

May 7, 1935.

A. J. BAZELEY

2,000,435

COUPLER MECHANISM

Filed Sept. 27, 1929

3 Sheets-Sheet 1

Fig. 1.

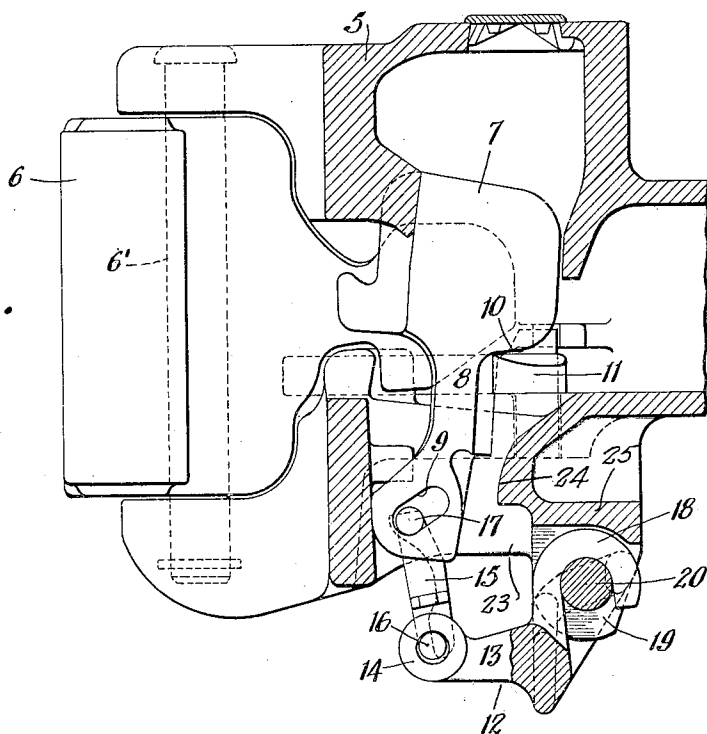
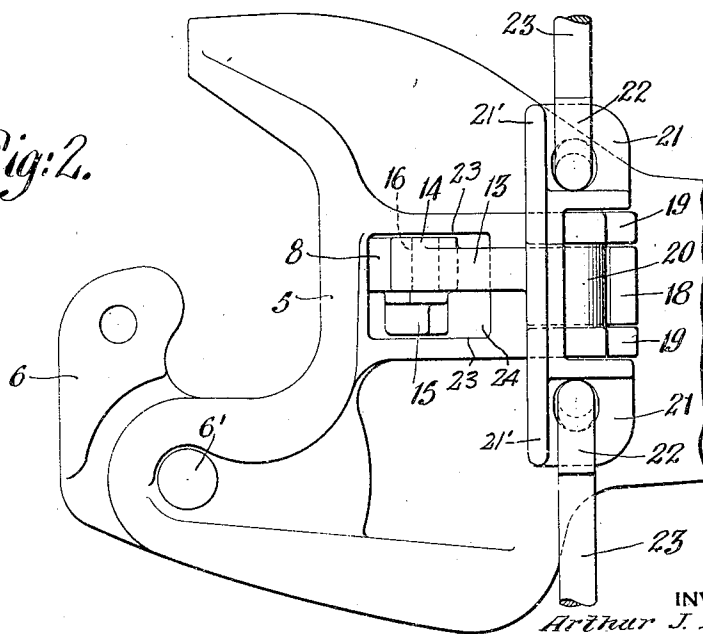


Fig. 2.



INVENTOR
Arthur J. Bazeley
BY
Clarence S. Kerr
ATTORNEY

May 7, 1935.

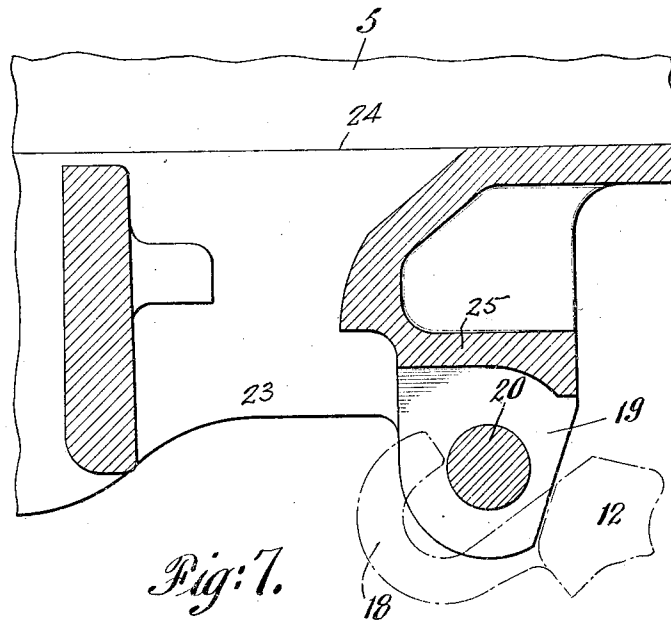
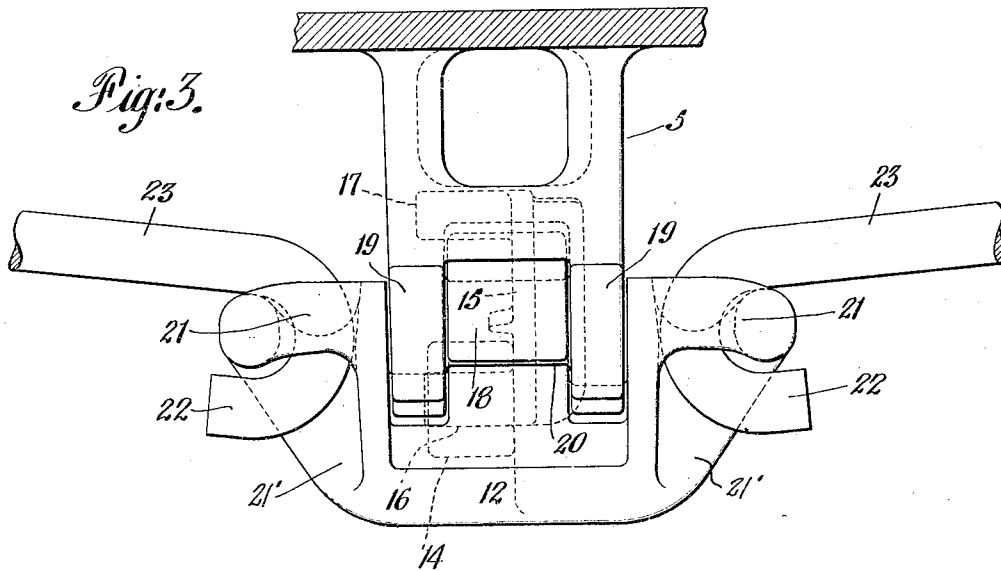
A. J. BAZELEY

2,000,435

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3 Sheets-Sheet 2



INVENTOR
Arthur J. Bazeley
BY
Clarence Skerr
ATTORNEY

May 7, 1935.

A. J. BAZELEY

2,000,435

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3 Sheets-Sheet 3

Fig. 4.

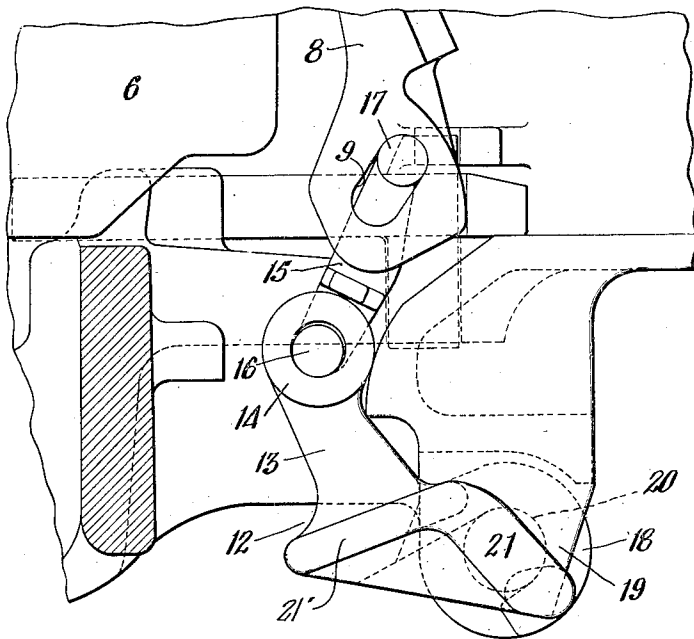


Fig. 5.

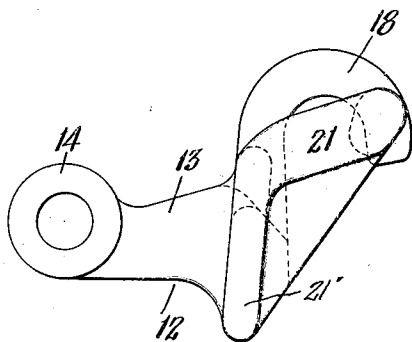
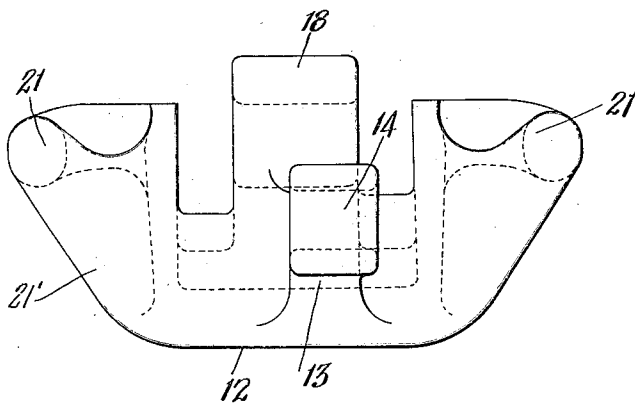


Fig. 6.

INVENTOR
Arthur J. Bazeley
BY
Clarence S. Kerr
ATTORNEY

UNITED STATES PATENT OFFICE

2,000,435

COUPLER MECHANISM

Arthur J. Bazeley, Cleveland, Ohio, assignor to
National Malleable and Steel Castings Com-
pany, Cleveland, Ohio, a corporation of Ohio

Application September 27, 1929, Serial No. 395,531

6 Claims. (Cl. 213-166)

This invention relates to coupler mechanisms and is more particularly concerned with the provision of an improved arrangement for operating the locks of standard A. R. A. type D couplers. In the patent to Kinne, No. 1,639,300, dated August 16, 1927, there is disclosed an operating means for such locks; which operating means comprises an element rotatably mounted in a pair of transversely spaced supporting lugs integral with the coupler head and depending therefrom, said rotatable element being releasably engaged by a lifter arm which in turn is connected by a link with the coupler lock. In the aforesaid said lugs tend either to separate or to approach each other, with the result that the assembly of the parts is thereby rendered difficult. I have provided an improved construction which effectively overcomes this difficulty. Through my arrangement a simplified and efficient lock operating means is provided and shifting of the supporting lugs is prevented so that facility of assembly is insured. Other features of the invention will be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a fragmentary vertical sectional view of a standard A. R. A. type D coupler embodying my invention, the coupler lock being shown in locking position.

Fig. 2 is a bottom plan view of the coupler of Fig. 1.

Fig. 3 is an end view of my improved lock lifting or operating mechanism in position on the coupler supporting lugs.

Fig. 4 is a fragmentary view of the coupler of Fig. 1 showing the lock lifting member in uppermost position.

Fig. 5 is a front elevation of the improved lock lifting or operating member.

Fig. 6 is a side view of said member, and

Fig. 7 is a fragmentary vertical sectional view with parts omitted showing in dotted lines the position of the lock lifter during the assembling thereof to the coupler unit.

Referring to the drawings there is shown a standard A. R. A. type D coupler having a head 5 to which a knuckle 6 is pivoted by a pin 6'. Co-operating with the knuckle 6 in the usual way is the customary lock 7 having a dependent leg 8 in the lower end of which the usual diagonal slot 9 is provided. The lock 7, in locking position (as shown in Fig. 1) rests with its rear shoulder 10 upon the knuckle opener 11. The parts above mentioned, being all old in the standard

coupler referred to, need not be further described.

For lifting or operating the lock 7, I have provided a lifter element designated generally by the numeral 12. This element has extending therefrom an arm 13 provided with an eye portion 14. A link 15 (which may be the same as the link 50 in the Kinne patent above referred to) has a pin 16 engageable with said eye portion 14, and also carries a pin 17 receivable within the above-mentioned slot 9, whereby the lifter element is connected to said lock. Also extending from the body of the lifter element 12 is a hook 18. Integral with and dependent from the coupler head 5 is a pair of transversely spaced lugs 19, 19, which lugs have integral therewith and extending therebetween a bearing element 20. The hook 18 on the lock lifting member 12 is adapted to be engaged with said bearing element 20, said hook being movable into engagement with said element during assembly of the parts as indicated in Fig. 7. Thru the lifter element 12 and the link 15 it will be evident that the lock may be readily shifted from its locking position shown in Fig. 1 either to its lock set position or to its uppermost position (Fig. 4).

The lock lifting or operating member 12 may, as shown, be provided at each side thereof with eye members 21, 21 each of which is adapted to receive the hook end 22 of an operating rod 23 which may be of standard construction. Said eye members, as shown, include portions 21', 21' which extend laterally from the lock operating member 12 at points intermediate the length thereof and between the portions 14 and 18 thereof. The provision of the eye portions 21, 21 enables said lifter element 12 to be operated by either of the two rods 23, 23, or, in other words, to be operated from either side of the coupler. It will be further seen that in the arrangement above described, the bearing element 20 integral with the lugs 19, 19, prevents warping or relative shifting of said lugs with respect to each other, and thereby insures that the lock lifter element 12 may be readily assembled between said lugs to complete the unit.

If desired, the lock lifter element 12 may be operable from but one side of the coupler and may for this purpose be provided with but one eye portion 21.

It will be seen from Figs. 1-4 and 7 that the lugs 19 form downward and rearward extensions of the side walls 23 of the opening 24 into which the lock leg 8 projects. A horizontal wall 25 joins the upper portions of the lugs 19, i. e., the portions thereof directly rearward of the side walls

23. This horizontal bridging wall 25, as will be apparent from Figs. 1 and 4, cooperates with the hook 18 and bearing element 20 to prevent displacement of the lock operating element 12 out of engagement with said bearing element in all operative positions of said element.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any mechanical equivalents of the features shown and described or portions thereof, but recognize that various structural modifications are possible within the scope of the invention claimed.

I claim:

1. In combination, an element for operating a lock of a car coupler, said element comprising in a unitary structure a lever arm having a hook shaped portion at one end adapted to engage an integral trunnion on a car coupler for pivotally mounting said element, and provided with integral means extending forwardly from said portion for connection to said lock, a member for connecting said element to said lock, means pivotally connecting said member to the forward end of said forwardly extending means, means joined to said lever arm intermediate said hook-shaped portion and said forward end of said forwardly extending means for attachment of an operating mechanism, and a rotatable operating rod having an end adapted to engage said means and cooperating therewith to transmit torsional forces from said rod to said means, said means comprising an eye for receiving said rod and centered on the axis of rotation of said element.

2. In a car coupler comprising a head, a knuckle and a lock for said knuckle, said lock having a leg extending into an opening in the bottom of the coupler head, a pair of projections to the rear of said lock and extending downwardly with respect to the side walls of said opening and integral therewith, each of said projections extending in the vertical plane of a respective one of said side walls, a bearing element extending between said projections and integral therewith, a lock operating member having a hook shaped portion engageable with said bearing element, means connecting said member with said lock, said member having means thereon providing a support for a rotatable operating element and a substantially horizontal wall bridging said projections and positioned above said hook shaped portion of said lock operating member for preventing displacement of said member out of engagement from said bearing element in all operative positions of said member.

3. An element for operating the lock of a car coupler, said element comprising in a unitary structure an open hook shaped end for pivotal engagement with a bearing integral with said

coupler, and an end provided with means for pivotal connection with said lock, said element having an eye portion joined with said element intermediate its ends, and said eye adapted for hooked engagement with a rotatable operating rod and being so constructed and arranged as to support the adjacent end of said rod and provide for the direct transmission of torsional force from said rod to said element only at points intermediate the ends thereof, said eye portion being centered on the axis of rotation of said element.

4. An element for operating the lock of a car coupler, said element comprising in a unitary structure an open hook shaped end for pivotal engagement with a bearing integral with said coupler, and an end provided with an eye portion for pivotal connection with said lock, said element having a second eye portion joined with said element intermediate said hook shaped end and the first mentioned eye portion, and said second eye portion being adapted for hooked engagement with a rotatable operating rod and being so constructed and arranged as to support the adjacent end of said rod and provide for the direct transmission of torsional force from said rod to said element only at points intermediate the ends thereof, said second eye portion being centered on the axis of rotation of said element.

5. In combination, an element for operating a lock of a car coupler, said element comprising in a unitary structure a lever arm having a hook shaped portion at one end adapted to engage an integral trunnion on a car coupler for pivotally mounting said element, and provided with integral means extending forwardly from said portion for connection to said lock, a member for connecting said element to said lock, means pivotally connecting said member to the forward end of said forwardly extending means, means joined to said lever arm intermediate said hooked-shaped portion and said forward end of said forwardly extending means for attachment of an operating mechanism, and a rotatable operating rod having an end adapted to engage said means and cooperating therewith to transmit rotational forces from said rod to said means, said means comprising an eye portion centered on the axis of rotation of said element.

6. In a car coupler comprising a head, a knuckle and a lock for said knuckle, said lock having a leg extending into an opening in the bottom of the coupler head, a pair of projections extending downwardly from said head to the rear of said opening, said projections comprising parallel walls at least portions of which are in the planes of the respective side walls of said opening, and an integral trunnion connecting said projections and adapted to support a lock operating element.

ARTHUR J. BAZELEY.