June 11, 1968 A. B. HAWES 3,387,568

FLEXIBLE CONNECTION BETWEEN ADJACENT MONORAIL COACHES

Filed April 15, 1966

FIG. 1.

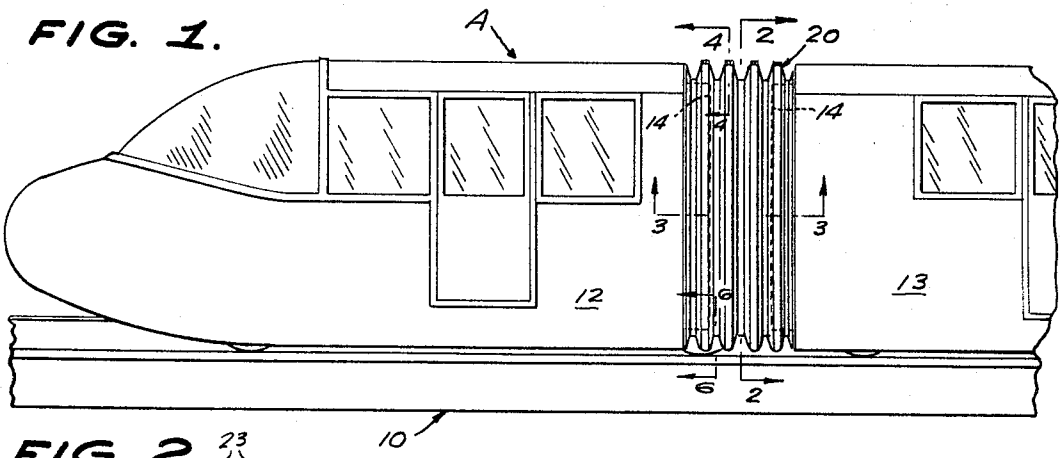


FIG. 2.

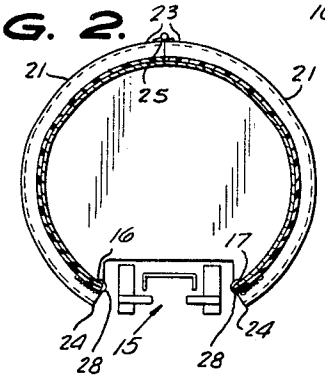


FIG. 3.

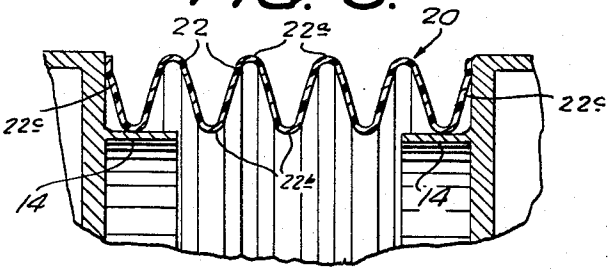


FIG. 4.

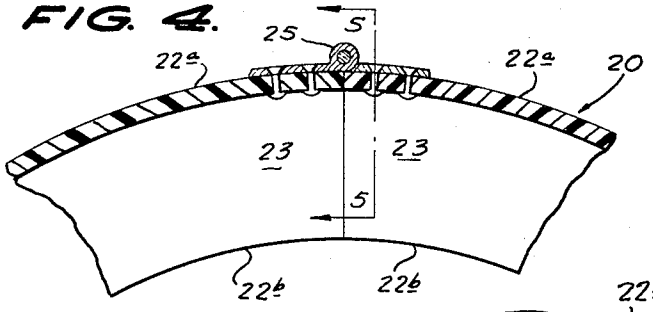


FIG. 5.

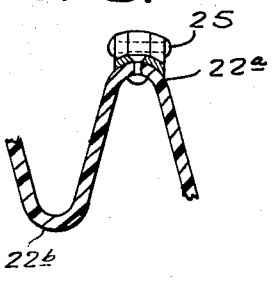
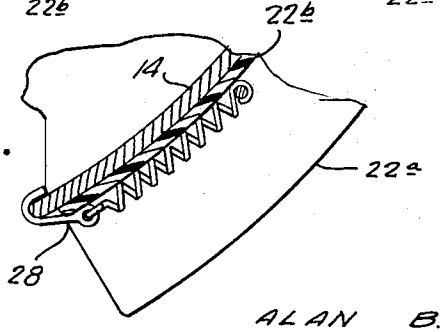


FIG. 6.



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FLEXIBLE CONNECTION BETWEEN ADJACENT MONORAIL COACHES

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ABSTRACT OF THE DISCLOSURE

The invention provides a flexible connection between adjacent monorail coaches in the form of a hood fabricated of semi-rigid plastic material and shaped to the same partial arcuate configuration as encircling flanges projecting outwardly from each of the adjacent ends of the coaches, a plurality of transverse corrugations formed in said hood to permit flexible expansion and compression longitudinally thereof, the corrugations at the ends of the hood being in frictional sliding engagement with said flanges and spring-biased hooks mounted near the lower edge of said hood and releasably clamped over the adjacent terminating lower edges of said flanges to provide the sole means of securing the hood to the coaches.

This invention relates to a resilient diaphragm between adjacent coaches of a monorail train which forms a flexible connection therebetween.

An object of the invention is to provide a flexible connection between adjacent coaches of a monorail train which lends itself to ready mounting and dismounting.

Another object of the invention is to provide a flexible connection between adjacent coaches of a monorail train which is shaped to a configuration so as to surround and enclose the space between the complemental ends of adjacent monorail coaches and which may be mounted between coaches and releasably-attached to the complemental ends of said coaches, with facility and ease.

A further object of the invention is to provide a flexible connection between adjacent coaches of a monorail train which is of simple construction, highly efficient in use, and commercially practical.

Other objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawing, in which:

FIGURE 1 is a side elevational view of a monorail train having the flexible connection according to the present invention between adjacent coaches.

FIGURE 2 is a cross-sectional view taken on the line 2—2 of FIGURE 1.

FIGURE 3 is a fragmentary sectional view taken on the line 3—3 of FIGURE 1.

FIGURE 4 is a cross-sectional view taken on the line 4—4 of FIGURE 1.

FIGURE 5 is a fragmentary sectional view taken on the line 5—5 of FIGURE 4.

FIGURE 6 is a fragmentary sectional view taken on the line 6—6 of FIGURE 1.

Referring to the drawing, the numeral **10** designates a monorail, and a train A, FIGURE 1, having a plurality of coaches **12** and **13** arranged in tandem spaced relation is mounted on the monorail **10** for travel therealong. The complemental ends of the adjacent coaches, or coaches **12** and **13**, each has a partial encircling flange **14**, the flanges **14** being of like construction. Since the construction of the flanges **14** is the same, the construction of only the flange **14** on the behind coach **13** will be described. The flange **14** projects outwardly from the complemental end of the coach **13** and extends from one side of the truck **15**, FIGURE 2, beneath the coach **13** to the opposite side of the truck **15**. Thus, the partial encircling flange **14** has spaced ends **16** and **17**.

A flexible connection embodying an elongated upstanding hood **20**, FIGURE 1, is interposed between the adjacent coaches or coaches **12** and **13**. The hood **20** is fabricated of flexible material, such as a semi-rigid plastic fiberglass material, the rigidity of the material being such as to enable the hood to support its own weight. The hood **20** is shaped to a partial circular configuration having a plurality of corrugations **22** in side-by-side relation and extending from one end to the other end thereof. The corrugations **20** are all of like depth such that the flexible expansion and compression will be absorbed by the radius of the corrugations. Specifically, the hood **20** comprises a pair of half sections **21**, FIGURES 2 and 4, arranged in face-to-face relation so that the complemental upper ends **23** are contiguous to each other with the complemental lower ends **24** spaced from each other, and means embodying hinge means **25** connects the upper ends **23** of the half sections **21** together for movement of the sections **21** toward and away from each other.

The hood **20** is disposed between the adjacent coaches or coaches **12** and **13** so that the ridges **22*a*** of the corrugations **22** are uppermost and the valleys **22*b*** of the corrugations **22** are lowermost with the valleys **22*b*** at the ends of the hood **20**, FIGURES 1 and 3, bearingly-contacting the flanges **14** of the coaches or coaches **12** and **13** and the free end portions **22*c*** projecting from the terminating valleys **22*b*** frictionally-engaging the complemental ends of the adjacent coaches or coaches **12** and **13**.

A pair of spring-biased hooks **28**, FIGURES 1 and 6, are on each of the complemental lower ends **24** of the pair of half sections **21** of the hood **20**, the hooks being releasably-interengageable with the adjacent terminating ends **16** and **17** of the adjacent flange **14**, as shown in FIGURE 6.

In operation, to disconnect the hood **20** from between the adjacent coaches, or coaches **12** and **13**, FIGURE 1, the hooks **28** adjacent the front coach **12** are shifted out of interengagement with the terminating ends **16** and **17** of the flange **14** projecting from the complemental end of the front coach **12**, whereupon the front coach **12** is caused to be moved forwardly sufficient to free its flange **14** from frictional engagement with the adjacent valley **22*b*** of the hood **20**. The hooks **28** adjacent the behind coach **13** are then shifted out of interengagement with the terminating ends **16** and **17** of the flange **14** projecting from the complemental end of the behind coach **13**, whereupon the half-sections **21** of the hood **20** are moved away from each other, and the thus opened hood lifted free from the flange **14** of the behind coach **13**.

To connect the hood **20**, the opened hood **20** is disposed so that the terminating valley **22*b*** at one end of the hood is adjacent to the flange **14** of the behind coach **13**, whereupon the pair of sections **21** of the hood **20** are moved toward each other with the terminating valley **22*b*** at the said one end of the hood bearingly-contacting the flange **14** of the behind coach **13** and the free end portion **22*c*** projecting from the terminating valley **22*b*** frictionally-engaging the complemental end of the behind coach **13**. At this point, the hooks **28** adjacent the behind coach **13** are shifted into interengagement with the lower ends of the pair of sections **21**, fixedly-attaching the hood **20** to the behind coach **13**. With the hood **20** thus attached to the behind coach **13**, the front coach **12** is moved backwardly to an extent such that the terminating valley **22*b*** at the other end of the hood **20** bearingly-contacts the flange **14** of the front coach **12** and the free end portion **22*c*** projecting from the terminating valley **22*b*** frictionally-engages the complemental end of the front coach **12**, whereupon the hooks **28** adjacent the front coach **12** are shifted into interengagement with the lower ends

of the pair of sections 21, fixedly-attaching the hood 20 to the front coach 12.

What is claimed is:

1. The combination with a pair of train coaches each having the same arcuate periphery in cross-section and arranged in tandem spaced relation for connection by a standard coupling, of a partial encircling flange projecting outwardly from each of the adjacent ends of said coaches, each of said flanges terminating in a pair of spaced lower edges extending longitudinally of the coaches, an elongated upstanding hood interposed between adjacent coaches, said hood being fabricated of semi-rigid plastic material and shaped to the same partial arcuate configuration as said flanges, a plurality of transverse corrugations formed in side-by-side relation on said hood to permit flexible expansion and compression longitudinally thereof, the corrugations at the ends of the hood being in frictional sliding engagement with and bearingly-contacting said flanges, and a pair of spring-biased hooks mounted near the lower edges of said hood and releasably clamped over the adjacent terminating lower edges of said flanges to provide the sole means of securing the hood to the coaches.

2. The combination according to claim 1, wherein said hood is split longitudinally along its top to form a pair of sections arranged in face-to-face relation so that the upper edges are contiguous to each other with the lower

edges spaced from each other, and means connecting the upper edges of said sections together for lateral movement of the sections toward and away from each other.

3. The combination according to claim 2, wherein said means comprise hinge means permitting lateral swinging movement of the hood sections about a longitudinally disposed hinge pivot.

4. The combination according to claim 3, wherein said hood is fabricated of semi-rigid fiberglass material.

5. The combination according to claim 1, wherein said hooks are disposed at the lower longitudinal edges of said hood, a coil spring being attached at one end to each hook and at the other end to the hood, stretching of said springs allowing extension of the hook to clampingly engage the lower edges of said flanges.

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