Jan. 6, 1942. J. E. OTT 2,269,286

STAY FOR USE IN FORMING FREIGHT CARLOADS

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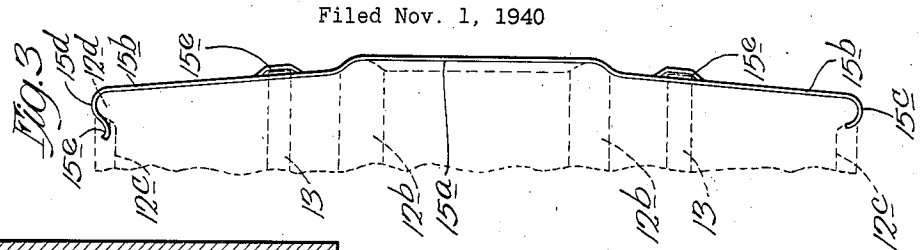


Fig. 3

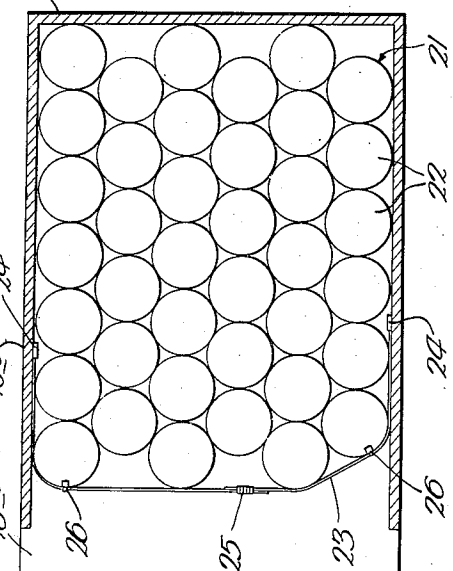
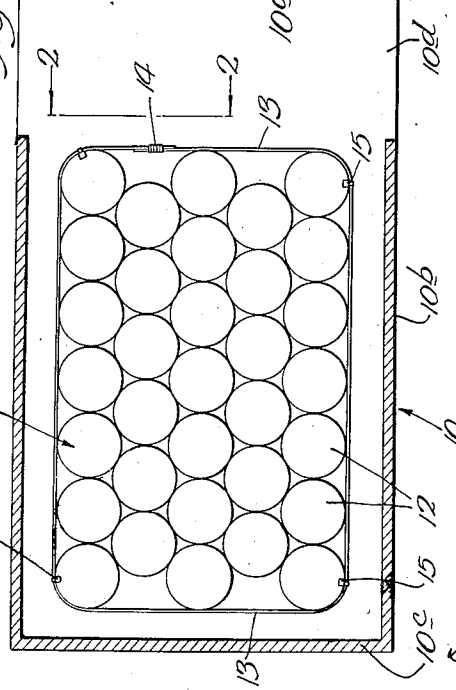


Fig. 1



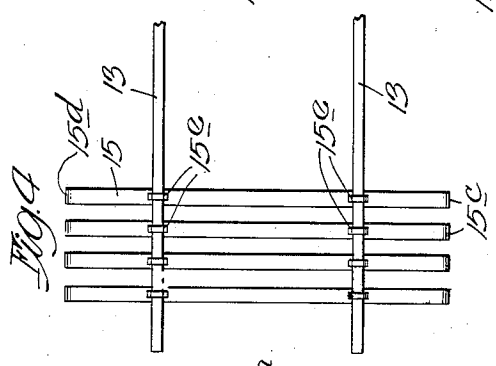


Fig. 4

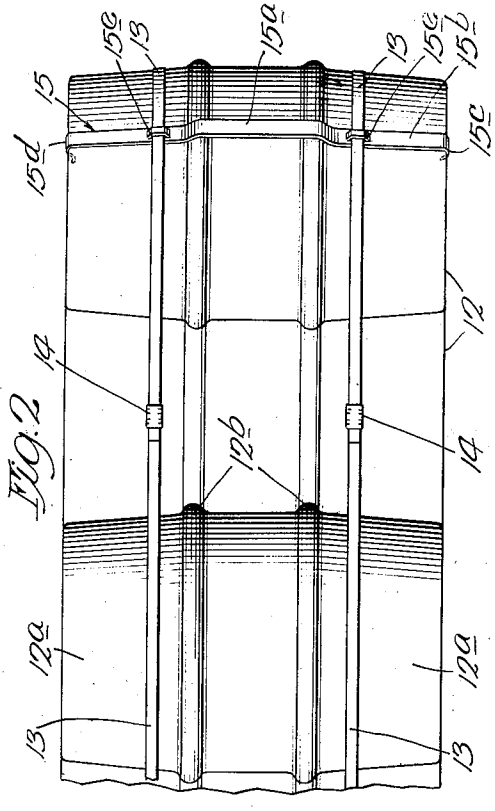


Fig. 2

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STAY FOR USE IN FORMING FREIGHT CARLOADS

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2 Claims. (Cl. 105—369)

This invention relates to improvements in freight car loads and, in particular, improvements in stays for use in securing loads in freight cars and other carriers. The purpose of the invention is to provide an improved freight car load comprising an upright supporting member which may be attached to a part of the load and which will serve to hold in proper position one or more flexible binders which pass horizontally about the whole or a part of the load. The improved stay of the present invention may be used in forming an anchored load which is held securely in position in the freight car or it may be used in forming a load unit of the floating or shifting type described in the United States Letters Patent of Chester M. MacChesney and John Ekern Ott, No. 1,703,495, issued February 26, 1929, wherein there is disclosed a form of upright metal stay upon which the present invention is an improvement, particularly in connection with the formation of certain types of loads.

In loading freight cars with individual barrels, boxes and other load elements, it is the practice, according to the invention of said Letters Patent, to bind together by surrounding flexible binders a sufficient number of such load elements to form a composite load unit of such size and weight that it will normally retain itself substantially in place by frictional contact with the car floor although free to move under the influence of heavy shocks which may be encountered in transit, the load unit being spaced from the car walls to permit such movements. In the formation of an anchored load, according to the preferred method, the barrels, boxes or other load elements are arranged in a group on the floor with the outer ones of the group in close contact with the side and end walls of the car and this load unit is held in fixed relationship to the car by flexible binders which are attached to the side walls of the car and drawn taut across the end of the load unit which is farther from the end wall of the car, thus holding the load in place. In the formation of either type of load, it is desirable to support the flexible binders above the car floor and in said Letters Patent there is shown a form of upright metal stay to which the metal binders may be detachably secured and which may be temporarily attached to the car walls while the load elements are being put in place, after which the operation of drawing the binders taut around the load serves to withdraw the supporting stays from the car walls and cause them to move inwardly to the load where they continue to perform the function of supporting the binders at proper distances above the car floor.

The principal object of the present invention is to provide an improved stay which is particularly adapted for use in conjunction with shipments of barrels or other similar containers in which various liquids, such as oil, gasoline, beer and the like, are commonly shipped and which are provided with the usual chimes or other projections which may be conveniently engaged by parts of the stay on which the flexible binders are supported. The barrels in which various liquid or granular commodities are commonly shipped, whether formed of wood or metal, are commonly provided with surrounding hoops or ribs and at each end of each barrel there is an annular chime extending beyond the barrel head, thus providing a convenient annular projection with which the parts of a strap supporting stay may be snapped into interlocking engagement. Similar projections are to be found on certain forms of boxes and other shipping containers. An important object of the present invention is to provide a strap supporting stay formed of strip metal or the like and having projecting hook-like extremities adapted to interlock with the chimes of barrels or the projections of other shipping containers while at the same time conforming largely to the surface contour of the barrel or other container so that the stay is held firmly in place when in use. Another object of the invention is to provide an improved freight car load comprising a plurality of barrels or other containers having annular projections on their ends in combination with a series of supporting stays which are detachably interlocked with said projections and which are provided with slots adapted to receive the flexible binders by which the barrels or other containers are held in proper relationship to each other within the car. Still another object of the invention is to provide an improved metal stay formed from a flat strip of steel or the like shaped to conform to the surface contour of a barrel or other container and provided with slots for receiving flexible binders in addition to hook-shaped extremities one of which is formed to snap into interlocking engagement with a chime or other annular projection of a barrel or other shipping container. Other objects relate to various features of the improved stay and of the improved

freight car load which will appear more fully hereinafter.

The nature of the invention will be understood from the following specification, taken with the accompanying drawing, in which one embodiment of the improved stay and two examples of the improved freight car load are illustrated. In the drawings,

Figure 1 shows a horizontal section through a freight car, illustrating in plan view two different types of freight car loads which are formed according to the principles of the present invention;

Fig. 2 shows an enlarged end elevation of a portion of the load illustrated at the left of Fig. 1, looking in the direction of the arrows 2—2;

Fig. 3 shows an enlarged side elevation of the improved stay of the present invention applied to a barrel which is illustrated by dotted lines; and

Fig. 4 shows a series of stays embodying the present invention and having flexible binders threaded through the slots thereof in readiness to be used in forming a load unit within a freight car.

The invention is illustrated in Fig. 1 in connection with a freight car 10 having a floor 10a, side walls 10b, end walls 10c, and side door openings 10d. At the left of the door openings 10d there is illustrated a load unit 11 constructed according to the principles of the invention of said MacChesney & Ott Letters Patent and comprising a plurality of barrels 12 which are arranged in longitudinal rows within the car with the barrels of each row having a staggered relationship with the barrels of the next adjacent row so that the barrels interfit with each other to provide a load unit of the most compact form. The barrels are bound together in this load unit 11 by a pair of surrounding flexible binders 13 which, in this instance, are in the form of flat flexible steel straps drawn taut around the group of barrels and having the overlapping ends of each strap united in the region of the door openings 10d by means of sealed joints 14 which may be joints of the form disclosed in the United States Letters Patent of Ralph H. Norton, No. 1,260,016, dated March 18, 1918, or any type of joint suitable for the purpose of securing the overlapping ends of a flexible binder together. The straps 13 are supported against vertical displacement by a plurality of metal stays 15 embodying the features of the present invention which are interlocked with certain of the barrels 12 at or adjacent to the corners of the load unit. Any desired number of these supporting stays may be used to provide the proper support for the binders 13. The load unit 11 is spaced from the side walls 10b and from the adjacent end wall 10c so that the load unit is capable of shifting as a whole upon the car floor when unusual shocks are encountered during the movement of the car, although it will be understood that the unit normally retains itself substantially in place on the car floor and spaced from the car walls.

The barrels 12 which are used in making up the load unit 11 are illustrated as being steel barrels provided, as shown in Fig. 2, with annular walls 12a tapered toward the ends of the barrel and provided on opposite sides of the middle portion of the barrel with annular projecting ribs 12b. The barrel is provided at each end, as shown in Fig. 3, with a head 12c and each end of the annular wall 12a terminates in an annular projection or chime 12d which extends beyond the outer face of the adjacent barrel head 12c. Each stay 15 is in the form of a comparatively thin and wide metal strap having an intermediate portion 15a which extends across and conforms to the outer portions of the ribs 12b of a barrel, and end portions 15b which are adapted to conform to and closely fit the tapered annular wall portions of the barrel, as shown in Fig. 3. The lower end portion 15b of the stay terminates in a hook-shaped extremity 15c adapted to hook under and around the lower chime of the barrel and the upper end portion 15b terminates in a hook portion 15d formed with a reversely curved extremity 15e. These hook-shaped members are somewhat resilient and after the lower hook 15c is hooked under the lower chime of the barrel the hook 15d—15e at the upper end of the stay is adapted to snap over the chime 12d at the upper end of the barrel or over other similar projections on other shipping containers. The curved extremity 15e of the hook-shaped member is curved away from the intermediate portion 15a of the stay so that when the stay is brought into position against the barrel the curved extremity is adapted to facilitate the snapping of the hook-shaped part over the chime of the barrel.

The portions 15b of the stay are also provided with slots 15e adapted to receive the flexible binders 13 which pass around the load unit. These slots are preferably formed by providing parallel longitudinal slits in the intermediate portion of the stay and then projecting the metal between the slits outwardly to form an elongated loop or eyelet through which the flexible binder 13 may be threaded. In Fig. 4, a plurality of stays 15 are shown as having flexible binders 13 threaded through the slots thereof and this assembly of the stays upon the binders may, in many cases, be arranged preliminary to passing the binders around the load unit so that the stays may then be quickly located in the proper positions and snapped into engagement with the barrels or other containers without the necessity of threading the binders through the slots of the stays at that time. When all of the stays have been properly positioned with the elements of the load unit in close relationship to each other, the binders are drawn taut and the overlapping ends of each binder are then sealed together by forming a sealed joint or by any other suitable device adapted to prevent separation of the strap ends.

At the right of Fig. 1 there is shown the use of the present invention in forming a freight car load of the anchored type. In this form the load unit 21 is made up of a series of barrels 22, similar in form to the barrels 12 previously described, and these barrels are arranged in rows with the barrels of one row in staggered relationship to those of the next adjacent rows, as in the embodiment of the invention previously described. In this embodiment, however, a sufficient number of barrels are placed within the car to occupy all of the space between the side walls 10b and with some of the barrels in contact with the end wall 10c at that end of the car. The barrels are maintained in this compact relationship bearing against the walls of the car by means of flexible binders 23 which may be flat flexible steel straps similar to the strap 13 previously described, and these binders are attached to plates 24 which are nailed or otherwise secured to the side walls 10b at each side of the car some distance from the end wall and from the door openings 10d. These flexible binders are then drawn taut across

the end of the load and the overlapping ends of each binder **23** are secured together by a sealed joint **25** or by other suitable fastening means. The flexible binders **23** are supported at intervals by metal stays **26** which are of the same form as the stays **15** previously described, the hook-shaped extremities of these stays being interlocked with the chimes of certain of the barrels at the end of the load unit. When the binders **23** have been drawn taut and their ends secured together, the barrels **22** are held in close contact with each other and against the walls of the car so that they are not permitted to have any substantial movement during the travel of the car.

With either form of freight car load described above, the improved metal stay of the present invention is of particular advantage in that it may be constructed at small cost and may be readily applied to one of the containers or other elements of the load unit merely by hooking and snapping it onto certain projections which are commonly present on these load elements. When the loaded car has reached its destination, the flexible binders may be cut and the supporting stays readily snapped out of engagement with the barrels or other containers preliminary to removing these barrels or containers from the car, and the stays so removed may be employed in the formation of other freight car loads if desired. The stays of the present invention are capable of repeated use with successive freight car loads without appreciable deterioration in their resilient qualities and supporting effects.

Although one form of the improved stay and certain examples of the freight car load have been shown and described by way of illustration, it will be understood that the invention may be constructed in various other embodiments which come within the scope of the appended claims.

I claim:

1. A stay for a freight car load comprising a metallic member adapted to be mounted in upright position at the side of a shipping container, said member being provided at its end with a hook having a reversely curved extremity permitting the hook to be snapped over a projection on the end of the container.

2. A freight car load comprising a group of shipping containers having annular projections at their upper and lower ends, flexible binders for maintaining said containers in compact relationship, and metallic stays having loops to receive said binders and having hooks at their ends, some of said hooks being provided with reversely curved extremities whereby those hooks are capable of being snapped over said projections on some of said containers.

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