July 17, 1923. 1,461,907

A. S. HUGHES

SHEET METAL CONSTRUCTION FOR TRUCK BODIES, ETC

Filed Dec. 26, 1919 4 Sheets-Sheet 1

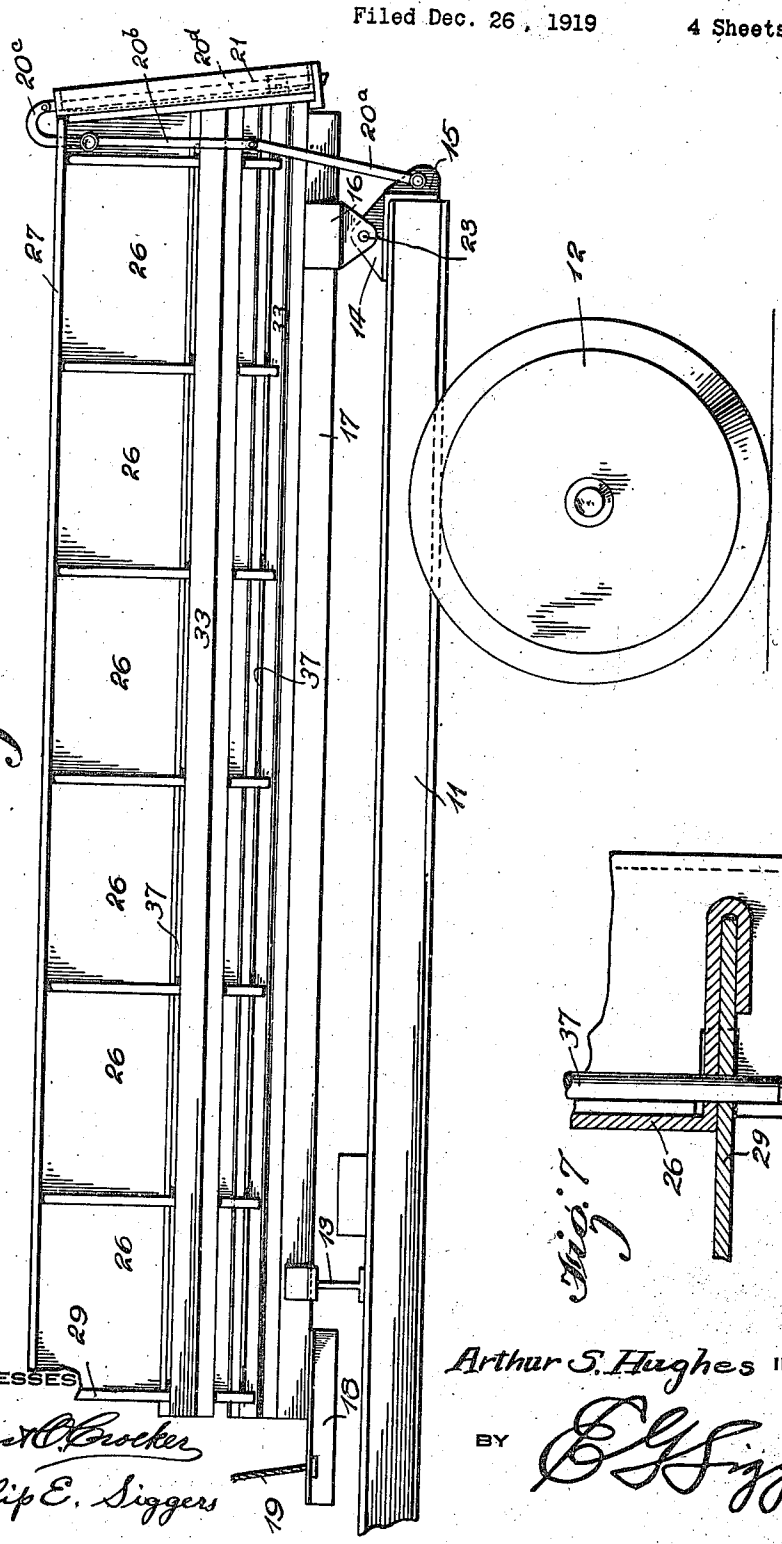


Fig. 1.

Fig. 7

WITNESSES

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Filed Dec. 26, 1919 4 Sheets-Sheet 2

Fig. 2.

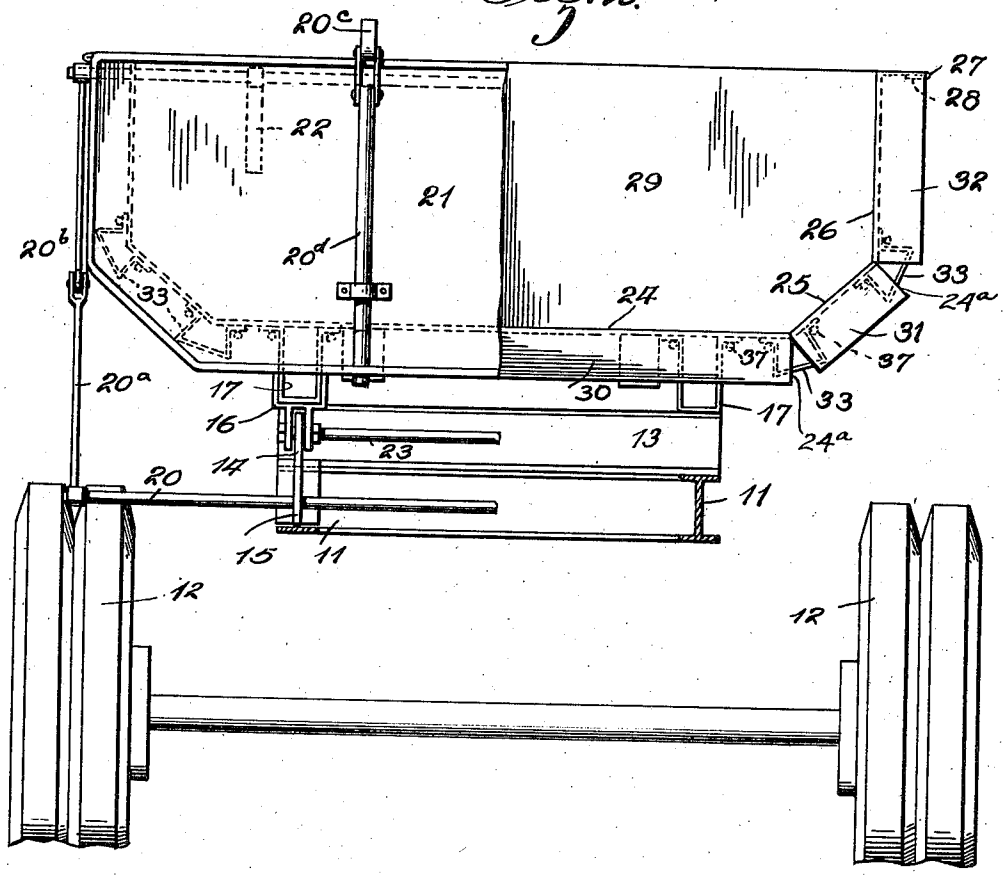
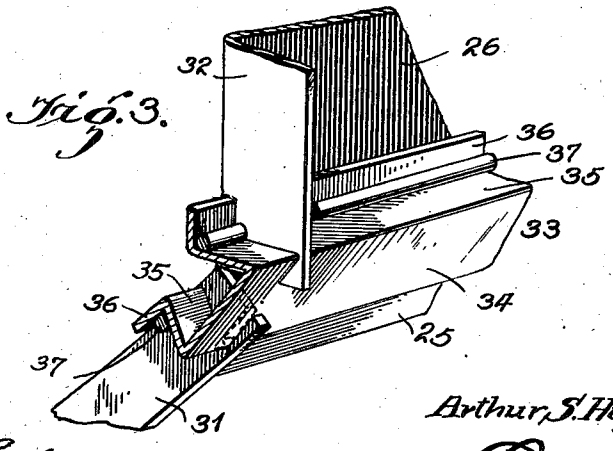


Fig. 3.



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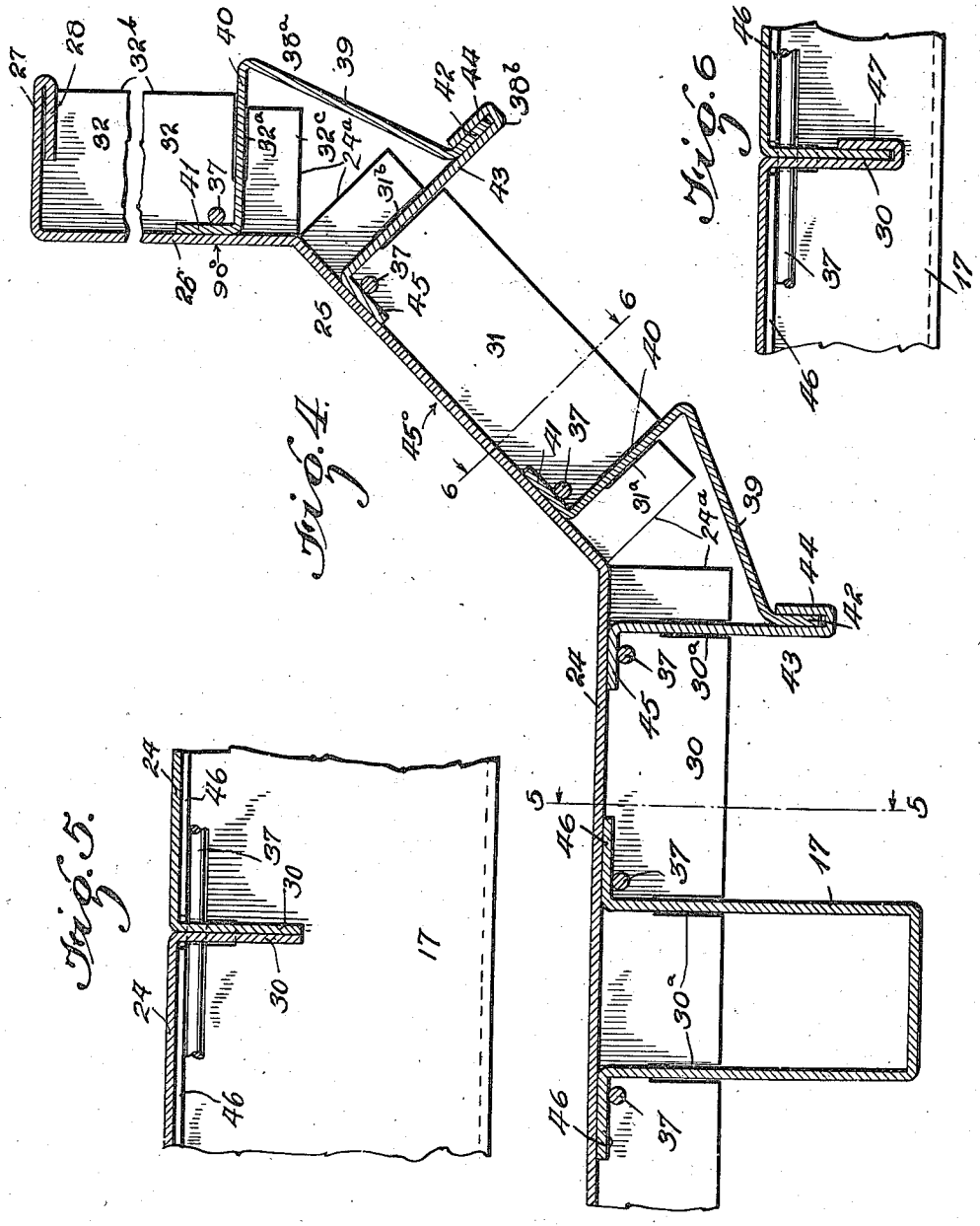
1,461,907

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SHEET METAL CONSTRUCTION FOR TRUCK BODIES, ETC

Filed Dec. 26, 1919

4 Sheets-Sheet 3



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4 Sheets-Sheet 4

Fig. 8.

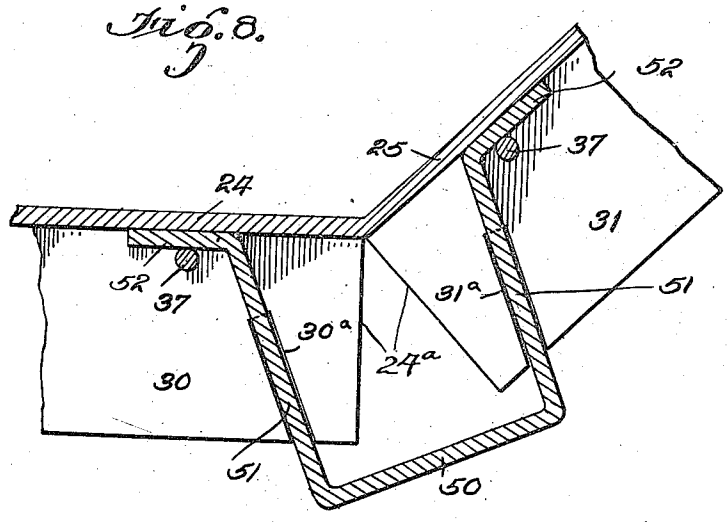


Fig. 10.

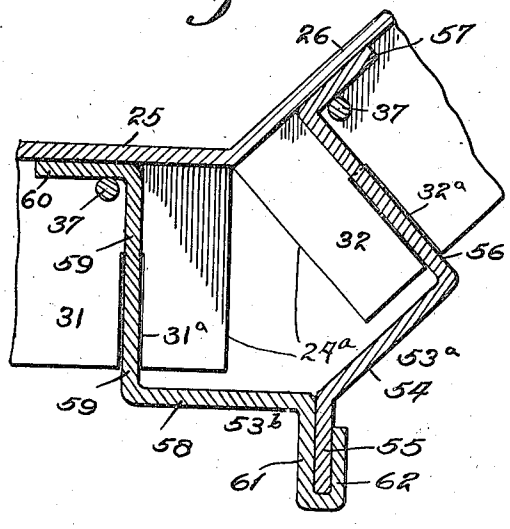
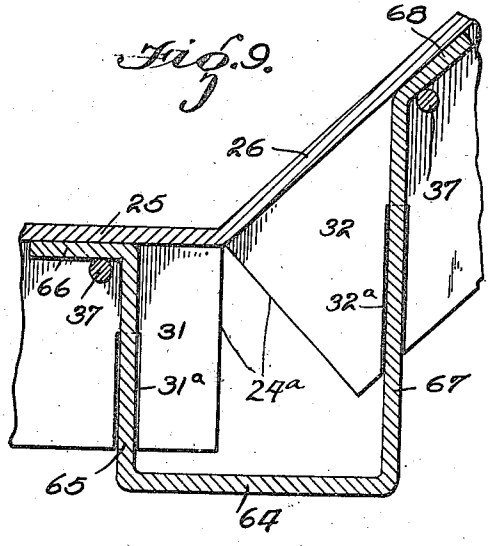


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

ARTHUR SHERIDAN HUGHES, OF MANSFIELD, OHIO.

SHEET-METAL CONSTRUCTION FOR TRUCK BODIES, ETC.

Application filed December 26, 1919. Serial No. 347,428.

To all whom it may concern:

Be it known that I, ARTHUR S. HUGHES, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented a new and useful Sheet-Metal Construction for Truck Bodies, Etc., of which the following is a specification.

This invention has reference to sheet metal construction designed for truck bodies, and other purposes.

The object is to provide a construction which will utilize sheets of pressed steel, or the like, to form bodies of superior strength and rigidity having no interior projections. Bodies formed in accordance with the present invention permit of ready replacement of worn or damaged parts.

The present application presents an improvement on the sheet metal truck body described and claimed in my co-pending application Serial No. 284,293, filed March 22, 1919. It is also a modified form of the truck body described in an application filed of even date herewith, Serial No. 347,428, which application is generic to the present invention. Those constructions not specifically claimed herein will, for the most part, be found to be covered by claims in either the previously filed application or in the application of even date referred to.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing in the drawings, but may be changed and modified, so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:—

Fig. 1 is a side elevation of a dumping truck body constructed in accordance with the present invention, parts not pertaining to the same being shown conventionally;

Fig. 2 is a rear end elevation of the same with the end gate shown partly broken away;

Fig. 3 is a perspective view, on an enlarged scale, of the form of corner brace shown in Figs. 1 and 2;

Fig. 4 is a cross sectional view of a portion of a truck body of the character shown in Figs. 1 and 2, but braced by a modified form of corner locking means.

Fig. 5 is a section on the line 5—5 of Fig. 4;

Fig. 6 is a section on the line 6—6 of Fig. 4;

Fig. 7 is a section showing the connection between the front end plate and one of the sides;

Figs. 8, 9 and 10 are each cross sectional views of further modified forms of the corner bracing means.

Referring particularly to Figs. 1 and 2, 11 indicates a frame or chassis of an auto truck, and 12 the wheels. A cross beam 13 serves as a rest for the forward end of the body, being secured to the frame 11. An angle bar 18 is made fast to the forward underside of the truck body, and a cable 19 or the like is secured in any convenient way to the angle bar. This cable is designed to be secured to a hydraulic hoist or similar means whereby the truck body may dump its load when lifted at its forward end.

To permit this dumping, a hinge is provided, comprising two or more angle plates 14 secured upon the rear end of the frame and having a hinge rod 23 secured between the same. Yokes 16 made fast to the underside of the truck body in any desirable way embrace the rod 23 and a neighboring angle plate 14. As shown in Fig. 2, the yokes 16 may be secured to longitudinal channel locking bars 17. The mounting of the truck body upon the frame is such that when its forward end is lifted, its rear end will be lowered, the movement taking place upon the rod 23 as an axis. Each angle plate 14 is provided with a web 15 upon which a cross rod 20 is mounted. The outer ends of the cross rod are each secured to links 20^a which, in turn, are secured to links 20^b. The upper ends of links 20^b are made fast in any desirable way with curved links 20^c which, in turn, are pivotally connected with latch rods 20^d. These latch rods secure a tail-gate 21 hingedly supported at its upper end at the rear of the truck body.

Inasmuch as all this construction has been described in more detail in the application filed of even date herewith referred to above, it is not thought necessary to refer to it further. It will be clear, however, that

the tail-gate is entirely automatic in its operation, opening when the truck body is lifted at its forward end and shutting and relocking itself when the truck body again rests upon the cross beam 13. The tail-gate and means for operating the same form no part of my invention, and are only illustrated as one of the many constructions of automatic gates which might be used in connection with the dumping truck body that forms the subject of the present application. A front end plate 29 is provided for the body. I have shown in Figure 7 a detail sectional view illustrating the connection between the end plate and the adjacent transverse channel member. This feature is fully described and claimed in the aforesaid companion application.

This invention relates to truck bodies, and unlike construction disclosed in the case filed of even date herewith, is not of such general application. The present truck body is made up of a plurality of channel or body members running transversely with respect to the body, each channel member comprising a horizontal portion 24, an inclined portion 25 and a vertical portion 26. The horizontal, inclined and vertical or upright portions are formed out of the same metal sheet, a plurality of these sheets, when juxtaposed, forming the bottom and sides of the truck body. Preferably the inclined portions 25 lie at an angle of forty-five degrees with the horizontal portions of the transverse channel or body members, while the vertical portions 26 make an angle of forty-five degrees with the inclined portions, or ninety degrees with the horizontal portions. Instead of this arrangement of the portions, some other angular relation may be used, but in any case there will be at least two portions in addition to the horizontal portion bent from each end of the transverse channel or body members. Instead of the two bent portions, there may be three or more, in which event there will be a corresponding number of locking and bracing members provided at the bend. To permit the bending of the body members the flanges thereof are split as indicated at 24^a.

The transverse channel or body members have depending flanges 30, inclined flanges 31 and outstanding flanges 32 corresponding with the portions of the same. These flanges all lie in the same vertical plane and are provided with breaks or cuts defining the same, which breaks or cuts are made before the portions are bent into their final form, as will be readily understood. The extreme upper ends of the portions 26 are bent to form outwardly projecting flanges 27, each having a bead 28. This construction materially increases the strength of the sides of the truck body, besides adding to the appearance of the same.

The longitudinal channel locking bars 17, above referred to, interlock with each of the flanges 30 of the transverse channel members by a series of slots where the flanges intersect each other, this construction having been specifically described and claimed in the other applications. Rods 37 run with these longitudinal locking channel members to additionally lock the transverse members together and provide more secure bracing of the same. These rods also being described and claimed in the other two applications, it is not believed to be necessary to further explain their function or construction.

In connection with the plurality of bends given the transverse body members, the principal feature of the present invention is the provision of bracing and locking members placed outside the bends which run longitudinally of the body. These members or locking means straddle the bends of and are interlocked with the flanges of adjacent portions of the transverse members. The accompanying drawings depict five forms of this locking means, the first form being shown in Figs. 1, 2 and 3, the second form in Fig. 4, and the other three forms in Figs. 8, 9 and 10. All these modifications are within the scope of the present invention.

The first form of locking member, shown on an enlarged scale in Fig. 3, comprises a substantially channel-shaped member indicated generally by the reference numeral 33 and comprising a web 34, sides 35 bent inwardly toward each other, and outstanding flanges 36 provided at the ends of the sides 35. The corner bracing members 33 interlock with the flanges of both the portions of the transverse channel or body members, which they are designed to hold together. One channel-locking member 33 will hold together the horizontal and inclined portions by means of its interlocking connection with the flanges 30 and 31, while the other locking member will hold together the inclined and upright portions by interlocking with the flanges 31 and 32. In either case, the corner bracing channel members are formed exactly the same, and have rods 37 running longitudinally therewith, which rods pass through the flanges of adjacent portions. The rods 37 provided for the corner bracing members are exactly like the rods running with the longitudinal channel bars 17. The outturned flanges 36 are so formed as to bear flat against the outer sides or faces of the portions of the transverse members with which they interlock. Thus the upper flange 36 in Fig. 3 bears flat against the portion 26 and is held securely in place by a rod 37, while in turn interlocking with the flanges 32.

In the modification disclosed in Fig. 4, the longitudinal corner bracing means is

made up of two parts. This form of locking member is much like the locking member shown in Fig. 13 in the application filed of even date herewith. It comprises a first part having an approximate V-shape in cross section with a long side 39 and a short side 40. The side 39 has an outstanding flange 42 and the side 40 a similar flange 41. The latter flange is bent at right angles to the side 40, while the flange 42 extends at an angle greater than a right angle with respect to the side 39. The second part of the locking member includes a straight side 43 having a right angle flange 45 at its upper end and a lower locking flange 44 engaged with the outstanding flange 42, whereby the two parts of the locking member are united. The locking members straddle each of the longitudinal corners as shown, with the side 40 interlocked with the flanges of the upper one of adjacent portions, while the sides 43 interlock with the flanges of the lower one of the portions. In other words, one of the locking and bracing members interlocks by means of slots 31^a with the flanges 31 and by means of slots 30^a with the flanges 30, and the other longitudinal bracing member interlocks by means of slots 31^b with the flanges 31, and by means of slots 32^a with the flanges 32. Rods 37 run longitudinally with the locking members intersecting with each of the outstanding flanges of the transverse channel or body member, these rods bearing against the outer faces of the outstanding flanges 41 and 45. The side 40 is locked in a perpendicular position with respect to the section 25 or 26, as the case may be, while the side 43 is held in a similar position with respect to the section 24 or 25, as the case may be.

It will be understood that the interlocking slots 30^a, 31^a, 32^a, shown in Fig. 4, are somewhat exaggerated in size in order that they may be clearly seen. As a matter of fact, however, the interlocking slots of the outstanding flanges 30, 31 and 32, have a width about equal to the thickness of the sides of the longitudinal locking members and the sides of the locking members, in turn, have slots of about the same width as the thickness of the flanges 30, 31 and 32, whereby the interlocking of the transverse and longitudinal members is made a secure one. Adjacent flanges of portions 25 and 26 of the body are united together by having one flange bent over the free edge of the other and returned, as illustrated in Fig. 6. In Fig. 4, this interlocking flange connection is absent from the bottom portion 24.

In place of the longitudinal bracing and locking members shown in detail in Figs. 3 and 4, three other modifications might be employed. The first of these modifications is illustrated in Fig. 8, which, as a comparison will show, is quite similar to Fig. 3. Here, the portions 24 and 25, or 25 and 26, as the case may be, are united by a channel bracing member 50 having sides 51 at right angles to the web and outstanding flanges 52, which flanges are disposed at an angle greater than a right angle with respect to the sides 51. The channel member 50, as a whole, is set at an angle intermediate that between the portions which are braced. Thus if the adjacent portions lie at angles of forty-five degrees with respect to each other, the web of the channel member 50 will make an angle of twenty-two and one-half degrees with respect to either portion, while the sides 51 will extend at angles of sixty-seven and one-half degrees with respect to the corresponding portion.

Fig. 9 is similar to the construction of Fig. 8 in employing a single channel bracing member, but in this case the web 64 lies in a plane parallel to the plane of the portion 25 and has two unequal sides 65 and 67. The shorter side 65 has an outstanding flange 66 at right angles, while the longer side 67 has an outstanding flange 68 extending at an angle considerably greater than a right angle, in the present case one hundred and thirty-five degrees. The sides 65 and 67 are each perpendicular to the web 64 of the channel member and therefore, parallel to each other.

As to the construction shown in Fig. 10, it is in many respects similar to the construction of Fig. 4, but in this case the two sections 53^a and 53^b of the longitudinal bracing member are brought toward each other to meet in an interlocking joint approximately midway of the interlocking connection with the respective portions 25, 26. Here the upper part 53^a of the locking member has a straight side 56 having an outstanding flange 57 at right angles thereto and another side 54 at the other end at right angles. This latter side 54 has a flange 55 bent at an angle greater than a right angle. The part 53^a includes the straight side 59 having an outstanding flange 60 at right angles, a side 58 at right angles to a side 59 and an interlocking connection 61, 62, with the flange 55 of the upper part. Thus it is seen that instead of the interlocking connection between the parts of the longitudinal brace running beneath the lower of the united sections, as in Fig. 4, it lies midway between said sections.

I wish it understood that in some constructions of bodies it may be advisable or necessary to arrange the body members longitudinally instead of transversely, which would necessitate locating the locking and bracing bars or members transversely. These obvious modifications are within the scope of my invention.

What is claimed is:—

1. In a body, a plurality of channel members having their flanges facing outwardly and placed in juxtaposition and secured together to form the bottom of said body, the flange of one member being lapped over the flange of the adjacent member, each of said channel members having their flanges split and being bent upwardly a plurality of times to form integral portions comprising the sides of said body.

2. In a body, a plurality of channel members having their flanges facing outwardly and placed in juxtaposition and secured together to form the bottom of said body, each of said channel members having their flanges split and being bent upwardly to form a side for said body, said side comprising a portion lying at substantially forty-five degrees and a portion at substantially ninety degrees with respect to the body bottom.

3. In a body, a plurality of channel body members having their flanges facing outwardly and placed in juxtaposition and secured together to form the bottom of said body, each of said channel members having their flanges split at a plurality of places and bent at said split portions to form an inclined portion and a vertical portion, and a locking and bracing member for each bent and split portion, said locking and bracing member spanning the split portion and interlocking with the flanges at each side thereof.

4. In a body, a plurality of channel members placed in juxtaposition and secured together to form the bottom of said body, with the flanges of said members facing outwardly, each of said channel members being bent upwardly to form an inclined portion and a vertical portion, and channel locking and bracing members running at right angles to the body members on the outside of the latter to interlock with the flanges thereof and brace the bends or corners of the same.

5. In a body, a plurality of channel body members placed in juxtaposition and secured together to form the bottom of said body, with the flanges of said members facing outwardly, each of said channel members being bent upwardly a plurality of times to form integral portions of approximately equal width making substantially equal angles with each other, and a plurality of spaced locking members on the outside of the body interlocking with the flanges of the channel members, certain of said locking members also bracing the corners of the body.

6. In a body, a plurality of channel body members placed in juxtaposition to form the bottom of said body, with the flanges of said members facing outwardly, each of said channel members being bent upwardly to form a side for said body, said side comprising a portion lying at substantially forty-five degrees and a portion at substantially ninety degrees with respect to the body bottom, and a plurality of spaced parallel longitudinally extending locking members interlocked with the flanges of the channel members and lying without the load-containing part of said body, certain of said locking members bracing the longitudinal corners of the body.

7. In a truck body, a plurality of transversely arranged channel members placed in juxtaposition to form the bottom of said body, each of said channel members being bent upwardly to form an inclined portion and a vertical portion, and longitudinal locking and bracing members each comprising two parts interlocked with each other, one of said parts being interlocked with the flanges of the upper of the two adjacent portions and the other part being interlocked with the flanges of the lower one of the two adjacent portions.

8. In a body, a plurality of channel members having their flanges facing outwardly and placed in juxtaposition and secured together to form the bottom of said body, each of said channel members having their flanges split at a plurality of places at spaced points from one end, and bent at said split portions to form an inclined portion and a vertical portion, and a locking and bracing member for each split and bent portion, the flanges of said channel members being slotted at each side of the split portion, and the locking and bracing member being of channel form, with the flanges of said locking and bracing member entering the slots of the flanges of said channel member, whereby the locking and bracing member spans the split portion and braces the longitudinal corners of the body.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ARTHUR SHERIDAN HUGHES.

Witnesses:

AUBREY L. FORD,

CHARLES T. BINKS.