Singaporean Patent Application No. 10201704653Q
"Foldable Cable Tray"
Your Reference No.: DSG/HPL/bea/PAT/8212590/SG
Our Reference No.: 577-1473 Singapore

PROPOSED CLAIM AMENDMENTS

1. A foldable cable tray comprising:

a first side rail;

a second side rail, the second side rail parallel to the first side rail;

a plurality of rungs movably connected to the first and second side rails to transit the foldable cable tray between unfolded and folded positions, each of the plurality of rungs including a first rung member having opposite ends and a second rung member having opposite ends; and

a locking device configured to lock each of the plurality of rungs to the first and second side rails when the foldable cable tray is in the unfolded position,

wherein each of the plurality of rungs is movably attached at a first end portion of the first rung member and a second end portion of the second rung member to the first and second side rails, respectively, and

wherein a first angular cut and a second angular cut are defined at the first end portion of the first rung member and at the second end portion of the second rung member, respectively.

2. The foldable cable tray of claim 1, wherein

the second rung member is slidably mounted within the first rung member for telescopic movement such that each of the plurality of rungs can be retracted or extended.

3. The foldable cable tray of any one of claims 1-2, wherein a first rung mounting hole and a first rung locking hole are defined at the first end portion of the first rung member.

4. The foldable cable tray of any one of claims 1-3, wherein a second rung mounting hole and a second rung locking hole are defined at the second end portion of the second rung member.

5. The foldable cable tray of claim 4, wherein a movement device is inserted through each of the first and second rung mounting holes to attach each of the plurality of rungs to the first and second side rails, enabling pivotal movement of each of the plurality of rungs therewith.

6. The foldable cable tray of claim 5, wherein the movement device is a riveted joint.

7. The foldable cable tray of claim 1, wherein the locking device is a locking pin, bolt and nut, locking rod, locking tab, L-bracket with channel nut and bolt, L-bracket with securing flange, locking clamp with bolt and nut, or L-bracket with locking tab.

8. The foldable cable tray of claim 1, wherein, in the unfolded position, the plurality of rungs are substantially perpendicular to each of the first and second side rails.

9. The foldable cable tray of claim 1, wherein, in the folded position, the plurality of rungs are near parallel to each of the first and second side rails.

10. The foldable cable tray of claim 1, wherein each of the first and second side rails includes:

a web having first and second ends; and

an upper flange disposed at the first end of the web; and

a lower flange disposed at the second end of the web,

wherein the upper and lower flanges are substantially perpendicular to the web.

11. The foldable cable tray of claim 10, wherein the lower flange defines a plurality of lower flange mounting holes through which the movement device is inserted from the bottom of each of the plurality of lower flange mounting holes to provide pivotal movement for the plurality of rungs.

12. The foldable cable tray of any one of claims 10-11, wherein the lower flange defines a plurality of lower flange locking holes through which the locking device is inserted to lock the plurality of rungs to the first and second side rails.

13. The foldable cable tray of claim 12, wherein each of the lower flange locking hole is positioned closely adjacent to each corresponding lower flange mounting hole.

14. The foldable cable tray of any one of claims 11-13, wherein the plurality of lower flange mounting holes are uniformly spaced apart at a predetermined interval across the entire length of the lower flange.

15. The foldable cable tray of any one of claims 12-14, wherein the plurality of lower flange locking holes are uniformly spaced apart at a predetermined interval across the entire length of the lower flange.

16. The foldable cable tray of any one of claims 10-15, wherein a shoulder is formed integrally from the inner surface of the web between the upper and lower flanges and extends across the entire length of the web.

17. A method of installing a foldable cable tray, the method comprising:

unfolding the foldable cable tray;

adjusting a plurality of rungs to set a desired width of the foldable cable tray by retracting or extending the plurality of rungs, each of the plurality of rungs including a first rung member having opposite ends and a second rung member having opposite ends, wherein a first angular cut and a second angular cut are defined at a first end portion of the first rung member and at a second end portion of the second rung member, respectively; and

applying a locking device to affix the plurality of rungs to side rails.

18. The method of claim 17, wherein the plurality of rungs are telescopic.

19. The method of any one of claims 17-18, wherein the locking device is a locking pin, bolt and nut, locking rod, locking tab, L-bracket with channel nut and bolt, L-bracket with securing flange, locking clamp with bolt and nut, or L-bracket with locking tab.