

No. 706,797.

Patented Aug. 12, 1902.

W. M. CAIN.

LOAD RETAINING MEANS FOR VEHICLES.

(Application filed Mar. 26, 1902.)

(No Model.)

Fig. 1.

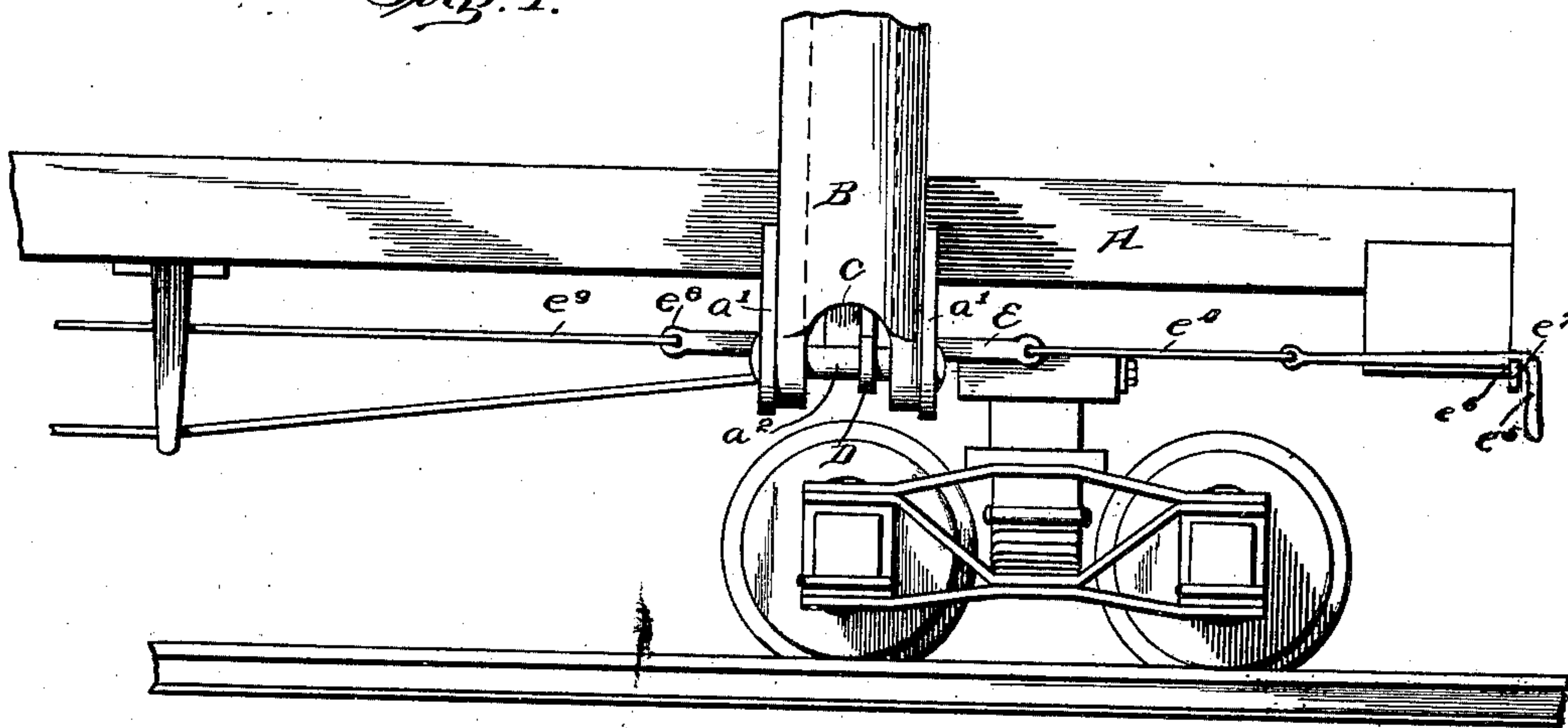


Fig. 2.

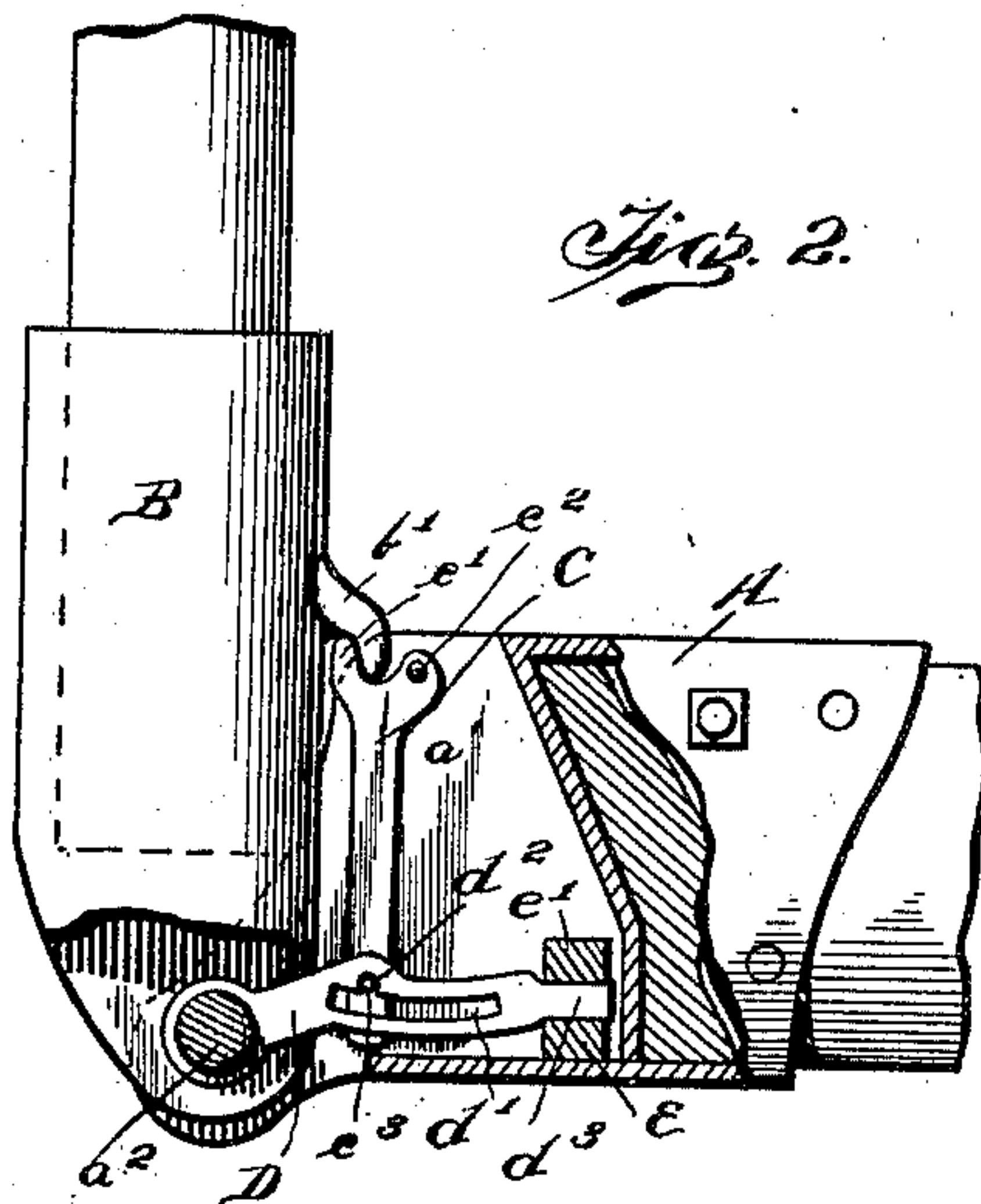
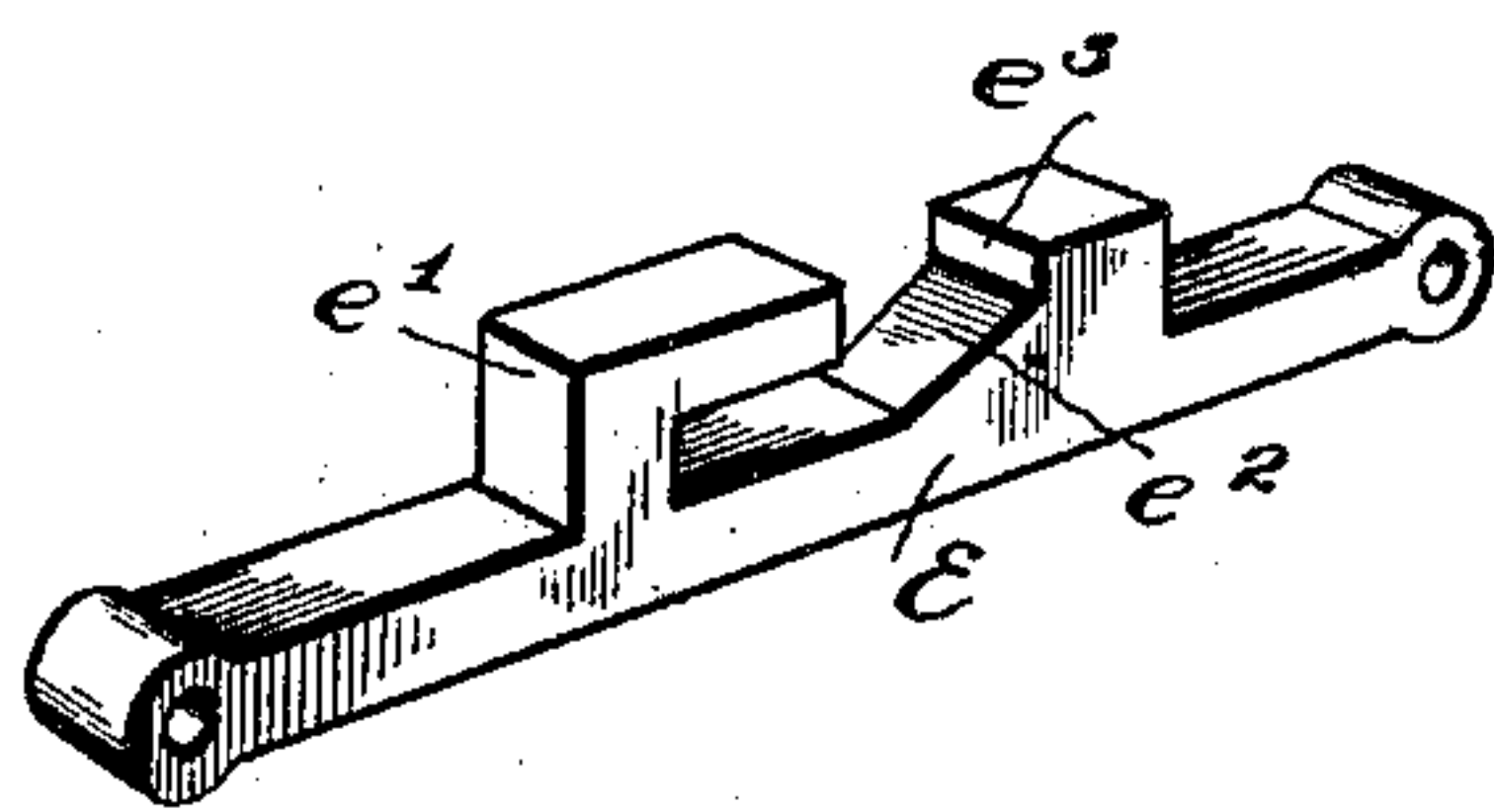


Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## LOAD-RETAINING MEANS FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 706,797, dated August 12, 1902.

Application filed March 26, 1902. Serial No. 100,098. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM MARTIN CAIN, a citizen of the United States, residing at Carlton, in the county of Carlton and State of Minnesota, have invented certain new and useful Improvements in Load-Retaining Means for Vehicles; and I do hereby 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.

My invention relates to load-retaining means for vehicles, and especially to stake-governing means for logging or platform cars, and has for its object the provision of a pivotally-supported stake-socket and simple, durable, and efficient means for controlling the position thereof.

It consists, in combination with a suitable car or vehicle, of a socket secured thereto, a stake-socket or stake pivotally secured therein, a pivotal lever for securing said socket in a vertical position, a latch for securing said lever against movement, and means to operate said latch.

It also consists of certain other constructions, combinations, and arrangements of parts, as will be hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of a car, showing my said invention. Fig. 2 is a transverse section through one of the bolsters of said car, showing my invention, partly in section, secured thereto. Fig. 3 is a detail of the latch-operating wedge forming part of my said invention.

In the drawings, A is a bracket vertically cleft in the outer end and formed with the forwardly-projecting arms  $a'$ , between which arms I pivotally secure a stake-socket B, of perfectly tubular form, cleft at its lower end and supported between said arms  $a'$  by the bolt  $a^2$ . Said socket is also provided near its upper end with a downwardly-curved finger  $b'$ , projecting therefrom toward the car and adapted in operative position to engage an upwardly-extending finger  $c'$  on the upper end of a vertically-arranged lever C, eccentrically pivoted, as at  $c^2$ , within the cleft of said bracket A and near the upper face there-

of. The shank of the lever C extends downwardly and is provided near its lower end with a laterally-extending wrist-pin  $c^3$  or equivalent, which is at all times engaged by a latch D. Said latch D is pivotally secured at one end within the cleft of said socket B, and is formed intermediate of its ends with a segmental slot, as at  $d'$ , with an upwardly-extending notch, as at  $d^2$ , which slot and notch are adapted to engage the wrist-pin  $c^3$ , which in operative position is engaged by said notch and when disengaged therefrom travels along said slot. To operate said latch, I provide the combined locking-bolt and lifting-wedge E, formed with an angular extension  $e'$ , adapted in operative position to overreach the free end  $d^3$  of said latch D, and further formed with an upwardly-inclined or wedge portion  $e^2$ , adapted in the operation of disengaging said latch D to raise the same sufficiently to free said pin  $c^3$  from said notch  $d^2$ . Said bolt E is further formed with a vertical extension or stop  $e^3$ , adapted to prevent the withdrawal of the end of said bolt from beneath said latch when said latch is raised. To one end of the bolt E, I secure the draw-rod  $e^4$ , extending to the end of the car and provided with an angular or other suitable handle  $e^5$  and with a notch  $e^6$ , adapted to engage a pin  $e^7$  in the body of the car to secure said rod  $e^4$  against longitudinal movement; but said rod and its terminal form and fastening  $e^5$ ,  $e^6$ , and  $e^7$  may be of any suitable or desirable construction. At the opposite end of said bolt E, as at  $e^8$ , I preferably secure a connecting draw-rod  $e^9$ , secured at its opposite end to a similar bolt to operate other and similar stake-controlling means, so that a plural number of such load-retaining constructions located on the same side of the vehicle may, if desired, be operated by one operating-handle.

While I have described one form of my said invention, it is obvious that it may be modified in many particulars within the spirit and scope of my said invention, and especially may the form and construction of said bracket A be modified to adapt it to be secured to various forms or parts of vehicles or other supporting structures. While I have described a stake-socket such as I prefer to



use, it is obvious that an integral stake supported in like manner would also be within the scope of my said invention.

In operation the socket D is raised to vertical position by hand or otherwise, the lever C being meantime held in receptive position by the latch D, maintained in elevated position by the inclined portion  $e^2$  of the partly-withdrawn bolt E. As soon as the finger  $b'$  is in position to be engaged by the finger or jaw  $c'$  the bolt E is shot forward by means of rod  $e^4$ , when the latch D drops of its own weight, and the foot of the lever also drops in an arc by gravitation, causing the finger  $c'$  to engage the finger  $b'$ , the notched portion  $d^2$  of said latch dropping over the pin  $c^3$  of said lever and securely locking the same. The bolt E continuing its forward movement, the angular portion  $e'$  thereof overreaches the free end of latch D and secures the same in position, and the bolt E is then secured against movement by any suitable fastening, as aforesaid, at the handle end of the rod  $e^4$ . When the bolt E is withdrawn to disembark the load, the angular portion  $e'$  first clears the latch D, which is then lifted by the inclined or wedge portion  $e^2$  of said bolt, causing the pin  $c^3$  to disengage from the notch  $d^2$  and subsequently to follow slot  $d'$ . The lateral strain of the load now forces the top of said socket away from the car, the finger  $b'$ , pulling on the finger  $c'$ , causing a pivotal movement of said lever C until the fingers  $b'$  and  $c'$  are disengaged, whereupon the socket B and contained stake fall radially downward, pivoting on bolt  $A^2$ , and the load is released.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a load-retaining apparatus, the combination with a suitable load-bearing structure, of a bracket extending therefrom, a stake-carrying socket pivotally supported in said bracket, a lever for locking said socket in a vertical position, means carried by said socket engaging said lever for effecting the locking operation, and means extending beyond said socket for operating and controlling said lever, substantially as described.

2. In a load-retaining apparatus, the combination with a suitable load-bearing structure, of a bracket extending therefrom, a tubular socket pivotally mounted on said bracket, a lever-engaging finger formed on said socket, a stake carried by the socket, a lever pivotally supported in the said bracket and adapted to engage said finger, and means pivotally supported by said bracket for controlling the movement of said lever, substantially as described.

3. In a load-retaining apparatus of the class described, the combination with a suitable load-bearing structure, of a bracket extending therefrom, a stake-carrying socket pivotally supported in said bracket, a lever pivoted at its upper end and provided with a locking-finger, means carried by said socket engag-

ing said finger for locking the socket in position, and means for swinging said lever on its pivot for releasing said engaging means, substantially as described.

4. In a load-retaining apparatus of the class described, the combination with a suitable load-bearing structure, of a bracket extending therefrom, a stake-carrying socket pivotally supported in said bracket, a pivotally-mounted lever, means carried thereby for locking said socket against movement, and means engaging the pivot of said socket and also engaging the free end of said lever for controlling the movement of the lever, substantially as described.

5. In a load-retaining apparatus the combination with a suitable load-bearing structure of a bracket extending therefrom; a stake-socket pivotally secured on said bracket and provided with lever-engaging means; a lever pivotally secured to said bracket and adapted to engage said means and provided with latch-engaging means; a latch pivotally secured at one end to said bracket and adapted to engage the latch-engaging means of said lever, substantially as described.

6. In a load-retaining apparatus the combination with a suitable vehicle of a bracket secured thereon and extending therefrom; a stake-socket pivotally secured to said bracket and provided with lever-engaging means; a lever pivotally secured to said bracket and adapted to engage said means and provided with latch-engaging means; a latch pivotally secured to said bracket and adapted to engage the latch-engaging means of said lever; means extending beyond said bracket for operating said latch, substantially as described.

7. In a load-retaining apparatus the combination with a suitable vehicle of a bracket secured thereto and extending therefrom; a stake-socket pivotally secured to said bracket, and provided with lever-engaging means; a lever pivotally secured to said bracket and adapted in operative position to engage said means, and provided with latch-engaging means; a latch pivotally secured near one end to said bracket and adapted intermediate of its ends to engage the latch-engaging means of said lever; means for operating said latch, comprising an integral locking-bolt formed with an angular extension adapted, in operative position, to overreach said latch, a wedge portion adapted, in operation to lift said latch and a vertical stop, substantially as described.

8. In a load-retaining apparatus, the combination with a suitable vehicle of a bracket extending therefrom and formed with forwardly-projecting parallel arms; a stake-socket forked at its lower end and pivotally secured between said arms and provided near its upper end with lever-engaging means; a lever eccentrically pivoted near its upper end between the walls of said bracket and adapted at said upper end in operative position to interlock with the lever-engaging means of said



socket, and provided near its lower end with  
a latch-engaging pin; a latch pivoted at one  
end between the arms of said bracket and  
having a slot formed therein intermediate of  
5 its ends extending longitudinally thereof and  
having a vertical extension of said slot at the  
end thereof nearest the pivoted end of said  
latch, and adapted to engage said latch-en-  
gaging pin; latch-operating means, compris-  
10 ing a bolt formed with an angular portion  
adapted in operative position to overreach  
the free end of said latch, a wedge portion  
adapted in operation to raise said latch, a

vertically-extending lug adapted to prevent  
the entire withdrawal of said bolt from be- 15  
neath said latch and a draw-rod secured to  
said bolt for moving the same; means for se-  
curing said draw-rod against movement sub-  
stantially as described.

In testimony whereof I hereunto affix my 20  
signature in presence of two witnesses.

WILLIAM MARTIN CAIN.

Witnesses:

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