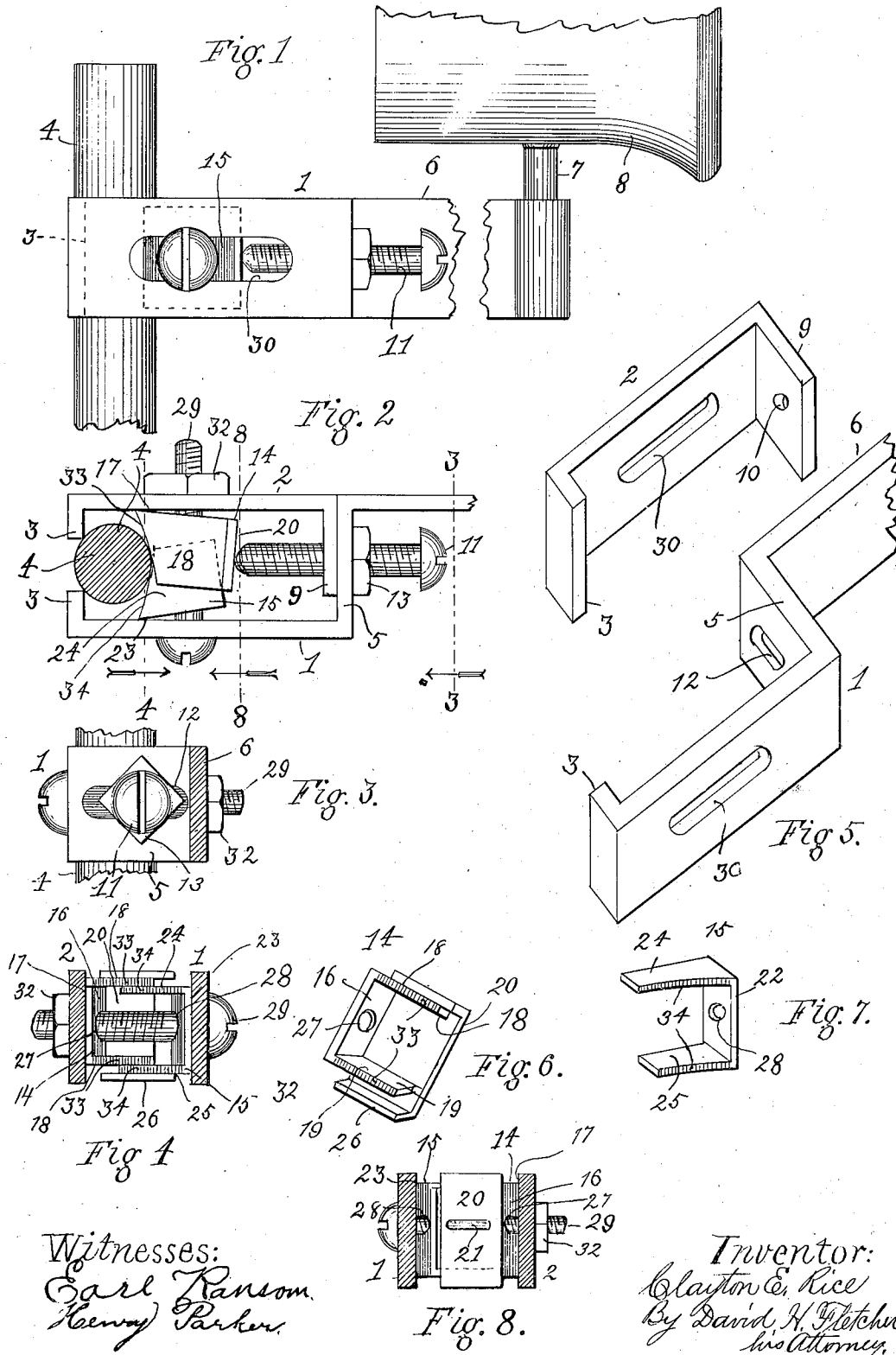


C. E. RICE.  
ADJUSTABLE CLAMP.  
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1,258,707.

Patented Mar. 12, 1918.



Witnesses:  
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Henry Parker.

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# UNITED STATES PATENT OFFICE.

CLAYTON E. RICE, OF CHICAGO, ILLINOIS.

## ADJUSTABLE CLAMP.

1,258,707.

Specification of Letters Patent.

Patented Mar. 12, 1918.

Application filed October 20, 1917. Serial No. 197,585.

*To all whom it may concern:*

Be it known that I, CLAYTON E. RICE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Clamps, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding numerals of reference in the different figures indicate like parts.

The primary object of my invention is to provide an adjustable clamp which may be adapted for use as a detachable support for lamps, mirrors or the like, but more especially for holding automobile lamps. A further object is to so construct said clamp as to enable it to be adjusted to fit supporting members, such as rods or bars, of varying shapes and sizes in cross-section and that in such a way as to insure a maximum gripping or clamping action so as to avoid danger of displacement by jar or otherwise when in use. To these ends, my invention consists in the combination of elements hereinafter more particularly described and definitely pointed out in the claims.

In the drawings,

Figure 1 represents a side elevation of a clamp embodying the features of my invention as it would appear when attached to a stationary support, said device being shown in the form of a lamp bracket,

Fig. 2, is a plan view thereof, the bracket arm being broken away,

Fig. 3, is a section taken upon the line 3—3, Fig. 2, viewed in the direction of the arrow there shown,

Fig. 4, is a vertical section taken upon the line 4—4, Fig. 2, viewed as indicated by the arrow,

Fig. 5, is an isometric view of the main clamping members or jaws,

Fig. 6, is an isometric view of one of the cam-like compression members,

Fig. 7, is a like view of a compression member, being the counterpart to that shown in Fig. 6, and

Fig. 8, is a section taken upon the line 8—8, Fig. 2, viewed as indicated by the arrow there shown.

Referring to the drawings 1 and 2, respectively, indicate in a general way, the main jaws or counterpart clamping mem-

bers which are preferably formed from flat steel or other metal bars and provided at their forward ends with gripping flanges or detents 3, 3, bent preferably at right angles to the body of the member and directed toward each other for the purpose of engaging a stationary support, such for example, as a vertical bar 4, Figs. 1 and 2, which may be assumed to represent a windshield support upon an automobile. The part 1 has a portion 5, bent at right angles thereto and in the example illustrated, a secondary portion or extension 6, bent in turn, at right angles to the part 5, which extension is provided with a stud 7, at its outer end for the support of a lamp 8. The member 2 is made somewhat shorter than the member 1 and is provided with a portion 9 bent at right angles thereto, the outer face of which is adapted to bear against the inner face of the part 5, and is provided with a threaded bore 10, Fig. 5, for the reception of an adjusting screw 11. A slot 12 in the part 5, Figs. 3 and 5, is provided for the reception of the screw 11, to permit lateral adjustment of the jaws 1 and 2. A locknut 13 enables the screw 11 to be held in place when adjusted, as and for the purpose hereinafter set forth. For the purpose of coacting with the flanges or detents 3 to clamp the stationary support 4, I provide counterpart compression members or cams generally designated by 14 and 15, which are preferably stamped from sheet-iron or steel, to provide for lightness and strength, although they may, if desired, be cast from malleable iron.

The part 14, in the example illustrated, is box-shaped and is provided with a side wall 16 arranged to lie adjacent to and bear laterally at its forward end against the inner face of the part 2, as shown at 17. Said member 14 also has top and bottom bearing flanges 18 and 19 and a rear wall 20, the latter being provided with a horizontal groove 21, Fig. 8. The member 15 has a side wall 22, located adjacent and at an angle to the part 1, with its forward end in contact with the inner face of said part as shown at 23, and inwardly extending flanges forming top and bottom walls 24 and 25, which are parallel with, and are adapted to slide loosely into the box-like structure 14. A narrow flange 26, Figs. 4 and 6, is formed preferably upon the lower part of the member 14, to

engage and guide the flange 25 of the member 15, which is adapted to slide between said flange and the part 19 of said member 14. The side wall 16 of the member 14 is provided with an opening 27, and the counterpart side wall 22 of the member 15 with a like opening 28, for the reception of a horizontally arranged bolt 29, which bolt is also passed loosely through longitudinally arranged slots 30, Figs. 1 and 5, formed in the members 1 and 2. A nut 32 is provided for tightening said bolt to force the members 1 and 2 toward each other. The forward edges 33 and 34 of the flanges of the compression-members 14 and 15, are preferably curved or otherwise shaped to cross each other at intersecting angles as clearly shown in Fig. 2, so as to bear against the support 4 with an opposing wedge-like action, with respect to each other so that when the nut 32 is tightened the movement of the jaws toward each other will cause the surfaces 33 and 34 to slide in opposite directions, the tendency being to slip upon the surface of the supporting member 4, thereby forcing it against the detents 3 until the desired pressure is attained.

The relative position of the compression members 14 and 15, will depend upon the relative size and shape in cross-section of the supporting member 4, and the adjustment of the screw 11; which latter, having its pointed or rounded end in the groove 21, of the back plate 20, serves as a pivotal banking to prevent it from being pushed back when the jaws 1 and 2 are compressed and at the same time enables said plate to rock upon said banking-screw and to exert a wedging action against the supporting member. The rear edges of the flanges 24 and 25 bear in like manner and are capable of a rocking action upon the inner edge of the back plate 20 as will be apparent upon reference to Fig. 2.

In adjusting the clamp to the support 4, the jaws 1 and 2 are placed with the parts 3 against one side of the support when the screw 11 is turned until the edges 33 and 34 of the compression members are caused to firmly engage the opposite side. Inasmuch as said edges are inclined, the pressure of the screw 11 tends to cause them to spread, as shown in Fig. 2, until the forward ends of the side walls 16 and 23, respectively, rest against the inner faces of the members 1 and 2, said side walls flaring outwardly as indicated. The screw 11 being tightened so as to press the edges of the compression members firmly against the support 4, the lock-nut 13 is tightened and the operation completed by tightening the nut 32 to cause the wedging action described of the compression members. It is obvious that the degree of the clamping action thus accomplished need only be limited by the relative strength of

the elements involved. Repeated tests upon an automobile over rough roads has failed to loosen the clamp.

I do not wish to be limited to the exact construction shown inasmuch as it may be varied without departing from the spirit of the invention.

Having thus described my invention, I claim:

1. A clamping device comprising, in combination, opposing jaws having means for engaging a support while permitting lateral movement of said jaws, laterally expansible compression members interposed between said jaws, with their front faces arranged at intersecting angles to engage said support in opposition to said jaw engaging means, means located between said jaws at the rear of said compression members to form a banking for the latter, and means for forcing said jaws toward each other to wedge said compression members against said support.

2. A clamping device comprising, in combination, opposing jaws having means for engaging a support while permitting lateral movement of said jaws, laterally expansible pivoted compression members interposed between said jaws with their forward faces arranged at intersecting angles to engage said support in opposition to said jaw engaging means, the forward ends only of said members being in lateral contact with said jaws, means located between said jaws to form a pivotal banking for said compression members and means for positively forcing said jaws toward each other to actuate said compression members.

3. A clamping device comprising in combination, opposing jaws having means for engaging a support while permitting lateral movement of said jaws, laterally expansible compression members interposed between said jaws, the forward faces of said members being inclined outwardly and forwardly in opposite directions to cause a wedging action thereof when compressed against said support, means for pivotally engaging said compression members to prevent backward movement thereof and means for forcing said jaws toward each other to move said compression members into rigid clamping engagement with said support.

4. A clamping device comprising, in combination, opposing jaws having means for engaging a support while permitting lateral movement of said jaws, laterally expansible counterpart compression-members interposed between said jaws, the forward faces of said members being inclined outwardly and forwardly in opposite directions to cause a wedging action thereof against said support when said members are moved laterally toward each other, banking means adjustable longitudinally of said jaws to form a pivotal

abutment in the rear of said compression members and means for positively moving said jaws toward each other to cause a rigid engagement of said compression members with a support.

5 5. A clamping device comprising in combination, opposing jaws having means for engaging a support while permitting lateral movement of said jaws, laterally expansible  
10 compression-members interposed between said jaws with their front faces arranged at intersecting angles to engage said support in opposition to said jaw engaging means, a banking-screw located between said jaws  
15 and arranged longitudinally thereof to form a pivotal banking for said compression members, and means for forcing said jaws toward each other to clamp said compression-members against said support with a wedg-  
20 ing action.

6. A clamping device comprising, in combination, opposing jaws having means thereon for engaging a support while permitting lateral movement of said jaws, laterally expansible compression members interposed  
25 between said jaws with their front faces extending laterally and forwardly at intersecting angles to engage said support in opposition to said jaw-engaging means, a forwardly extended adjustable banking screw  
30 extending through openings in the rear of said jaws and located between them, to form an adjustable pivotal banking for said com-

pression-members and screw controlled means for forcing said jaws together to ac- 35  
tuate said compression-members.

7. A clamping device comprising, in combination, opposing jaws having means thereon for engaging a support while permitting lateral adjustment of said jaws, compression-members located between said jaws, said members being movable laterally with respect to each other, the front faces of said jaws being extended laterally and forwardly at intersecting angles to engage said support  
40 in opposition to said jaw engaging means, the forward outer ends of said members being arranged to contact with said jaws, a forwardly extended banking-screw located between said jaws said screw extending  
45 loosely through a slot in a laterally bent portion of one of said jaws and tapped through a counterpart portion of the other, the forward end of said screw forming a  
50 pivotal banking support for the rear of said compression-members, a lock-nut upon said screw and screw controlled means for forcing said jaws toward each other against said  
55 compression-members.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses, this 17th day of October, 1917.

CLAYTON E. RICE.

Witnesses:

DAVID H. FLETCHER,  
JENNIE L. FISKE.