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W. H. EMERICK & P. ALQUIST.

MEANS FOR CONNECTING DRAFT TIMBERS AND CENTER SILLS OF CARS.

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2 SHEETS—SHEET 1.

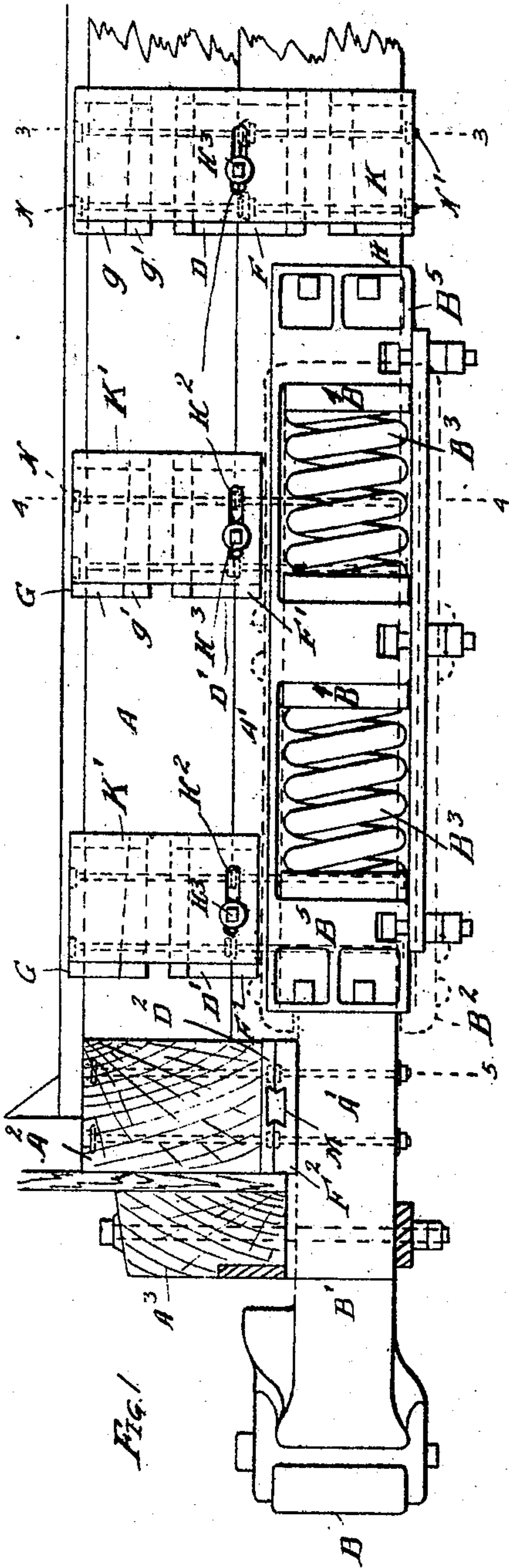


Fig. 1

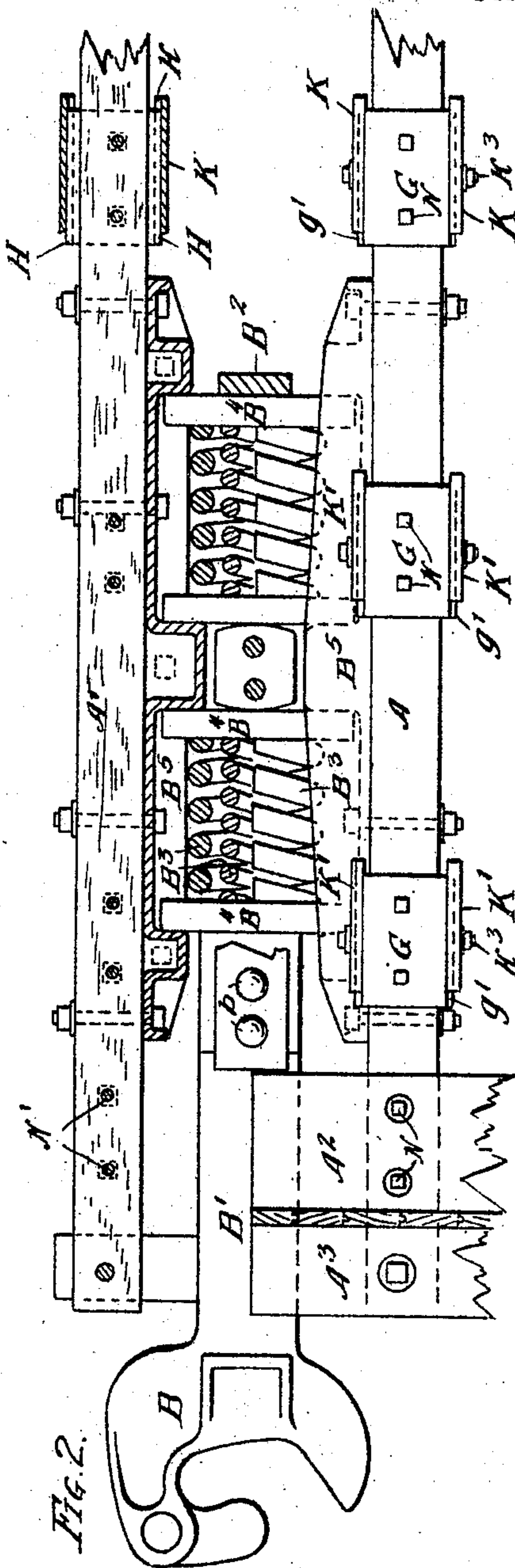


Fig. 2

WITNESSES:

F. B. Townsend  
H. W. Munday

INVENTORS.

W. H. Emerick  
BY: Peter Alquist  
Munday, Everett & Adcock  
his ATTORNEYS





# UNITED STATES PATENT OFFICE.

WILLIAM HUNTER EMERICK AND PETER ALQUIST, OF MEMPHIS,  
TENNESSEE.

MEANS FOR CONNECTING DRAFT-TIMBERS AND CENTER SILLS OF CARS.

No. 795,593.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, WILLIAM HUNTER EMERICK and PETER ALQUIST, citizens of the United States, residing in Memphis, in the county of Shelby and State of Tennessee, have invented a new and useful Improvement in Means for Connecting Draft-Timbers and Center Sills of Cars, of which the following is a specification.

Our invention relates to improvements in means for connecting the draft-timbers and center sills of cars. Heretofore the draft-timbers have been connected to the draft-sills by connecting-bolts extending vertically through the draft-timbers and sills and bolting the same together, and great difficulty, expense, and loss of time have heretofore been experienced when the draft-timbers are broken and require removal and replacement, as it is necessary to unload the car in order to remove the connecting-bolts and remove a broken draft-timber and replace it with a new one.

The object of our invention is to provide a simple, strong, efficient, and durable means for removably connecting the draft-timbers to the center sills of a car, so that the draft-timbers will not be liable to breakage and so that in case a draft-timber is broken it may be removed from a loaded car very easily and quickly and replaced by a new one without unloading the car.

Our invention consists in the means we employ to practically accomplish this object or result—that is to say, it consists, primarily, in the combination, with the center sill of a car, of a removable draft-timber and means for removably connecting the draft-timber to the sill.

It further consists, in connection with the sill and draft-timber, of connecting-plates furnished with dovetails.

It further consists in providing the connecting-plates with a removable dovetail key.

It further consists, in connection with the sill, draft-timber, and connecting-plates, of a cap-plate and one or more clamp-plates furnished with wedging dovetails to clamp the sills together.

It further consists, in connection with the dovetail connecting-plates, sill, and draft-timber, of a cap-plate and bottom plate and one or more clamp or draw plates furnished with wedging dovetails to clamp the sills together.

It further consists in the novel construction

of parts and devices and in the novel combinations of parts and devices herein shown or described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation, partly in vertical section, of a device embodying our invention. Fig. 2 is a plan view partly in horizontal section. Figs. 3, 4, and 5 are vertical sections on lines 3-3, 4-4, and 5-5, respectively, of Fig. 1. Fig. 6 is a detail side elevation of the connection shown in Fig. 3 with the clamp or draw plate removed. Fig. 7 is a detail cross-section through the connecting-plates, showing one form of the same. Fig. 8 is a detail cross-section through the connecting-plates, showing the same furnished with a removable dovetail key; and Fig. 9 is a detail perspective view of the dovetail key. Fig. 10 is a detail partial section on line 10-10 of Fig. 4. Fig. 11 is a detail partial section on line 11-11 of Fig. 3.

In the drawings, A A represent the draft or center sills of a railway-car, and A' A' the removable draft-timbers; A<sup>2</sup>, the front or cross sill; A<sup>3</sup>, the buffer-block; B, the coupler; B', the draw-bar; B<sup>2</sup>, the draw-bar strap or yoke connected to the draw-bar by rivets b; B<sup>3</sup>, the springs of the draft-rigging; B<sup>4</sup>, the followers, and B<sup>5</sup> the side plates or stop-castings of the draft-rigging, which are attached to the draft-timbers A' in the usual manner.

To enable the draft-timbers A' to be removed from the sills A quickly and conveniently and without unloading the car and at the same time provide a very strong, efficient, and durable connection between the draft-timbers A' and sills A, we provide a plurality of connecting-plates D F, D' F', and D<sup>2</sup> F<sup>2</sup>, each furnished with interengaging dovetails. The several pairs of connecting-plates D F, D' F', and D<sup>2</sup> F<sup>2</sup> differ somewhat in construction, according to their location in respect to the side plates or stop-castings of the draft-rigging, or, in other words, as to whether they fit along or at the rear or front of the draft-rigging. The connecting-plate construction which we prefer to employ at the rear of the draft-rigging comprises, in addition to the connecting-plates D F, having side flanges d d, f f, a cap-plate G, having side flanges g g, and which fits on top of the sill A, a bottom plate H, having side flanges h h, and which fits underneath the draft-timber A', and a pair of clamp-plates K, which are furnished with inclined or wedging dovetails k, engaging



correspondingly-inclined or wedging dovetails  $g'$   $h'$  on the cap-plate G and bottom plate H and preferably on the sides  $g$   $h$  of the cap-plate G and bottom plate H. By this construction the clamp or draw plates K, by reason of the inclined dovetails, operate to clamp the sill A and draft-timber A' together in a very firm and strong manner. The rear connecting-plates D F are furnished with transversely-extending dovetails  $d^2$  and  $f^2$  on their horizontal meeting faces, which interengage. The rear connecting-plates D F may, if desired, be furnished with a transversely-extending dovetail key M, as illustrated in Fig. 9, in lieu of the construction shown in Fig. 6, the dovetails on both plates D and F being in such case of a female form, necessary to receive such dovetail key M. The clamp-plates K are furnished with slots  $k^2$ , through which extend a horizontal connecting-bolt  $k^3$ , furnished with a nut  $k^4$  and serving to clamp plates K K together after they are driven home, the slots permitting the necessary longitudinal movement of the clamp or draw plates K for tightening or clamping together the bottom plate and cap-plate and the sill and draft-timber. Vertical bolts N, having heads  $n$ , fitting in countersinks  $g^2$  in the cap-plates G, and nuts  $n'$ , fitting in countersinks  $d'$  in the sill-connecting plates D, securely fix the connecting-plate D and cap-plate G to the sill and clamp the same together and prevent any longitudinal movement of the plates D F on the sill. Similar bolts N', having heads fitting in corresponding recesses in the draft-timber-connecting plate F, and nuts fitting in countersinks  $h^2$  in the bottom plate H connect the plates F and H and fix them in position longitudinally on the draft-timber.

The connecting-plates D' F', which connect the draft-timbers at points along the draft-rigging, are furnished with transversely-extending female dovetails  $d^3$   $f^3$ , which receive a transversely-movable dovetail key M, thus firmly and removably securing the connecting-plates D' F' together. The clamp-plates K', employed in connection with the connecting-plates D' F', are of similar construction to the connecting-plates before described, excepting that they are not so wide and do not project over the sides of the draft-timber. These connecting-plates K' K', however, overlap the end faces of the transversely-movable key M and prevent its removal until the clamp-plates K' are removed.

The connecting-plates D<sup>2</sup> F<sup>2</sup> at the front of the draft-rigging omit the side flanges  $d$   $d$  and  $f$   $f$  and are furnished with dovetail grooves or female dovetails and are connected by a removable transversely-extending double-dovetail key M, this form of connecting-plates adapting the upper one D<sup>2</sup>, if desired, to be secured to the front or cross sill of the car and the lower one to be secured to the draft-

timbers, although the side plates or stop-castings of the draft-rigging may extend to the front end of the draft-timbers, as is the case in some constructions of draft-rigging.

We claim—

1. The combination with the center sill of a car, of a removable draft-timber, a draft-rigging side plate or stop-casting secured to said draft-timber, connecting-plates D F at the rear of said side plate or stop-casting having side flanges  $d$   $f$ , and with transversely-extending dovetails  $d^2$   $f^2$ , a cap-plate G having side flanges  $g$ , furnished with inclined or wedging dovetails  $g'$ , a bottom plate H having sides  $h$  furnished with inclined or wedging dovetails  $h'$ , clamp-plates K K furnished with dovetails engaging said dovetails on the sides of said connecting-plates D F and with inclined or wedging dovetails engaging said inclined or wedging dovetails on the cap and bottom plates G H, intermediate connecting-plates D' F' located between the ends of the side plate or stop-casting, furnished with transversely-extending dovetails, a double-dovetail key connecting the same, a cap-plate having inclined or wedging dovetails on its sides, clamp-plates having inclined or wedging dovetails engaging the cap-plate, and a longitudinal dovetail on said connecting-plate D' and a front pair of connecting-plates D<sup>2</sup> F<sup>2</sup> furnished with transversely-extending dovetails and with a removable double-dovetail key, whereby said draft-timber is removably connected to said sill and firmly and rigidly secured thereto, substantially as specified.

2. In a car, the combination with the center sills, of removable draft-timbers and connecting-plates furnished with interengaging dovetails for removably connecting the draft-timbers to the sills, substantially as specified.

3. The combination with a center sill, of a draft-timber, dovetail connecting-plates and a removable dovetail key, substantially as specified.

4. The combination with a center sill, of a draft-timber, dovetail connecting-plates and a removable double-dovetail key, substantially as specified.

5. The combination with a center sill, of a draft-timber, a cap-plate and a bottom plate having inclined or wedging dovetails and longitudinally-movable clamp or draw plates furnished with inclined or wedging dovetails, substantially as specified.

6. The combination with a center sill, of a removable draft-timber, a cap-plate having side flanges furnished with inclined or wedging dovetails, a bottom plate having side flanges furnished with inclined or wedging dovetails and a clamp-plate having inclined or wedging dovetails engaging those on the sides of the cap-plate and bottom plate, substantially as specified.

7. The combination with a center sill, of a



draft-timber, and connecting-plates furnished with transversely-extending interengaging dovetails on their meeting faces, substantially as specified.

8. The combination with the sill and draft-timber, of a pair of connecting-plates secured to the sill and draft-timber respectively, and provided with dovetails and a connecting device furnished with dovetails engaging the dovetails on the connecting-plates, substantially as specified.

9. The combination with the sill and draft-timber, of a pair of dovetails furnished with transversely-extending dovetail grooves and a double-dovetail key, substantially as specified.

10. The combination with the sill and draft-timber, of a pair of connecting-plates furnished with transversely-extending dovetails and a longitudinally-extending dovetail, a cap-plate having a longitudinally-extending inclined dovetail and a clamp or draw plate, substantially as specified.

11. The combination with the sill and draft-timber, of a pair of connecting-plates furnished with transversely-extending dovetails and a longitudinally-extending dovetail, a cap-plate having a longitudinally-extending inclined dovetail, a clamp or draw plate and a pair of clamp or draw plates furnished with dovetails engaging those on the cap-plate and on one of the connecting-plates, substantially as specified.

12. The combination with the sill and draft-timber, of connecting-plates having sides furnished with dovetails, a cap and bottom plate each having sides furnished with inclined dovetails and clamp-plates furnished with corresponding longitudinally-extending dovetails, substantially as specified.

13. The combination with the sill and draft-timber, of connecting-plates having sides furnished with dovetails, a cap and bottom plate each having sides furnished with inclined dovetails and clamp-plates furnished with corresponding longitudinally-extending dovetails, a bolt extending through the clamp-plates, said clamp-plates having longitudinal sills to receive said bolt, substantially as specified.

14. The combination with the sill and draft-timber, of connecting-plates having sides furnished with longitudinal dovetails, a bottom plate having sides furnished with a longitudinal dovetail and clamp-plates furnished with longitudinally-extending dovetails, substantially as specified.

15. The combination with a connecting-plate secured to the draft-timber, of a connecting-plate secured to the sill, and a dove-

tail connecting means between said connecting-plates, substantially as specified.

16. The combination with a cap-plate secured to a sill, of a bottom plate secured to a draft-timber and a connecting means for the two plates, substantially as specified.

17. The combination with a cap-plate secured to a sill, and having an inclined or wedging shoulder, of a bottom plate secured to a draft-timber and having an inclined or wedging shoulder and a clamp or draw plate having inclined or wedging shoulders engaging the inclined or wedging shoulders on the cap and bottom plates, substantially as specified.

18. The combination with a connecting-plate secured to a sill, of a connecting-plate secured to a draft-timber and a removable dovetail connecting means for said plates, substantially as specified.

19. The combination with a connecting-plate secured to a sill, of a connecting-plate secured to a draft-timber, said plates being furnished with dovetails, and a double-dovetail connecting-key, substantially as specified.

20. The combination with a connecting-plate secured to a sill and furnished with a plurality of dovetails on its lower face, of a connecting-plate secured to the draft-timber and furnished with a plurality of interengaging dovetails on its upper face, substantially as specified.

21. The combination with a connecting-plate having sides embracing a sill, of a cap-plate having sides embracing a sill and a clamp-plate having inclines engaging inclines on said connecting-plate and cap-plate, substantially as specified.

22. The combination with a connecting-plate having sides embracing a draft-timber, a bottom plate having sides embracing a draft-timber, and a clamp or draw plate having inclines engaging corresponding inclines on said connecting-plate and bottom plate to clamp the same about the draft-timber, substantially as specified.

23. The combination with a connecting-plate having sides embracing a draft-timber, a bottom plate having sides embracing a draft-timber, and a clamp or draw plate having inclines engaging corresponding inclines on said connecting-plate and bottom plate to clamp the same about the draft-timber, and a bolt extending horizontally through said clamp or draw plates, substantially as specified.

WILLIAM HUNTER EMERICK.  
PETER ALQUIST.

Witnesses:

BERT L. DAVIS,  
N. A. ALQUIST.