

Aug. 12, 1969

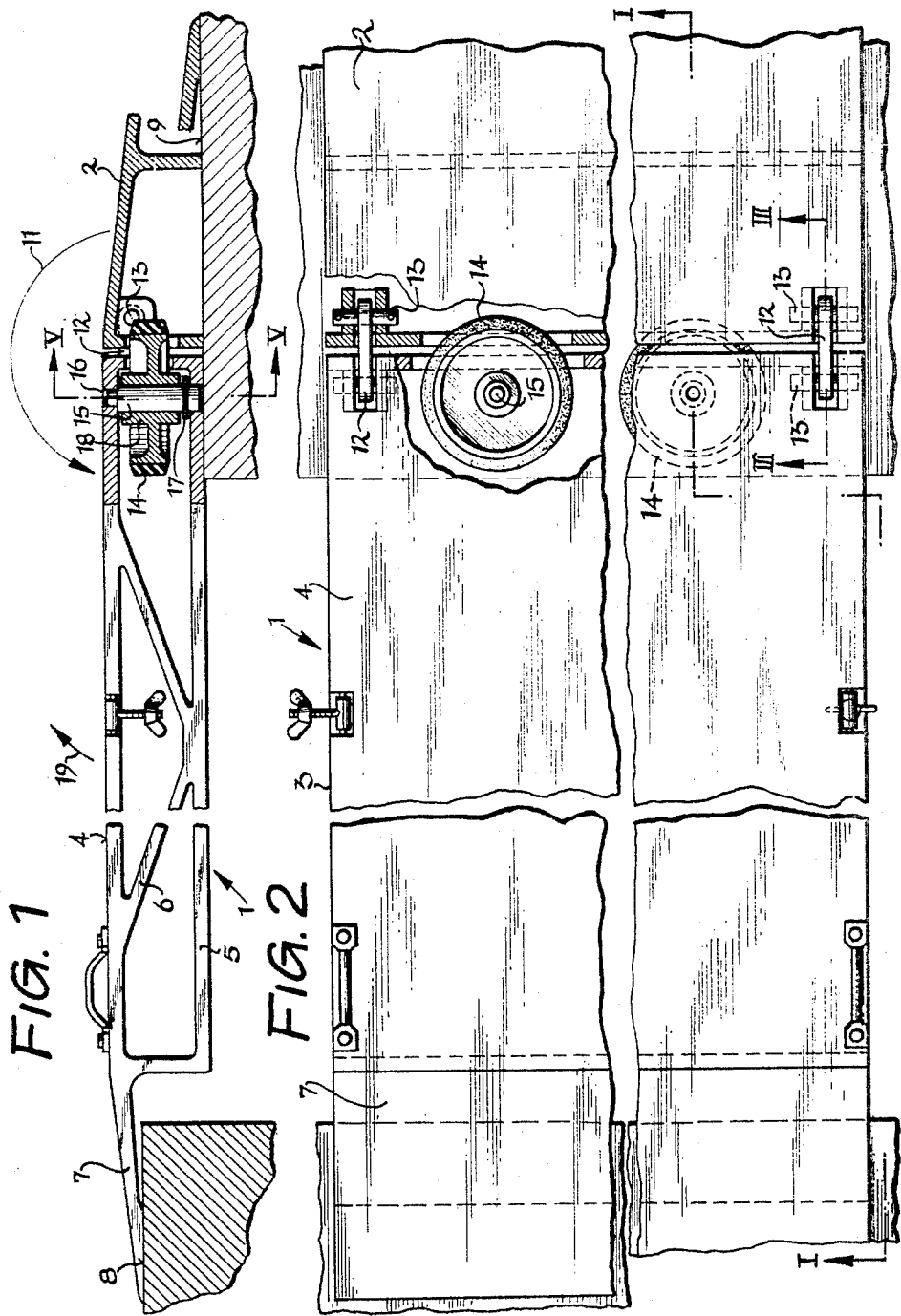
K. ALTEN

3,460,176

TRANSLOADING BRIDGE

Filed May 1, 1967

2 Sheets-Sheet 1



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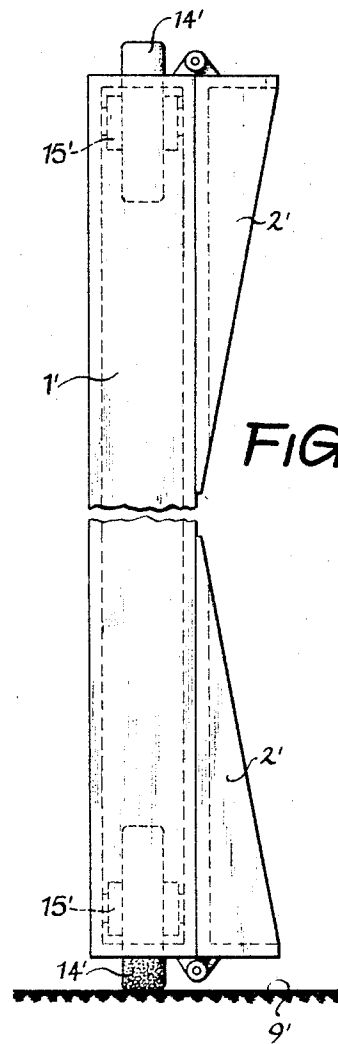
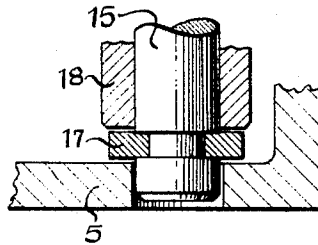
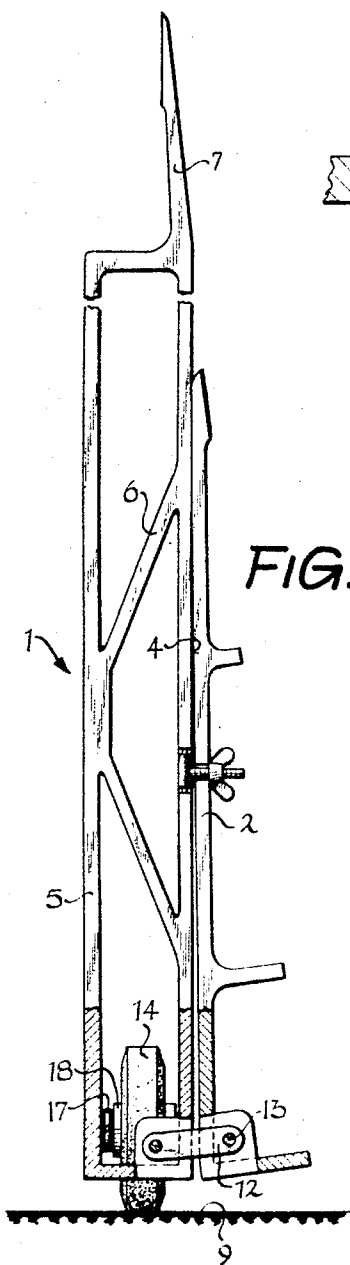
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TRANSLADING BRIDGE
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A 52,337
Int. Cl. E01d 15/12
U.S. Cl. 14—72 3 Claims

ABSTRACT OF THE DISCLOSURE

The present invention concerns a manually movable transloading bridge in which the wheels for supporting the bridge during its movement are journaled in the main bridge member at that end portion thereof which is adjacent to the tiltable ascent therefor, so that when the bridge is in operation, by far the major portion of the wheels is covered by the main bridge member while the remainder of the wheels is covered by the respective adjacent tiltable ascent.

The present invention relates to a transloading bridge which is manually movable and has a bridge plate which at one or both ends is provided with a movable wedge-shaped ramp or ascent, and also has one or more wheels, the axles of which are approximately perpendicular to the bridge plate.

With heretofore known transloading bridges, the wheels by means of which the bridge is movable are journaled in supports which are connected to one of the two lateral edges of the bridge plate. Thus, these wheels protrude laterally and do so to a considerable extent because they are journaled in special supports. Aside from the fact that these bridges have an undue width, the wheels journaled in the above outlined manner, prevent the mounting of lateral longitudinally extending holding means for safety elements protecting the bridge against an undue displacement during operation. The laterally mounted transporting wheels have the additional drawback that a considerable space is required for moving and mounting the bridge. This is due to the fact that the wheels with the usually rectangle-shaped loading bridges are arranged at the longer lateral edges. Finally, the wheels are exposed when the bridge is in use.

It is, therefore, an object of the present invention to overcome the above mentioned drawbacks.

It is another object of this invention, by means of a special arrangement of the said transporting wheels, to prevent that the mounting of the wheels causes a widening of the bridge.

It is a further object of this invention to provide a transloading bridge, as set forth in the preceding paragraphs, in which the wheels are covered and protected when the bridge is in operation.

A still further object of this invention consists in the provision of a transloading bridge as set forth above, which will facilitate the moving of the bridge.

It is a still further object of this invention to provide a transloading bridge which when not in use can easily be stored in the manner of upright ladders so as to require a minimum of storage space.

These and other objects and advantages of the invention will appear more clearly from the following specification, in connection with the accompanying drawing, in which:

FIGURE 1 diagrammatically illustrates a transloading bridge according to the invention, partially in view, and partially in section, said section being taken along the line I—I of FIG. 2.

FIGURE 2 is a top view of the bridge shown in FIG. 1.

FIGURE 3 shows the bridge of FIG. 1 in vertical transport position partially in section.

FIGURE 4 shows a modification with transport wheels and ascent members at opposite ends.

FIGURE 5 shows a partial sectional view of the wheel axle mounting.

The transloading bridge according to the present invention is characterized primarily in that the wheels which are provided at one or both ends of the bridge plate are arranged on that end or those ends which is, or are adjacent the respective ascent. According to a further feature of the present invention, the transporting wheels are so mounted that only a minor portion thereof protrudes from the bridge plate.

The invention is based on the finding that the wedge-shaped ramps or ascents employed in connection with transloading bridges are not fixed, but movable, and in particular, are tiltable about a transverse axis of the bridge in such a way that when the bridge is in operation, the ascent forms an extension of the bridge plate, whereas when the bridge is out of operation, the ascent is folded back onto the bridge plate. If the transporting wheels are arranged on the transverse edges or ends of the bridge plate to which the ascents are linked, the wheels are covered by said ascents when the latter are in operative position. When, however, the ascents are folded back onto the bridge plate, the wheels are in transporting position. The transloading bridge can be transported when folded into a substantially vertical position, but can also be stored in this position, in which, for instance, it will take up only a minimum of space. This also applies when the bridge is to be moved to its new place of employment.

The transloading bridges of the type involved, which usually have a rectangular shape, are by suitable handles moved in such a way that the longer lateral edges of the bridge are in upright position. Also, the folding down into operative position is with the bridge according to the invention, considerably facilitated over heretofore known bridges, and can be carried out without damage to the operators.

Referring more specifically to the drawing, the transloading bridge, which preferably consists of light metal, as for instance, aluminum, comprises primarily a rectangular bridge plate 1, and wedge-shaped ramp or ascent 2. The bridge plate 1, the longer lateral edge 3 of which, during the operation of the bridge extends in the direction in which the traffic moves, has an upper plate 4, and a lower plate 5. Said plates 4 and 5 are interconnected by inclined spars 6 and respectively form an upper chord and a lower chord. At the front end of the bridge, the bridge plate 1 is provided with an extension 7, by means of which it rests on a platform 8. The rear end of the bridge plate 1 rests on a second platform 9 while bridging the space between the two platforms.

The rear end of bridge plate 1 has linked thereto a wedge-shaped ramp or ascent 2 which in the drawing is shown in operative position, but can be folded by 180° in the direction of the arrow 11 so that its top surface rests on the top surface of the bridge plate 1. In this position, the ascent 2 can be held by any convenient connecting means, such as bolts, clamps, or the like (not shown in the drawing). The tilting of the ascent 2 about an axis transverse to the longitudinal direction of the bridge is effected by means of fish plates 12 provided with eyes through which extend transverse bolts 13.

Below the marginal portion to which the ascent 2 is linked, there are provided two wheels 14, the axles 15 of which, extend perpendicularly with regard to the bridge plate 1, while the ends of said axles are connected to the upper plate 4 and the lower plate 5. This may be realized by means of a trunnion 16 at the upper end of axle 15,

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and, by locking plates 17 at the lower end of axle 15. The wheel hubs 18 and the major portion of the wheel body are located in the bottom projection of the bridge plate 1, or within said bridge plate 1. Consequently, only a portion of the wheel body protrudes from the bridge plate 1.

According to the particular construction shown in FIG. 1, the wheels 14 are protected within the bridge plate 1 and located below the ascent 2.

If it is desired to transport the bridge, the ascent 2 is first tilted so as to have its surface located on the surface of the bridge plate 1. By lifting and tilting the bridge plate 1 in the direction of the arrow 19, the bridge is moved into a substantially vertical position so that both wheels 14 engage the platform 9, and the bridge can now be rolled to a desired place.

The arrangement of the wheels 14 within the bridge plate 1 is also feasible in box-shaped bridge plates. Furthermore, if desired, the wheels 14 may be provided at both ends of the bridge plate 1 as shown in FIG. 4 with corresponding numerals primed.

It is, of course, to be understood that the present invention is, by no means, limited to the particular construction shown in the drawing, but also comprises any modifications within the scope of the appended claims.

I claim:

1. A manually movable transloading bridge which comprises: an intermediate bridge member, two end members forming ascents and being respectively connected to opposite ends of said intermediate bridge member, at least one of said end ascent members being pivotally connected to the respective adjacent end of said intermediate bridge member and being tiltable about an axis transverse to the longitudinal extension of said intermediate bridge member from a first position in which it is adapted to rest on a ramp into a second position in which its top surface rests on the top surface of said intermediate bridge

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member, and vice versa, and wheel means journaled on an axis of rotation perpendicular to said intermediate bridge member and arranged at least at one end portion of said intermediate bridge member, said wheel means when said one end member is in said second position being exposed for rolling into differing use and storage locations.

2. A bridge according to claim 1, in which said pivoted end ascent member has an opening complementary to said wheel means and in which said intermediate bridge member comprises an upper chord and a lower chord, and in which said wheel means is journaled on an axis located between said chords, said chords covering up at least a portion of said wheel means extending radially from said axis while the remainder of said wheel means projects beyond the end of said intermediate bridge member into said complementary opening of said tiltable ascent member and is covered by said tiltable ascent member in the first position thereof.

3. A bridge according to claim 2, said which axis includes shaft means extending in a direction substantially perpendicularly with regard to the top surface of said intermediate bridge member and providing the journalling axis for said wheel means near said opening of said tiltable ascent member whereby it is in complementary relationship to said wheel means and said shaft means rotatably supporting said wheel means.

References Cited

UNITED STATES PATENTS

2,670,484	3/1954	Bintliff et al.	14—72
2,760,216	8/1956	Curtis	14—72

FOREIGN PATENTS

971,051	9/1964	Great Britain.
1,161,515	1/1964	Germany.

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