

SPLICEABLE CABLE BRIDGE

TECHNICAL FIELD

[0001] The present disclosure relates to the technical field of cable installation equipment, in particular to a spliceable cable bridge.

BACKGROUND

[0002] At present, in industries such as petroleum, chemical, light industry, television, and telecommunications, a large number of tray-type cable bridges are used as it is necessary to lay a large number of power and communication cables. For traditional tray-type cable bridges, when being connected to each other, they need to be first leveled and aligned, and then fastened by means of auxiliary washers and screws.

[0003] When being connected, it is difficult for a prior art tray-type cable bridge to ensure a smooth connection surface. Besides, the use of the auxiliary gaskets and screws for fastening leads to not only a complicated construction process, but also protrusions of the screws and auxiliary gaskets out of their respective installation openings after completion of the construction process, which degrades the appearance and is likely to scratch the cable, thus jeopardizing overall construction quality and increasing work intensity.

SUMMARY

[0004] An object of embodiments of the present disclosure is to provide a spliceable cable bridge to improve installation efficiency of the spliceable cable bridge.

[0005] An embodiment of the present disclosure provides a spliceable cable bridge, comprising: a plurality of bridge units spliced in sequence, each bridge unit includes a bottom plate and two side plates which are fixed to the bottom plate and provided opposite to each other, the bottom plate and the two side plates forming a cable accommodating slot, where:

the bridge unit has a first connecting end and a second connecting end, the first connecting end including a plurality of protrusions provided on a side of the side plate facing away from the cable accommodating slot, and a second connecting end including a plurality of

side openings on the side plate whose extension direction is perpendicular to that of the side plate, and the side openings are snap-fitted to the protrusions one by one; and

for each two adjacent bridge units, a first connecting end of one bridge unit is spliced with a second connecting end of the other bridge unit.

[0006] In an embodiment of the present disclosure, optionally, for each bridge unit, at least one protrusion includes a blocking portion whose extension direction is the same as that of the side plates.

[0007] In any embodiment of the present disclosure, optionally, the first connecting end further includes buckles provided on the bottom plate, and the second connecting end further include bayonets provided on the bottom plate, wherein the bayonets can be snap-fitted on the buckles.

[0008] In an embodiment of the present disclosure, optionally, the first connecting end further includes first mounting holes provided on the side plates, and the second connecting end further includes second mounting holes provided on the side plates; and each two adjacent bridge units can be connected by a fastener passing sequentially through the first mounting holes and the second mounting holes.

[0009] In any embodiment of the present disclosure, optionally, both the first mounting hole and the second mounting hole are strip-shaped holes.

[0010] In an embodiment of the present disclosure, optionally, the first connecting end and the second connecting end further include a first socket provided on the side plates and a second socket provided on the side plates; the spliceable cable bridge further includes a pallet having a plug-in portion, and when two adjacent bridge units are spliced, the first socket is provided opposite to the second socket, and then the plug-in portion can be fixedly plugged into the first socket and the second socket.

[0011] In any embodiment of the present disclosure, optionally, the bridge unit further includes a plurality of first heat dissipation holes provided on the side plates.

[0012] In an embodiment of the present disclosure, optionally, the bridge unit further includes second heat dissipation holes and threading holes provided on the bottom plate.

[0013] In any embodiment of the present disclosure, optionally, the second heat

dissipation holes and the threading holes are alternately provided.

[0014] In an embodiment of the present disclosure, optionally, the bridge unit is a one-piece structure.

[0015] In a technical solution of the present disclosure, the spliceable cable bridge includes a plurality of bridge units spliced in sequence. Since the bridge units includes the first connecting end comprising a plurality of protrusions provided on the side plate and a second connecting end comprising a plurality of side openings provided on the side plate, the first connecting end of one bridge units can be spliced with the second connecting end of the other bridge units when the bridge units are being spliced. Specifically, the second connecting end of the other bridge units is snap-fitted from the bottom to the top onto the first connecting end of the one bridge units, and the side openings on the second connecting end of the other bridge units are snap-fitted together with the protrusions onto the first connecting end of the one bridge units.

[0016] Compared with the prior art, when the spliceable cable bridge in the present technical solution is in use, two adjacent bridge units can be spliced according to the wiring requirements by means of snap-fit between the protrusions on the first connecting end and side openings on the second connecting end, thereby improving splicing efficiency and aesthetic appearance of spliced cable bridges.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] Fig. 1 is a structural schematic diagram of a bridge monolith of an embodiment of the present disclosure;

[0018] Fig. 2 is a structural schematic diagram of the bridge monolith of another embodiment of the present disclosure;

[0019] Fig. 3 is a structural schematic diagram of a spliceable cable bridge of an embodiment of the present disclosure;

[0020] Fig. 4 is a structural schematic diagram of a first connecting end of a bridge monolith of an embodiment of the present disclosure;

[0021] Fig. 5 is a structural schematic diagram of a second connecting end of a bridge monolith of an embodiment of the present disclosure;

[0022] Fig. 6 is a structural schematic diagram of a pallet of an embodiment of the present disclosure.

[0023] Reference Signs:

- 1 - bridge unit;
- 2 - bottom plate;
- 3 - side plate;
- 4 - first connecting end;
- 5 - second connecting end;
- 6 - protrusion;
- 7 - side opening;
- 8 - buckle;
- 9 - bayonet
- 10 - first mounting hole;
- 11 - second mounting hole;
- 12 - first socket;
- 13 - second socket;
- 14 - first heat dissipation hole;
- 15 - second heat dissipation hole;
- 16 - threading hole;
- 17 - pallet;
- 18 - plug-in portion.

DETAILED DESCRIPTION

[0024] In order to improve installation efficiency of the spliceable cable bridge, a spliceable cable bridge is provided by an embodiment of the present disclosure. The following embodiments further illustrate the present disclosure in detail so as to further specify the objectives, technical solutions, and advantages of the present disclosure.

[0025] Where ordinal numbers such as "first", "second", "third" or "fourth" are mentioned in this application, they shall be understood as distinguishing only, unless they expressively show

the order in the context.

[0026] As shown in Figures 1 to 5, a spliceable cable bridge is provided in an embodiment of the present disclosure, and includes a plurality of bridge units 1 spliced in sequence. The bridge unit 1 includes a bottom plate 2, and two side plates 3 which are fixed to the bottom plate 2 and provided opposite to each other. The bottom plate 2 and the two side plates 3 form a cable accommodating slot, where:

the bridge unit 1 has a first connecting end 4 comprising a plurality of protrusions 6 provided on a side of the side plate 3 away from the cable accommodating slot, and a second connecting end 5 comprising a plurality of side openings 7 whose extension direction is perpendicular to that of the side plate 3 provided on a side of the side plate 3, and the side openings 7 can be snap-fitted to the protrusions 6 one by one;

for each two adjacent bridge units 1, a first connecting end 4 of one bridge unit 1 is spliced with a second connecting end 5 of the other bridge unit 1.

[0027] In the present technical solution, the spliceable cable bridge includes not only a plurality of bridge units 1 spliced in sequence. Since the bridge unit 1 includes the first connecting end 4 comprising a plurality of protrusions 6 provided on a side of the side plate 3 but also a second connecting end 5 comprising a plurality of side openings 7 provided on a side of the side plate 3, the first connecting end 4 of one bridge unit 1 can be spliced with the second connecting end 5 of the other bridge unit 1 when the bridge units 1 are being spliced. Specifically, the second connecting end 5 of the other bridge unit 1 is snap-fitted from the bottom to the top onto the first connecting end 4 of the one bridge unit 1, and the side openings 7 on the second connecting end 5 of the other bridge unit 1 are snap-fitted together with the protrusions 6 onto the first connecting end 4 of the one bridge unit 1.

[0028] Compared with the prior art, when the spliceable cable bridge in the present technical solution is in use, two adjacent bridge units 1 can be spliced according to the wiring requirements by means of snap-fit between the protrusions 6 on the first connecting end 4 and side openings 7 on the second connecting end 5, thereby improving splicing efficiency and aesthetic appearance of spliced cable bridges.

[0029] As shown in Figures 3 and 4, in an embodiment of the present disclosure,

optionally, for each bridge unit, at least one protrusion 6 includes a blocking portion (not shown in the figures) whose extension direction is the same as that of the side plates 3.

[0030] By providing the blocking portion on the protrusion 6 and making the extension direction of the blocking portion be the same as that of the side plates 3, it is possible to increase the restraining effect of the first connecting end 4 provided with the protrusion 6 on the second connecting end 5 snap-fitted thereon, thereby increasing the reliability of connection between two adjacent bridge units 1.

[0031] In embodiments of the present technical solution, no limitation is made to the specific shape of the protrusion 6, but the protrusion 6 may be configured as a lug shape, and the portion of the side plate 3 corresponding to the protrusion 6 may be configured as a hollow structure. In this way, it can reduce not only the weight of the spliceable cable bridge, but also improve the heat dissipation effect of the spliceable cable bridge.

[0032] As shown in Figures 1, 2, 4 and 5, in any embodiment of the present disclosure, optionally, the first connecting end 4 further includes buckles 8 provided on the bottom plate 2, and the second connecting end 5 further includes bayonets 9 provided on the bottom plate 2, wherein the bayonets 9 can be snap-fitted to the buckles 8.

[0033] By providing the buckles 8 on the first connecting end 4 and the bayonets 9 on the second connecting end 5, when two adjacent bridge units 1 are being connected, the bayonets 9 can be snap-fitted to the corresponding buckles 8, so as to realize the fixed connection of the bottom plates 2 of the two adjacent bridge units 1, achieving more reliable connection of spliceable cable bridge.

[0034] The snap-fit between the buckle 8 and the bayonet 9 is not limited to particular forms. For example, the buckle 8 is snap-fitted on the bayonet 9 as an interference-fit. Alternatively, the buckle 8 is provided in a sheet shape, and when the buckle 8 is snap-fitted on the bayonet 9, the sheet-shaped buckle can be flipped around the fixed part of the buckle 8 and the bottom plate 2 as an axis by using auxiliary tools such as a flat pliers, so as to realize the fixing of the first connecting end 4 and the second connecting end 5 to the bottom plate 2.

[0035] As shown in Figures 3-5, in the embodiment of the present disclosure, optionally, the first connecting end 4 further includes first mounting holes 10 provided on the side plates 3,

and the second connecting end 5 further includes second mounting holes 11 provided on the side plates 3, respectively; and each two adjacent bridge units 1 can be connected by a fastener passing sequentially through the first mounting holes 10 and the second mounting holes 11.

[0036] By providing the mounting holes on the first connecting end 4 and the second connecting end 5 respectively, two corresponding mounting holes are provided directly opposite to each other after the first connecting end 4 and the second connecting end 5 are snap-fitted. In this way, in the case of high demands on structural stability of a spliceable cable bridge, two adjacent bridge units 1 can be connected by fasteners passing sequentially through two corresponding mounting holes.

[0037] As shown in Figures 4 and 5, in any embodiment of the present disclosure, optionally, both the first mounting hole 10 and the second mounting hole 11 are strip-shaped holes.

[0038] When both the first mounting hole 10 and the second mounting hole 11 are strip-shaped holes, as long as the fastener can pass through the parts of the two corresponding mounting holes that are directly provided opposite to each other, demands on the processing accuracy requirements for the two mounting holes can be effectively reduced, and so does the difficulty for processing the spliceable cable bridge.

[0039] As shown from Figures 3 to 6, in an embodiment of the present disclosure, optionally, the first connecting end 4 further includes a first socket 12, and the second connecting end 5 further includes a second socket 13 provided on the side plates 3; the spliceable cable bridge further includes a pallet 17 having a plug-in portion 18, and when the two adjacent bridge units 1 are spliced, the first socket 12 is provided opposite to the second socket 13, and then the plug-in portion 18 can be fixedly plugged into the first socket 12 and the second socket 13.

[0040] By providing the first socket 12 on the first connecting end 4 and the second socket 15 on the second connecting end 5, the first socket 12 and the second socket 13 are provided opposite to each other when the first connecting end 4 is snap-fitted on the second connecting end 5, and then the plug-in portion 18 of the pallet 17 can be plugged into the first socket 12 and the second socket 13. In this way, the structural reliability of the spliceable cable bridge can be further improved; in addition, the joint between the first connecting end 4 and the

second connecting end 5 can also be covered with the pallet 17, therefore improving aesthetic appearance of the spliceable cable bridge.

[0041] Further, a third mounting hole is provided on the pallet 17 and faces the first mounting hole 10 and the second mounting hole 11. In this way, the pallet 17 may be fixed to the first connecting end 4 and the second connecting end 5 by a fastener passing sequentially through the three mounting holes.

[0042] As shown in Figures. 1, 3 and 4, in any embodiment of the present disclosure, optionally, the bridge unit 1 further includes a plurality of first heat dissipation holes 14 provided on the side plates 3.

[0043] In each embodiment of the present technical solution, the specific shape of the first heat dissipation hole 14 is not limited, which may be a circle, a rectangle, an ellipse, and the like. By providing the first heat dissipation holes 14 on the side plate 3, weight of the bridge unit 1 can be reduced, and heat dissipation of the spliceable cable bridge spliced by the single units 1 is improved.

[0044] Further, as shown in Figures. 1 to 3, in an embodiment of the present disclosure, optionally, the bridge unit 1 further includes second heat dissipation holes 15 and threading holes 16 provided on the bottom plate 2.

[0045] In each embodiment of the present technical solution, the second heat dissipation hole 15 and the threading hole 16 are not limited in their specific shapes, which may be circles, rectangles, ellipses, and the like. By providing the second heat dissipation holes 15 and the threading holes 16 on the bottom plate 2, weight of the bridge unit 1 may be reduced, and dissipation performance may be improved.

[0046] Further, as shown in Figures 2 and 3, in any embodiment of the present disclosure, optionally, the second heat dissipation holes 15 and the threading holes 16 are alternately provided.

[0047] In the present technical solution, by alternately providing the second heat dissipation holes 15 and the threading holes 16, heat dissipation of the cables arranged in the spliceable cable bridge is further facilitated.

[0048] In the embodiment of the present disclosure, optionally, the bridge unit is a

one-piece structure.

[0049] By configuring the bridge unit as a one-piece structure, difficulty of a process for processing the bridge unit can be effectively reduced, strengthening structural stability of the bridge unit, and improving the structural stability of the spliceable cable bridge spliced by the bridge units.

[0050] Of course, those skilled in the art can make various amendments and variations to the present disclosure without departing from the spirit and scope thereof. Accordingly, these amendments and variations fall within the scope of the appending claims and equivalents thereof, and are also intended to be incorporated in present disclosure.

CLAIMS

1. A spliceable cable bridge, characterized by comprising:

a plurality of bridge units spliced in sequence, each bridge unit comprises a bottom plate and two side plates which are fixed to the bottom plate and provided opposite to each other, the bottom plate and the two side plates forming a cable accommodating slot, where:

the bridge unit has a first connecting end and a second connecting end, the first connecting end comprising a plurality of protrusions provided on a side of the side plate facing away from the cable accommodating slot, the second connecting end comprising a plurality of side openings on the side plate whose extension direction is perpendicular to that of the side plate, and the side openings are snap-fitted to the protrusions one by one; and

for each two adjacent bridge units, a first connecting end of one bridge unit is spliced with a second connecting end of the other bridge unit.

2. The spliceable cable bridge according to claim 1, characterized in that for each bridge unit, at least one protrusion comprises a blocking portion whose extension direction is the same as that of the side plates.

3. The spliceable cable bridge according to claim 1, characterized in that the first connecting end further comprises buckles provided on the bottom plate, and the second connecting end further comprises bayonets provided on the bottom plate, wherein the bayonets can be snap-fitted to the buckles.

4. The spliceable cable bridge according to claim 1, characterized in that the first connecting end further comprises first mounting holes provided on the side plates, and the second connecting end further comprises second mounting holes provided on the side plates; and each two adjacent bridge units can be connected by a fastener passing sequentially through the first mounting holes and the second mounting holes.

5. The spliceable cable bridge according to claim 4, characterized in that both the first mounting hole and the second mounting hole are strip-shaped holes.

6. The spliceable cable bridge according to claim 1, characterized in that the first connecting end further comprises a first socket provided on the side plates, and the second connecting end further comprises a second socket provided on the side plates;

the spliceable cable bridge further comprises a pallet having a plug-in portion, and when two adjacent bridge units are spliced, the first socket is provided opposite to the second socket, and then the plug-in portion can be fixedly plugged into the first socket and the second socket.

7. The spliceable cable bridge according to claim 1, characterized in that the bridge unit further comprises a plurality of first heat dissipation holes provided on the side plates.

8. The spliceable cable bridge according to claim 7, characterized in that the bridge unit further comprises second heat dissipation holes and threading holes provided on the bottom plate.

9. The spliceable cable bridge according to claim 8, characterized in that the second heat dissipation holes and the threading holes are alternately provided.

10. The spliceable cable bridge according to any one of claims 1 to 9, characterized in that the bridge unit is a one-piece structure.