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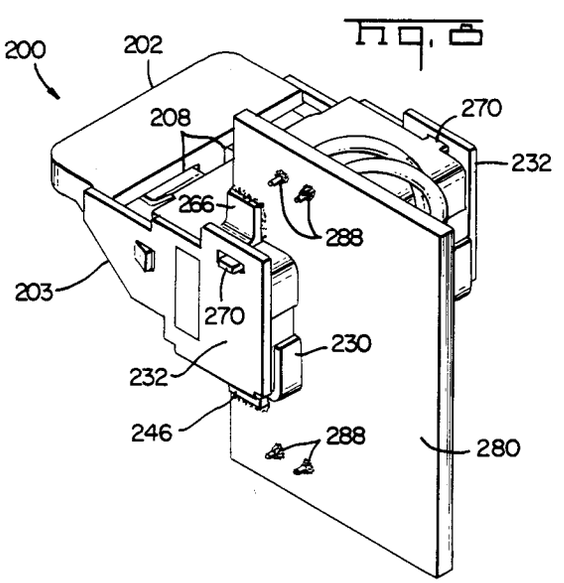
(54) Local area network interface.

(57) A shielded data connector (200) performing as an interface to a local area network is engageable with a complementary connector for interconnecting electronic components to the network. It includes an insulating terminal support housing (202) having a front mating face and a rear face and mounting a plurality of terminals having contact portions engageable with contacts of the complementary connector. The terminal support housing has shield means (230). The data connector is in the form of a plug-in module for the network and includes an edge card (280) which has data traces electrically connected to terminals of the terminal support housing and is pluggable into and removable from an edge card connector (150B) mounted in a wall box (2) and terminating a multiconductor shielded communications cable (120) of the network.



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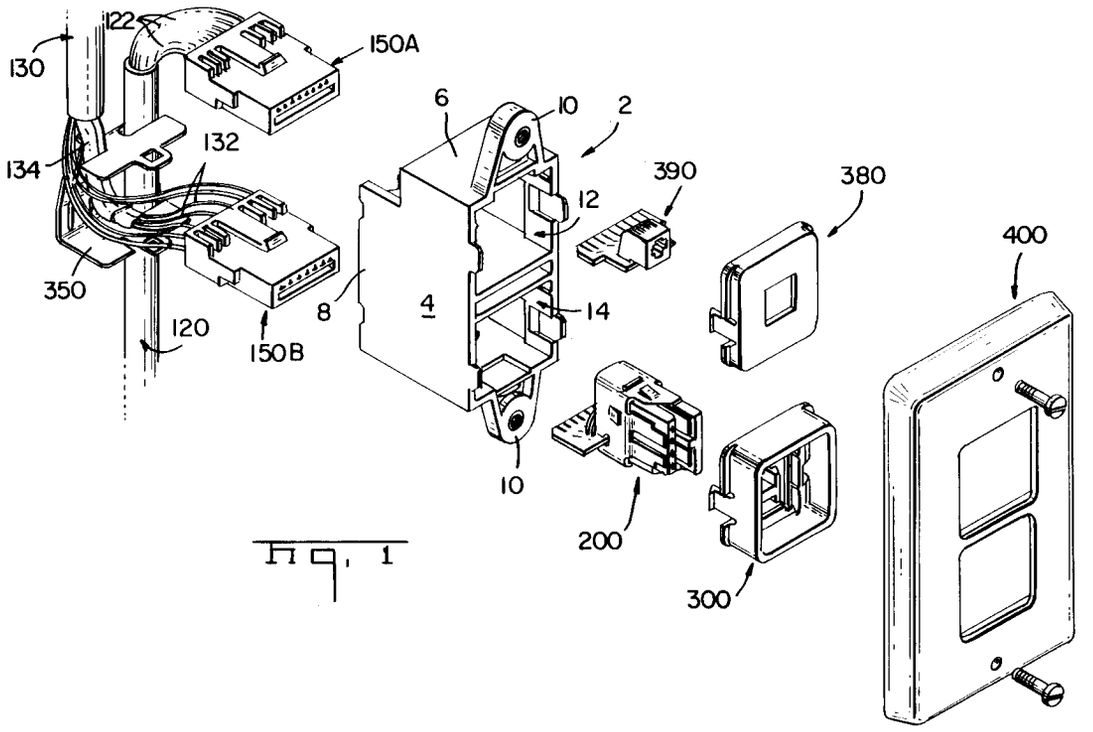
122
130
150A
132
134
350
120
150B
6
10
2
390
12
8
4
14
10
200
380
400
300

Fig. 1

The present invention relates to an interface for accommodating communication network systems where more than one type of interface device is utilized in the same local area. Modular connections allow adaptation between two different interface devices using two different telecommunication cables.

Communication network systems vary in scope and design as directed by the manufacturers of the interfacing devices. Some network interface devices utilize shielded systems whereas others utilize an unshielded system. Several designs of interfacing devices are known in the art.

For example, US-A-4 501 459 and 4 193 654 relate to shielded connectors for coupling two shielded cables of a shielded information network system. These connectors are hermaphroditic in nature, that is, two identical connectors are utilized for the connection, and each connector can accommodate four lines of information.

Connectors for unshielded network interfaces are also known, for example, US-A-4 210 376; 4 221 458; 4 292 736 and 4 231 628 relate to data network connectors or modular jacks, which are mountable to printed circuit boards, and are capable of accommodating between four and eight lines of communication. These connectors include stamped and formed contacts for receiving a mating plug.

Edge card connectors for interconnecting printed circuit boards to multi-conductor cable are also known in the art. For example, US-A-3 860 318 shows an edge connector having stamped and formed contacts providing interconnection to circuit board traces on one end, while on the opposite end, providing a barrel-type insulation displacement device for terminating individual conductors.

GB-A-1 171 549 describes an adaptor for enabling a standard electronic module, which can be slid into racks or crates to form a complete system of electronic apparatus and which has pin contacts on the back of the module, to be connected to a rack or crate utilising edge connector

There is disclosed in US-A-4 407 559 a local area network receptacle assembly for interconnection of electronic equipment to a local area network, including a modular electrical connector having at least one signal carrying contact disposed at a front mating face for interconnection with at least one mating contact of a complementary connector, the modular electrical connector being electrically connected to a shielded cable having individual data communication conductors which form the network, the modular electrical connector being enclosed by a wall box having at least two identical cavities each having an open front face and a partially open rear face.

The present invention consists in a data connector performing as an interface to a local area network and being engageable with a complementary connector for interconnecting electronic components to the network, the data connector including an insulation terminal support housing having a front mating face, a rear face, and a terminal support platform extending between the faces which positions a plurality of terminals (214) onto the terminal support platform, each with resilient contact tongues adjacent the mating face, deflectable towards the terminal support platform when the mating face of the terminal support housing is interconnected with the complementary connector; and shield means surrounding the terminals and the terminal support housing; the data connector being characterized in that: an edge card is secured to said terminal support housing, the edge card including data traces electrically connected to respective terminals of the data connector, the data connector is modular in profile being connectable and disconnectable to a multiconductor shielded data cable within the network via an edge card connector interconnected to the data cable, thereby establishing a connection between corresponding conductors in the interconnected cables.

In order that the invention may be more readily understood, reference will now be made to the accompanying drawings, in which:-

Figure 1 is a perspective dew of the total system embodying the invention.

Figure 2 shows the assembled system of Figure 1 ready for the reception of a network interface.

Figure 3 is a view similar to that of Figure 2 showing the face plate exploded away from the wall jack.

Figure 4 is a plan view of the front of the wall box.

Figure 4A is a cross section through lines 4A-4A of Figure 4.

Figure 4B is a cross section through lines 4B-4B of Figure 4.

Figure 4C is a plan view of the rear of the wall box.

Figure 4D shows the cross section of Figure 4A showing the data interface devices fully assembled.

Figure 5 shows a perspective view of a conductor to card edge interconnection device.

Figure 6 shows a cross section of the conductor to card edge connector through lines 6-6 of Figure 5.

Figure 7 shows an exploded perspective view of the hermaphroditic data connector.

Figure 8 shows a perspective view of the hermaphroditic electrical connector fully assembled.

Figure 9 shows a perspective dew of the hermaphroditic electrical connector ready for insertion in a respective adaptor insert.

Figure 10 is a diagrammatical sketch of the configuration of the shields when the system is used for two shielded interconnection data interface assemblies.

Figure 11 shows a cross-sectional view through the modular jack adaptor insert showing the locking lances locking the modular jack to the adaptor insert.

Figure 12 shows a cross-sectional view through the shielded data interface assembly showing the locking lances on the data interface assembly in a locked configuration with the adaptor insert.

Figure 13 is a front plan view of the shielded data interface assembly adaptor insert.

Figure 14 is a rear plan view of the data interface assembly adaptor insert.

Figure 15 shows a cross-sectional view of the data interface assembly inserted in a respective adaptor insert ready for interconnection with a mating hermaphroditic electrical connector.

Referring to Figure 1 there is shown an interface interconnection system for interconnecting two different interface systems. More specifically there is shown a two-cavity wall box 2 for receiving from the rear two edge connectors 150A and 150B, the edge connector 150A interconnecting an unshielded cable 120 and the edge connector 150B interconnecting a shielded cable 130. The edge connectors 150A and 150B are inserted from the rear of the wall box and are locked in position within the wall box. The modular jack interface assembly 390 and the data interface assembly 200 are each interconnected with an edge card and each interface assembly 390, 200 may be inserted through the front of a wall box for interconnection with the respective edge connectors 150A, 150B. A face plate 400 is then placed over the completed assembly to cosmetically blend the entire system in with the wall.

Referring now to Figure 2, there is shown the system of Figure 1 completely assembled. A shielded cable 130 is shown entering the wail box from the rear interconnected to data interface assembly 200. Also shown is unshielded cable 120 inserted into the wall box from the rear and interconnected with modular jack assembly 390. Modular plug 490 is shown poised for reception into modular jack assembly 390. Referring now to Figure 3 there is shown the assembly of Figure 2 with the face plate exploded away from the completed assembly, showing the adaptor inserts 300, 380 in an assembled configuration.

The wall box 2 will now be described in greater detail with reference to Figures 4-4C. Referring first to Figure 4 the wall box 2 is shown as having two receiving cavities 12 and 14. The wall box 2 is generally comprised of two endwalls 6 and two sidewalls 4 with two mounting bosses 10 extending from opposite endwalls 6. The upper cavity 12 is defined by sidewalls 16, floor 18, ceiling 20 and backwall 28. It will be noticed that backwall 28 does not extend from the ceiling 20 to the floor 18, but rather, extends only from the ceiling 20, the wall 28 ending with a lower edge 50. As such, there is an opening from the front of the wall box completely through to the rear of the wall box, providing an opening 48 for either edge connector 150A or 150B. Located on the edge 50 of wail 28 is a latch receiving area defined by side edges 52 and upper edge 54.

Similarly lower cavity 14 is defined by sidewalls 22, floor 24, ceiling 26 and rearwall 30. Once again, rearwall 30 does not extend from the ceiling 26 to the floor 24, but rather, terminates with edge 58 providing a cavity 56 for receiving either edge connector 150A or 150B from the rear. Also defined on edge 58 of wall 30 is a latch-receiving area defined by side edges 60 and upper edge 62.

Located in the center of wall 28 is aperture 32 having a locking tab 34, and located in the center of wall 30 are apertures 36, 40 having locking tabs 38, 42 respectively. Included in the lower mounting boss 10 is an aperture 44 having a locking tab 46.

Extending forwardly from the sidewalls 16 of upper cavity 12 and forwardly from the sidewalls 22 of the lower cavity 14 are alignment arms 64 and 78, respectively. Referring now to both Figures 4A and 4B, the geometrical configuration of alignment arms 64 is shown in greater detail. The alignment arms 64 each have a surface 70 which is recessed from the associated sidewall 16 and extends rearwardly into the cavity to a contiguous lead-in surface 66. The lead-in surface 66 then extends rearwardly back to a point planar with the sidewall 16, the sidewall 16 then being recessed back to a surface 72, the sudden recess causing a locking surface 68. Such alignment arm 78 has a like configuration to that of the arms 64 having a recessed surface 84, a lead-in surface 80 and a locking back surface 82, as shown in Figure 4A.

As shown in Figure 4A wall box 2 has a wall 28 and a wall 112 extending downwardly through the center of the box, and extending rearwardly from wall 28 is floor 92. Located directly above wall 92 are ribs 94. Extending rearwardly from wall 112 is a floor 96 and directly below floor 96 are ribs 98. Extending from, and contiguous with lower floor portion 24 is a floor 110 extending rearwardly of the wall box.

Referring again to Figures 4A and 4B, the rearward part of the upper cavity is flanked by a

pair of recessed walls 76, the recessed walls 76 being offset from walls 72 forming a shoulder 74. Likewise, the lower cavity portion is flanked by a pair of recessed walls 90, the walls 90 being recessed from walls 86 forming a shoulder 88. Also shown in 4B is floor 96 extending rearwardly from wall 112. At the rearward edge of floor 96 are located two cable cut-out portions 100 and 102. Referring now to Figure 4C, the rear plan view of wall box 2 shows floor 96 once again with cable cut-out portions 100 and 102. Floor 92 is also shown extending from wall 28, floor 92 having a cable cut-out portion 104 laterally aligned with cut-out portion 100 in floor 96. Floor 110 is also shown having a cable cut-out portion 106 which is laterally aligned with cable cut-out portion 102 in floor 96. Figure 4C also shows in greater detail the card edge connector receiving areas 48 and 56.

Finally, the entire wall box 2 is a one-piece molded unit plated with a metallic coating to shield the entire box. The preferred embodiment utilizes a nickel over copper plating, although other combinations of metals could be utilized without varying from the scope or intent of the instant invention.

Referring next to Figure 7 the data interface assembly 200 is shown in greater detail, the assembly 200 comprising housing 202, terminals 214, stuffer cap 220, upper and lower shield members 260, 230, and printed circuit board 280. The housing 202, terminals 214 and stuffer cap 220 are similar in design to those disclosed in U.S.-A-4 193 654 and 4 501 459.

The insulative housing 202 has a floor 205 and upstanding sidewalls 204, sidewalls 204 extending forwardly defining a mating end 203. The housing 202 also has two shield receiving slots 208 located therein. Located in the floor 205 are terminal receiving slots 210. Located on the outside of the housing 202, as an extension of the sidewalls 204, are ribs 206. Disposed along the internal surface of sidewalls 204 and generally laterally aligned with ribs 206 are channels 212.

The contact terminal 214 is shown having a resilient contact portion 218 and an insulation displacement portion 216, the portion 216 having an insulation displacement slot 217. Shown disposed above the housing 202 in Figure 7 is stuffer cap 220 having alignment ribs 222 and conductor receiving slots 226.

Shown disposed below the housing 202 in Figure 7 is a lower Shielding member 230 comprising a floor member 240 and upstanding sidewalls 232. Extending forwardly from the sidewalls 232 are shielding wing portions 234 having stamped out of the wing portions 234, two locking lances 236. Located in the upstanding sidewalls 232 are two pairs of locking slots 248 and 250. Extending forwardly from the floor 240 are two shielding wing portions 238 and stamped from the floor portion 240 is a locking lance 242 and a printed circuit board mounting tab 246. The lower shielding portion 230 further includes a printed circuit board receiving slot 244.

Shown disposed above the stuffer cap 220 in Figure 7 is an upper shielding portion 260, the shielding portion 260 having forwardly extending shielding wings 262. Extending outwardly from the side edges of the shielding member are two locking tabs 270. Stamped from the shielding member 260 are locking lance 264 and printed circuit board mounting tab 266. On the rearward portion of the upper shield member 260 is located a printed circuit board receiving slot 268.

Also shown in Figure 7 is a printed circuit board 280 having mounting tabs 282, wire receiving holes 288 and a recessed portion 286. Printed circuit board 280 also includes printed circuit traces 284 (Figure 9) disposed thereon.

Referring now to Figures 9, 13 and 14 there is shown in greater detail the data interface assembly adaptor insert 300. The adapter 300 comprises sidewalls 304 and endwalls 302. Extending forwardly from the sidewalls 304 are two locking latches 306 comprising a lead-in section 308 and a back latching surface 310 (Figure 9). Although adaptor 300 is molded from a plastic material, the complete interior portion of the adaptor is plated with conductive material 312 for shielding purposes. Referring more specifically to Figure 14, on the interior of the endwalls 302 there is located two locking shoulders 320 extending from the interior of the endwalls 302. Extending from the interior of one of the sidewalls 304 is a T-bar 314 having a leg portion 318 and a lead-in surface 316. Opposed from the T-bar 314 is a T-slot 326 having a lead-in surface 328 and a backwall 330 (Figure 12). Defined by the sidewalls and the interior surfaces of the adaptor 300 is a data interface assembly receiving area 322.

Referring now to Figure 11, there is shown a modular jack 390 and a modular jack adaptor 380. The modular jack 390 is similar in design to those disclosed in U.S.-A-4 210 376; 4,221,458; 4,231,628; and 4,292,736. The modular jack 390 has a plug-receiving opening 394 on the forward surface of the modular jack 390. Modular jack 390 further comprises a locking shoulder 392 and stamped and formed contacts 395 . The modular jack adaptor 380 comprises latch members 382, modular jack latch members 384 and modular plug opening 386.

Referring now to Figure 10, the removable shield members 350 are shown comprising sidewall 352, front wall 354 and opposite sidewall 356. Extending from sidewall 352 is a connection tab 364 having a connecting slot 366 therein. Also

located in sidewall 352 is a wire-receiving slot 358. Extending from the forward edge of sidewall 356 is a connection tab 368 having a connection slot 370 therein. A second wire-receiving slot 360 is located in sidewall 356 in alignment with wire-receiving slot 358. Located in sidewall 356 and laterally opposed from wire-receiving slot 360 is wire opening 372. Stamped out of the front wall 354 is a shielding tongue 362.

Referring now to Figures 5 and 6, there is shown in detail the card edge connector either 150A or 150B, which is similar in design to that disclosed in U.S.-A-3 860 318.

The connector 150 comprises top edge 152, bottom edge 154, sidewalls 160, shoulders 174, recessed sidewalls 162 and a backwall 158. Extending inward from the backwall 158 are terminal-receiving slots 172 for receiving contact terminals 180. Contact terminals 180 comprise a barrel-type insulation displacement terminal 182, and a resilient contact portion 184. Also shown in Figure 6 is a stuffer cap 190 which has a stuffer post 192 with a surrounding circular aperture 194. The outer diameter of stuffer post 192 is smaller than the inside diameter of the barrel insulation displacement section 182. The stuffer cap 190 further includes wire-receiving slot 196. Referring again to Figure 5, card edge connector 150A or 150B includes a latch 164 extending from the backwall 158 and disposed above the top wall 152. The latch 164 comprises a lead-in section 166 with a latching back surface 168.

The instant embodiment can be used as a network interface outlet for any combination of network interface devices. That is two unshielded cables 120 could be interconnected to two unshielded modular jacks 390, or two shielded cables 130 could be interconnected to two data interface assemblies 200 or one unshielded cable 120 and one shielded cable 130 could be interconnected to respective interface assemblies 390, 200, and either interface assembly 390 or 200 can be interconnected to either cavity 12, 14 as the adaptor inserts 380, 300 and the edge connectors 150A, 150B are interchangeable in either of the cavities 12, 14.

In order to interconnect a shielded cable 130, it is first necessary to assemble the shielded data interface assembly 200. Referring to Figure 7, the housing 202 must first have the terminals 214 installed therein, the side edges of the terminal 214 being received in the terminal grooves 210 in floor 205. When the terminals 214 are fully installed, the resilient contact portion 218 is disposed in the forward mating end 203. The individual conductors 224 may then be terminated to the barrel portion of the terminal 216 by placing the individual conductors in the wire-receiving slots 226 of the stuffer cap 220. With the four conductors in place in the respective wire-receiving slots 226, as shown in Figure 7, the cap 220 is then lowered onto the housing 202, the locating ribs 222 being disposed in the stuffer cap receiving slots 212 which aligns stuffer posts (not shown) in the stuffer cap with the barrel terminals 216 which forces the individual conductors 224 into the barrel 216 terminating respective conductors into respective slots 217.

The upper and lower shielding covers 260, 230 are then installed over the housing 202 completely shielding the contact terminals 214. The lower cover 230 is first placed over the lower portion of the housing, the mounting lugs 206 fitting into the mounting slots 248 on the sidewalls 232. The upper shield 260 may then be installed over the housing 202, the shielding wings 262 being placed into the receiving slots 208 and the locking tabs 270 being placed in the mounting slots 250. The edge card 280 is then connected to the shielding members, the cutout portion 286 of the edge card 280 sliding over the upper and lower shield members 260, 230 and sliding into slots 268 and 244 of upper and lower shield 260, 230, respectively. This places the edge card mounting tabs 282 in alignment with mounting tabs 266 and 246 of the shielding members. The tabs 282 are then soldered to mounting tabs 266, 246 to mechanically mount the edge card 280 to the shielding members 230, 260 and to electrically interconnect ground traces 290 on edge card 280 to the shield members 260, 230. The individual conductors 224 may then be soldered in place to solder pads 288 in edge card 280 interconnecting the individual conductors 224 to the traces 284. As finally assembled, the contact resilient portion 218 is electrically interconnected to the conductive traces 284 on the edge card 280 via the contact terminal 214 and the individual conductors 224, and the shielding members 230, 260 are commoned to the grounding traces 290.

The completed data interface assembly 200 may then be installed in a respective data connector adaptor 300 as shown in Figure 9. The data interface assembly 200 is installed into the assembly receiving area 322, the assembly 200 sliding into the receiving area until the mounting tabs 236 latch over the locking shoulders 320 of the adaptor 300 which also places mounting tabs 242 in abutment with the front surfaces 332 (Figure 13) of the adaptor 300. When latching tabs 236 are in their locked position over the shoulders 320, they are also resiliently biased against the interior surface of endwalls 302. As the interior of adaptor 300 is completely plated with plating material 312, the tabs 236, biased against the endwalls 302, common the shielding members 230 and 260 to the plating material 312.

The individual conductors 132 of shielded cable 130 are then terminated to the contact termi-

nals 180 of edge card connector 150B. The edge card connectors 150A, 150B are identical in design, the only distinguishing feature is whether the connector is used with a shielded or an unshielded cable. When referring to the design aspects of the connectors, as in Figures 5 and 6, reference will be made to connector 150, generally. However, when a particularly located connector is to be noted, the postscript will also be utilized.

Each individual conductor 132 would be placed in the wire-receiving slots 196 of the stuffer cap 190 (Figure 6) and would be terminated in the individual insulation displacement barrels 182, as shown in Figures 5 and 6. With the individual conductors 132 terminated to the contact terminals 180, the edge card connector 150B could be inserted from the rear side of wall box 2 through either of the connector-receiving areas 48 or 56 (Figure 4C). If the edge card connector 150B is placed in the upper cavity 48, the edge card connector 150B moves forwardly until the shoulder 174, between sidewalls 160, 162, abuts shoulder 74 in the wall box 2, as shown in Figures 4A and 4D. When installing the edge connector 150B, the bottom surface 154 lies along the floor 18 and when shoulders 174 abut the shoulder 74 the latch member 164 latches in place such that latch member 164 fits into the latch-receiving slot defined by surfaces 52 and 54 (Figure 4) which locks the edge card connector 150B in place.

The assembled data interface assembly 200 and adaptor 300 may then be installed into upper cavity 12 from the front side of the wall box 2. The printed circuit board 280 first enters the cavity and begins entry into edge connector opening 170. The latch 306 then begins engagement along surfaces 70 of alignment arms 64 which aligns the assembly 200 and adaptor 300 in the proper vertical orientation. Continued insertion of the adaptor causes the lead-in sections 308 of the adaptor 300 to ride up on the ramp 66 of the alignment arm 64 and finally lock itself, with back latching surface 310 adjacent shoulder 68 of wall box 2, as shown in Figures 4A and 4D.

A shield member 350 would then have to be installed from the rearward side of the wall box 2 to shield the back side of data assembly 200. The cable 130 would first be disposed in the opening 372 of the shielding member 350 with the cable shielding braid 134 adjacent the resilient tongue 362 as shown in Figure 10. The shielding member 350 would then be installed into the back portion of wall box 2, the sidewall 354 being placed between floor 92 and ribs 94 and sidewall 352 being placed above but adjacent to floor 96. The shielding member 350 is inserted into the wall box until tab 368 is inserted into aperture 32 and slot 370 is locked onto the locking tab 34; and locking tab 364 is disposed in slot 36 with the slot 366 engaging the cab 38.

It should be noted that the data connector assembly 200 is redundantly grounded, each level of grounding being commoned to a common potential. The assembly 200 includes a first level grounding as the shielding members 230, 260 surround the housing 202. The assembly 200 includes a second level of grounding as the wall box 2 and the adaptor 300 are plated and commoned to one another at their point of joinder, that is, between front edge 307 of adaptor 300, and front edge 7 of wall box 2. Furthermore the two levels of grounding are commoned to one potential, as tabs 236 on lower shielding member 230 are resiliently biased against the interior of sidewalls 302.

The shielded cable 130 will be oriented downwardly as shown in Figure 4D with the cable 130 disposed in cable cutouts 104 and 100. With the shielded cable 130 disposed in this manner, the back edge of wire entry slot 102 backs up the shielded cable 130, so that, the resilient tongue 362 maintains adequate contact with the shielding braid.

If a second shielded cable is to be used, a second edge card connector will be inserted into the back side of the wall box 2 as previously described, and into the lower connector-receiving area 56. A second shielding member 350 would then be utilized, its orientation being as shown in Figure 10. It should be noted that the shield member 350 can be used in either upper 12 or lower 14 cavity, by simply inverting the shielding member. The shielding member 350 would be installed from the back side of the wall box with the sidewall 352 disposed between the ribs 98 and the floor 96 and the sidewall 356 disposed below but adjacent to floor 110. With the second shielded cable 130 inserted in the opening 372, the second shielding member 350 would be inserted until the tab 364 extends into aperture 40 and until tab 368 extends into aperture 44, slots 366, 370 engaging tabs 42, 46 respectively.

If an unshielded cable 120 and a modular jack interface assembly 390 were to be installed in cavity 14, a second shielding member 350 would not be added to the back side of wall box 2 as previously described. Rather, the individual conductors 122 of the unshielded cable 120 would be terminated to the edge card connector 150A and the connector would be installed into receiving area 56, shoulders 174 abutting shoulder 88 of wall box 2. Furthermore, bottom surface 154 would be disposed adjacent to floor 110 and latch member 164 would be locked in place in the slot defined by surfaces 60 and 62.

The modular jack interface assembly 390 would then be installed onto the adaptor 380, the

latching members 384 locking onto shoulders 392 of the modular jack 390. As installed, the adaptor 380 is aligned with plug receiving opening 394 for reception of a modular plug. The modular jack 390 and adaptor 380 would then be installed into cavity 14 with the edge card 396 first mating with the edge card opening 70 of the connector 150A. The connector 390 has signal carrying contacts 395. The latch arms 382 are then aligned with alignment arms 78, the ramps 388 in sliding engagement with surfaces 84 of alignment arms 78 until the latch arms 382 are locked behind surfaces 82 as shown in Figure 11.

The face plate 400 may then be placed over the wall box 2 face plate openings 402 and 404 slidably received over adaptors 380 and 300 respectively. As installed the assembly is ready for reception of a modular plug data connector 490 as shown in Figure 2. The assembly is also ready for reception of a data interface connector of the type disclosed in U.S.-A-4,193,654 and 4,501,459.

Hermaphroditic data connector 500 (Figure 15) when interconnected to data interface assembly 200 interconnects like terminals in connector 500 with terminals 214, and commons like shielding wings with shielding wings 538 and shielding wings 262. When the data connector 500 is inserted the T-bar overlaps T-slot 326, and likewise the T-slot of data connector 500 overlaps T-bar 314.

Thus, the instant embodiment allows versatility with respect to data interfacing assemblies, and also allows for local access to any combination of shielded and unshielded systems. As each of the elements are modular in nature, the system allows for easy installation and connect/disconnect. The system also allows for interchangability between shielded and unshielded systems as either cavity of the wall box may be used for either system and as the same edge card connectors are utilized in both systems. Finally, the assembly allows for interconnection to existing data interconnection systems.

Claims

1. A data connector (200) performing as an interface to a local area network and being engageable with a complementary connector (500) for interconnecting electronic components to the network, the data connector (200) including an insulation terminal support housing (202) having a front mating face, a rear face, and a terminal support platform (205) extending between the faces which positions a plurality of terminals (214) onto the terminal support platform (205), each with resilient contact tongues (218) adjacent the mating face, deflectable towards the terminal support platform (205) when the mating face of the terminal support housing (202) is interconnected with the complementary connector (500); and shield means (230,260) surrounding the terminals (214) and the terminal support housing (202); the data connector (200) being characterized in that:

   an edge card (280 is secured to said terminal support housing (202), the edge card (280) including data traces (284) electrically connected to respective terminals (214) of the data connector (200), the data connector (200) is modular in profile being connectable and disconnectable to a multi-conductor shielded data cable (130) within the network via an edge card connector (150B) interconnected to the data cable (130), thereby establishing a connection between corresponding conductors in the interconnected cables.

2. A connector as claimed in claim 1, wherein the edge card (280) has ground traces commoned with ground pads (282), and wherein the shield means (230,260) is electrically connected to the ground pads (282).

3. A connector as claimed in claim 2, wherein the shield means (230,260) comprises tab means (246,266) projecting therefrom and the edge card ground pads (282) are electrically and mechanically fixed to the tab means, thereby commoning the ground traces and the shield means.

4. A connector as claimed in any preceding claim, including individual wire conductors (224) connecting the terminals (214) of the terminal support housing (202) to data traces (284) of the edge card (280).

5. A connector as claimed in any preceding claim, wherein the edge card (280) is orthogonally disposed relatively to the front mating face of the terminal support housing (202).

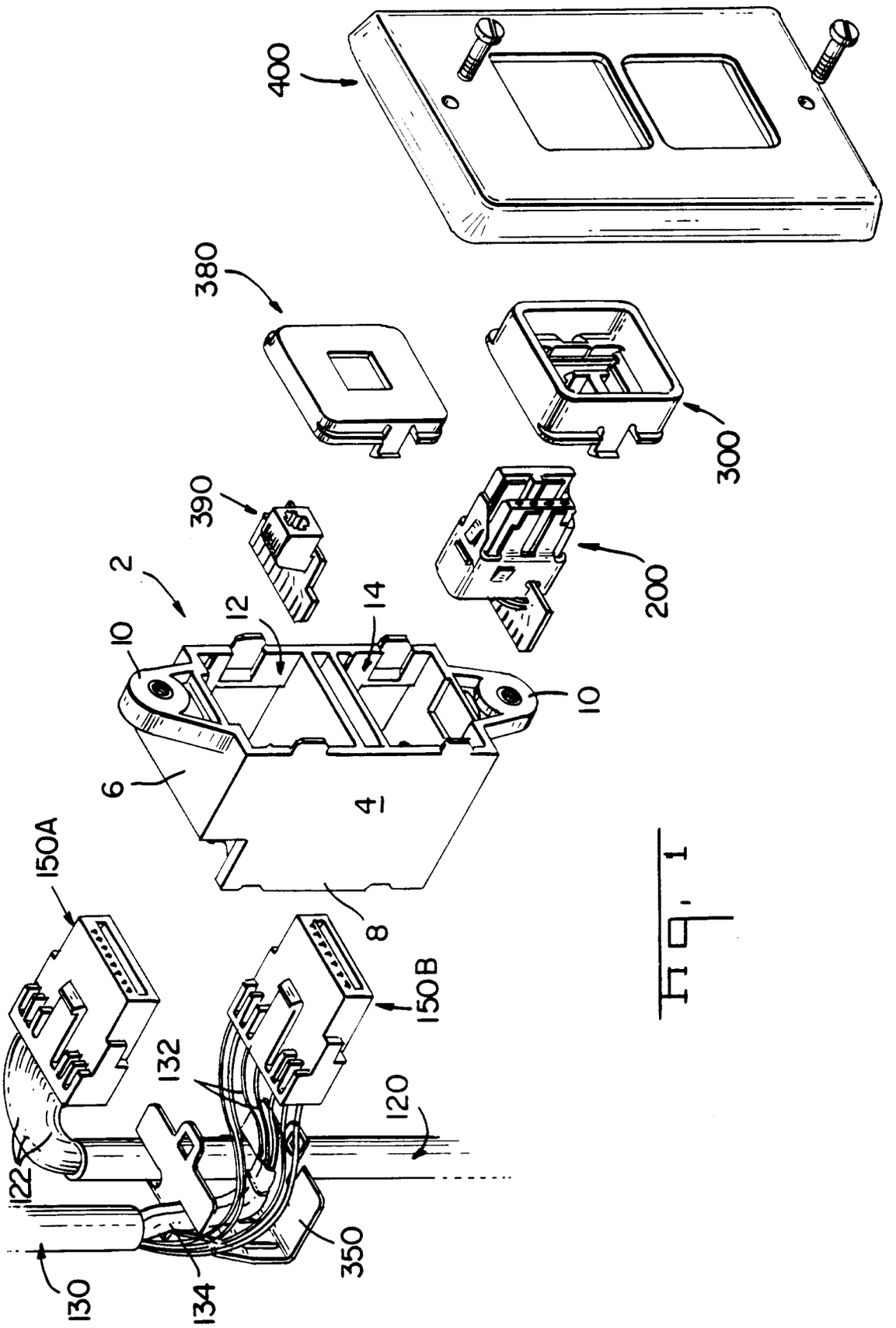
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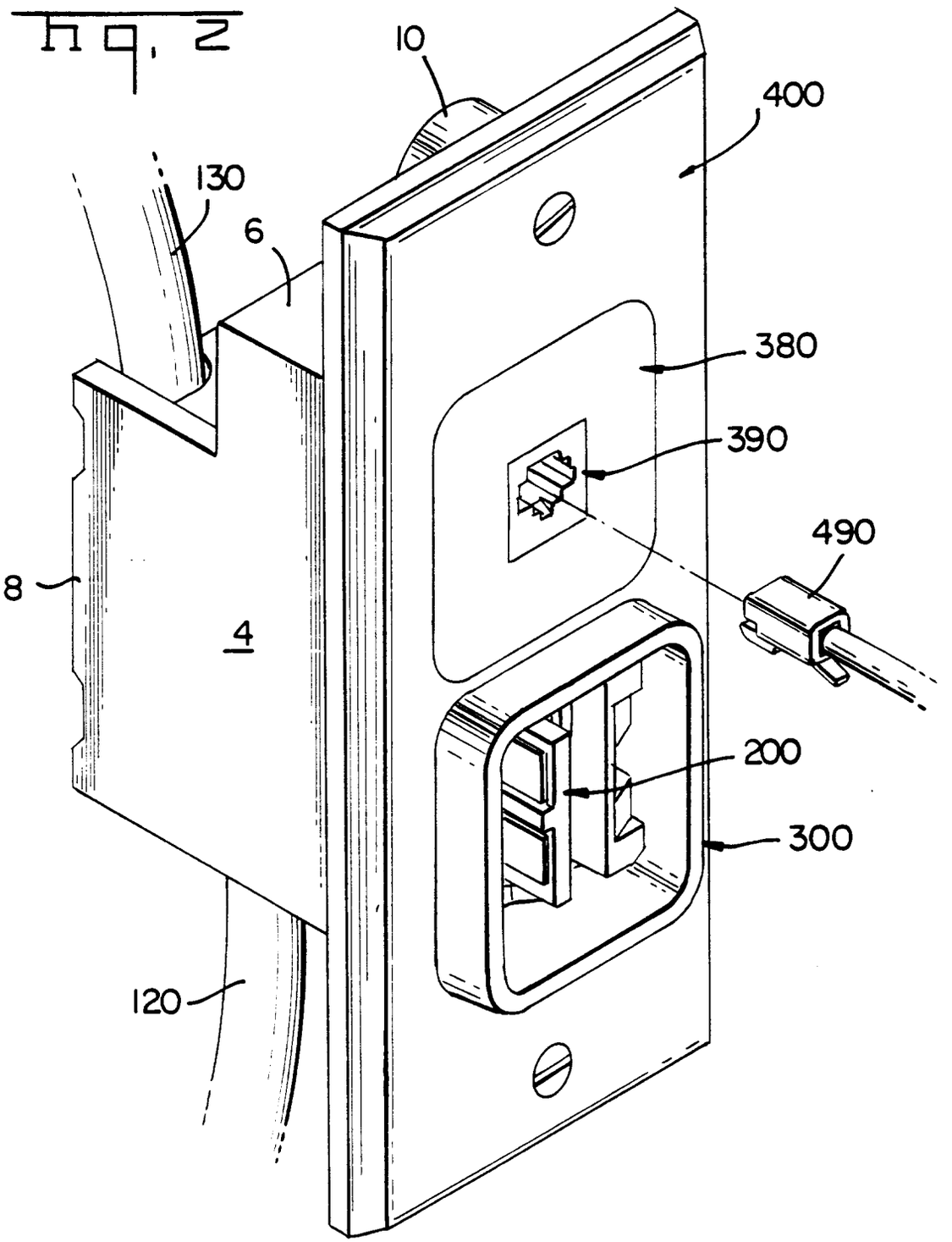
Fig. 1

Fig. 2



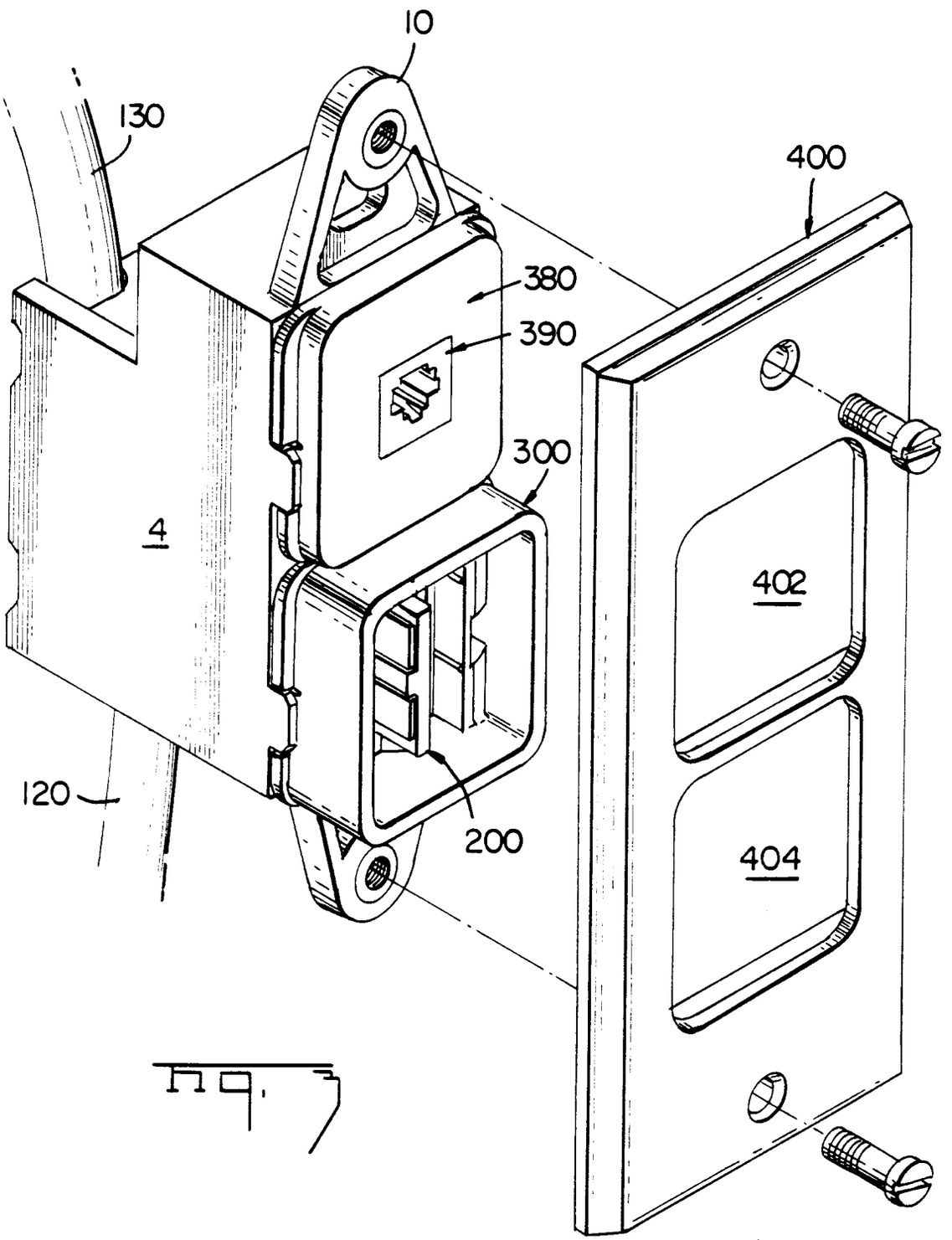
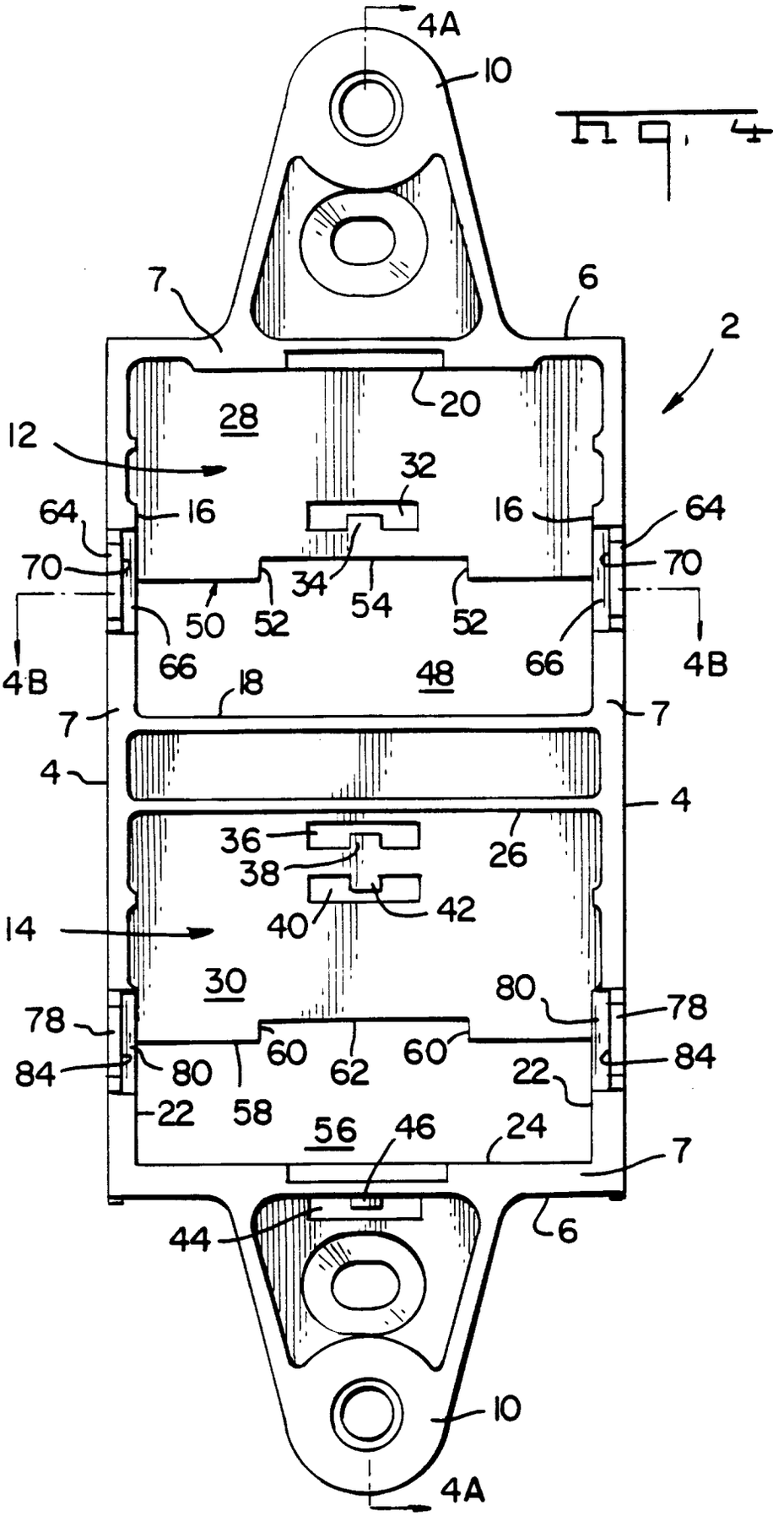


Fig. 3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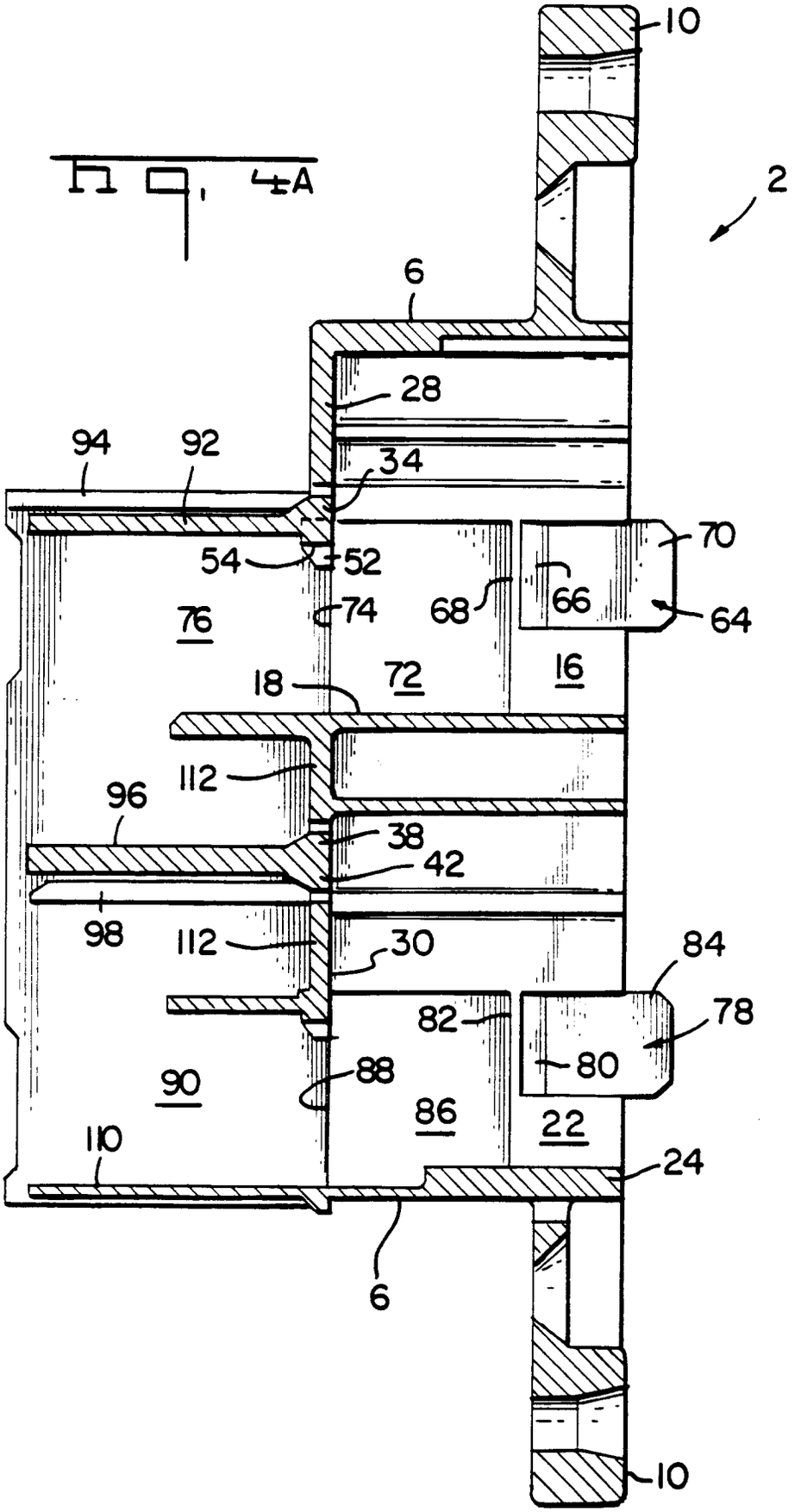
4A

Fig. 4A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90
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24
6
10

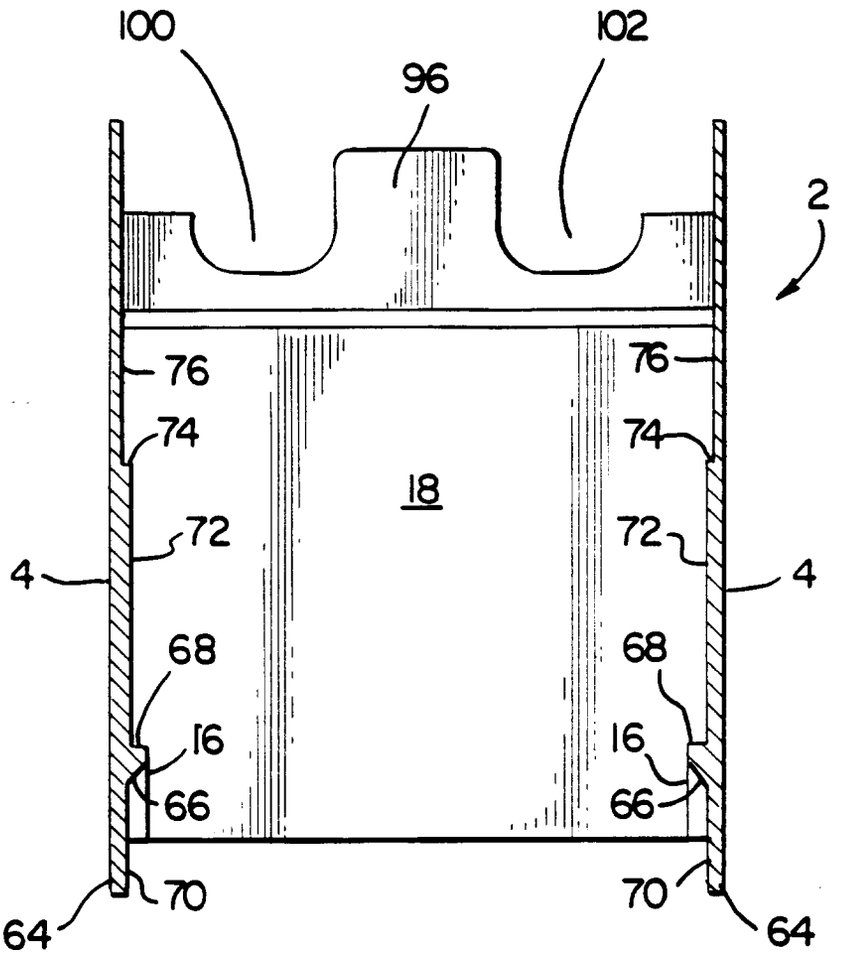
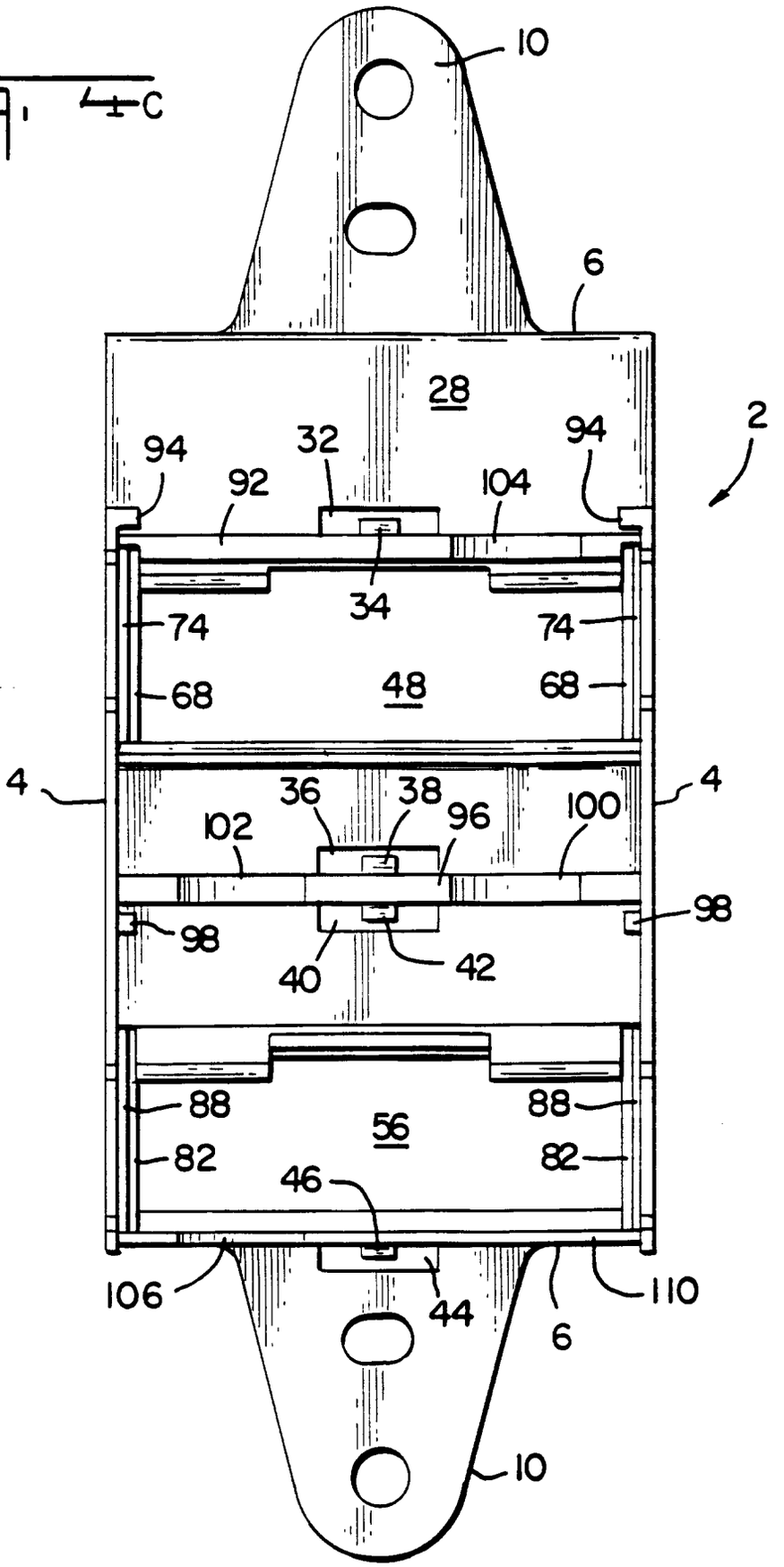


FIG. 4B

Fig. 4C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98
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40
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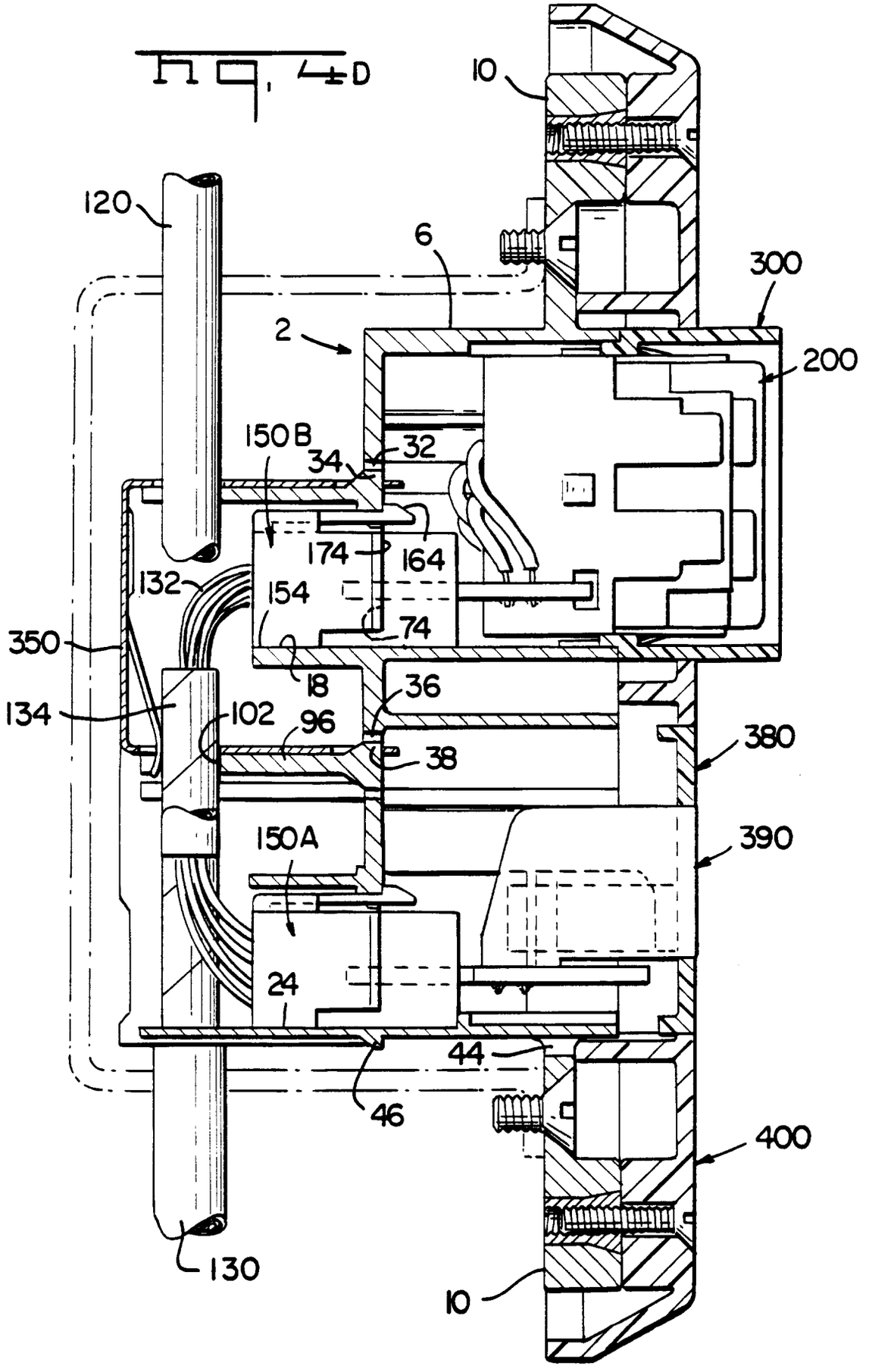
88
88
56
82
82
46
106
44
6
110
10

Fig. 4D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150A
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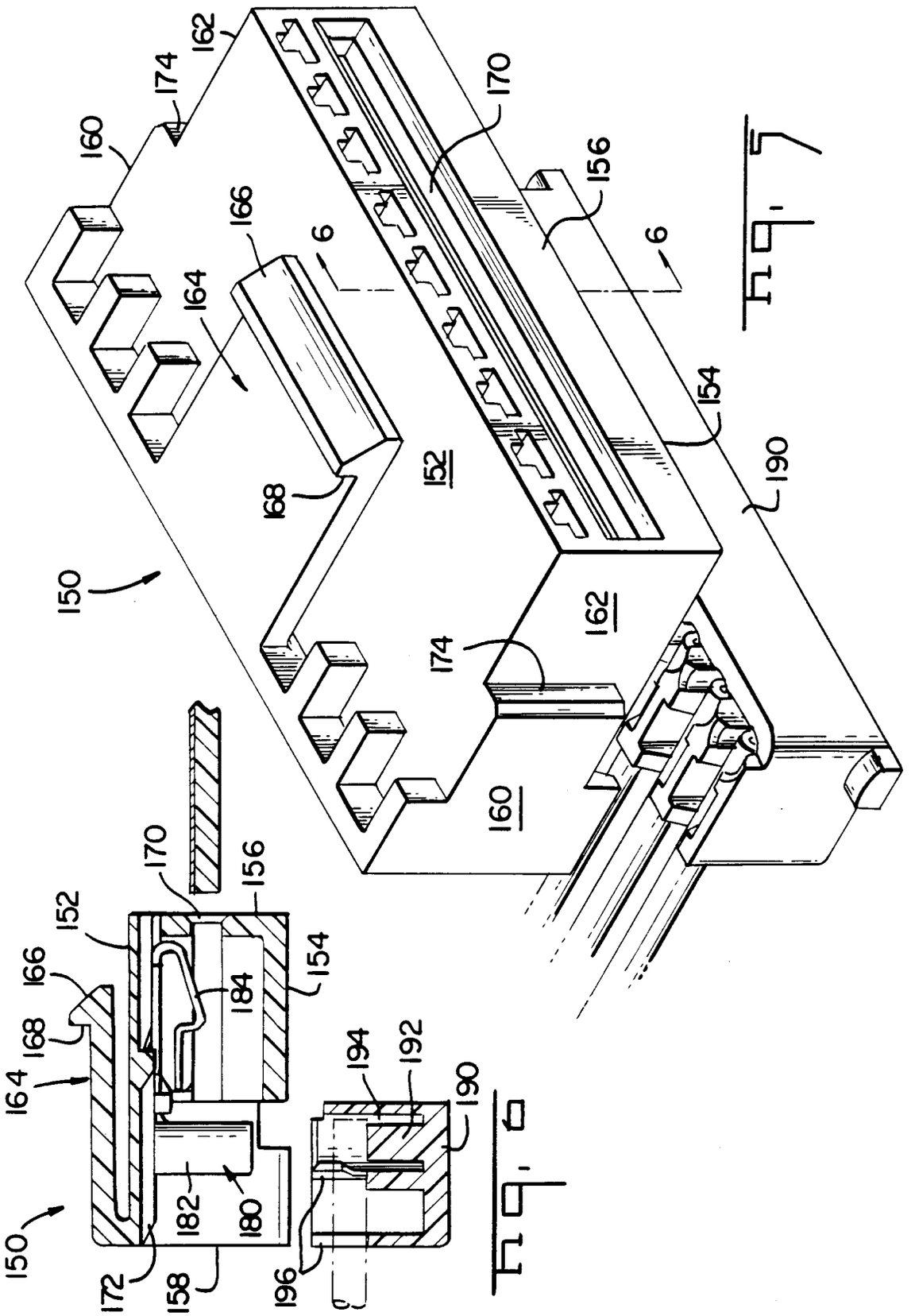
46
400
130
10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6
6

Fig. 7

Fig. 6

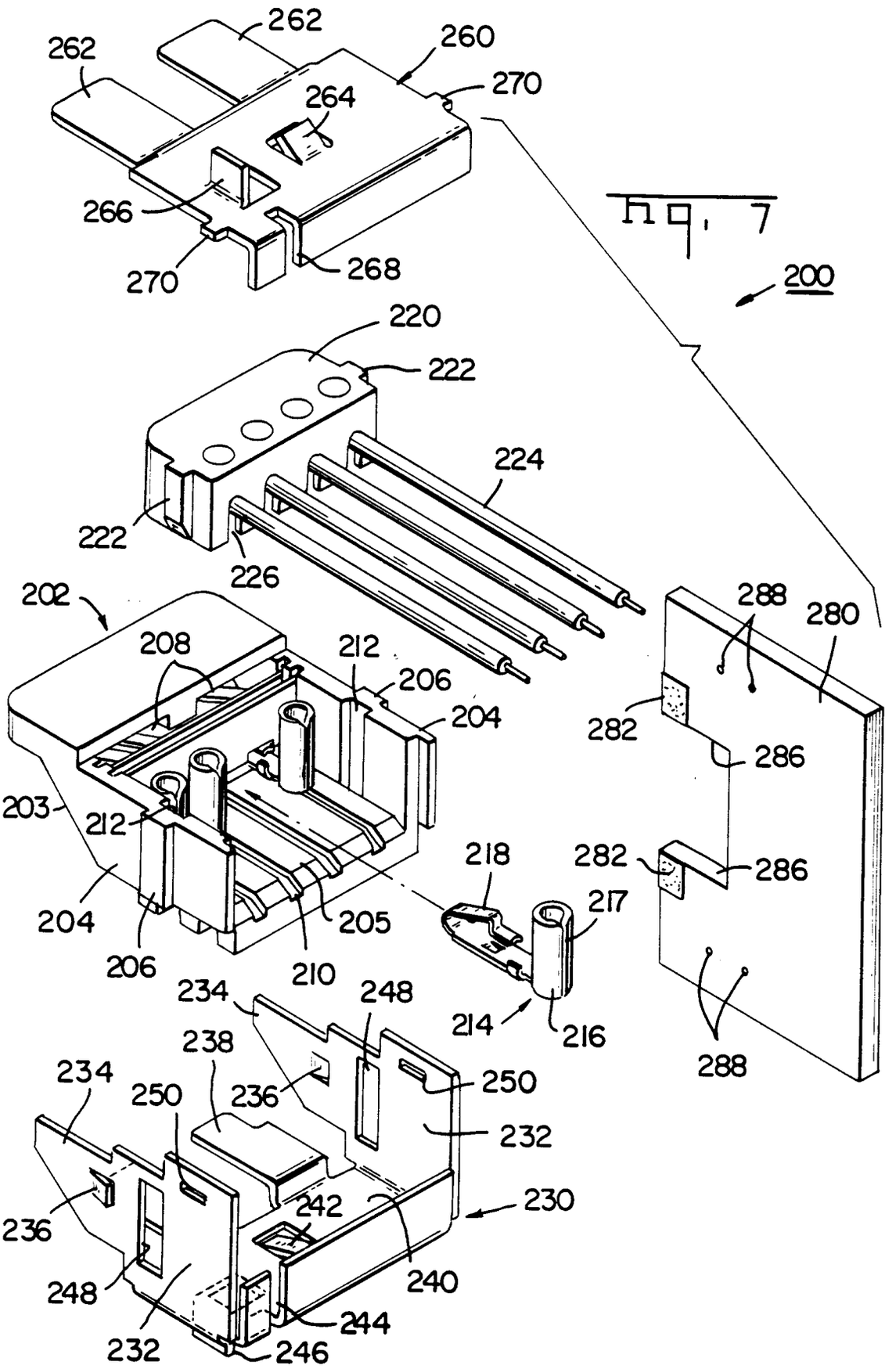
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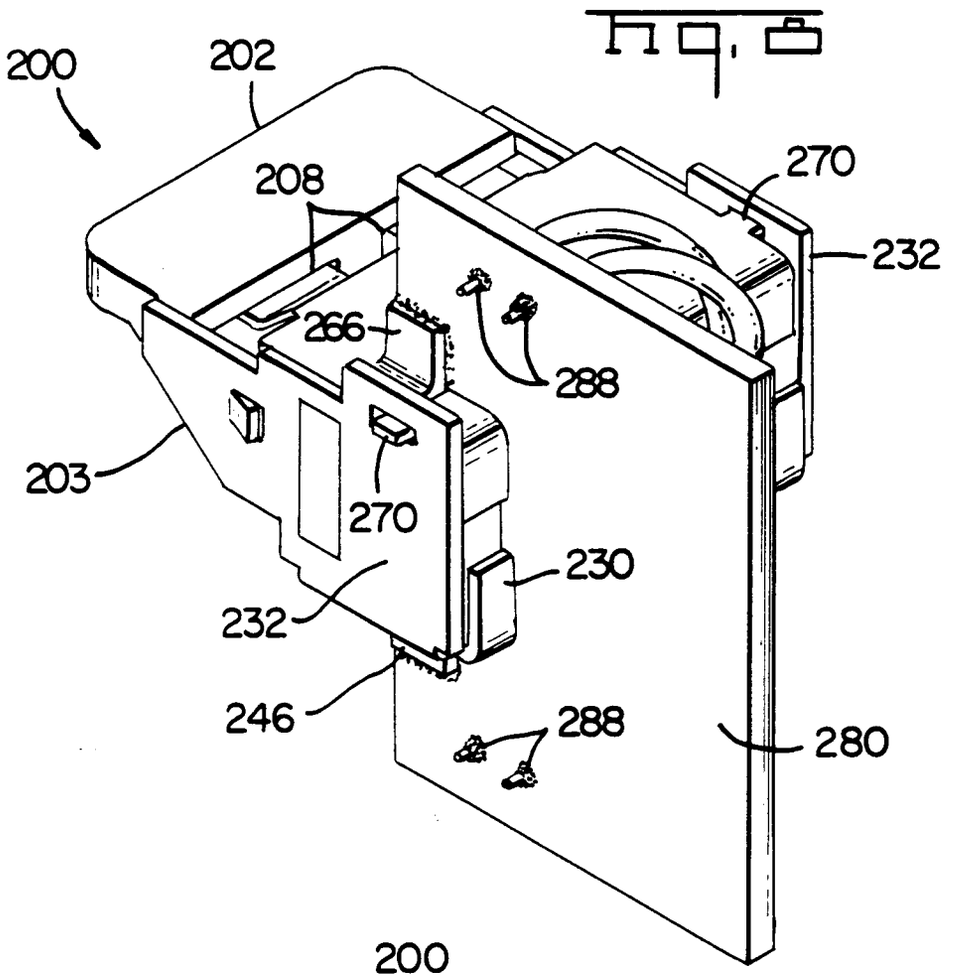
Fig. 7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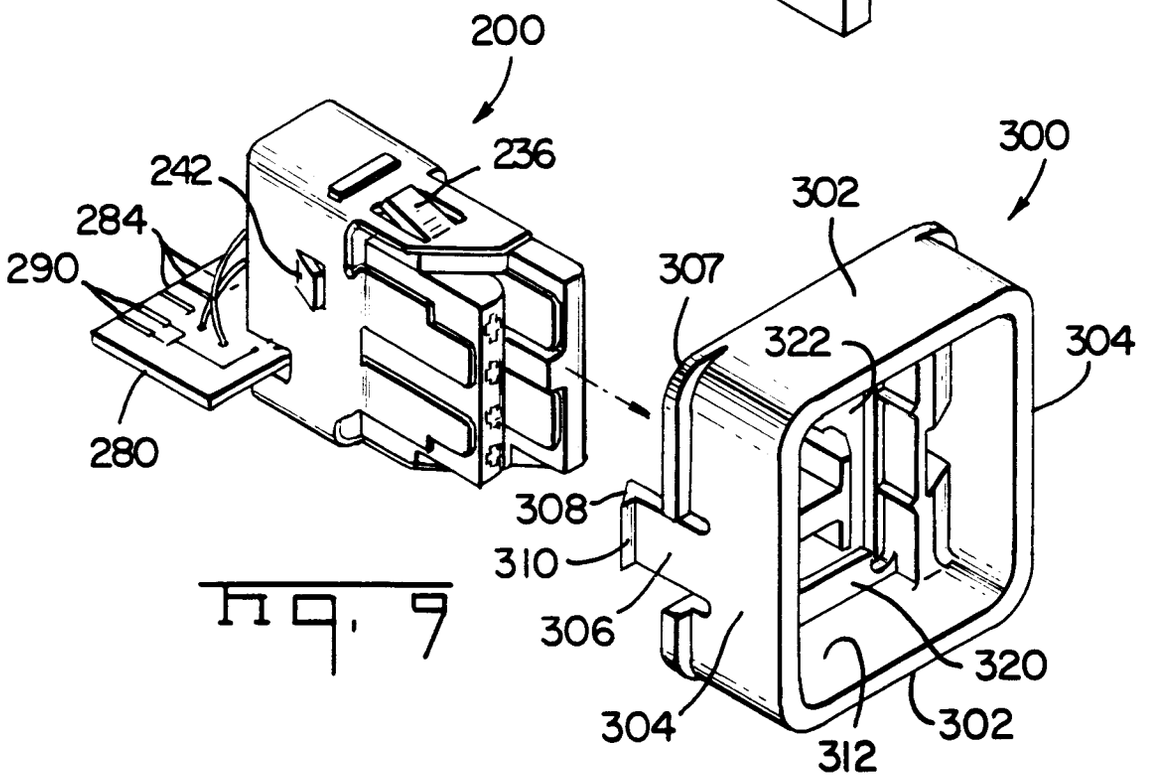
288
280

Fig. 8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306
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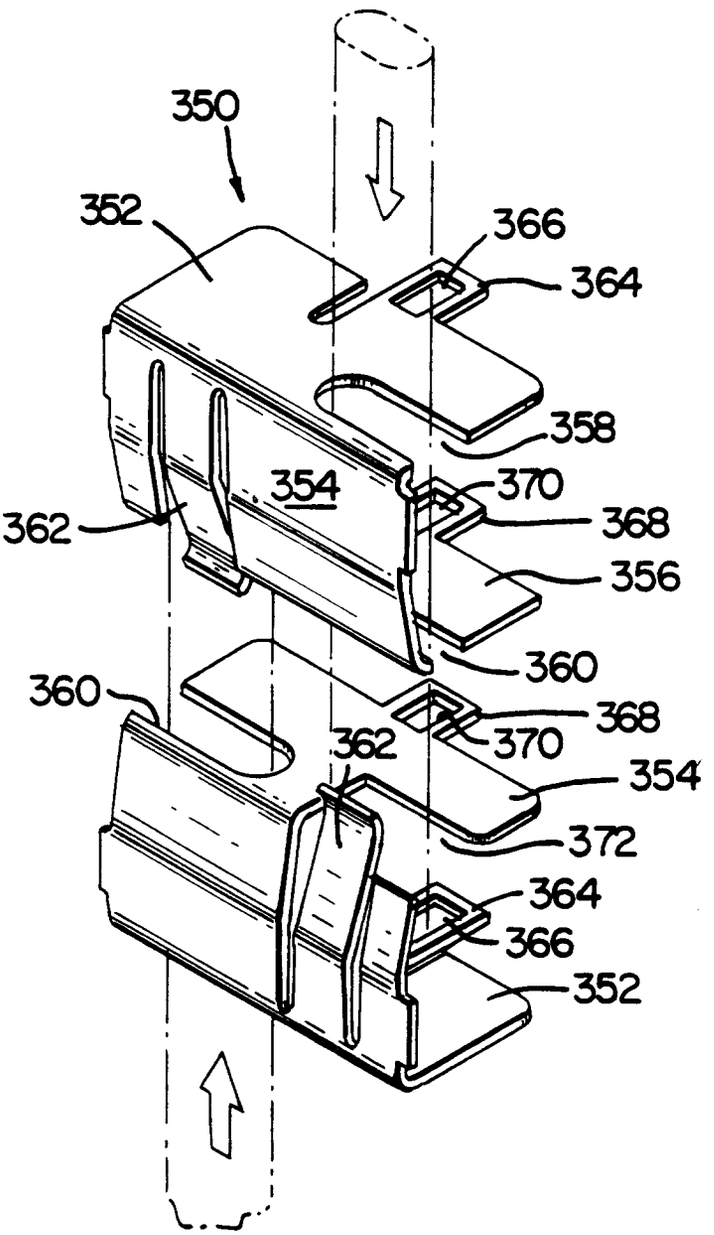
302
312

Fig. 9

Fig. 10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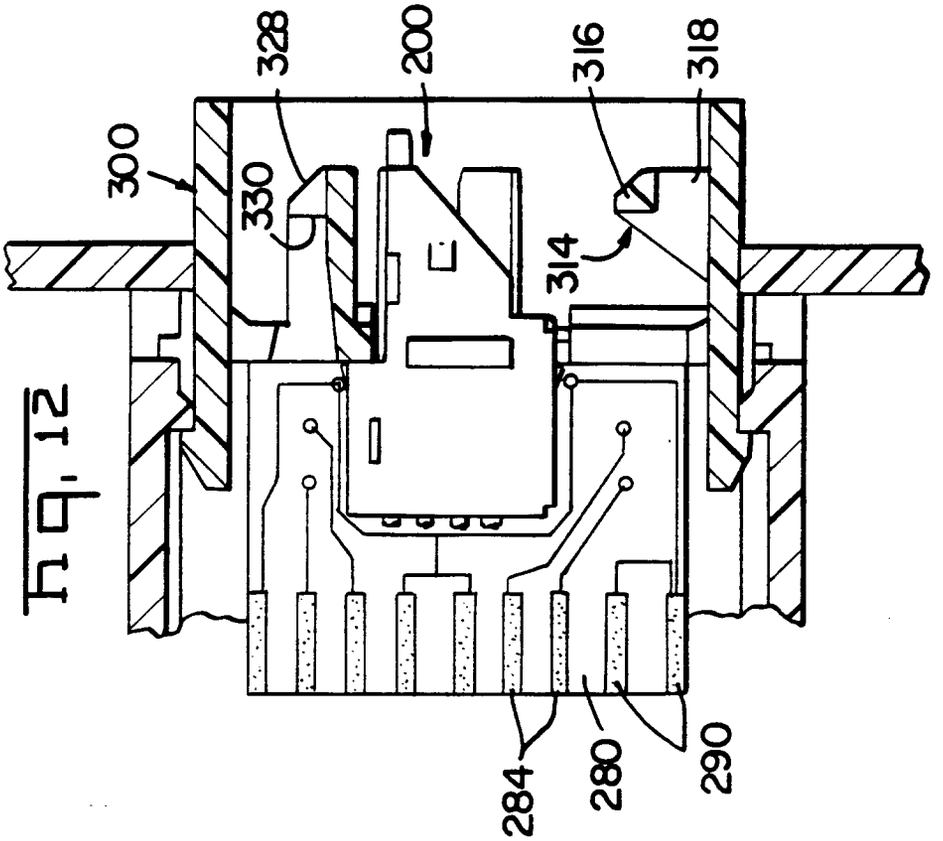
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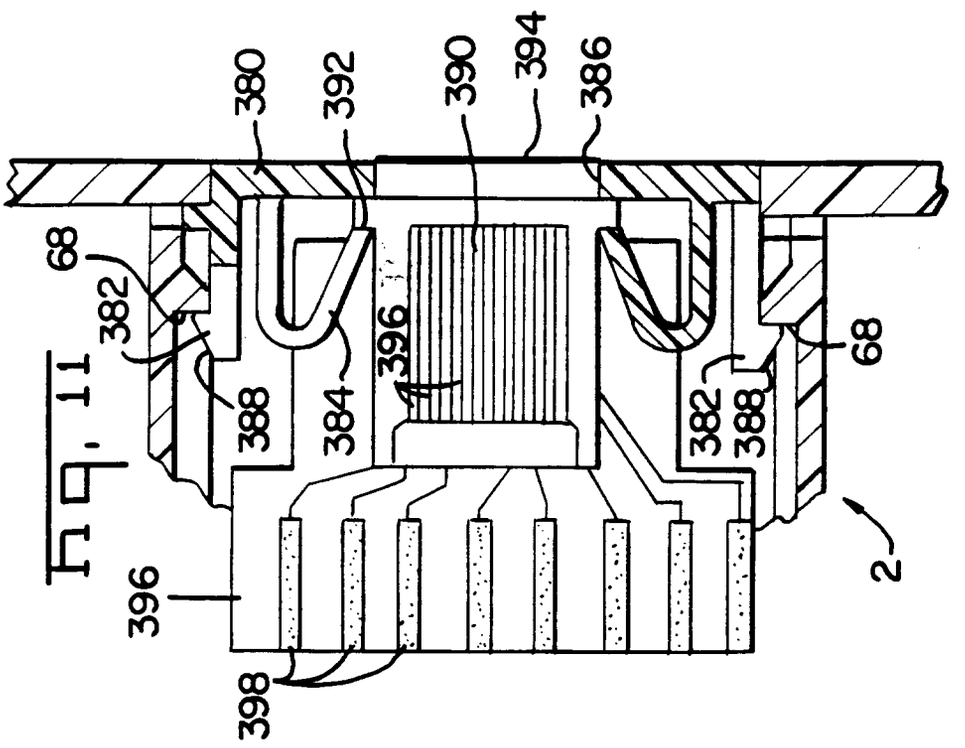
318
300
330
314
284
280
290

Fig. 12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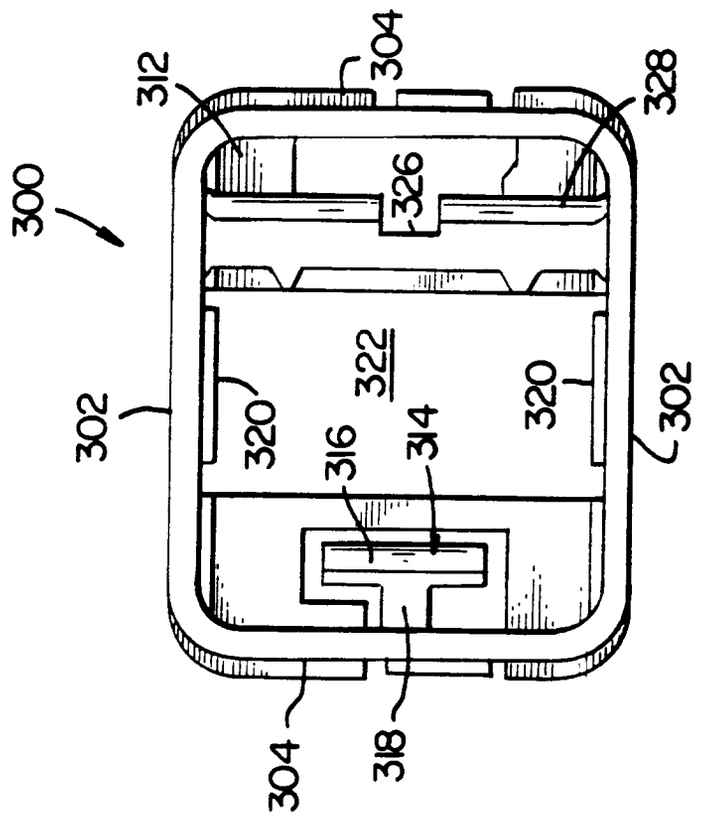
68
396
398
2

Fig. 11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328
326
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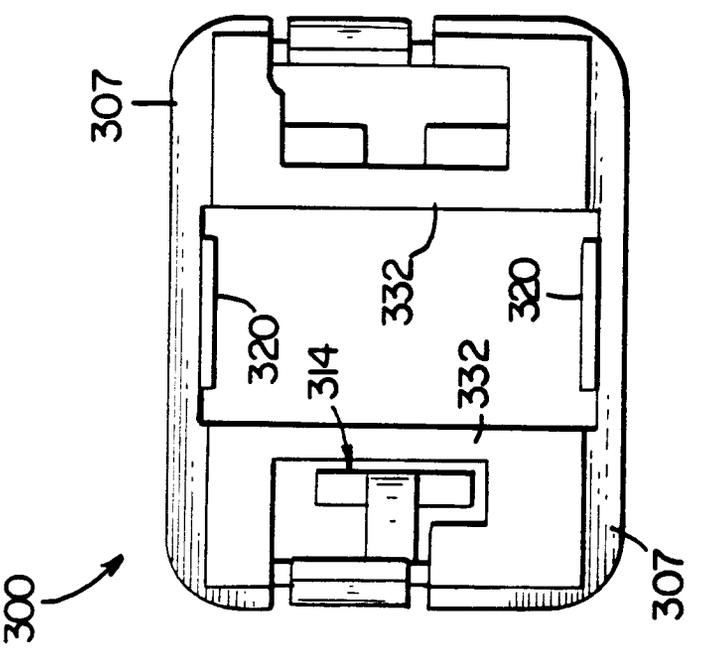
320
322
316
314
320
302
304
318

Fig. 14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332
320
320
314
332
300
307

Fig. 17

Fig. 15