which are adapted to be cast in place in concrete floors of building structures to provide a permanent outlet flush with the floor defining surface for receiving, for example, stand-by extensions for general wiring, duplex floor box extensions, telephone outlet boxes, electric current plug-in sockets and the like.

Prior to the pouring of concrete floors in partially completed building structures, similar outlet boxes are initially installed with electric raceway conduits connected thereto. Usually such boxes are set too high or too low or in non-level position with respect to a proposed floor surface or, subsequently accidently disturbed out of initially set position whereby the cover or floor plate of the outlet box would not be level or flush with a finished concrete floor surface. Thus, the floor plate of such outlet boxes is adjustable relative to the box proper to permit leveling thereof flush with a finished concrete floor surface.

Adjustable outlet boxes as known theretofore however, possessed certain disadvantages in that they were complicated, not positively adjustable in all directions of movement, not easily adjustable, unnecessarily heavy and expensive to manufacture and costly in the amount of time required to effect final adjustment of a floor plate relative to the closure lid of such outlet boxes and a finished concrete floor surface.

Accordingly, it is an object of the invention to provide an improved adjustable outlet box which is not subject to the above noted disadvantages.

Another object of the invention is to provide an improved adjustable outlet box wherein a rotatably detachable floor plate is adjustably, indirectly mounted in the closure lid of said outlet box.

A further object of the invention is to provide an improved adjustable outlet box wherein relative adjustment of a floor plate is not dependent in whole or in part or influenced by a resilient gasket.

Another object of the invention is to provide an improved adjustable outlet box wherein an annular member, rotatably detachably mounting a floor plate, is adjustably journaled in the closure lid of said outlet box.

A further object of the invention is to provide an improved adjustable outlet box wherein means for adjusting a floor plate relative to the closure lid of said box, is held captive on said closure lid.

Another object of the invention is to provide an improved adjustable outlet box wherein an annular member, adjustably carried by the closure lid of said outlet box and mounting a rotatably detachable floor plate, is disposed in floating relation with an annular gasket secured on the closure lid of said box.

With the above and other objects in view, the invention resides in the novel construction, combination, and arrangement of parts, the novel features of which are set forth with particularity in the appended claims, the invention itself, however, both as to its organization and method of operation, together with additional objects and advantages thereof, being best understood from the following description of a specific embodiment thereof, when taken in connection with the accompanying drawing in which:

FIGURE 1 is a cross-sectional view through the improved adjustable outlet box as assembled and embedded in a concrete floor with its floor plate adjusted level with the finished floor surface;

FIGURE 2 is a top plan view of the assembled outlet box per se, in closed position and showing a pair of conduits connected thereto "in-line" position;

FIGURE 3 is a similar view, partially in section, with the floor plate removed showing the adjustable annular member, the annular gasket secured on the closure lid of the outlet box in sealing engagement with the outer periphery of the annular member, and the locking plate for securing the floor plate on the adjustable annular member;

FIGURE 4 is a view in elevation, showing the annular member as adjustably carried by the closure lid of the outlet box and with the floor plate secured in the upper end of the annular member;

FIGURE 5 is a transverse sectional view through the adjustable annular member including the floor plate thereon and its closure cap, showing an electrical socket receptacle, for example, secured to the floor plate in depending relation thereto disposed in the adjustable annular member; and

FIGURE 6 is an enlarged detail sectional view, showing one of the adjusting screws in the manner in which they are held captive on the closure lid of the outlet box.

Referring to the drawing, the improved adjustable outlet box, generally indicated at **10**, comprises a rectangular base receptacle **12**, provided with a plurality of knockout openings **14**, formed in the side walls thereof in diametrically opposite, axial alignment, and a closure lid **16**, having a large circular opening **18**, centrally thereof adapted to be secured on the receptacle **12** by means of the screws **20**.

In accordance with the invention and as best shown in FIGURES 1 and 4, a flat annular gasket **22**, of resilient rubber-like material having an inner diameter substantially smaller than the diameter of the opening **18**, in the closure lid **16**, is mounted on the outer face of the closure lid **16**, with its inner peripheral edge **24**, in substantial overlapping concentric relation with the opening **18**, therein, a flat metal backing ring **26**, having a slightly larger inner diameter than the said opening **18**, being superimposed on the gasket **22**, in concentric relation therewith, and the assembly so retained on the closure lid **16**, by a plurality of relatively long machine screws **28**, provided with reduced neck portions **30**, and extending through suitable angularly spaced holes provided therefor in the ring **26**, gasket **22** and closure lid **16**, and maintained in adjustable captive relation with the closure lid **16**, by means of an E shaped spring ring **32**, embracing the reduced neck portion of each of the screws **28**, immediately below the closure lid **16**.

Further in accordance with the invention and as best shown in FIG. 4, an annular sleeve-like member **34**, having an outer diameter smaller than the diameter of the opening **18**, in the closure lid **16**, but larger than the inner diameter of the gasket **22**; the sleeve **34** being provided with a plurality of angularly spaced, integral ears or lugs **36**, each provided with a screw threaded opening **38**, therethrough, and extending radially from its outer peripheral edge at one end thereof, is disposed axially centrally of the closure lid opening **18**, with the captive screws **28**, depending from the closure lid **16**, threaded into the ears or lugs **36**, for supporting the annular member **34**, in adjustable floating relation relative thereto and with the inner peripheral edge portion **24**, of the gasket **22**, in upwardly flared sealing engagement with the outer periphery of the said member **34**.

The annular member **34** is further provided on its inner periphery with an annular shoulder **40**, and a pair of

diametrically opposite arcuate bosses or projections 42, in axially spaced relation to the upper face of the shoulder 40, forming open ended, arcuate slots 44, therebetween adapted for rotatably, detachably securing a floor plate 46, now to be described, indirectly on the upstanding free end of the adjustable annular member 34, as shown in FIGS. 4 and 5.

Further in accordance with the invention and as best shown in FIGS. 3 and 5, the floor plate 46, comprises an annular member of polished brass, for example, having an annular shoulder 47, on its underside and its lower outer peripheral edge beveled as indicated at B. Moreover, the floor plate 46, is provided with a central opening 48, therethrough and a relatively large screw-threaded counterbore 50, concentric therewith forming a wide, annular shoulder 52, below the top face of the floor plate 46, provided at diametrically opposite points with "key-hole" openings 54, therethrough whereby an anchoring plate 56, having a central opening 58, therethrough and arcuate ends 60, including upturned stop projections 62, formed thereon, is secured to the underside of the floor plate 46, in spaced concentric relation therewith by means of a pair of flat head screws 64, having their heads seated in the smaller ends of the "key-hole" openings 54, in the annular shoulder 47. With the floor plate 46, so provided, it is secured on the upstanding free end of the adjustable member or sleeve 34, with an annular fiber gasket 65, therebetween by placing the floor plate 46, thereon with the anchoring plate 56, within the member 34, and rotating the same clockwise whereby the arcuate ends 60, including the upstanding stop projections 62, on the anchoring plate 56, coact with the slots 44, formed by the annular shoulder 40, and arcuate bosses 42, on the inner periphery of the member 34, after the manner of a "bayonet type" connection to securely lock the floor plate 46 thereon. When the outlet box 10 is so provided for future use, the counterbore 50, in the floor plate 46, is closed by means of a screw-threaded disc 66, having a suitable fiber washer 68, thereunder, and a suitable slot 70, in its upper face for manipulating the same with the aid of a screw driver or the like.

As above described, the anchoring plate 56, is utilized in conjunction with the floor plate 46, only in applications where the floor plate 46, may be provided with accessories such as a stand-by extension for general wiring, duplex extension or telephone wire outlet, for example, instead of an electric current outlet receptacle. However, when the floor plate 46, is to be provided with a current outlet receptacle such as a "Hubbell Type" outlet socket, for example, as indicated at 72, FIG. 5, the outlet socket is secured to the floor plate 46, in place of the anchoring plate 56, in like manner and suitably connected to the current carrying conductor extending through the conduits 74, the outlet socket 72, being connected to the floor plate 46, by means of a supporting bracket 56', integral therewith, having angularly bent oppositely extending arcuate free end portions and stop fingers as on the anchoring plate 56. Thus, when electrically actuated office machines, lamps and the like are to be energized, the closure disc 66, is removed from the floor plate 46, to expose the outlet socket 72 for plugging an extension cord therein.

In practice, the adjustable outlet box 10, with the usual rigid metallic raceway conduits, connected thereto in conventional manner, is suitably secured in a predetermined position on a sub-floor surface 76, with its floor plate 46, detached therefrom. In this position, the adjustable annular sleeve 34, of the outlet box 10, is adjusted to within a fraction of an inch of the proposed finished floor line with its free end face substantially level, with respect to thereto, and the floor plate 46, subsequently secured thereon. However, before or during the pouring of the concrete floor 78, the pre-set position of the outlet box 10, is often disturbed to the extent that the floor plate 46 will not be level with the finished floor line level. Thus, the adjustable feature of the outlet box 10, provides means, in accordance with the invention, for adjusting the floor plate 46, up or down and into level alignment with the finished surface of the concrete floor after the pouring thereof.

While the invention has been illustrated and described with respect to a preferred embodiment thereof, it is to be expressly understood that modifications may be made therein without departing from the inventive concept underlying the same. Therefore, the invention is not to be limited except as is necessitated by the prior art and the scope of the appended claims.

What is claimed is:

1. A floor outlet box including a detachable closure lid therefor having a central opening therethrough, an annular sleeve adapted to be received axially of said closure lid opening, said closure lid and said annular sleeve including coactable means whereby said annular sleeve is supported in adjustable floating relation by said closure lid, resilient means secured on said closure lid embracing said annular sleeve in flared sealing relation, an annular floor plate including an anchoring means thereon adapted to be detachably secured on the free end of said sleeve, and coactable means formed internally of the free end of said annular sleeve for receiving said anchoring means in locked relation upon relative clockwise rotation of said floor plate.

2. A floor outlet box including a detachable closure lid therefor having a central opening therethrough, an annular floor plate supporting member extending partly through said closure lid opening, said closure lid and said supporting member including coactable means whereby said annular member is supported in adjustable floating relation, a resilient flat annular member secured on said closure lid in overlapping concentric relation with said closure lid opening embracing said annular member in flared sealing relation, a floor plate including an anchoring means adapted to be rotatably detachably secured on the free end of said annular member, and means formed on the inner periphery of said annular member for receiving said anchoring means upon relative clockwise rotation of said floor plate.

3. A floor outlet box including a detachable closure lid therefor having a central opening therethrough, an annular sleeve having a plurality of radially extending members integral with one end thereof extending partly through said closure lid opening, adjustable means extending through said closure lid in depending captive relation engaging said radially extending members whereby said annular sleeve is supported in adjustable floating relation in said closure lid opening, a resilient annular member secured on said closure lid by said captive means embracing said annular sleeve in flared sealing relation, a floor plate including an anchoring means thereon adapted to be rotatably detachably secured on the free end of said annular sleeve, and means formed on the inner periphery of the free end of said annular sleeve for receiving portions of said anchoring means in coactable locked relation upon relative clockwise rotation of said floor plate.

4. A floor outlet box including a detachable closure lid therefor having a central opening therethrough, an annular sleeve adapted to be received axially of said closure lid opening in clearance relation, said closure lid and said annular sleeve including coactable means integral therewith whereby said annular sleeve is supported in adjustable floating relation by said closure lid, a resilient, flat, annular gasket including a backing ring therefor secured on said closure lid by the coactable means integral therewith, said resilient gasket being disposed in concentric, overlapping relation with said central opening therein whereby to embrace said annular sleeve in flared sealing relation, an annular floor plate having a screw-threaded counterbore concentric therewith and an anchoring means secured on the underside thereof in concentric relation with said counterbore whereby said floor plate is adapted

to be detachably secured on the exposed end of said annular sleeve, coactable means formed internally of the exposed end portion of said annular sleeve for receiving said anchoring means in locked relation upon clockwise rotation of said floor plate on said annular sleeve, and a closure disc screw-threaded in said counterbore flush with said floor plate.

5. A floor outlet box including a detachable closure lid therefor having a central opening therethrough, an annular sleeve adapted to be received axially of said closure lid opening in clearance relation, said closure lid and said annular sleeve including coactable means integral therewith whereby said annular sleeve is supported in adjustable floating relation by said closure lid, a resilient annular gasket including a backing ring therefor secured on said closure lid by the coactable means integral therewith embracing said annular sleeve in flared sealing relation, an annular floor plate having a screw-threaded counterbore concentric therewith, an electrical outlet socket having an anchoring means integral therewith detachably secured to the underside of said floor plate concentric with said counterbore adapted to be detachably secured on the exposed end of said annular sleeve, coactable means on the inner periphery of said annular sleeve for receiving said anchoring means in locked relation upon clockwise rotation of said floor plate on said annular sleeve, and a closure disc screw-threaded in said counterbore flush with said floor plate.

6. A floor outlet box including a detachable closure lid therefor having a central opening therethrough, a plurality of adjustable supporting members carried by said closure lid in depending, captive relation, an annular sleeve adapted to be received axially of said closure lid opening in clearance relation, said annular sleeve including means coactable with the adjustable members on said closure lid whereby said annular sleeve is supported in adjustable floating relation on said closure lid, resilient means including a backing member secured on said closure lid by said supporting members in overlapping concentric relation with its central opening whereby to embrace said annular sleeve in flared sealing relation, an annular floor plate having a screw-threaded counterbore concentric therewith, an anchoring means secured on the underside of said floor plate in spaced concentric relation whereby said floor plate is adapted to be detachably secured on the exposed end of said annular sleeve, coactable means integral with the inner periphery of said annular sleeve for receiving said anchoring means in locked relation upon clockwise rotation of said floor plate on said annular sleeve, and a closure disc screw-threaded in said counterbore flush with said floor plate.

7. A floor outlet box comprising a base receptacle having a plurality of knock-out openings formed therein in co-axial alignment, a closure lid detachably secured on said base receptacle having a central opening therein, a plurality of adjustable supporting screws extending through said closure lid in depending relation, means detachably secured on said screws whereby said screws are maintained in captive relation with said closure lid, a resilient flat annular gasket including a backing ring therefor secured on said closure lid by said adjustable screws in concentric overlapping relation with said closure lid opening, an annular sleeve adapted to be received axially of said closure lid opening in clearance relation therewith, said annular sleeve including a plurality of radially extending screw-threaded ears thereon for receiving the depending portions of said screws therethrough whereby said annular sleeve is supported in adjustable floating relation by said closure lid, an annular floor plate having a screw-threaded counterbore concentric therewith, an anchoring plate having a central opening therein secured on the underside of said floor plate in spaced concentric relation whereby said floor plate is adapted to be detachably secured on said annular sleeve, coactable means integral with the inner periphery of said annular sleeve for receiving portions of said anchoring plate in locked relation upon clockwise rotation of said floor plate on said annular sleeve, and a closure disc screw-threaded in said counterbore flush with said floor plate.

8. A floor outlet box comprising a base receptacle having a plurality of knock-out openings formed therein in coaxial alignment, a detachable closure lid for said receptacle having a central opening therein, a plurality of adjustable supporting members extending through said closure lid in depending captive relation, a resilient flat annular gasket including a backing ring therefor secured on said closure lid by said supporting members in concentric overlapping relation with said closure lid opening, an annular sleeve adapted to be received axially of said closure lid opening in clearance relation with said resilient gasket in flared sealing engagement therewith, said annular sleeve including integral means coactable with the adjustable members on said closure lid whereby said annular sleeve is supported thereon in adjustable floating relation, an annular floor plate having a screw-threaded counterbore concentric therewith, an anchoring plate having a central opening therein secured on the underside of said floor plate in spaced concentric relation whereby said floor plate is adapted to be detachably secured on the exposed end of said annular sleeve, coactable means integral with the inner periphery of said annular sleeve for receiving said anchoring means in locked relation upon clockwise rotation of said floor plate on said annular sleeve, and a closure disc screw-threaded in said counterbore flush with said floor plate.

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