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TIPPING BODIES FOR COMMERCIAL VEHICLES

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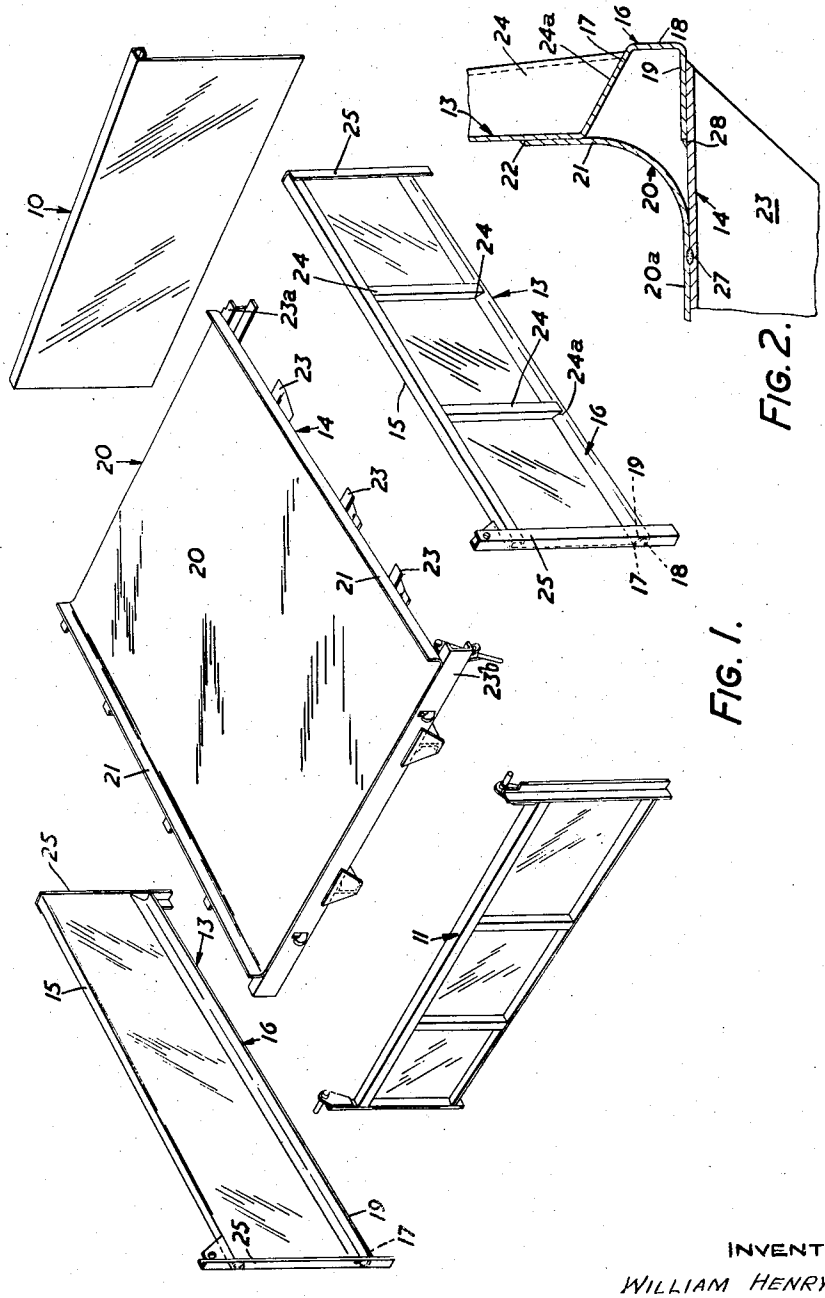


FIG. 2.

FIG. 1.

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TIPPING BODIES FOR COMMERCIAL VEHICLES

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This invention relates to all-metal fixed-side tipping bodies for commercial vehicles. Such bodies are largely employed for the carriage and deposit of sand, gravel, ballast and the like, and to facilitate the depositing operation the longitudinal sides and the floor of the body merge into each other by way of an arc.

The main object of the invention is to effect economies in the manufacture of such bodies while simultaneously obtaining maximum strength for a given material utilisation. A further object is to provide an improved construction of such bodies enabling them to take up the minimum stowage space while being shipped in a "knocked-down" state.

The invention comprises the combination, in an all-metal fixed-side tipping body for a commercial vehicle, of longitudinal side panels bent outwardly and then downwardly towards their lower longitudinal edges to form side sills affording lower marginal rigidity, and a floor sheet the longitudinal side edges of which are upwardly turned to form arcuate flanges connected to the side panels adjacent the top of the side sills of the latter.

Preferably the lower longitudinal edges of the side panels are turned inwardly so that the side sills are in the form of inwardly open channels, the inwardly turned portions of the side panels and the floor sheet being connected to transverse members of the floor structure.

A preferred form of body in accordance with the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is an exploded view of the body showing in perspective the five main separate parts and,

Figure 2 is a detail sectional view through the lower portion of one of the longitudinal side panels of the body to illustrate the connection of the longitudinal side panel to the floor structure.

Referring to the drawings, the all-metal fixed-side tipping body is constructed in five main separate parts or sub-assemblies as shown in Figure 1. These separate parts are a headboard **10**, a tailboard **11**, two longitudinal side panels **13, 13** and a floor structure **14** all of which are substantially flat so that they take up the minimum amount of space during shipment and/or stowage prior to final assembly of the body. The longitudinal side panels **13, 13** are formed from flat sheets the upper longitudinal edges of which are turned outwardly, downwardly and inwardly to form upper stiffening channels **15**. Along their lower longitudinal edges each of the side panels **13, 13** has an integrally formed side sill **16**, more clearly shown in Figure 2, produced by bending the panels outwardly at an obtuse angle to form a downwardly and outwardly sloping portion **17**, then bending them downwardly at a similar angle to form a vertical portion **18** below the sloping portion, and finally bending them inwardly to provide a horizontal inwardly projecting flange **19**, the side sill thus produced being in the form of an inwardly open channel.

Along its longitudinal side edges the rectangular floor

sheet **20** of the floor structure **14** of the body is turned upwardly to form arcuate flanges **21, 21** of slightly greater depth than the side sills **16, 16** of the longitudinal side panels **13, 13** and adapted to be connected to the inner vertical surfaces of the respective side panels just above the downwardly and outwardly sloping portions **17, 17** of the side sills. Such connection may be effected by a continuous weld, as shown at **22** in Figure 2, if suitable welding facilities are available at the place where the bodies are to be finally assembled, or alternatively connection can be effected by means of bolts, not illustrated, which pass through registering holes formed in the upper ends of the flanges **21, 21** and the side panels **13, 13.**

The floor structure **14** of the body comprises a spaced series of transverse members **23** to the upper surfaces of which the central flat portion **20***a* of the floor sheet **20** is secured, each transverse member being formed from a length of channel section material and having its ends projecting beyond the upturned arcuate flanges **21, 21** of the floor sheet to enable the lower inwardly projecting flanges **19** of the side sills **16, 16** which are aligned with the central flat portion of the floor sheet and nearly meet the latter, to be secured thereto and hold the inwardly open channels and arcuate flanges **21** in rigid relationship. The connection may be effected either by means of bolts, not illustrated, or a welding operation, as indicated at **27, 28.** It will be appreciated that the inwardly open channels, arcuate flanges **21, 21** and the outer ends of the transverse members **23** form longitudinally extending box-like structures which impart rigidity both in the horizontal and vertical planes to the lower edges of the side panels **13, 13** and the floor structure **14.** Extra rigidity may be, and in the example illustrated is, imparted to the side panels **13, 13** by spaced vertical stiffeners **24** secured to the outer surfaces of the main vertical portions of the side panels, the lower edges **24***a* of the stiffeners sloping downwardly and outwardly and being secured, as by means of welding, to the downwardly and outwardly sloping portions **17** of the side sills **16** whilst their upper horizontal edges are secured within the upper stiffening channels **15** of the side panels.

As a further feature facilitating shipping of the body in its sub-assemblies, the corner pillars **25** of the body preferably form part of the side panel assemblies **13, 13** instead of, as in normal practice, being attached to the front and rear transverse members **23***a*, **23***b* of the floor structure **14.** On final assembly of the body the lower ends of the corner pillars **25** are connected to the front and rear transverse members **23***a*, **23***b* of the floor structure **14.** It will be understood that also during final assembly of the body the headboard **10** and tailboard **11** are secured to the respective corner pillars **25.**

I claim:

1. For a commercial vehicle, an all-metal fixed-side tipping body comprising the combination of longitudinal side panels bent outwardly and then downwardly towards their lower longitudinal edges to form side sills affording lower marginal rigidity to said side panels, and a floor sheet horizontally aligned with the lower edges of said side sills and the longitudinal side edges of which are upwardly turned to provide upstanding flanges of arcuate form merging with a central flat portion of the floor sheet and the upper ends of which terminate at, and are connected to, the inner surfaces of said panels just above the top of the side sills of the latter.

2. For a commercial vehicle, an all-metal fixed-side tipping body comprising the combination of longitudinal side panels which, towards their lower longitudinal edges, are bent outwardly, downwardly and then inwardly to provide side sills in the form of inwardly open channels affording lower marginal rigidity to the side panels, and a floor structure comprising a spaced series of transverse

members and a floor sheet the longitudinal side edges of which are upwardly turned to provide upstanding flanges of arcuate form merging smoothly with a central flat portion of the floor sheet and the upper ends of which are connected to the inner surfaces of the side panels just above the top of the side sills of the latter, the inwardly turned portions of the side sills, which are aligned with the central flat portion of the floor sheet and nearly meet the latter, being secured to the upper surfaces of said transverse members of the floor structure so that longitudinally extending box-like structures are formed which impart rigidity both in the horizontal and vertical planes to the side panels and floor structure.

3. For a commercial vehicle, an all-metal fixed-side tipping body comprising the combination of substantially vertical longitudinal side panels formed from flat sheets which, towards their lower longitudinal edges, are provided with horizontally arranged inwardly open channels formed by bending the side sheets outwardly at an obtuse angle to form downwardly and outwardly sloping portions, then bending them downwardly at a similar angle to form vertical portions below said sloping portions, and finally bending them inwardly to provide horizontal inwardly projecting flanges defining the lower edges of the channels, and a floor structure comprising a spaced series of transverse members and a floor sheet the longitudinal side edges of which are upwardly turned to form upstanding flanges which curve inwardly to merge smoothly with a central portion of the floor sheet and the upper ends of which are connected to the inner surfaces of the side panels just above the downwardly and outwardly sloping portions thereof, the inwardly turned flanges of the side sheets, which are aligned with the central flat portion of the floor sheet and nearly meet the latter, being

secured to the upper surfaces of said transverse members of the floor structure which project outwardly beyond the upstanding flanges of the floor sheet, the upstanding flanges of the floor structure, the inwardly open channels of the side panels and the respective outer ends of the transverse members forming longitudinally extending box-like structures which impart rigidity both in the horizontal and vertical planes to the lower portions of the side panels and the floor structure.

4. A tipping body according to claim 3, wherein corner pillars of the body are incorporated in said two longitudinal side panels and the body comprises, in addition to the two substantially flat longitudinal side panels and the floor structure, two additional substantially flat main subassemblies, namely a headboard and a tailboard, so that said body occupies minimum stowage space while being shipped in a "knocked-down" state.

5. A tipping body according to claim 3, wherein spaced vertical stiffeners are secured to the outer surfaces of said longitudinal side panels, the lower edges of the stiffeners being secured to the upper surfaces of said outwardly bent portions of the side panels.

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