June 10, 1924. 1,496,793

C. J. UNGER

VEHICLE END GATE

Filed May 24, 1923

Fig. 1.

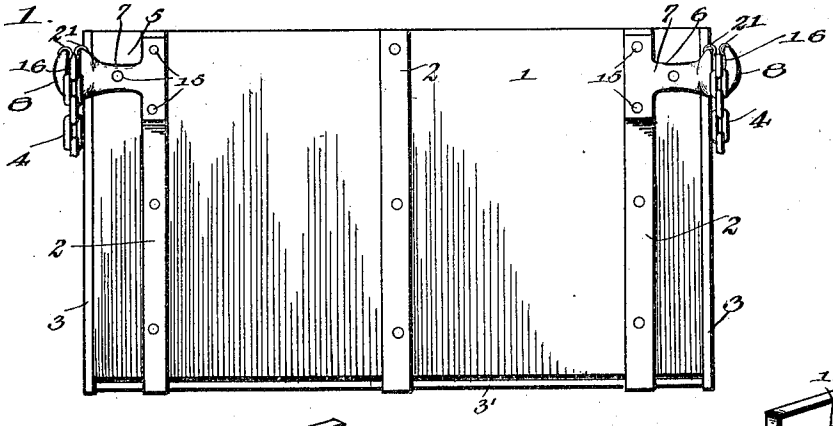


Fig. 2

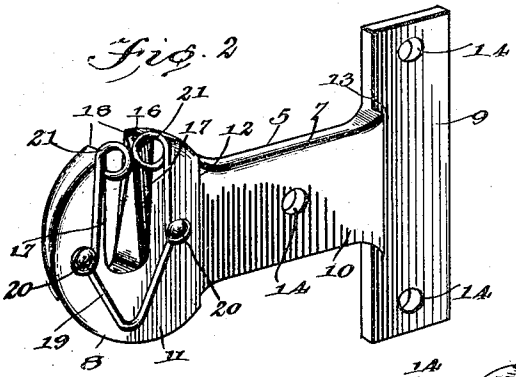


Fig. 5.

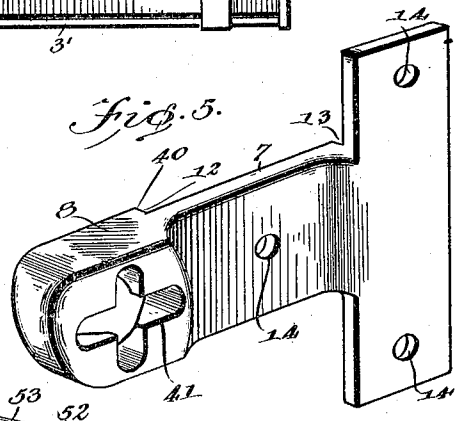


Fig. 3.

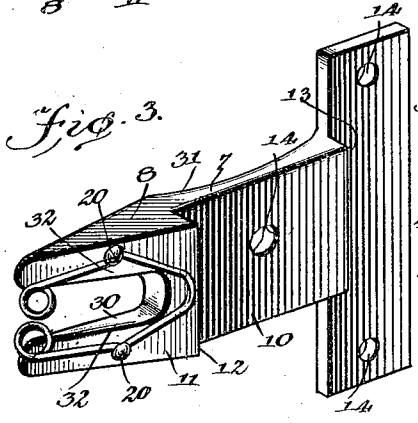


Fig. 6.

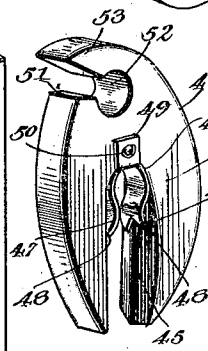
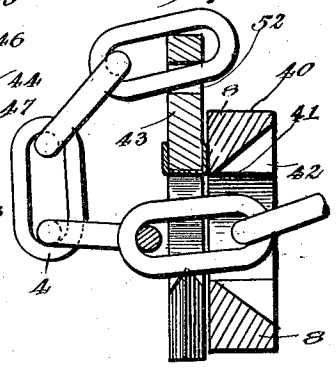


Fig. 4.



WITNESSES

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Patented June 10, 1924. 1,496,793

UNITED STATES PATENT OFFICE.

CHARLES JOHN UNGER, OF IRONTON, OHIO.

VEHICLE END GATE.

Application filed May 24, 1923. Serial No. 641,169.

To all whom it may concern:

Be it known that I, CHARLES JOHN UNGER, a citizen of the United States, and resident of Ironton, in the county of Lawrence and State of Ohio, have invented certain new and useful Improvements in Vehicle End Gates, of which the following is a specification.

My invention relates to improvements in fastening devices for end gates or like swinging closures and consists in the combinations, constructions and arrangements herein described and claimed.

An object of the invention is to provide a simple and efficient fastening device for end gates or like closures which embodies means adapted to be attached to the end gate or like closure and engageable with a chain which is attached to the frame or other support for the closure to releasably hold the closure in desirable relation to the support without there being any necessity of providing the chain with links or other elements of special construction for engaging with the device.

A further object of the invention is to provide a fastening device of the character described which embodies inherently actuated means adapted to releasably hold the chain in engagement with the fastening device.

Other objects and advantages will be apparent from the following description, considered in conjunction with the accompanying drawings, in which

Figure 1 is a face view of an end gate equipped with a practical embodiment of the invention,

Figure 2 is a perspective view showing one of a pair of fastening members which is comprised in the embodiment of the invention exhibited in Figure 1,

Figure 3 is a view similar to Figure 2 showing a modified form of fastening member,

Figure 4 is a vertical section through another modified form of fastening device embodying the same invention, and

Figures 5 and 6 respectively are perspective views showing the two cooperative elements which comprise the form of the device exhibited in Figure 4.

Referring now to the drawings, and particularly to Figure 1 thereof, the numeral 1 designates an end gate which is provided on one face thereof with a plurality of spaced apart parallel vertically extending hinge straps 2 formed at their lower ends to provide bearings for a horizontal pintle 3′ which may be mounted in any suitable known manner on a fixed support, as for instance in the sides 3—3 of a wagon box, whereby the end gate will be mounted to swing about a horizontal axis downwardly and outwardly from a position in which it is disposed in closing relation to an open end of the wagon box, as illustrated in Figure 1. It is desirable that the end gate 1 and the sides 3—3 of the wagon box shall be provided with cooperative fastening elements adapted to be releasably engaged with each other to support the end gate in closing relation to the one end of the wagon box, in open position or when the end gate has been swung outwardly and downwardly from the position shown in Figure 1 to any predetermined position intermediate fully opened position and closed position. The sides 3—3 of the wagon box ordinarily are provided with chains such as indicated at 4, each of which is attached at one end to one of the sides 3. Heretofore it has been necessary to provide chains 4 having links of special construction or provided with hooks or like fastening elements for engaging cooperative fastening elements on the end gate, whereby such chains are adapted for engagement with the fastening elements on the end gate at only one point or at very few points along their length and therefore the end gate can be held in but few positions intermediate the closed and full open positions thereof. My invention provides means adapated to be attached to the end gate for engaging chains of ordinary construction at a great many points along their length, the range of adjustment being limited only by the number of links in the normally free portions of the chains, whereby movement of the end gate with respect to the end walls of the sides 3—3 is relatively great.

In carrying out my invention in the form now preferred by me, I provide a pair of similar brackets or keeper plates 5 and 6 respectively. The brackets 5 and 6 are identical one with the other in essential respects and differ from each other only in that one

of the brackets is designed for application to the end gate at the left hand side of the latter while the other bracket or keeper plate is intended to be attached to the end gate at the right hand side of the latter.

Each of the brackets 5 and 6 comprises a substantially flat generally T-shaped body 7 having the stem portion thereof enlarged laterally at one end to provide a head 8. The body 7 is fashioned to provide progressively offset face portions 9, 10 and 11 respectively, which face portions extend from the end of the body remote from the head 8 to the opposite end of the body, the face portion 11 forming one face of the head 8 and being merged into the face 10 by a shoulder 12. The face 10 is merged into the face 9 by a shoulder 13. The body 7 of each of the brackets 5 and 6 is provided with a plurality of spaced apart apertures or openings 14 through which bolts 15 or like fastening elements may be projected to attach the body to the outer face of the end gate 1 so that the face 9 will be disposed flatwise against the outer face of one of the straps 2, the face 10 will be disposed flatwise against the outer face of the body of the end gate between the adjacent edge of the hinge strap and one side edge of the body of the end gate while the shoulder 12 will be in abutting relation to one end face of the body of the end gate and the head 8 will extend laterally of one side edge of the end gate. The head 8 of each of the brackets or keeper plates 5 and 6 is formed with a notch 16 extending downwardly therein from the upper edge thereof slightly beyond the horizontal median line of the head, which notch is substantially U-shaped in cross sectional contour and has the side walls thereof beveled oppositely from their vertical median lines toward their opposite ends, as indicated at 17 and 18 respectively in Figure 2, whereby the notch 16 will be relatively narrow intermediate its ends or in other words intermediate the face 11 and the opposite face of the head 8. The width of the relatively narrow portion of the notch 16 is less than that of any one of the links comprised in the chain 4. Any one of the links of the chain 4 may be turned vertically flatwise and moved downwardly in the notch 16 and the link then contiguous to the outer face of the head 8 then turned horizontally flatwise to engage at its inner end with the beveled portions 18—18 of the side walls of the notch 16, whereby the chain will be held against movement in the direction of its length through the notch 16. In order to prevent the chain from becoming displaced accidentally because of movement thereof vertically in the notch 16, my invention provides a spring retainer 19 which is formed of a length of spring wire bent intermediate its ends substantially into U-shape the arms thereof being bent intermediate their ends to provide loops through which screws 20 may be projected to secure the spring retainer against the inner face of the head 8 with the arms thereof extending vertically at opposite sides of the notch 16. The arms of the spring retainer 19 are formed adjacent their extremities to provide loops 21 which extend inwardly beyond the planes of the side walls of the notch 16 adjacent to the upper end of the latter, the adjacent sides of the spring loops 21—21 being nearly in contact with each other.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. When a selected link of one of the chains 4 is turned vertically flatwise and is moved downwardly in the notch 16 between the spring loops 21—21 of the spring retainer, the free end portions of the spring retainer will spring apart to permit the passage of the chain link downwardly into the notch and will then spring together or toward each other to prevent upward movement of the chain link relatively to the notch. The chain will be held against movement in the direction of its length relatively to the notch because of the engagement of the link contiguous to the outer face of the head 8 of the stem with the beveled portions of the side walls of the notch. It therefore will be apparent that the end gate 1 will be releasably held in any desired adjustment in respect to the adjacent ends of the sides 3 of the wagon box, the number of adjustments being limited only by the number of links in the free end portions of the chains 4. It also will be apparent that chains comprising links of the usual straight or twisted forms of construction may be engaged with the brackets or keeper plates 5 and 6 in the manner described. It therefore is not necessary to provide hooks or links of special construction in chains which are adapted for use with the brackets or keeper plates 5 and 6.

In Figure 3, I show a modified form of bracket or keeper plate which differs from the form of the device hereinbefore described in that a notch 30 is formed in the head 8 of the body 7 of a bracket designated at 31 to extend horizontally in the head from the outer end thereof instead of vertically from the upper side of the head, as in the form of bracket hereinbefore described. The inner face 11 of the head 8 of the bracket 31 lies in a vertical plane extending obliquely to the plane of the face 10 and the notch 30 has the side walls thereof inclined oppositely from the outer end thereof toward its inner end, as indicated at 32, 32, whereby the notch will be wider throughout its length at its inner end than at the outer end thereof. The spring retainer 19 which has been hereinbefore described is asso-

ciated with the notch 30 and is attached by screws 20 or the like to the inner face of the head 8 of the bracket 31. The construction of the bracket 31 otherwise is identical in essential respects with that of the brackets 5 and 6. Like reference characters have been used to indicate like parts throughout the several views of the drawing and it therefore is thought that no further description of the construction of the bracket 31 or of the operation thereof is necessary for an understanding of the construction and operation thereof. It will be manifest that a pair of the brackets 31 intended for application to an end gate 1 at the right and left hand sides of the latter comprises precisely identical brackets, one with the other, since the respective brackets of the pair may be used interchangeably at the right and left hand sides of the end gate.

In the embodiment of the invention illustrated in Figure 4, a bracket 40 having an opening 41 through the head portion 8 thereof is provided. The opening 41 is substantially cruciform in configuration at the outer end thereof and the walls of the branches of the opening are cut away to provide a concavity 42 in the outer face of the head 8 of the bracket 40, the opening 41 being merged into the concavity 42. The links of the chain 4 may be threaded through the opening 41. A latch plate 43 which preferably has the form best seen in Figure 6 is associated with the bracket 40 and is fashioned to provide a flat face 44 adapted to be disposed in flatwise relation to the outer face of the head 8 of the bracket 40 so that a notch 45 in the latch plate 43 will be in register with opposite branches of the cruciform opening 41. The notch 45 is narrower than any one of the links of the chain 4 so that the latter may be engaged with the latch plate 43 to hold the latter against the outer face of the head 8 of the bracket 40 and to preclude movement of the chain 4 in the direction of its length through the notch 45. A spring retainer for holding the chain against accidental displacement from the notch 45 comprises an elongated strip of spring material bent to form a substantially U-shaped body 46 which is placed within the notch 45 at the inner end of the latter with the extremities of the arms of the U-shaped body 46 directed toward the open end of the notch and being bent inwardly and then outwardly adjacent to their extremities as indicated at 47 to engage with the side walls of the notch and to thus hold the extremities of the arms of the spring body 46 against sliding engagement with the side walls of the notch. Preferably, the arms of the U-shaped spring body are fashioned to provide tangs 48 for biting into the side walls of the notch to hold the arms of the spring body against any appreciable elongation when a link of the chain 4 which is of greater thickness than the distance between the portions 47—47 of the arms of the spring body is forced between such arms as the chain link is moved along the notch 45 toward the inner end of the latter. The U-shaped body of the spring member is provided at points intermediate its length with fastening lugs 49 which may be secured by screws 50 or like fastening elements to the latch plate 43.

The latch plate 43 also is formed to provide a notch 51 adjacent to one end thereof, the notch being enlarged at 52 at its inner end so that the portion of the latch plate located between the notch 51 and the adjacent end of the latch 43 is relatively narrow and may serve as a hook as indicated at 53 and with which the link at the free end of the chain 4 may be engaged to hold the latter against swinging movement.

The width and thickness of the latch plate 43 are such that the latch plate may be moved bodily through the cruciform opening 41 when the latch plate is turned in a certain position in respect to the bracket 40.

Obviously, my invention is susceptible of embodiment in forms other than that illustrated in the accompanying drawings and I therefore consider as my own all modifications and adaptations of the forms of the device herein described which fairly fall within the scope of the appended claims.

Having thus described the invention, what I claim is:—

1. A fastening device comprising a bracket having a head portion provided with a notch in the edge thereof, said notch having a relatively narrow portion for engaging with the links of a chain, a spring retainer carried by said head portion in association with the notch for holding the chain against displacement from the notch, said spring retainer comprising a substantially U-shaped body adapted to be attached to the head portion to provide arms extending along opposite sides of the notch toward the open end of the latter, said arms having portions at their extremities extending inwardly from the side walls of the notch adjacent to the open end of the latter.

2. A fastening device comprising a bracket having a head portion provided with a notch in the edge thereof, said notch having a relatively narrow portion for engaging with the links of a chain, a spring retainer carried by said head portion in association with the notch for holding the chain against displacement from the notch, said spring retainer comprising a substantially U-shaped body adapted to be attached to the head portion to provide arms extending along opposite sides of the notch toward the open end of the latter, said arms having spring loops

at their extremities extending inwardly from the side walls of the notch adjacent to the open end of the latter.

3. A fastening device of the character described comprising a keeper plate having an attaching portion and a head portion, said head portion having an opening formed therethrough, the opening being cruciform in configuration in cross section at one end thereof and being merged at its other end into a concavity in one face of said head portion, and a latch plate adapted to be associated with the keeper plate, said latch plate being adapted for engagement with links of a chain and being narrower than the widest part of the opening of the keeper plate.

4. A fastening device of the character described comprising a keeper plate having an attaching portion and a head portion, said head portion having an opening formed therethrough, the opening being cruciform in configuration in cross section at one end thereof and being merged at its other end into a concavity in one face of said head portion, a latch plate adapted to be associated with the keeper plate and having a notch therein adapted to receive a link of a chain and a spring retainer associated with the notch for engaging the chain link in the latter to hold said link against displacement, said latch plate having a hook portion adapted to be engaged by an open link of a chain.

CHAS. JOHN UNGER.

Witnesses:
CARTER H. RUCKER,
G. E. DENMORE.