March 4, 1958 W. J. METZGER 2,825,473

CAR COUPLER

Filed May 13, 1954 5 Sheets-Sheet 1

Fig. 1

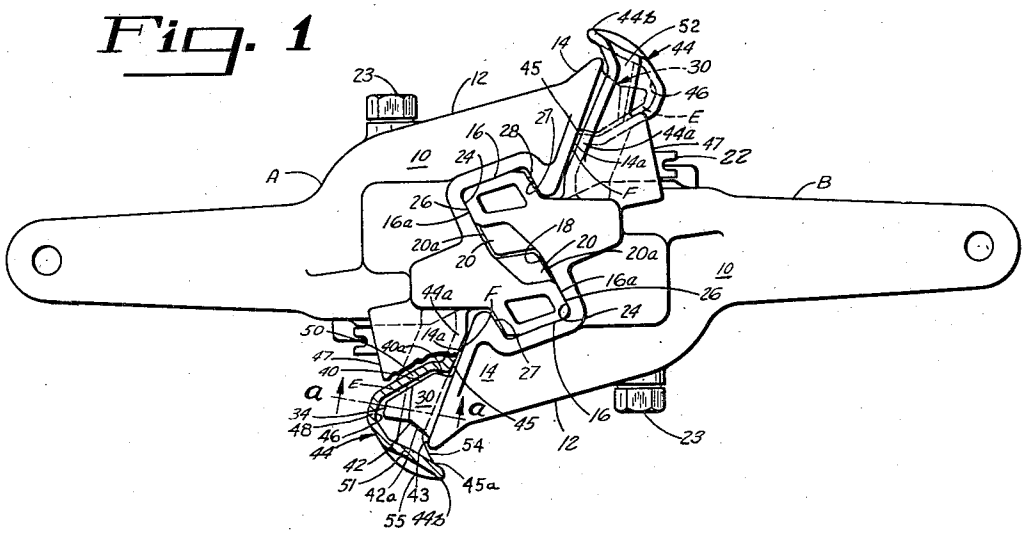


Fig. 2

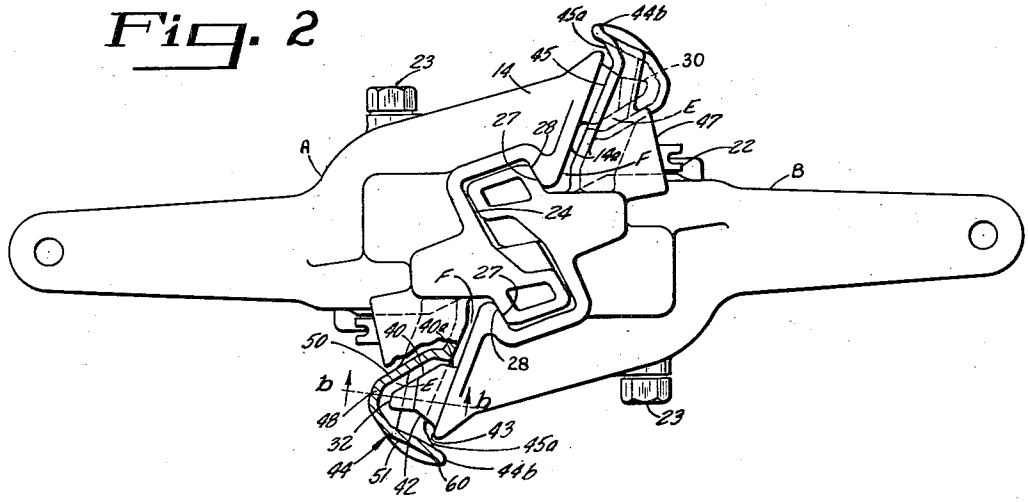


Fig. 1a

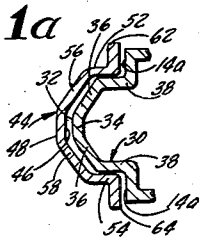
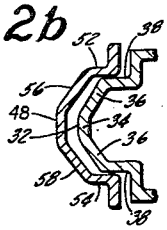


Fig. 2b



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Fig. 3

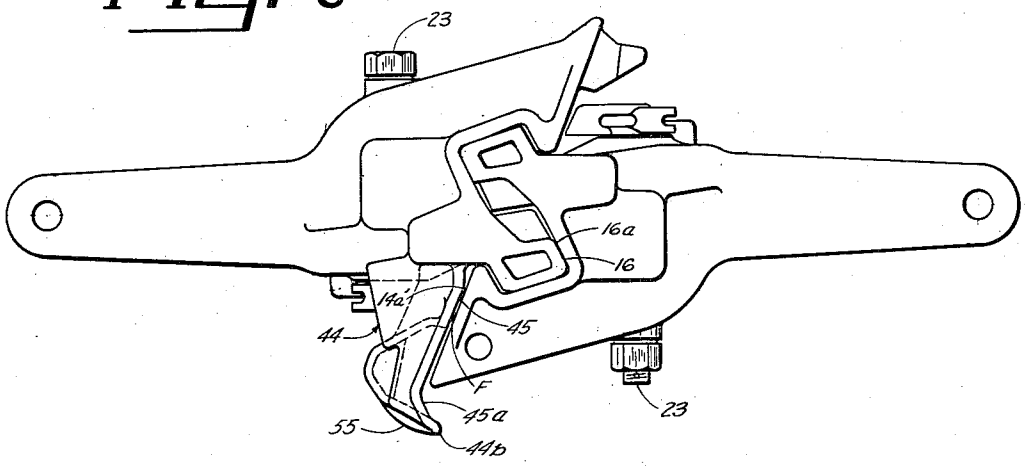
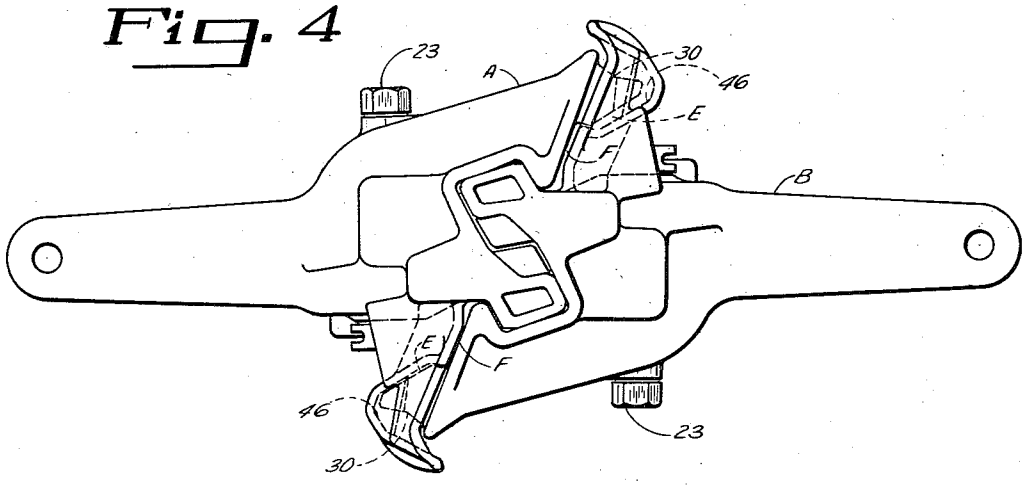


Fig. 4



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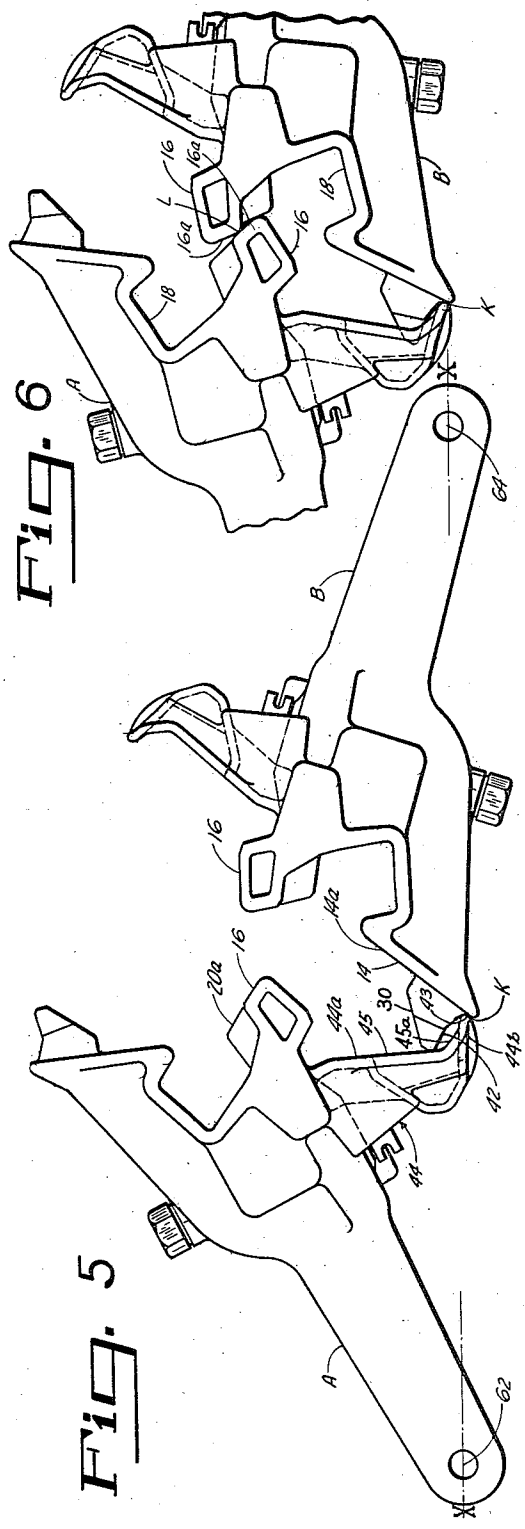


Fig. 6

Fig. 5

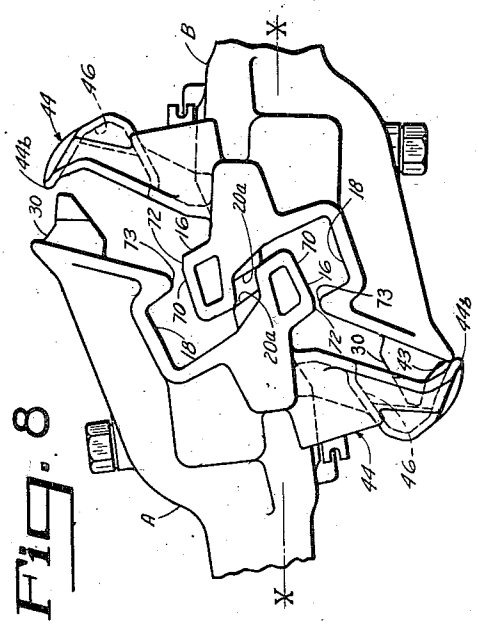


Fig. 8

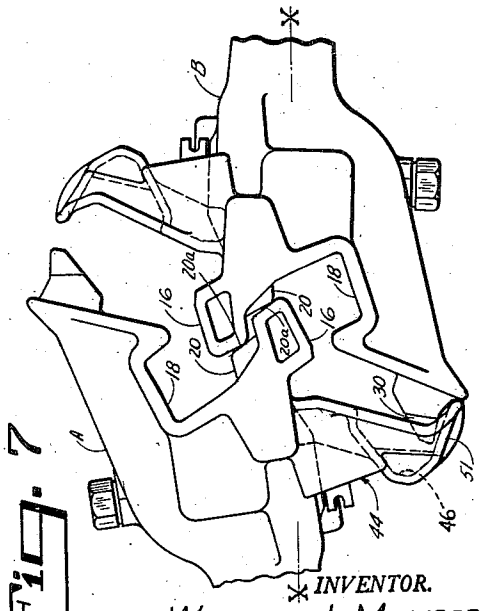


Fig. 7

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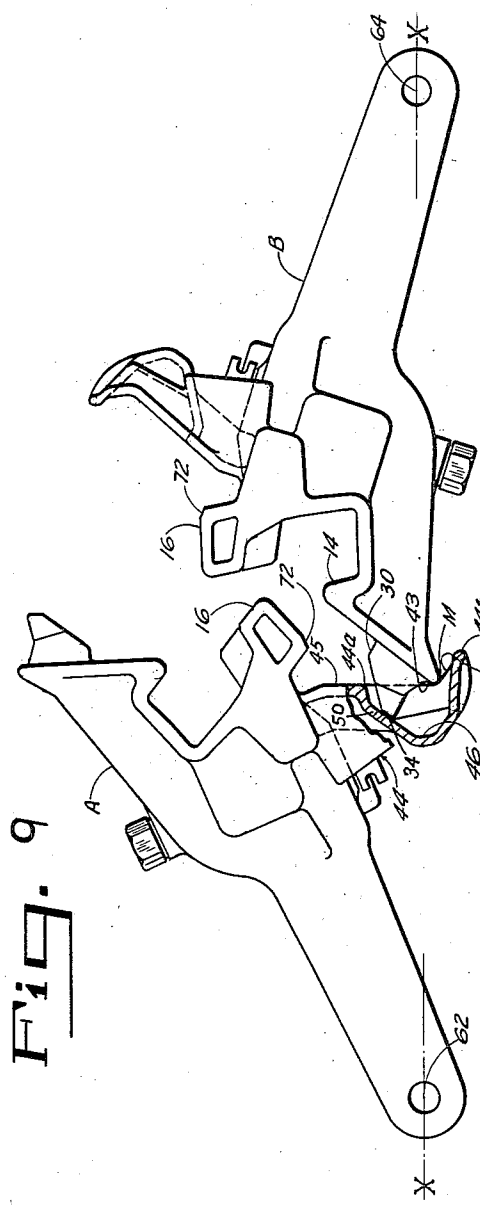


Fig. 9

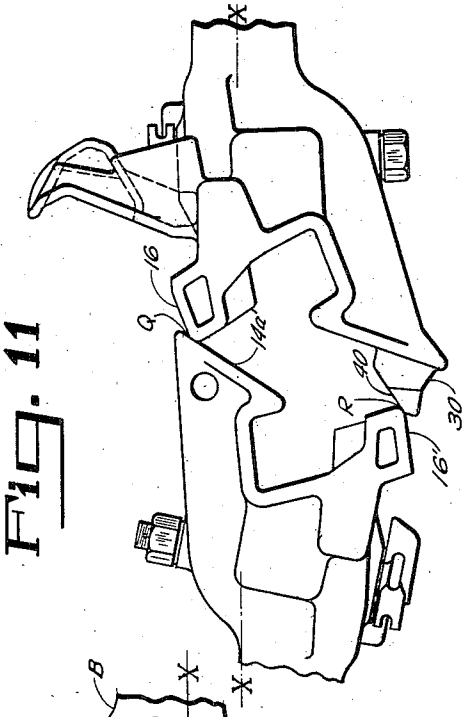


Fig. 11

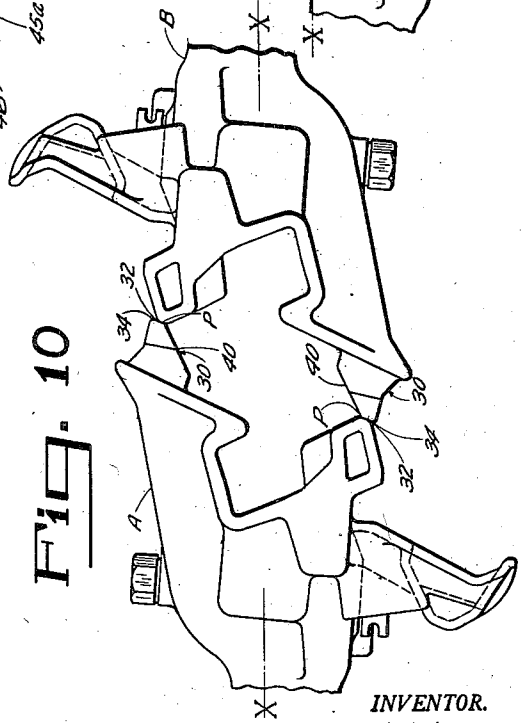


Fig. 10

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Fig. 12

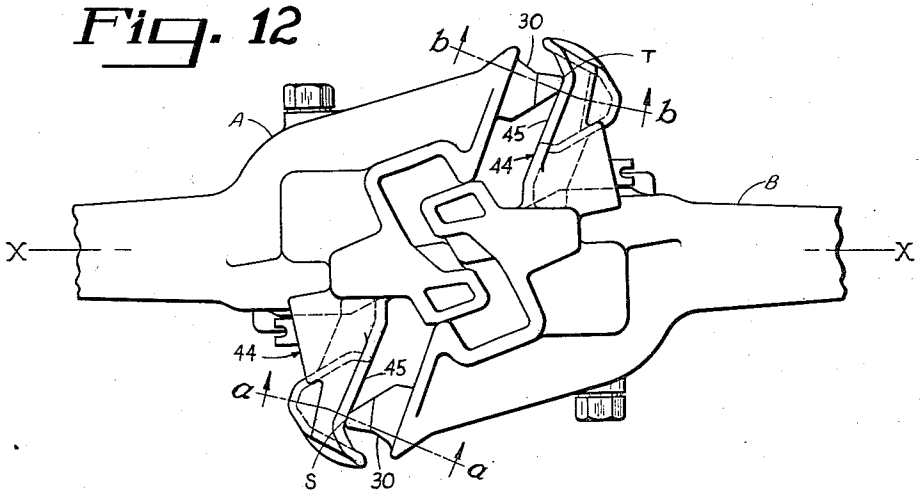


Fig. 13

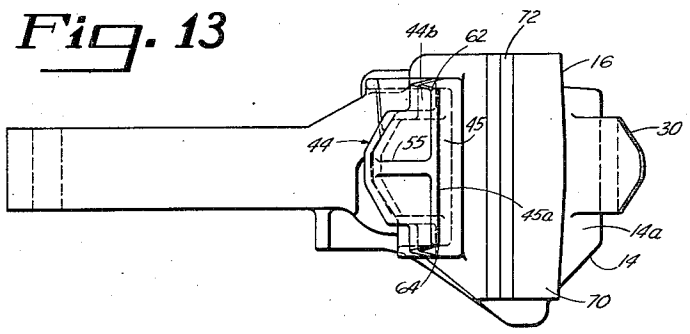


Fig. 12a

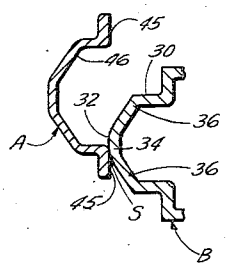
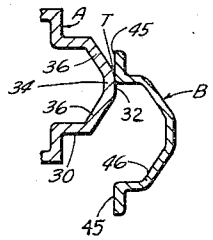


Fig. 12b



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United States Patent Office 2,825,473 Patented Mar. 4, 1958

2,825,473

CAR COUPLER

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Application May 13, 1954, Serial No. 429,513

Claims priority, application Great Britain June 8, 1953

15 Claims. (Cl. 213—77)

This invention relates to automatic car couplers of the rigid-jawed type and more particularly to interlocking and gathering means therefor.

It is a general object of my invention to provide interlocking means on couplers of the rigid-jawed type to prevent telescoping of the associated cars during collisions and derailments and to prevent a pulled out coupler from dropping to the road bed and possibly causing a derailment.

Another object of my invention is to provide means for positive and efficient gathering of couplers of the rigid-jawed type under conditions where the couplers are displaced vertically or laterally, or both, relative to one another.

A further object of my invention is to provide interlocking means on rigid-jawed type couplers which will prevent any substantial vertical and lateral movement between coupled couplers, thereby eliminating a major portion of the contour wear that occurs in service on present rigid-jawed type couplers.

A more specific object of my invention is to provide in a coupler of the rigid-jawed type, interlocking and gathering means including a projection which extends forwardly from the front surface of the pulling jaw of the coupler and a complementary aligning wing pocket on the buffing jaw side of the coupler head for cooperating with a projection on the pulling jaw of a mating coupler.

A further object of my invention is to provide an interlocking rigid-jawed type coupler which can couple with existing rigid-jawed type couplers.

A still further object of my invention is to provide an interlocking rigid-jawed type coupler which can be used with a transition screw coupling to permit coupling with other types of draw bar systems.

The various features and advantages of the invention will be apparent from the following description taken in conjunction with the drawings in which:

Fig. 1 is a plan view partly in section of two couplers embodying the invention, the couplers being coupled and in buffed position.

Fig. 1*a* is a partial vertical sectional view taken along line *a*—*a* of Fig. 1.

Fig. 2 is a plan view partly in section similar to Fig. 1 but showing the couplers in pulled position.

Fig. 2*b* is a partial vertical sectional view taken along line *b*—*b* of Fig. 2.

Fig. 3 is a plan view of my interlocking coupler coupled with an existing non-interlocking type rigid-jawed coupler, the couplers being shown in buffed position.

Fig. 4 is a plan view showing the couplers of Fig. 1 angled the maximum amount laterally with respect to each other.

Fig. 5 is a plan view illustrating the angular gathering range of the couplers when they have been displaced to the same side of a longitudinal center line connecting the pivotal centers of the couplers. In this case, the forward end surface of the forwardly extending portion of

the aligning wing of the coupler on the left is shown engaging the front surface of the pulling jaw of the coupler on the right.

Fig. 6 is a plan view illustrating the position of the couplers relative to one another as they move together for coupling from their position shown in Fig. 5. This view shows engagement occurring between the opposing buffing jaws of the couplers.

Fig. 7 is a plan view showing the position of the couplers following that of Fig. 6, the lock of each coupler having been pushed rearwardly into the lock cavity by the buffing jaw of the opposing coupler.

Fig. 8 is a plan view showing the position of the couplers following that of Fig. 7, each buffing jaw commencing to move into the complementary recess in the pulling jaw of the opposing coupler.

Fig. 9 is a plan view partly in section, similar to Fig. 5 showing the opposing couplers angularly displaced to the same side of a longitudinal center line connecting the pivotal centers of the couplers, but the coupler on the left being displaced a lesser amount than the corresponding coupler in Fig. 5. In this case the pulling jaw of one coupler is shown in contact with the front face of the gathering wing on the opposing coupler.

Fig. 10 is a plan view showing the couplers angularly displaced to opposite sides of a longitudinal center line connecting the pivotal centers of the couplers with the pulling jaw projection on each coupler in engagement with the buffing jaw of the opposing coupler. This represents the maximum displaced position of the couplers on opposite sides of the center line from which coupling is possible.

Fig. 11 is a plan view illustrating the lateral gathering range of a coupler embodying my invention during coupling with an existing non-interlocking type, rigid-jawed coupler.

Fig. 12 is a plan view showing the initial contact between a pair of horizontally aligned but vertically displaced couplers as they approach for coupling.

Fig. 12*a* is a partial vertical sectional view taken along line *a*—*a* of Fig. 12 showing the initial contact between the front face of the aligning wing and the opposing pulling jaw projection.

Fig. 12*b* is a partial vertical sectional view taken along line *b*—*b* of Fig. 12 showing the initial contact between the pulling jaw projection and the opposing front face of the aligning wing.

Fig. 13 is a side elevational view of an interlocking coupler of the type shown in Figs. 1–12.

Referring in particular to Figs. 1 and 2, couplers A and B are shown in mating engagement and both are of the rigid-jawed type commonly known as the "Willison" coupler. Both couplers are of identical construction, each comprising a head **12** having a pulling jaw **14** and a buffing jaw **16** which are transversely spaced on opposite sides of the longitudinal center line of the coupler. Jaws **14** and **16** have front vertical faces **14***a* and **16***a*, respectively, which diverge in a direction forwardly of the coupler. The head has the usual recess **18** on its forward side between jaws **14** and **16** to receive jaw **16** of the opposing coupler in interengaged or coupled position. A longitudinally movable lock **20** disposed adjacent jaw **16** is provided for locking the couplers in coupled position. Lock **20** has a front surface **20***a* which is inclined outwardly and forwardly from the longitudinal center line of the coupler at substantially the same angle as face **16***a* of the adjacent buffing jaw **16**. During coupling operations the lock is adapted for rearward movement into the coupler head to permit passage of jaw **16** of the opposing coupler into coupled position. As soon as the couplers are in coupled position, the lock of each coupler moves forwardly to

locking position. A pivotal lever 22, which may be attached to any suitable uncoupling mechanism is provided for retracting the lock out of locking position when it is desired to uncouple the couplers.

Extending through the coupler head is a bolt 23 for attachment of a transition screw coupling to permit coupling of my interlocking rigid-jawed coupler with other types of draw bar systems, whenever this becomes necessary.

Within recess 18 in the coupler head is the vertical buffing face 24 which is disposed at an angle to a vertical plane extending transversely of the coupler and is adapted for buffing engagement with the complementary face 16*a* on jaw 16 of the opposing coupler. Forming one side of recess 18 is pulling face 27 adapted for engagement with complementary face 28 on the buffing jaw of an opposing coupler when the coupled couplers are subjected to pulling or draft forces, as seen in Fig. 2.

Formed on front surface 14*a* of pulling jaw 14 adjacent the outer end thereof is a forwardly extending coupler aligning projection 30 having a forward end surface 32 which is preferably curved convexly in a vertical direction (Figs. 1*a* and 2*b*). As will be seen in Figs. 1*a* and 2*b* projection 30 comprises vertical front wall 34, on which is located surface 32, rearwardly diverging upper and lower walls 36 and horizontal top and bottom walls 38 which extend from surface 14*a*.

It will be noted that front wall 34 is inclined laterally so as to lie in a plane which is substantially parallel to surface 14*a* of pulling jaw 14. Projection 30 also includes side walls 40 and 42 (Figs. 1 and 2). Side wall 40 extends diagonally rearwardly from front wall 34 and terminates in a portion 40*a* which is substantially perpendicular to front surface 14*a* of pulling jaw 14 and merges therewith. Side wall 42 projects rearwardly, substantially perpendicularly, from front wall 34 and terminates in a diagonal portion 42*a* which merges with surface 14*a* of pulling jaw 14 near the outer end thereof, to form a shoulder 43 on the pulling jaw.

On the buffing jaw side of the coupler head is provided an aligning wing 44, which is disposed rearwardly of buffing jaw 16 and extends laterally from the coupler body. Wing 44 has a pocket 46 (Figs. 1 and 2) disposed near the outer end thereof for receiving projection 30 of an opposing coupler during coupling operations. Wing 44 includes portion 44*a* which has a vertical front abutment surface 45 extending in a generally diagonally rearward direction. It also includes outer portion 44*b* having front abutment surface 45*a* which extends in a diagonally forward direction and forms a continuation of surface 45. Outer portion 44*b* of the wing has a rounded end surface which is adapted for engagement with shoulder 43 on the opposing coupler to assist in aligning the couplers when they come together for coupling under extreme horizontally angled conditions, as may be seen in Figs. 5 and 9. This particular aligning feature will be discussed in a succeeding portion of this description. Numeral 47 designates a transverse web for reinforcing wing 44.

As may be seen in Fig. 1, pocket 46 comprises vertical rear wall 48, forwardly diverging vertical side walls 50 and 51 and horizontal top and bottom walls 52 and 54. It will be observed that side wall 51 projects substantially forwardly of abutment surface 45 on the wing, thereby forming the aforementioned portion 44*b*. Arcuate rib 55 is provided for strengthening side wall 51. Pocket 46 is also formed with diverging upper and lower walls 56 and 58 (Figs. 1*a* and 2*b*), respectively, which connect end wall 48 with top wall 52 and bottom wall 54. Vertical flanges 62 and 64 extend from top wall 52 and bottom wall 54, respectively, adjacent the forward ends thereof to strengthen these walls against vertical impacts to which the couplers may be subjected in service.

From Figs. 1*a* and 2*b* it will be observed that top and bottom walls 52 and 54 of pocket 46 are adapted for

engagement with top and bottom walls 38 of the opposing projection to effectively limit relative vertical displacement of the coupled couplers. It will be appreciated, therefore, that vertical as well as horizontal telescoping of the cars to which the couplers are attached will be prevented in case of a derailment. In addition, the vertical interlock will materially decrease the amount of contour wear between the coupled couplers. It will also be apparent that this vertical interlock will prevent a coupler which is accidentally "pulled out" from its car from dropping to the road bed and possibly causing a derailment.

Referring to Fig. 1, it will be noted that in the buffed position of the coupled couplers, engagement takes place between surfaces 16*a* on the buffing jaws 16 and buffing faces 24 on the coupler heads. In the pulled position of the couplers, as seen in Fig. 2, engagement occurs between surfaces 28 on the buffing jaws and pulling faces 27 on the pulling jaws 14. It will be observed that in both of these positions (buffed and pulled) a longitudinal clearance as at E exists between the opposing complementary diagonal surfaces on the projections 30 and pockets 46 and as at F between the opposing front surfaces 45 and 14*a* on the opposing wings and pulling jaws, respectively.

When a present, non-interlocking type, rigid-jawed coupler is coupled with my interlocking coupler and buffing forces are applied thereto, as seen in Fig. 3, the aforementioned clearance, as at F, also exists between the front surface 45 on the wing of the interlocking coupler and the front surface 14*a'* on the pulling jaw of the present non-interlocking coupler. Even when a pair of my interlocking couplers, coupled and in buffed position, are angled the maximum amount laterally with respect to each other, as shown in Fig. 4, clearances between the projections and their respective pockets and between the opposing front surfaces on the wings and the pulling jaws, still exist as at E and F, although the clearances are reduced from that shown in Figs. 1, 2, and 3. These clearances ensure that buffing stresses will not be applied to the wings and projections when the couplers are in coupled position.

A feature of my aligning wings resides in the increased horizontal gathering range of the couplers to which they are applied. This is particularly illustrated in Figs. 5 through 8, inclusive, where two opposing couplers A and B embodying the invention are shown pivotally mounted at points 62 and 64 which represent the pivotal connections on associated cars. The position shown in Fig. 5 represents the maximum amount that the couplers may be angled horizontally and still positively gather and couple. It will be assumed for purposes of illustration that the cars to which the couplers are connected are disposed in longitudinal alignment along center line X—X, which connects the pivotal centers 62 and 64 of the couplers. The initial point of contact between the angled couplers as they move toward one another for coupling is seen to occur, as at K, between the forward end of outer portion 44*b* of the wing 44 of coupler A and shoulder 43 on the pulling jaw 14 of coupler B. It will be observed that point K lies on the side of the center line X—X opposite to that of jaws 16 of the couplers.

It will be understood that if coupler B is angled horizontally, a smaller amount during coupling than is shown in Fig. 5, so that outer portion 44*b* of coupler A initially engages side wall 42 of projection 30 on coupler B, the inclination of wall 42 will cause relative sliding between wall 42 and portion 44*b* of coupler A, until the forward end of the latter portion engages shoulder 43 on coupler B at point K. It will be apparent that the inclination of wall 42, including portion 42*a*, with respect to surface 14*a* on the pulling jaw of the coupler, ensures fast but relatively smooth movement between the couplers, substantially to their position as shown in Fig. 5.

Further movement of the couplers longitudinally toward one another from the Fig. 5 position, causes the couplers to rotate about their pivotal axes 62 and 64

toward the center line X—X to the Fig. 6 position, in which the front faces 16*a* on the buffing jaws of the opposing couplers come into engagement as at L.

From the position shown in Fig. 6, the inclined front surfaces 16*a* on the buffing jaws 16 permit sliding of the latter relative to one another, thereby allowing each buffing jaw to slide into recess 18 in the opposing coupler head. In this connection, the coupler locks 20 are forced rearwardly into the lock cavities by the opposing buffing jaws as seen in Fig. 7.

It will be noted in Fig. 7, that the side wall 51 of pocket 46 on coupler A diverges outwardly a sufficient amount to preclude engagement between this wall and the projection 30 of coupler B as the couplers rotate to the above position. Further movement of the couplers toward one another from the position shown in Fig. 7 causes the buffing jaws 16 to slide laterally along the inclined complementary surfaces 20*a* on the locks, thereby moving the couplers transversely of one another to the position shown in Fig. 8. In this position the front face of portion 44*b* of wing 44 of coupler A no longer engages shoulder 43 on the opposing pulling jaw of coupler B but has moved laterally outwardly past shoulder 43, thereby permitting projection 30 on coupler B to enter further into recess 46 on wing 44 of coupler A. It will be noted that in the Fig. 8 position, the forwardly extending portion 44*b* on the aligning wing of coupler B is disposed outwardly of projection 30 on coupler A so that upon further longitudinal movement of the couplers toward one another from the Fig. 8 position, the latter projection can enter pocket 46 on coupler B, to complete the coupling operation. It will be observed that outer surface 70 on the buffing jaw 16 of each coupler has been relieved, as at 72, so that interference between the buffing jaws and the inner tips 73 of the pulling jaws will not occur as the buffing jaws slide into the recesses 18 in the opposing coupler heads.

Referring to Fig. 9, it will be seen that it is not necessary that projection 44*b* on the aligning wing 44 engage shoulder 43 on the opposing pulling jaw in order to obtain proper coupling of the couplers. In Fig. 9, coupler A is shown angularly displaced from the longitudinal center line X—X connecting the pivotal centers 62 and 64 a lesser degree than is shown in Fig. 5, while coupler B is shown displaced about the same amount as is shown in Fig. 5. It will be observed that the projection 30 on coupler B enters pocket 46 on coupler A, but that the end wall 34 of the projection does not engage the opposing side wall 50 of the pocket. Engagement takes place as at M between the outer edge of shoulder 43 on pulling jaw 14 of coupler B and front abutment surface 45 on wing 44 of coupler A. It will be noted that point M lies on the side of the longitudinal center line X—X opposite to that of jaws 16 of the couplers. It will be undersood that if coupler B is angled horizontally a smaller amount than is shown in Fig. 9 so that the outer edge of shoulder 43 on coupler B initially engages wing 44 of coupler A at some intermediate point along the diagonally forwardly extending surface 45*a*, the inclination of the latter will cause relative sliding between this surface and shoulder 43 until the shoulder engages coupler A at point M. From the Fig. 9 position the couplers will pivot toward one another into coupled position in a manner similar to that explained in connection with Figs. 5 through 8.

Fig. 10 illustrates the maximum gathering range of the couplers when the latter are angularly displaced to opposite sides of longitudinal center line X—X. Engagement initially takes place between the end walls 34 of projections 30 and the opposing buffing jaws as at P. The inclination of surfaces 32 on end walls 34 causes relative sliding of each buffing jaw along surface 32 of the opposing projection, whereby the coupler heads are gathered and aligned for coupling. In this connection it will be apparent that after the buffing jaws have moved transversely past surfaces 32 and onto side walls 40 of projections 30 the sharp inclination of those walls ensures that the couplers will move positively and quickly into aligned position. In addition it will be noted that the engagement which takes place at points P is equi-distant from and on opposite sides of the longitudinal center line X—X so that the couplers will be effectively gathered without danger of jackknifing or misalignment occurring.

Fig. 11 illustrates the gathering of a substantially horizontally aligned interlocking Willison coupler during the coupling operation with an existing non-interlocking type Willison coupler, which is shown laterally displaced to one side of longitudinal center line X—X connecting the pivotal centers of the couplers. The buffing jaw 16 on the interlocking coupler is shown engaging inclined surface 14*a*′ on the non-interlocking Willison coupler as at point Q while the buffing jaw 16′ of the latter coupler is in engagement with inclined side wall 40, as at R, on projection 30 of the interlocking coupler. It will be clear that the inclined surface 14*a*′ and inclined wall 40 will cause the couplers to gather as they slide transversely of one another during the coupling operation.

It will be noted that the points Q and R are disposed on opposite sides of the longitudinal center line X—X so that jackknifing of the couplers will not occur under this condition.

Another important feature of my invention resides in the ability of the couplers to couple when displaced vertically with respect to one another. The couplers A and B shown in Fig. 12, while aligned laterally with respect to one another, are displaced vertically. In Figs. 12*a* and 12*b* which are partial sectional views taken on Fig. 12, it will be seen that coupler A is at a higher elevation than coupler B. As the couplers approach for coupling, engagement occurs at point S (Fig. 12*a*) between the aligning wing of coupler A and the projection 30 on the pulling jaw of coupler B and simultaneously at point T (Fig. 12*b*) between the projection 30 on the pulling jaw of coupler A and the aligning wing of coupler B. It will be understood that upon further longitudinal movement of the couplers toward one another from the engaged position shown in Fig. 12 toward the coupled position shown in Fig. 1, the sliding engagement between the sloping surfaces on walls 34 and 36 of projections 30 and the front abutment surfaces 45 on the aligning wings will cause relative vertical movement between the couplers until the projections enter the pockets 46, after which the couplers move to final coupled position.

It will be observed from Figs. 12*a* and 12*b* that surface 32 on end wall 34 of each projection 30, which is convexly curved in a vertical direction, makes possible an increased vertical gathering range over that obtainable solely by means of inclined wall 36, since the inclination of the latter surface will cause relative vertical sliding movement between the vertically displaced couplers as they come together for coupling.

It will be noted that engagement between the vertically displaced couplers A and B shown in Fig. 12 occurs at the points S and T which are equi-distant from and spaced on opposite sides of the center line X—X. This will prevent jackknifing of the couplers during vertical alignment. It will be understood that even though the vertically displaced couplers are so positioned relative to one another prior to the coupling operation that engagement will occur only at one of the aforementioned points S or T, as the couplers come together, vertical alignment of the couplers will still occur to permit successful coupling.

As with all other types of interlocking couplers, it will be understood that couplers to which my invention is applied will be connected to the associated car in such a manner as to allow both vertical and horizontal angling thereof.

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 expres-

sions of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

What I claim is:

1. A car coupler of the rigid-jawed type comprising a head having a pulling jaw and a buffing jaw transversely disposed on opposite sides of the longitudinal centerline of the coupler, each of said jaws being interengageable with a complementary jaw of an opposing coupler, and means on said head engageable with complementary means on the head of an opposing similar coupler to limit relative vertical movement therebetween, said means comprising at least one abutment surface extending forwardly from said pulling jaw and at least one abutment surface disposed laterally of said buffing jaw.

2. A car coupler of the rigid-jawed type comprising a head having a pair of transversely spaced jaws disposed on opposite sides of the longitudinal centerline of the coupler, one of said jaws having projecting means, extending forwardly thereof, the other of said jaws having pocket means disposed laterally and rearwardly thereof, said projecting means being receivable in pocket means on an opposing similar coupler to limit relative vertical movement between the couplers.

3. In a car coupler of the rigid-jawed type having a pair of transversely spaced jaws disposed on opposite sides of the longitudinal centerline of the coupler, interlocking means comprising a projection extending forwardly of one of said jaws and being integral therewith, said projection having top and bottom abutment surfaces and being adapted to be freely received in a complementary recess having corresponding upper and lower abutment surfaces on an opposing similar coupler to limit relative vertical movement between the couplers.

4. In a car coupler having a pair of transversely spaced jaws disposed on opposite sides of the longitudinal centerline of the coupler, aligning means comprising a wing extending laterally of one of said jaws, said wing including a pocket portion and a diagonally forwardly extending outer portion disposed adjacent said pocket portion, said outer portion having a convexly curved end surface for rotatively engaging a jaw of an opposing similar coupler to rotate the couplers into longitudinal alignment during coupling operations.

5. In a car coupler having a pair of transversely spaced jaws disposed on opposite sides of the longitudinal centerline of the coupler, aligning means comprising an abutment disposed laterally of one of said jaws, said abutment comprising an inner portion having a front abutment surface extending diagonally rearwardly and an outer portion extending diagonally forwardly from said inner portion, said outer portion having a rounded end surface for rotatively engaging an abutment on a jaw of an opposing similar coupler to rotate the couplers into longitudinal alignment during coupling operations.

6. A car coupler of the rigid-jawed type comprising a head having a pair of transversely spaced jaws disposed on opposite sides of the longitudinal centerline of the coupler, a projection extending forwardly from one of said jaws, a wing extending laterally of the other of said jaws, said wing comprising a diagonally rearwardly extending inner portion and a diagonally forwardly extending outer portion, said outer portion including a front abutment surface slidingly engageable with a projection of an opposing similar coupler operative to align the couplers from laterally displaced positions for coupling.

7. In a car coupler of the rigid-jawed type having a pair of transversely spaced jaws, coupler aligning means comprising a projection on one of said jaws disposed substantially entirely forwardly of the jaws and a wing extending laterally of the other of said jaws, said projection including a transverse front abutment wall and side walls diverging generally rearwardly from said front wall, said walls being slidingly engageable with abutments on an opposing coupler to move the couplers from laterally angled positions into longitudinal alignment during coupling operations.

8. In a car coupler of the rigid-jawed type having a pair of transversely spaced jaws disposed on opposite sides of the longitudinal centerline of the coupler, coupler aligning means comprising a projection extending forwardly of one of said jaws and a wing disposed laterally and diagonally rearwardly of the other of said jaws, said projection including a vertical front abutment wall convexly curved about a vertical axis and upper and lower walls diverging rearwardly from said front wall, said walls being slidingly engageable with abutments on the wing of a similar, opposing coupler to move vertically displaced couplers into vertical alignment during coupling operations.

9. In a car coupler of the rigid-jawed type having a pair of transversely spaced jaws disposed on opposite sides of the longitudinal centerline of the coupler, a coupler aligning wing extending laterally of one of said jaws, said wing comprising a front abutment wall having a forwardly facing pocket therein, said wall extending in a generally rearwardly direction from the side of the coupler and having at its outer end a generally diagonally forwardly extending portion.

10. In a car coupler of the rigid-jawed type having a buffing jaw and a pulling jaw transversely spaced on opposite sides of the longitudinal centerline of the coupler, said pulling jaw including a front abutment face which extends in a diagonally forward direction and a coupler aligning projection extending forwardly from said pulling jaw, said projection comprising a front wall and a pair of side walls, one of said side walls merging with said face near the outer extremity thereof to form an abutment shoulder on said pulling jaw.

11. A car coupler of the rigid-jawed type comprising a head having a buffing jaw and a pulling jaw, a projection extending forwardly from said pulling jaw, said head having a wing extending laterally of said buffing jaw, said wing comprising a generally rearwardly extending inner portion, a generally forwardly extending outer portion, and a pocket portion disposed intermediate said inner and outer portions for receiving in close overlapping relationship the projection of an opposing coupler to substantially eliminate relative vertical movement between the couplers when the couplers are in coupled position, said inner and outer portions having front abutment surfaces engageable with surfaces on an opposing similar coupler to align the couplers during coupling operations.

12. A car coupler of the rigid-jawed type comprising a head having a buffing jaw and a pulling jaw disposed on opposite sides of the longitudinal centerline of the coupler, said head including a buffing face positioned between said jaws and being engageable with a buffing jaw of an opposing coupler when the couplers are in coupled position, said head having an aligning wing extending laterally from the buffing jaw side thereof, said wing comprising a diagonally rearwardly extending inner portion and an outer portion extending diagonally forwardly from said inner portion, said wing being, when the couplers are in coupled position, being spaced longitudinally from the pulling jaw of the opposing coupler.

13. A car coupler of the rigid-jawed type comprising a head having a pair of transversely spaced jaws, each of said jaws being interengageable with a complementary jaw of an opposing coupler, and means on said head for overlapping engagement with a complementary means on an opposing similar coupler to sufficiently limit relative vertical movement between the couplers that vertical disengagement of the latter is prevented when the couplers are in coupled position, said means including a projection portion on one side of said head and a pocket portion on the other side of said head, one of said portions extending forwardly of said jaws and the other of said portions being disposed rearwardly of said jaws.

14. A car coupler of the rigid-jawed type comprising a head having a pulling jaw and a buffing jaw transversely spaced on opposite sides of the longitudinal centerline of the coupler, said jaws having front faces which diverge in a forward direction, a projection extending forwardly from the front face of said pulling jaw, a wing extending laterally of said buffing jaw, said wing comprising a generally rearwardly extending inner portion, a generally forwardly extending outer portion, and a pocket portion disposed intermediate said inner and outer portions.

15. A car coupler of the rigid jawed type comprising a head having a buffing jaw and a pulling jaw, said head having abutment means on one side of said buffing jaw disposed forwardly thereof and including a forwardly extending projection having top and bottom horizontal surfaces, said head having other abutment means on the opposite side of said buffing jaw disposed rearwardly

thereof and including a pair of rearwardly extending vertically spaced horizontal surfaces, said projection being received between the vertically spaced surfaces on an opposing similar coupler and said vertically spaced surfaces receiving therebetween the projection on an opposing similar coupler when the couplers are in coupled position to preclude vertical disengagement between the couplers.

References Cited in the file of this patent

UNITED STATES PATENTS

1,891,660	Tomlinson	Dec. 20, 1932
1,989,894	Tomlinson	Feb. 5, 1935
2,040,968	Wittmer	May 19, 1936
2,246,406	Wittmer	June 17, 1941
2,533,940	Johnson	Dec. 12, 1950
2,562,203	Metzger	July 31, 1951