C. FAUST.
LOGGING CAR STAKE HOLDER.
APPLICATION FILED SEP. 1, 1916.

1,206,687.

Patented Nov. 28, 1916.
3 SHEETS—SHEET 2.

Witness

Inventor
Casper Faust

By
Attorneys

[Diagram of a logging car stake holder, showing various parts and mechanisms with labels for each piece.]
C. FAUST.
LOGGING CAR STAKE HOLDER.
APPLICATION FILED SEPT. 1, 1916.

1,206,687.  Patented Nov. 28, 1916.

3 SHEETS—SHEET 2.

Inventor
Casper Faust

Attorneys

Witness
A. Woodard

A. Williams
UNITED STATES PATENT OFFICE.

CASPER FAUST, OF OSHKOSH, WISCONSIN.

LOGGING-CAR STAKE-HOLDER.

1,206,687.

Application filed September 1, 1916. Serial No. 118,065.


To all whom it may concern:

Be it known that I, CASPER FAUST, a citizen of the United States, residing at Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Logging-Car Stake-Holders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in stake holders for lumber cars and more particularly to releasable holders of this character and is designed as an improvement on the holder shown in my Patent No. 1,199,655 dated May 18, 1915.

The principal object of the invention is to so construct the stake socket as to prevent binding of the stake against the checks thereof even though the load may shift longitudinally to a considerable extent, this object being attained by hingedly connecting one of said checks with the car whereby it will be swung outwardly away from the stake when released.

Another object is to provide the ends of the saddle plate which extends between the two cheek members with lugs for reception in the ends of links which connect said plate and members, the links being hinged to said lugs and the latter serving to relieve strain from the hinges.

Yet another object is to provide a device which may be easily and inexpensively manufactured and marketed yet which will be highly efficient and durable in all respects.

With the foregoing in view the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings: Figure 1 represents a side elevation of a portion of a logging car showing this invention applied; Fig. 2 is an enlarged perspective view of the stake socket showing the pin removed and the parts in position ready for opening the socket; Fig. 3 is a similar view with the socket in open position after the stake has been released; Fig. 4 is a perspective view taken from the side opposite to that shown in Fig. 2; Fig. 5 is a horizontal section taken on the line 5-5 of Fig. 4; Fig. 6 is a top plan view of one of the bearings showing the cap plate removed; Fig. 7 is a horizontal section through the corner of the socket shown in Fig. 2 with the parts in locked position with the exception that the locking pin has been removed; Fig. 8 is a similar view showing the manner in which the combined locking and cast-off lever swings the releasable retaining link outwardly when operated; Fig. 9 is a perspective view showing the manner in which the improved socket may be applied to the transverse beams or bunks of a logging car; Fig. 10 is a plan view of the upper end of one of the stakes showing the chain securing means; Fig. 11 is a front elevation thereof; and, Fig. 12 is a vertical section taken on the line 12-12 of Fig. 10.

In the embodiment illustrated a flat car having a side sill S is shown to which is secured a stake holder 1 constituting this invention. This holder 1 comprises a socket bracket composed of laterally extended spaced cheek pieces or plates 2 and 3 forming the side walls of the bracket, one of which is rigidly and the other hingedly connected with the car. The rigid cheek piece 2 is provided with a flange 4 extending at right angles from its outer face at its rear edge and having apertures therein for the passage of connecting bolts which extend through the sill and connect the cheek to the car. A supporting shelf or plate 5 extends horizontally from the upper end of the cheek piece 2 and is designed to rest on the platform of the car as is shown clearly in Fig. 2 and be secured thereto by attaching screws or bolts thereby relieving the sill from the strain exerted by the stake. The hingedly connected cheek piece 3 is mounted in bearings 6 and 7 disposed in vertical alignment on the sill S. Both of these bearings are in the form of substantially rectangular blocks having sockets 6' and 7' respectively in their opposed faces to receive studs or pins 8 and 9 carried by the cheek 3. The upper bearing 6 has a laterally extending platform or car deck engaging plate 5' similar to plate 5 of the member 2 and which is designed to rest on and be supported by the car deck and is secured thereto by bolts or screws.

The lower bearing 7 is carried by an attaching plate 11 being preferably made integral.
therewith, said plate being bolted to sill S. The outer upper corners of the bearing blocks 6 and 7 are rounded to permit the outward opening of the cheek piece 3.

The cheek piece 3 has recesses 12 and 13 formed at the corners of its rear edge and shaped to fit the bearing blocks 6 and 7 being of slightly less depth than the width of the blocks. The pinnels 8 and 9 extend longitudinally from the ends of the integral rib 14 left between said recesses and seat within said sockets 6' and 7'. When these pinnels are operatively engaged with the bearing sockets the rear walls of the recesses 12 and 13 are so positioned that when the cheek 3 is closed these walls will engage the front faces of the bearing blocks and serve as stops for limiting the closing movement of the cheek 3, whereby it is positioned at right angles to the sill to which it is attached.

The front wall of the socket bracket comprises a removable saddle plate 15 having inwardly extending supporting teeth 16 which articulate with notches 17 formed in the free front ends of the cheek pieces. This saddle plate is also provided with longitudinally extending angular end lugs 18 having on their outer faces link supporting bearings 19 which are made integral with the lugs 18 and are arranged midway the length thereof, said lugs being shown rectangular and disposed intermediate the width of the saddle plate.

Angular saddle retaining links 20 and 21 are hingedly movably in the bearings 19 and link 20 is here shown in the form of an isosceles triangle with the base thereof mounted in one of the bearings 19 and its apex is left free and designed to engage with a lug 22 which projects laterally from the outer face of the cheek piece 3, said lug being apertured to receive a retaining hook to be described. The end bars 24 of the links 20 and 21 which are engaged with the bearings 19 are shown recessed to provide shoulders 25 and 26 for engagement with the upper and lower edges of the bearings. These bearings are preferably formed by bending ductile tongues carried by the lugs 18 outwardly and rearwardly around the recessed portions of the retaining links. The length of the lugs 18 corresponds substantially to the distance between the side bars 27 and 28 of the links 20 and 21 so that the ends of said lugs will engage the inner faces of said side bars adjacent their connection with the base bars 24 and thereby relieve the bearings 19 of excessive strain. By so forming these links and lugs the saddle plate will be rigidly held to afford a permanent support for the stave to be retained in the holder.

The link 20 is permanently coupled to cheek 3 by a hook 29 which is anchored in the rib and is provided with a nose that engages the aperture of the lug 23 and thus forms a shackle connection between the cheek piece 3 and the saddle which saddle when bridged between the cheek plates completes the socket for the reception of the squared end of a bolster stake A. While the socket and bolster stake are herein shown square it is to be understood that they may be curvilinear in cross section or of any other desired cross sectional contour without departing from the spirit of this invention.

The contracted inner end of the link 21 is of solid flat formation as disclosed at 30, the intermediate portion of said link having a lug 31 for reception in an aperture 80 in the cheek piece 2 when said link 21 is swung into contact with the outer side of said cheek piece as shown clearly in Fig. 7. The free end of link 21 is preferably direct ed laterally as indicated at 33 and is designed for reception in a socket 34 on the fulcrumed end of a combined locking and cast-off lever 35, said end of the lever being preferably fulcrumed between ears 36 cast integrally with the cheek piece 2. The lever 35 is formed with an opening 37 through which an ear 38 on the link 21 projects when said lever is folded inwardly into contact with said link as depicted in Figs. 2 and 7, a pin 39 being adapted for passage through an aperture in said ear 38 to normally prevent outward swinging of the lever 35. Pin 39 is preferably carried by a chain 40 which is secured to the sill S or to any appropriate part of the car. The free end of lever 35 preferably has formed thereon a nose 41 over which one end of a chain 42 or other suitable release runner is adapted to be hooked for swinging the lever 35 outwardly after removal of pin 39.

By the construction just described it will be observed that all outward strain on link 21 will be received by the lug 31 thereof as long as said link is in operative position. When the pin 39 is released, however, and a pull is exerted on the runner 42, the cast-off lever 35 will be moved to the position depicted in Fig. 8, whereupon the end 33 of link 21 is disengaged from the socket 34 and lug 31 is at the same time removed from the aperture 32. The outward force exerted on the saddle plate 15 by the stake A will now force the latter outwardly as depicted in Fig. 3 and with the parts in this position, the link 20 may swing downwardly around the stud 32 to allow the saddle plate to lower so as to prevent breakage thereof by the falling logs.

During releasing of the stake A it will be observed that no binding thereof within the socket on the cheek piece 3 may swing outwardly away from 2, due to the hinged connection between said piece 3 and the car.

It is also to be observed that the laterally
directed free end 33 of link 21 bears against the lever 35 in rear of the fulcrum 35' there- 
of and since all strain exerted by said link is outward, it will have no tendency to open 
the lever 35. Even through the weight of the chain 42 may be pulling outwardly on the 
nose 41 to an appreciable amount. It will, however, on the other hand tend to hold 
said lever 25 in its closed position until a pull is exerted on chain 42. This is deemed 
a rather salient feature of the invention since there is no possible danger of the 
socket opening and releasing the stake when a person is in a heretofore dangerous posi- 
tion while removing the pin 39.

The stakes A at opposite sides of the car are shown connected by detachable log re- 
taining chains 50 and which are here shown 
detachably and adjustably connected with 
the upper ends of the stakes so that the 
length of the chain may be varied according 
to the tension required and which may be 
released from the stakes before the load is 
discharged, leaving the chain free to drop as 
soon as the stake is released from the bolster 
socket and thereby prevents strain being 
errected on the cooperating stake at the 
other side of the car which often times is 
so great as to cause the breakage of the 
steke. The means for connecting these 
chains 50 with the cooperating oppositely 
disposed stakes A comprises a clevis 51 
which is fixed to the upper end of each stake 
by bolts or in any other suitable manner and 
which is designed to detachably receive and 
hold the chain 50 which spans the load. 
These clevises are each shown U-shaped with 
the arms 52 thereof engaging opposite side 
facing of the stake and the cross bar 53 of 
said clevis is provided with laterally spaced 
forwardly projecting arms 54 provided in 
their free ends with registering apertures 
one of which is in the form of a keyhole 
opening 55, the other 56, being shown circu- 
lar. These arms 54 are shown reinforced at 
their bases by webs 57 cast integral with the 
clevis and the inner facing of said arms are 
spaced apart a distance sufficient to receive etweeen them one link of the chain 50 when 
disposed in edgewise position as shown 
clearly in Figs. 11 and 12 said faces being 
curved on their opposite sides to form shoul- 
ders 58 against which the ends of the adja- 
cent horizontally disposed links of the chain 
50 abut and whereby the chain is held against longitudinal movement between said 
arms. This chain 50 is held against lateral 
release by means of a locking pin 59 which 
extends through the apertures in the arms 52 
and is provided with a laterally extending 
lug 60 which locks the pin against with- 
drawal after it has once been inserted, the 
keyhole slot 55 permitting its insertion, it 
being understood that after the pin is once 
inserted it is turned to position its lug out of 
alinement with the lateral extension or slot 
55' of the keyhole slot 55 so as to prevent its 
accidental withdrawal. One end of this pin 
59 is shown bent to form a right angularly 
disposed loop 61 which extends in a direc- 
tion diametrically opposite to the direction 
of the lug 60 so that when the pin is inserted 
the weight of said loop will tend to cause it 
to rotate in said apertures and position the 
lug 60 out of alinement with the extension 
55' of the slot 55. It will thus be observed 
that the pin cannot be removed until it has 
been rotated to properly position the lug for 
passage through the slot 55' and when con- 
structed as shown this can only be accom- 
plished by turning the right angularly dis- 
posed loop upward, the extension 55' of the 
slot 55 being shown extending downwardly 
or toward the cross bar of the clevis. If de- 
sired a lock 62 may be employed for pre- 
venting unauthorized persons from releasing 
the load. The shackle of this lock extends 
through the loop 61 and through a staple 64 
in the upper end of the stake and is prefer- 
ably connected by a chain 65 with said 
staple to prevent loss when not in use.

It is to be understood that this improved 
stake holder may be applied equally well to 
what are termed the bunks or cross bars of 
a car as well as to the side sills thereof and 
when so connected the device is constructed 
as shown in Fig. 9 in which the bracket is 
provided with rearwardly extending arms 
or plates 63 which engage the opposite side 
faces of the bunk and are bolted thereto and 
these arms may extend flush with the cheek 
pieces of the bracket or be made offset later- 
ally therefrom according to the size of the 
bunk to which the socket is to be applied.

In the use of this improvement when it is 
desired to release the load the lock 62 is 
first disengaged by the usual key (not 
shown) and the pin 59 is withdrawn from 
the clevis thereby leaving the chain 50 free 
to drop out when the stake is released from 
the bolster socket. The pin 59 is now re- 
leased and the runner 42 hooked onto the 
nose 41. This runner leads to a remote 
point as usual and when it is pulled the cast- 
off lever 35 will be moved to the position 
shown in Fig. 8, thus releasing the retaining 
link 21 and permitting the saddle plate 15 
and cheek piece 3 to swing outwardly 
whereupon the stake is free to drop.

From the above description it will be 
obvious that the stakes will be rigidly held 
in position by the interlocking engagement 
of the links 20 and 21 with the saddle 
carried lugs and the bearings of said links re- 
lieved of strain, a portion of the strain or 
load being borne by the lugs 18. Moreover, 
the attachment of the cheek pieces 2 and 3 
direct to the car sill without any connecting 
back plate and with their attaching means 
on their outer faces, permits the stake to lie
flat against the sill throughout the width of said sill and thus effects a rigid mounting for the stake.

I claim:

1. A bolster stake holder comprising laterally spaced cheek pieces, a saddle adapted to bridge the cheek pieces and in swinging union with one of them, a link pivotally mounted on said saddle, releasable means for connecting said link with the other cheek piece, and a lug carried by said saddle and projecting through said link when the latter is in closed position to relieve strain from the pivot thereof.

2. A bolster stake holder comprising cheek pieces, a saddle adapted to bridge the cheek pieces and in swinging union with one of them, an angular lug projecting longitudinally from the free end of said saddle, a bearing on said saddle at one side of said lug, an open saddle retaining link pivotally mounted in said bearing and adapted to swing over said lug in contact therewith to relieve strain from the bearing, and means for releasibly connecting the link with the other cheek piece.

3. A stake holder of the class described comprising laterally spaced cheek pieces, a saddle bridging said cheek pieces, said cheek pieces and saddle having interlocking teeth and notches, angular lugs extending longitudinally from the ends of said saddle and having bearings on their outer faces, triangular links having their bases rotatably mounted in said bearings, said links embracing said lugs when in closed position with their bases in contact with said lugs, whereby the bearings of said links are relieved of strain, and means for connecting said links with the two cheek pieces.

4. In a stake holder of the class described, a pair of cheeks having attaching means at their rear edges one of said cheeks being fixed and the other hinged to its attaching means, a saddle bridging said cheeks and in swinging union with one of them, and means for detachably connecting said saddle with the other cheek.

5. In a stake holder of the class described, a cheek plate, an attaching flange extending at right angles from the outer face of said plate at its rear edge, another cheek plate, vertically disposed bearing blocks having sockets in their opposed faces, said last mentioned cheek plate having recesses in its rear corners with pinlets extending longitudinally into said recesses and engaging said sockets, said bearing blocks having their outer corners rounded to permit the outward opening of the cheek piece, and a saddle bridging said cheek plates at their front ends and detachably engaged with one of them.

6. A logging stake socket comprising a pair of cheek plates to extend outwardly from the car, a saddle plate to bridge the outer ends of said cheek plates and swingingly connected to one thereof, a link pivoted to the free end of said saddle plate, said link and the other cheek plate having locking means for engagement when said link is swung inwardly, a combined locking and cast-off lever fulcrumed to the last named cheek plate and engaging with the free end of the link, and means for locking said lever in position to prevent outward movement of the link.

7. A logging stake socket comprising a pair of cheek plates to extend outwardly from the car, a saddle plate to bridge the outer ends of said cheek plates and swingingly connected to one end thereof, a link pivoted to the free end of said saddle plate, said link and the other cheek plate having locking means for engagement when said link is swung inwardly, a combined locking and cast-off lever fulcrumed to the last named cheek plate and having a socket to receive the free end of the link, and means for holding said lever in position to prevent outward movement of the link.

8. A logging stake socket comprising a pair of cheek plates to extend outwardly from the car, a saddle plate to bridge the outer ends of said cheek plates and swingingly connected to one thereof, a link pivoted to the free end of said saddle plate, said link and the other cheek plate having locking means for engagement when said link is swung inwardly, a combined locking and cast-off lever fulcrumed to the last named cheek plate and having a socket to receive the free end of the link, said lever having an opening formed therethrough, and an apertured lug formed on the said link and adapted to pass through said opening and to receive a locking device to prevent outward movement of the lever when the latter is swung inwardly.

9. The combination with a logging car having a releasable stake socket with a stake mounted therein; of a load retaining chain, means carried by said stake for holding the chain against longitudinal movement, and releasable means for securing it against lateral movement.

10. A device for detachably securing a chain to a logging car stake comprising a clevis adapted to be fixed to the upper end of the stake, laterally spaced forwardly projecting arms having registering apertures, the wall of one of said apertures having a recess therein, the inner faces of said arms having link engaging stops at their opposite sides, and a locking pin for passage through said apertures and having a lateral lug adapted to pass through said recess and to lock the pin against withdrawal after it has been turned in said apertures.

11. A device for detachably securing a
chain to a logging car stake comprising a clevis adapted to be fixed to the upper end of the stake, laterally spaced forwardly projecting arms having registering apertures, the wall of one of said apertures having a recess therein, the inner faces of said arms having link engaging stops at their opposite sides, a locking pin for passage through said apertures and having a lateral lug adapted to pass through said recess and to lock the pin against withdrawal after it has been turned in said apertures, and means for automatically turning the pin after its insertion.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CASPER FAUST.

Witnesses:

VERNA WOLVERTON,

F. L. CONROY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."