Jan. 22, 1974 R. G. BAUMGARTNER Re. 27,898

PEDESTAL CLOSURES FOR BURIED TELEPHONE PLANT

Original Filed June 6, 1969 2 Sheets-Sheet 1

FIG. 1

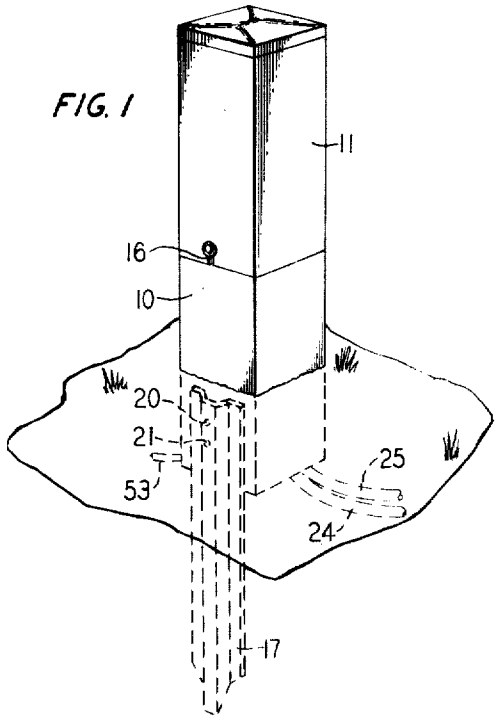


FIG. 2

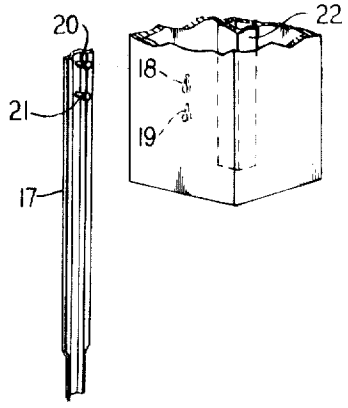


FIG. 4

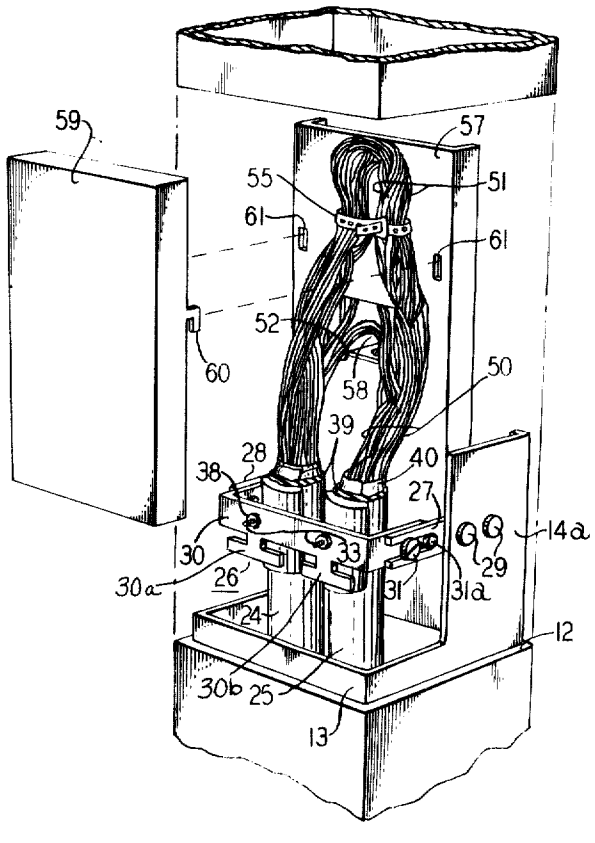
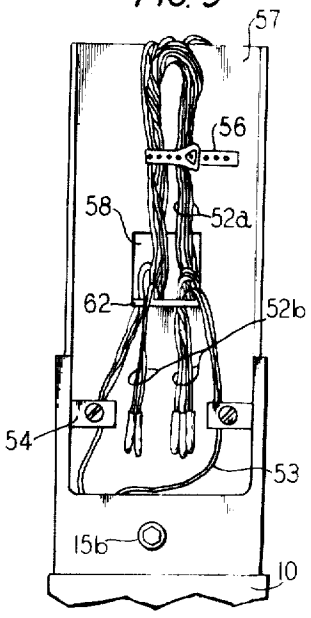


FIG. 5



INVENTOR
R. G. BAUMGARTNER
BY Charles E. Grant
ATTORNEY

PEDESTAL CLOSURES FOR BURIED TELEPHONE PLANT

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FIG. 8

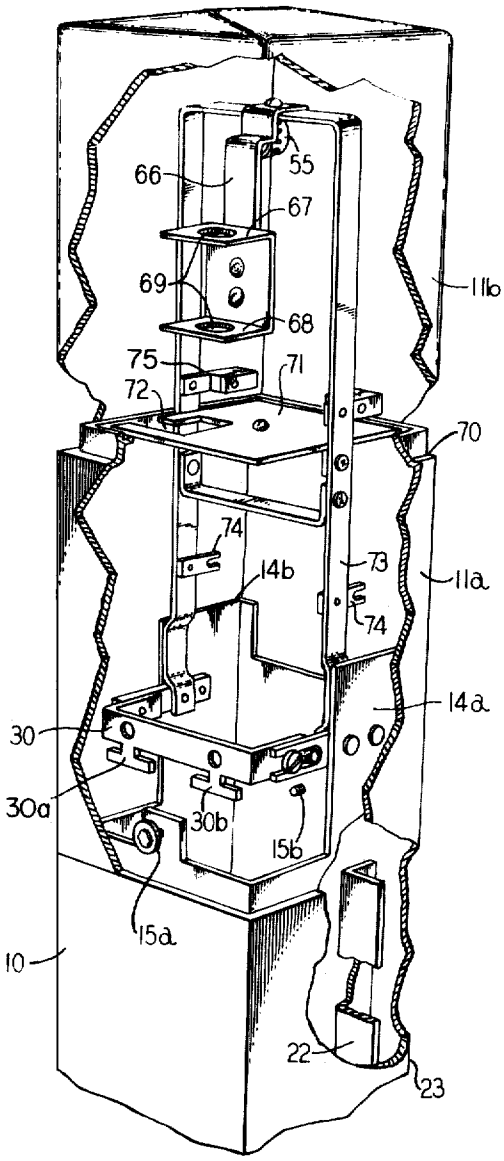


FIG. 6

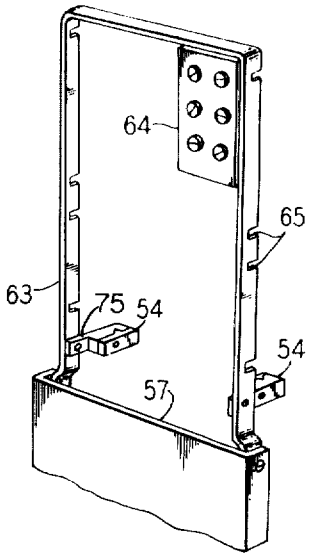


FIG. 7

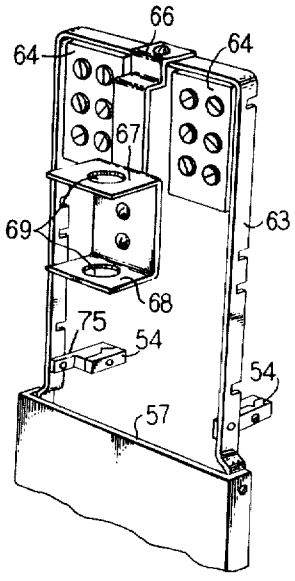
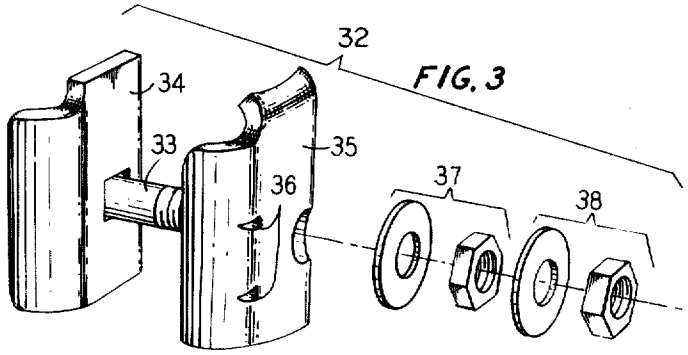


FIG. 3



United States Patent Office

Re. 27,898
Reissued Jan. 22, 1974

27,898

PEDESTAL CLOSURES FOR BURIED TELEPHONE PLANT

Robert Garland Baumgartner, Baltimore, Md., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J.

Original No. 3,538,236, dated Nov. 3, 1970, Ser. No. 831,086, June 6, 1969. Application for reissue Sept. 12, 1972, Ser. No. 288,412

Int. Cl. H02g 9/02

U.S. Cl. 174—38 3 Claims

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

ABSTRACT OF THE DISCLOSURE

This specification discloses a pedestal-type telephone cable closure consisting of a base and an upper housing of like cross section. The base is mounted on a channel which is driven into the ground separately. The cables are led in through the base bottom and supported on a bonding clamp that also contacts the cable's metallic shield. A center partition in the upper housing physically segregates the pairs to which service wire splices will be made.

FIELD AND OBJECTS OF THE INVENTION

This invention relates to pedestal-type closures used with buried telephone cable plant.

One object of the invention is to reduce the cost and complexity of connects and disconnects within a pedestal-type telephone cable closure.

A more specific object of the invention is to reduce the risk of mistake in the splicing of service drop wires to telephone pairs appearing in pedestal-type closure.

An added object of the invention is to facilitate the mounting and grounding of telephone cables within a pedestal-type closure.

An important object of the invention is to achieve the above objects in a telephone cable closure while also providing functional flexibility at a minimum of cost.

BACKGROUND OF THE INVENTION

In the inventor's Pat. 3,480,721 issued Nov. 25, 1969, Ser. No. 768,376 filed Oct. 17, 1968, there is described a pedestal-type telephone closure possessing features of practical and technical importance to the art. This closure consists of a fully closed lower housing and an upper housing of like shape and mounted onto a circumferential flange of the lower housing. A supportive stake is driven in the ground and thereafter the closure is fixedly mounted thereto. A closed vertical passage at an interior corner of the lower housing enables service wires to be added without having to remove ballasting in the closure base.

An important aspect of the invention disclosed in the aforementioned patent is its flexibility to handle entire cable splices as well as service drops in the same basic design, such being achieved with variations in the internal hardware and bracketry. One basic closure thus fulfills the functions previously handled by several specialized closure designs.

In the further development of this genus of telephone cable closure, several additional improvements have now been achieved and are the subject of the present patent application.

One such improvement relates to the manner of effecting an electrical bond between the metallic cable sheath and the ground bracket of the closure, while within the same area, also effecting the mechanical clamping of the

cable to the closure. It has been realized that the inner and outer sheath clamp previously used for bonding and clamping is overly bulky, rigid, and hard to install. A clamp that grips only a segment of the cable between the sheath and outer jacketing, rather than reaching around the entire outer jacket, now is provided.

Additionally, a further feature for improving housekeeping in the closure and thereby reducing the chances of installer error has been achieved. Specifically, a partition is centrally disposed in the upper housing and serves to separate those pairs of the cable which are specified for service splices from the remainder of the pairs of a cable. A window in the partition affords a passage through which to feed a "preferred count" cable pair destined for splicing to service wire drops. The central partition thus serves to establish separate compartments for service splices and distribution splices or unspliced distribution cable pairs. Additionally, because the preferred pair count is only a small fraction of the total cable pairs, for example twenty-five pairs or less, the installer finds it easier to locate a desired pair for service splicing and is less likely to make a mistake in using existing color-coding schemes.

In one embodiment of the invention, a shield is placed over the main cable to further insure against the installer entering the wrong compartment.

The invention and its further objects, features, and advantages will be more readily apprehended from a reading of illustrative embodiments of the invention.

THE DRAWING

FIG. 1 is a perspective side view of an installed closure;

FIG. 2 is an exploded side perspective view of the closure base and a mounting stake;

FIG. 3 is an exploded side perspective view of a cable bonding and anchoring clamp;

FIG. 4 is a partial side perspective view of one version of the closure interior;

FIG. 5 is an elevation view of the lower portion of the FIG. 4 closure;

FIG. 6 is a frontal perspective of a further type of bracket mountable on the bracketing shown in FIG. 4;

FIG. 7 is a frontal perspective view of a still type of bracket; and

FIG. 8 is a side perspective view of a closure housing utilizing a third species of internal bracketing.

DETAILED DESCRIPTION OF AN ILLUSTRATIVE EMBODIMENT

Pursuant to one object of the invention, the present telephone cable closure can, with simple systematic additons to the interior hardware, function as a splicing point for distribution cable, as a terminating point for service wires, as a bridging point for a branch cable, or indeed function in all three respects concurrently. In these respects, the invention realizes/objectives similar to those stated in the inventor's aforementioned Pat. 3,480,721. Its basic disclosed embodiment is hereinbelow used as a framework to demonstrate the present invention's improved structural aspects.

Accordingly, FIG. 1 depicts a closure, embodying the present invention in place in the ground and consisting of a base **10** and an upper housing **11** which advantageously is of the bell jar type. These members are cross sectionally similar so that the bottom edge of upper housing **11** engages the circumferential lip **12** of base **10**, as shown in FIG. 4. Extending from lip **12** is a flange **13** which is relatively short in its frontal aspect, but in the rear is elongated into flange extensions **14a**, **14b**, best shown in FIG. 8. A frontal extension of flange **13**, also seen in FIG. 8, supports a locking nut **15a**; and as seen in FIG. 5, a similar locking nut **15b** is supported in

the opposite side of base **10**. Locking nuts **15a**, **15b** engage keyways **16** in upper housing **11**, one of which is shown in FIG. 1. In this fashion, upper housing **11** is removably secured in two places to base **10** to maintain a rigid nonrocking relationship between the two.

As seen in FIGS. 1 and 2, base **10** is mounted on a post **17** and when so mounted extends somewhat below ground level. Two keyhole-shaped holes **18**, **19** in base **10**, are engaged by devices **20**, **21** which can be a pair of clinch nuts and bolts threadably mounted in post **17**. As in the aforementioned patent application, the post **17** is first driven into the ground alone and thereafter the bolts **20**, **21** are maneuvered into the holes **18**, **19** until the bolts and the keyholes are engaged. Thereafter, the bolts are tightened from the inside of the base **10** to complete the fastening.

Also as in the preceding patent application, an L-shaped channel **22** is fastened along the vertical back corner **23** of base **10** as is depicted in FIG. 2 and FIG. 8. A run for service wires from the splicing area of base **10** down to the bottom of base **10** thus is afforded, the advantage of which is to avoid having to clear out the fill or ballast within base **10** for the purpose of running service wires at some later time.

Pursuant to one facet of the invention, fastening of the cable legs **24**, **25** within base **10** is afforded through the bracket and clamp assembly **26**, depicted in FIG. 4. A pair of slotted arms **27**, **28** mounted on flange extensions **14a**, **14b** respectively by some means such as rivets **29**, provides support for a U-shaped bracket **39**. Bolt **31** and projection **31a** accommodate to the slotted arms **27**, **28** and provide sliding horizontal adjustment for the bracket and clamp assembly **26**.

Two downwardly extending inverted T-members **30a**, **30b** are provided to secure conventional hose-type clamps (not shown) which grip the exposed inner cable sheath for grounding and mechanical support.

The outer jacket **39** and the inner aluminum shield **40** are removed from a section of the cable legs **24**, **25**. Then, the bonding clamp assembly **32**, depicted in FIG. 3 is installed through a slit in the outer jacket **39** and the shield **40**. The inner clamp **34** is slipped into the cable interior and the bolt **33** is engaged through the slit. Thereafter, the outer clamp **35** is placed onto bolt **33**, and the washer and nut **37** are tightened. The tangs **36** of clamp **35** grip the outer jacket **39**. The bolt **33** then is fed through one of the holes **33a** in U-bracket **30**, and finally the washer and nut assembly **38** is engaged to bolt **33** and tightened down. The resulting electrical and mechanical anchoring of the cable legs **24**, **25** to the bracket **30** provides strong grounding and support for the cable legs. A routine application of vinyl tape (not shown) then is applied around the cable pairs **50**.

In accordance with a further aspect of the invention, a partition **57** is mounted as with rivets **29** and the flange extensions **14a**, **14b**. Partition **57** is mounted vertically in a plane that is off-center with respect to the base **10**. Partition **57** has a central window **58**. The cable pairs **50**, which comprise the entire count of the cable leg **25** are divided into two groups. Those pairs which will either remain unspliced or which will form a distribution splice are disposed on the near side of partition **57** and there held down by the cable tie **55**. These pairs are designated **51**. The remaining pairs **52**, which form the count, are fed through window **58** and as seen in FIG. 5 are secured in a loop arrangement by the cable tie **56**.

The preferred count pairs **52** are those specified by the telephone engineer as the only pairs available at a given closure for terminating service drops. Typically the preferred count is twent-five or fewer pairs. Thus, with existing color-code schemes, the segregating of a preferred count on one side of a partition **57**, in accordance with one aspect of this invention, precludes the installer from confusing pairs of the same color code and further greatly reduces his searching time for a given telephone pair.

Moreover, as shown in FIG. 5, a further housekeeping feature involves physically separating the pairs **52a** of the preferred count **52**, namely those that are presently unused for splicing, and the pairs **52b** of the preferred count **52**, which, as shown, are spliced to service wires **53**. As time passes and further service splices are required, appropriate cable pairs of the unused group **52a** are removed from the loop in which they are bound by cable tie **56**, spliced, and thereafter disposed in the ring fixture **62**.

The spliced service drops, shown in FIG. 5, are each supported in an assembly such as **54** which is a mounting and grounding connector that effects grounding connection with the sheath of service wires **53**. The latter thereafter are led down through channel **22** and onto the installation being served.

It is seen in FIG. 5 that a substantial loop of telephone pairs is provided on either side of partition **57**. This is to make available enough copper in each conductor pair to withdraw several splicings.

The internal hardware just described and depicted in FIG. 4 is further enhanced by the provision of a shield **59** secured on the near side of partition **57** by engagement of slots **51** with arms **50**. Shield **59** when fastened to partition **57** is added assurance that an installer will stay clear of the distribution pairs which are not intended for service drops from the closing in question. The closure of FIG. 4 thus is used at loop-through locations where advantageously only service wires are to be terminated.

There is occasional need at loop-through locations for the provision of protector blocks which guard against extraneously introduced current and voltage surges. For this requirement, the additional bracketing depicted in FIG. 6 and consisting of U-shaped bracket **63** with slots **65**, is mounted at top of partition **57** in the manner shown. Protector blocks **64** then are mounted in slots **65** with appropriate hardware. The use of bracket **63** of course requires a longer upper housing **11**, but one that is in all other respects identical to that depicted in FIG. 1. The bracket **63** also supports connector assemblies **54** whose function has already been described.

A further variation of the bracketing arrangement depicted in FIG. 6 is shown in FIG. 7. There, a wire support **66** which comprises arms **67**, **68** each having a slotted housekeeping loop **69**, is connected to the top of the U-shaped bracket **73**. The loops **79** are for the purpose of supporting conductor pairs in orderly fastion, by insertion of the pairs throuhg the slots. Support **66** advantageously is a nylon-coated metal stamping.

At closure locations where a distribution splice is required as well as the termination of device wires, the interior hardware depicted in FIG. 8 is advantageous. The interior hardware consists of an elongated U-shaped bracket **73** supporting the bracket **30**, which as in FIG. 4 supports the bracket and clamp assembly **26** (not shown in FIG. 8). If protector blocks such as **64** are needed and if, further, the cable is ended at this closure or a bridge cable is necessary, then the cable splice is made in the bottom chamber defined within the undersection **11a** of housing **11**. Then, in a manner similar to that depicted in FIGS. 4 and 5, a preferred cable count is fed or bridged to the space defined within the top section **11b**. Housing sections **11a** and **11b** are both similar in cross section to the base **10**, and mount atop one another by the engagement of the bottom edge of top section **11b** onto the lip **70** of undersection **11a**.

The partition **71** in the embodiment of FIG. 8 is horizontally mounted at the juncture between the undersection **11a** and the housing top section **11b**. Partition **71** serves the additional function of helping to hold undersection **11a** in place by virtue of the overlapping edges as shown. The preferred count (not shown) is led through window **72**, and is secured by cable tie **55** from which suitable ones of the preferred count are spliced to service

drops. The splices are supported by the wire support **66** which is similar to that shown in FIG. 7. Bracket **73** advantageously includes extensions **74** disposed in the section **11a**, for supporting branch cables where necessary. Extensions **75** of bracket **73** mount connector assemblies such as **54**.

In summary, a family of buried telephone cable pedestal closures haves been described which differ internally in accordance with their intended use. Each is equipped with housekeeping aids to establish separate compartments for splicing and distribution. Advantageously, approximately six service wires and a maximum 200-pair splice with a 50-pair bridge is accommodated in the appropriate closure. Cable bonding, loop length, and internal hardware are largely standardized in all the closures to simplify enclosure installation.

The spirit of the invention is embraced in the claims to follow.

What is claimed is:

[1. A pedestal closure for telephone cable comprising:
a four-sided open-ended base;
an upper housing of like cross section and closed at its top;
means removably securing said upper housing to said base;
a cable-mounting bracket connected across the upper interior of said base;
means mechanically clamping a telephone cable to said cable-mounting bracket and electrically connecting a metallic sheath of said cable to said bracket;
a partition disposed in said upper housing and defining two separate compartments therein, said partition including a window;
a first group of wire pairs destined for splicing with service wires being led through said window;
means connected to said partition for mounting said first group on the far side of said partition; and
means connected to said partition for mounting on the near side of said partition a second group of wire pairs comprising substantially the remainder of the pair count in said cable.]

[2. A pedestal closure in accordance with claim **1**,
further comprising means mounting said partition vertically and off-center from said base,
means including a cable tie fastened on said partition near side above said window for detachably securing said second wire group; and
means including a second cable tie connected above said window on said partition far side for removably securing the members of said first wire group.]

[3. A pedestal closure in accordance with claim **2**, further comprising a shielding enclosure substantially coextensive in width with said partition and means securing said enclosure on said partition near side to substantially conceal said second wire group.]

[4. A pedestal closure in accordance with claim **1**,
wherein said upper housing comprises an open-ended undersection in engagement with said base, and a top section closed at its top and engaging the upper edge of said undersection; and
means mounting said partition horizontally at the juncture between said undersection and said top section of said upper housing.]

5. Apparatus in accordance with claim [4] *8*, further comprising an elongated inverted U-shaped bracket connected to said base and extending vertically upwardly through said undersection and through said top section, means connecting said partition to the legs of said bracket, and a wire support connected to the top of said bracket and comprising a unitary metallic stamping including a plurality of arm pairs, each arm pair including a closed loop for receiving and securing members of said first wire group.

[6. In combination, a pedestal closure comprising:
a four-sided open-end base comprising an inwardly extending circumferential lip along the upper edge thereof and a pair of opposite flange side extensions extending upwardly from the rear of said lip;
an upper housing having a cross section like said base and a closed up, said upper housing lowermost edge engaging said base lip;
means removably securing said upper housing to said base;
a cable-mounting bracket comprising a pair of horizontal slotted arms respectively connected to said flange extensions, a U-shaped bracket including means engaging the said slots on respective legs of said bracket;
a telephone cable comprising multiple wire pairs jacketed in an inner metallic sheath and an outer plastic sheath;
first and second plates straddled respectively on said inner metallic sheath and said outer plastic sheath, means including a bolt extending outwardly from said second plate and through said first plate for effecting gripping relation between said plates; and means engaging said bolt to said U-shaped bracket;
a partition in said upper housing defining two separate compartments therein, said partition including a window;
a first group of wire pairs destined for splicing with service wires being led through said window;
means for mounting said first group on the far side of said partition; and
means connected to said partition for mounting on the near side of said partition a second group of wire pairs comprising substantially the remainder of the pair count in said cable.]

[7. A cable closure comprising a lower housing, a bell jar type upper housing connected thereto, a vertical central divider in said upper housing including at least one window, a multipair commmunications cable being led through said lower housing, means for fastening said cable to a first side of said divider, a shield for enclosing said cable in the vicinity of said divider, and means connected to the second side of said divider for supporting selected cable pairs led through said windows.]

8. A pedestal closure for telephone cable comprising:
a four-sided open-ended base;
an upper housing having a like cross section and including an open-ended undersection in engagement with said base, and a top section closed at its top and engaging the upper edge of said undersection;
means removably securing said upper housing to said base;
a cable-mounting bracket connected across the upper interior of said base;
means mechanically clamping a telephone cable to said cable-mounting bracket and electrically connecting a metallic sheath of said cable to said bracket;
a partition horizontally mounted at the junction between said undersection and said top section of said upper housing and defining two separate compartments therein, said partition including a window;
a first group of wire pairs destined for splicing with service wires being led through said window;
means connected to said partition for mounting said first group on one side of said partition; and
means connected to said partition for mounting on the other side thereof a second group of wire pairs comprising substantially the remainder of the pair count in said cable.

9. A pedestal closure for telephone cable comprising:
a four-sided open-ended base;
an upper housing of like cross section and closed at its top;
means removably securing said upper housing to said base;
a cable-mounting bracket connected across the upper interior of said base;

means mechanically clamping a telephone cable to said cable-mounting bracket and electrically connecting a metallic sheath of said cable to said bracket;

a partition dipsosed in said upper housing and defining two separate compartments therein, said partition including a window;

means mounting said partition vertically and off-center trom said base;

a first group of wire pairs destined for splicing with service wires being led through said window;

means connected to said partition for mounting said first group on the far side of said partition including a first cable tie connected above said window on said partition far side for removably securing the members of said first wire group;

means connected to said partition for mounting on the near side of said partition a second group of wire pairs comprising substantially the remainder of the pair count in said cable including a second cable tie fastened on said partitioned near side above said window for detachably securing said second wire group; and

a shielding enclosure substantially coextensive in width with said partition and means securing said enclosure on said partition near side to substantially conceal said second wire group.

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LARAMIE E. ASKIN, Primary Examiner

U.S. Cl. X.R.

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