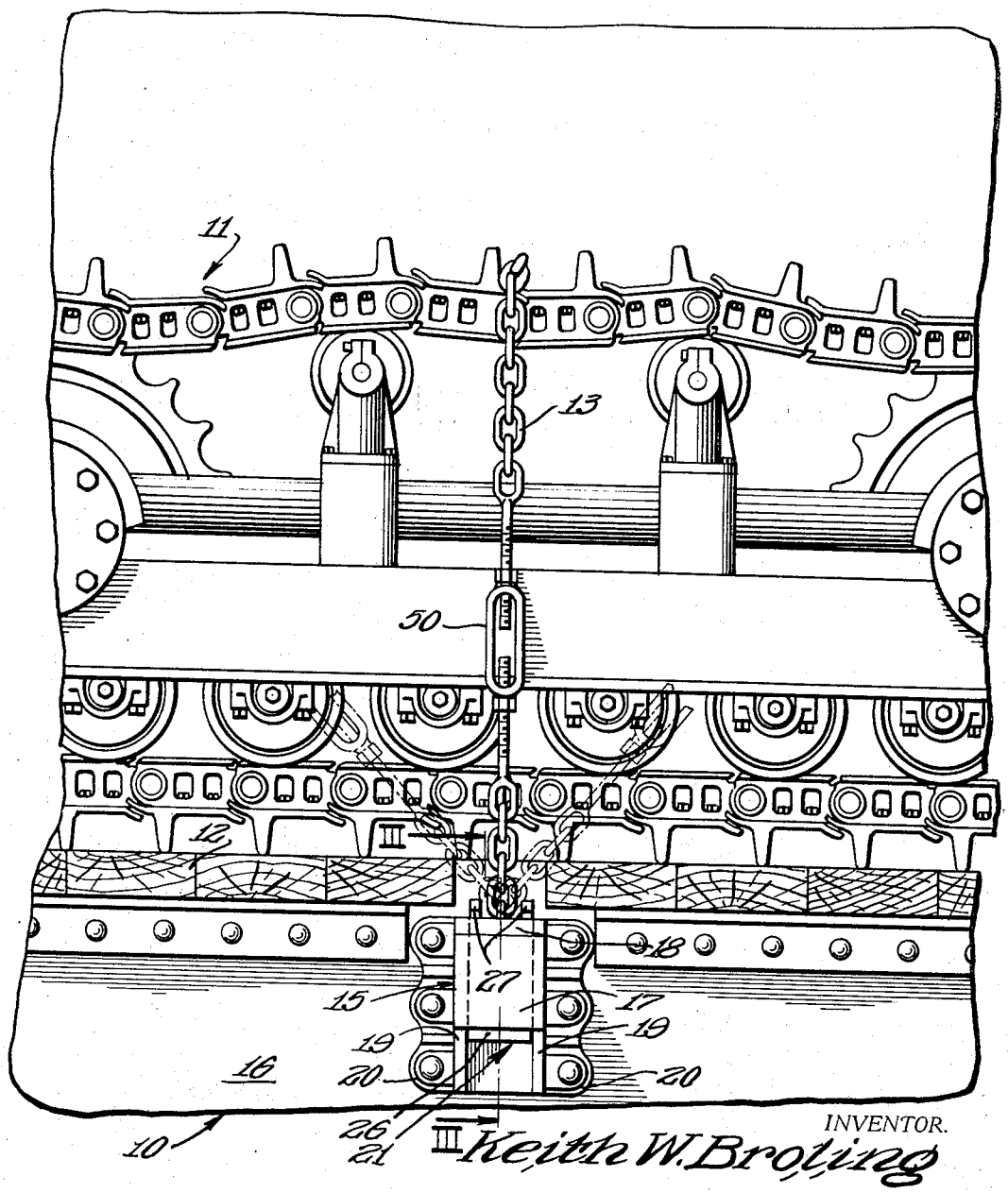
July 18, 1967 K. W. BROLING 3,331,334

STAKE POCKET CHAIN ANCHOR

Filed June 14, 1965 2 Sheets-Sheet 1

Fig. 1



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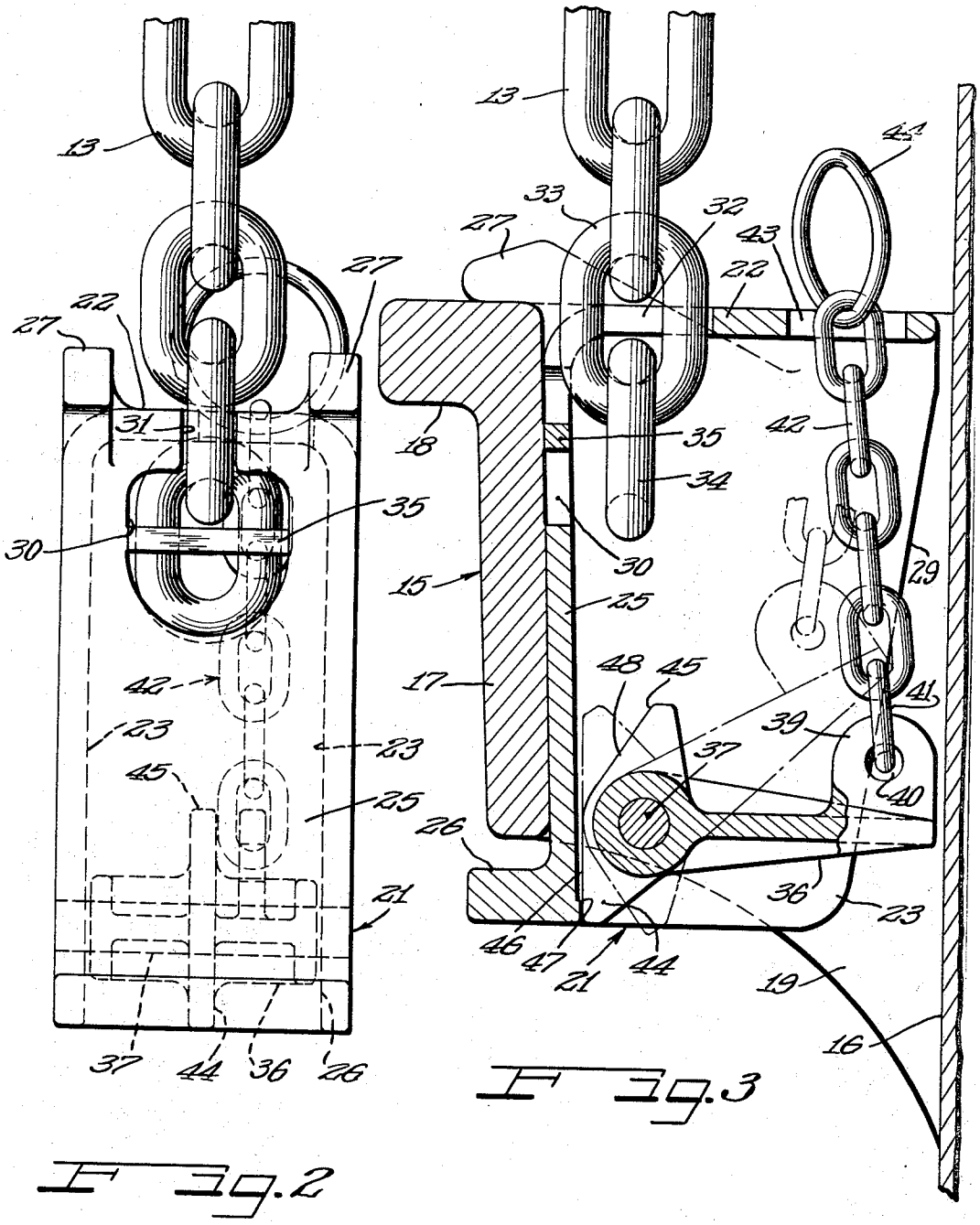


Fig. 2

Fig. 3

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3,331,334

STAKE POCKET CHAIN ANCHOR

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8 Claims. (Cl. 105—369)

This invention relates to improvements in anchoring devices for anchoring heavy equipment to freight cars and the like and more particularly relates to such devices as may be anchored to the stake pockets of freight cars.

A principal object of the present invention is to provide a simple form of anchoring device for tying down heavy loads, such as tractors and other heavy equipment to the floors of freight cars, by releasably anchoring the tie down chains for the load, to the stake pockets of the car.

Another object of the invention is to provide an improved anchoring device for anchoring tie down chains to the stake pockets of freight cars and the like, in which the anchoring device is insertable into a stake pocket from the top thereof and is provided with a simplified form of locking means freely mounted on the anchoring device to move to a locking position by gravity.

Still another object of the invention is to improve upon the anchoring devices heretofore in use to tie down tractors and other heavy equipment to the decks of freight cars, by providing a simple and improved form of anchoring device in the form of an anchoring block insertable in the stake pocket of the car from the top thereof and having anchoring engagement with the underside of the front wall of the stake pocket, in which the anchoring block is locked in position in the stake pocket by a releasable locking member normally moving into a locking position by gravity and releasable from the top of the stake pocket.

These and other objects of the invention will appear from time to time as the following specification proceeds and with reference to the accompanying drawings wherein:

FIGURE 1 is a fragmentary view in side elevation of a portion of one side of a freight car, showing a stake pocket with an anchoring device constructed in accordance with the principles of the invention therein, and an anchoring chain extending therefrom and anchoring a tractor to the car;

FIGURE 2 is a front end view of the anchoring device shown in FIGURE 1; and

FIGURE 3 is a vertical section view taken transversely through a stake pocket and anchoring device therein, with the tie down chain slack and the anchoring device in a lowermost position in the pocket.

In the embodiment of the invention illustrated in FIGURE 1 of the drawings, I have shown a freight car **10** having a tractor **11** held in position on a flat deck **12** of the car by a tie down chain **13** anchored to a stake pocket **15** of the car. The freight car **10** has stake pockets **15** secured to and extending outwardly of side frame members **16** of the car at suitable intervals for the length of the car, it being understood that the stake pockets are spaced along the side frame members of the car and open through the flat deck **12** of the car, and that a separate tie down chain may be anchored to each stake pocket, for anchoring tractors or other heavy equipment to the deck of the car.

The stake pockets **15** are of a conventional form and each includes a front wall **17** having a reinforcing lip **18** extending outwardly of the upper end thereof and having parallel spaced side walls **19, 19** extending therefrom to the side frame member **16** of the car. The side walls **19, 19** have flanged feet **20, 20** riveted or otherwise secured

to the side frame member of the car. The front wall **17** with the side walls **19, 19** and frame **16** of the car form an open pocket, opening to the top and bottom of the pocket and forming a retaining or anchoring means for an anchor block **21** having a chain **13** anchored thereto. The anchor block **21** is generally hollow having a top wall **22** extending across the upper ends of parallel spaced side walls **23** connected to and extending rearwardly of a front wall **25**, registering with and slidably engaging the inside of the front wall **17** of the stake pocket **15**, when the anchor block **21** is in place in its stake pocket, and tension is taken up on the chain **13**. A retaining flange **26** extends outwardly of the lower end of the front wall **25** and normally is under the bottom of the front wall **17** of the stake pocket **15** to retain the anchor block **21** to said stake pocket upon an upwardly pulling force thereon as by the taking up of tension on the chain **13**. Spaced retaining lugs **27** extend forwardly of the side walls **23, 23** and have bottom surfaces in alignment with the top of the front wall **25** to engage the top of the front wall **17** of the stake pocket **15** and retain the anchoring device from falling out of the stake pocket as tension is released from the chain **13**, as illustrated in FIGURE 3.

The side walls **23, 23** are tapered from the top rear end portions thereof toward the front wall **25**, as they extend downwardly to the bottom of the anchor block, as shown in FIGURE 3 and indicated by reference character **29**. The tapered rear end portions of the side walls **23** accommodate the insertion of the anchoring block into the stake pocket from the top thereof, the taper of said side walls being sufficient to enable the flange **26** and anchor block **21** to fit into the stake pocket from the top thereof and slide downwardly therealong into the position shown in FIGURE 3.

The front wall **25** has a generally keyhole shaped slot **30** leading therethrough and having a neck portion **31** opening to a relatively narrow slot **32** in the bridge or top wall **22** of the anchoring block, and of a width sufficient to enable a link **33** of the anchoring chain to slide therealong and be held in position in the anchoring block by the next adjacent downwardly spaced link **34** extending at right angles thereto, and abutting the underside of the top wall **22**, as tension is taken up on the chain **13**. A bar **35** extends across the widened end portion of the keyhole slot **30** and is welded or otherwise secured thereto, after placing the anchoring chain **13** in the keyhole slot in position within the anchoring block, to prevent unauthorized removal of the chain from the anchoring block.

A locking lever **36** is provided to lock the anchoring block **21** in position in the stake pocket as inserted therein. As shown in FIGURE 3 the locking lever **36** is disposed between the side walls **23, 23** and is pivotally connected therebetween on a transverse pivot pin **37**, mounted at its opposite ends in said side walls. The locking lever **36** has an upwardly projecting ear **39** at its outer end having an aperture **40** therein to receive a link **41** of a release chain **42**. The chain **42** extends through an opening **43** in the top plate **22** and has a ring **44** on the end thereof of a larger diameter than the size of the opening **43**, to retain the chain from falling into the stake pocket, and forming a gripping means for moving the lever **36** into its upwardly extended release position, shown by broken lines in FIGURE 3, accommodating the removal of the anchor block **21** by moving said anchor block angularly inwardly within the stake pocket to clear the flange **26** from the inner side of the front wall **17** and then drawing the anchor block upwardly through the stake pocket.

The locking lever **36** is sufficiently heavy at its outer end that it will drop by gravity into its locking position upon the release of tension on the chain **42**, as when the ring **44** is resting on the top surface of the top wall **22**.

Downwardly and upwardly extending stop lugs **44** and **45** respectively, are provided to limit movement of the locking lever **36** downwardly beyond a locking position and upwardly beyond a position where it will not return to its locking position by gravity.

The stop lug **44**, as shown in FIGURE 3, has an abutment surface **46** extending vertically when the locking lever is in its locking position and engaging a stop rib **47** extending along the inside of the wall **25** adjacent the bottom thereof. The stop **45** is of a similar form and has a wall **48**, which is in a vertical position when the locking lever **36** is in its release position and engages the inside of the wall **25** to limit upward movement of the locking lever beyond a position where it will not return by gravity.

In tying down a tractor or other vehicle to the flat deck of a freight car. assuming the anchor blocks are in position in their stake pockets, the anchor blocks will be in their downwardly extended positions as the anchor chain is attached to the tractor or other device it is desired to tie down. As shown in FIGURE 1 the anchor chain has a turnbuckle **50** therein and is extended upwardly over the top of a tread of the tractor **11** and may be hooked or otherwise secured thereto in a conventional manner, the hooks not being shown herein, since they form no part of the present invention. As tension in the anchoring chain **13** is taken up by turning the turnbuckle **50**, the anchor block **21** will be drawn upwardly along the stake pocket to engage the retaining flange **26** under the bottom of the front wall **17** as shown in FIGURE 1 and thereby anchor the anchoring chain **13** to the stake pocket.

FIGURE 1 shows by broken lines the positions the anchoring chain **13** may taken when it is desired the anchoring chain extend angularly toward the front or rear of the tractor, as well as vertically of the anchoring device, to retain a tractor or other device to be anchored to the deck of the flat car from movement along the car. The end anchoring devices on the car may have their anchoring chains inclined in one direction or another with respect to the anchoring blocks, to better hold the device being tied down from a tendency to move along the car.

While I have herein shown and described one form in which the invention may be embodied, it may readily be understood that various variations and modifications in the invention may be attained without departing from the spirit and scope of the novel concepts thereof.

I claim as my invention:

1. A tie down for tying down heavy equipment to freight cars and the like having spaced stake pockets extending from opposite sides of the car comprising:

an anchor block fitting in the stake pocket from the top thereof and having a front wall conforming to the inner face of the stake pocket,

and an inwardly spaced wall portion tapering inwardly from the top to the bottom of said anchor block,

vertically spaced retainers extending outwardly of said front wall and spaced from the top and the bottom of the stake pocket when the anchor block is inserted therein, to limit upward and downward movement of the anchor block in the stake pocket and retain the anchor block to the stake pocket,

a tie down chain connected to and extending upwardly of said anchor block,

a releasable locking member movably mounted in said anchor block into position to engage the frame of the car and retain the lower of said retainers into position to engage under the stake pocket,

and means connected with said locking member and operable from the top of the stake pocket to move said locking member upwardly within the limits of said inwardly tapering portion of said inwardly spaced wall portion of the anchor block, to accommodate inward movement of the anchor block along the stake pocket a distance sufficient to release the lower of said retainers from the bottom of the stake pocket, and to thereby accommodate upward movement of the anchor block along the stake pocket, to be removed from the stake pocket from the top thereof.

2. The structure of claim **1**,

wherein the releasable locking member is transversely pivoted to the anchor block adjacent the lower end thereof and extends toward the side of the freight car,

and wherein stop means are provided to stop downward movement of said locking member into a locking position.

3. A tie down particularly adapted to tie down heavy equipment to a freight car and the like having stake pockets at opposite sides of the car, comprising:

an anchor block fitting into a stake pocket from the top thereof and having a front wall conforming to and engaging an inner wall of the stake pocket,

side walls extending from said wall along opposite sides of the stake pocket toward the side of the freight car and a top wall connecting said front and side walls together,

a tie down chain having inter-engagement with said top wall for attachment to a load, to tie the load down on a car and exerting an upward pull on said anchor block as tension is taken up on the chain,

said front wall having upper and lower retainer flanges extending outwardly from the top and bottom thereof, spaced apart a distance greater from the height of the stake pocket, and preventing movement of said anchor block downwardly out of the stake pocket and limiting upward movement of said anchor block along the stake pocket, as tension is taken up on the tie down chain,

said side walls tapering at the rear ends toward said front wall as they extend downwardly along said anchor block in an amount sufficient to accommodate inward movement of said anchor block along the stake pocket into position to release said lower retainer flange from under the stake pocket and to accommodate said retainer flange to move upwardly along the stake pocket for release of the anchor block from the top of the stake pocket,

a releasable locking member pivoted to said anchor block, adjacent the lower end thereof and normally movable by gravity into position to engage the side of the freight car and retain the anchor block from inward movement along the stake pocket,

a manually operable member connected with said locking member and operable from the top of the stake pocket for moving said locking member within the limits of the tapering wall portions of said side walls to accommodate inward movement of the anchor block into position to release the lower retainer to move upwardly along the stake pocket,

and means limiting movement of said locking member into a locking position.

4. A tie down for tying down heavy equipment to freight cars and the like having spaced stake pockets extending from opposite sides of the car comprising:

an anchor block fitting in the stake pocket from the top thereof and having a retainer member at the bottom thereof engaging under the stake pocket and limiting upward movement of the anchor block along the stake pocket,

a tie down chain connected to and extending upwardly of said anchor block for attachment to a piece of equipment to be retained to the car,

a releasable locking member transversely pivoted to said anchor block adjacent the lower end thereof and extending transversely of the stake pocket toward the side of the freight car, to prevent movement of said retainer member out of registry with the bottom of the stake pocket,

an operating member for said locking member connected thereto and extending upwardly out of the stake pocket and manually operable to move said locking member into position to accommodate movement of the anchor block along the stake pocket to move said retainer member out of registry with the bottom of the stake pocket,

and stops extending upwardly and downwardly of said locking member, adjacent the pivot thereof, and operable to prevent movement of said locking member out of its locking position by gravity and to prevent release movement of said locking member beyond a position where it will not return to its locking position by gravity.

5. A tie down for tying down heavy equipment on freight cars having stake pockets on opposite sides of the car, comprising:

an anchor block fitting into a stake pocket from the top thereof and having a front wall engageable with an inner wall of the stake pocket,

side walls extending from said front wall toward the side of the freight car and a top wall connecting said front and side walls together,

a tie down chain having interengagement with said top wall for attachment to a load, to tie the load down on the car and exerting an upward pull on said anchor block as tension is taken up on the chain,

said front wall having a retainer flange extending horizontally outwardly from the bottom thereof for engagement under the stake pocket,

said side walls tapering toward said front wall as they extend downwardly along said anchor block an amount sufficient to accommodate inward movement of said anchor block along the stake pocket into position to release said retainer flange from under the stake pocket,

a releasable locking member pivotally mounted between the side walls of said anchor block adjacent the lower ends thereof and adjacent the front wall of said anchor block,

said locking member extending from said front wall of said anchor block toward the side of the freight car when inserted in the stake pocket, and biased by gravity into position to prevent the release of said retainer flange from under the bottom of the stake pocket,

and a release member connected to said locking member adjacent the free end thereof and extending upwardly through the stake pocket, to accommodate release of said locking member from the top of the stake pocket.

6. A tie down in accordance with claim 5,

wherein the locking member has stops extending upwardly and downwardly therefrom in the region of the pivot thereof, for engagement with the front wall of the anchoring device and limiting movement of said locking member downwardly beyond a locking position, and limiting upward movement of said locking member beyond a position where it will not return by gravity.

7. In an anchoring device adapted to fit in a vertically opening stake pocket extending outwardly of and spaced along a side frame member of a freight car and the like,

a hollow anchor block having a front wall,

side walls extending rearwardly therefrom and a top wall connecting said front and side walls together,

a slot in said front and top wall accommodating the placing of a chain link therein, with a link thereof engaging under the top wall, to tie the chain down, to retain a load in position,

a retainer flange extending outwardly of said front wall under the bottom of the stake pocket when the anchor block is in position in the stake pocket,

said side walls tapering toward said front wall from the tops to the bottoms thereof as they extend downwardly along said front wall, to accommodate said flange to clear the top and bottom of the stake pocket and to enable said anchor block to be placed in said stake pocket from the top thereof and to be removed therefrom,

at least one retainer extending from said top wall to retain the anchor block from falling downwardly along the stake pocket,

a releasable locking lever pivoted between said side walls and movable by gravity into position to prevent the release of said anchor block from the stake pocket and operable from the top of the stake pocket to accommodate inward movement of the anchor block along the stake pocket to release said retainer from beneath the stake pocket,

said release lever having stops thereon adjacent the pivot thereof and extending upwardly and downwardly therefrom for engagement with the inside of said front wall of said anchor block and limiitng movement of said locking member into a locking position and beyond a release position where it cannot return to a locking position by gravity.

8. An anchoring device in accordance with claim 7, wherein a chain is connected to the outer end of the locking member and extends upwardly therefrom through the top wall of the stake pocket and has a ring on the end thereof, forming a manually operable gripping member to move said locking member to a release position and a retainer for said chain to retain said chain in a position to release said locking member.

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