This invention relates to railway car couplers and more particularly to automatically operated knuckle type couplers such as are recognized as standard equipment by the Association of American Railroads, or as are used in the foreign countries which have adopted the knuckle type of coupler.

The invention is concerned with the problem of providing an automatic knuckle type coupler, of the type disclosed in Patent No. 2,666,533, with a shelf which will afford vertical interlock when coupled to a similar coupler, and also when intercoupled with a different type of coupler, especially that type of coupler designated as an alternate standard type F coupler by the A.A.R.

As is known by those familiar with the art of railway car couplers, the so called type F coupler is provided at the lower portion of its head with a forwardly projecting auxiliary interlocking lug which would normally interfere with the interlock shelf of a coupler of the type disclosed in the previously mentioned patent so as to prevent intercoupling between these two types of couplers.

In order to afford more complete interchange of railway rolling stock and intercoupling between cars equipped with different types of couplers, it is highly essential to provide some means of vertical interlock arrangement that will accommodate such intercoupling.

Accordingly, it is a primary object of this invention to provide an automatic knuckle type of coupler with a vertical interlock shelf which will permit intercoupling with a different type of automatic knuckle type coupler which has an interlock lug projecting forwardly therefrom in the area of the shelf.

A more specific object of the invention is the provision of a knuckle type of automatic coupler with a vertical interlock shelf having a recess for receipt of the lower auxiliary interlocking lug of a type F coupler to permit intercoupling therebetween.

These and other objects of the invention will be apparent from an examination of the following description and drawings, wherein:

FIGURE 1 is a view similar to FIGURE 3, but illustrating a couple of the type illustrated in FIGURE 1, coupled to a coupler of the type illustrated in FIGURE 2.

As best seen in FIGURE 1, the coupler comprises a head indicated generally at 10 having at one side a forwardly projecting guard arm 12 and having on the other side a pair of vertically spaced forwardly projecting top and bottom knuckle pivot ears 14 and 16, respectively. A knuckle 18 is disposed between the ears 14 and 16 and pivotally connected thereto by pin 29 for rotation about a vertical axis.

The guard arm 12 and the knuckle pivot ears 14 and 16 are spaced transversely of the coupler from each other to define therebetween an opening or throat 22 adapted to receive the nose portion 24 of the knuckle 18 of a mating coupler.

Inasmuch as the above described construction is conventional, it is not shown in great detail except as combined with the novel interlock means herein described.

The coupler head 10 is provided with a generally horizontal transversely extending vertical interlock shelf 26 which is disposed directly under the throat 22 of the head.

The forward edge of the shelf 26 is disposed to extend generally transversely across the forward portion of the throat so that the shelf will cross the lower end of the throat cavity and offer support for that portion of the knuckle of a mating coupler which is received within the throat. The forward edge of the shelf may be reinforced by an integral depending flange 28 which extends substantially the entire length of the shelf. Also, a depending integrally formed rib 30 may be provided to insure additional rigidity for the shelf structure.

As best seen in FIGURE 3, the shelves of the couplers A and A' which embody the invention are so arranged that when the couplers are coupled with each other, each shelf 26 affords vertical support for the knuckle 18 of the mating coupler so as to provide a vertical interlock between the couplers and thereby aid in preventing vertical separation of the couplers from each other in the event of failure of a coupler shank or separation of a coupler from the draft rigging of the car.

Turning now to FIGURES 2 and 4 of the drawings, it will be seen that there is shown a coupler of the type which has been designated as a standard type F coupler by the American Association of Railroads. This coupler has been indicated generally at F in the drawings and, as can be seen by an examination of the drawings, is somewhat different from the couplers A and A' shown in the other figures of the drawing. The Type F coupler is generally larger and includes aligning wings 34 and 36 projecting forwardly from the left and right hand side respectively as seen in FIGURES 2 of the drawings. The aligning wings are adopted to mate with complementary aligning wings of similar type F couplers to afford vertical interlock therebetween. The F coupler is also provided with a transversely extending horizontal shelf 38 disposed to close the lower end of its throat.

In addition to the aligning wings 34 and 36, which afford vertical interlock for type F couplers, type F coupler head is also provided with a forwardly projecting auxiliary interlocking lug 40 which is disposed immediately below the shelf 38 and adapted to mate with a complementary lug of another type F coupler to afford additional horizontal interlock therebetween.

As was previously mentioned, the purpose of the invention is to provide a coupler of the type illustrated in FIGURE 1 with a vertical interlock shelf which will permit intercoupling of the coupler with a standard type F coupler.

This has been made possible by providing the shelf 26 of the novel coupler with a recess 32 which, as best seen in FIGURE 4, is located in the forward edge of the shelf and so disposed with respect to the longitudinal axis of the coupler as to accommodate the receipt thereon of the forward portion of an auxiliary interlocking lug 40 of a type F coupler. Thus, when provided with a shelf 28 which has the special recess 32, the coupler becomes universal in nature, in that it is capable of intercoupling with a type F coupler as well as similar couplers, and still affords vertical interlock with either type of coupler.
I claim:
A railway coupler head comprising vertically spaced upper and lower knuckle pivot ears on one side of the head, a guard arm on the other side of the head, said head having a throat between said ears and guard arm, said throat and guard arm being substantially coextensive in length and terminating at their lower ends at a horizontal shelf projecting forwardly from the head and spaced downwardly below said lower ear, said shelf extending from the forward end of said arm across the width of said throat to reinforce the arm and adapted to provide a vertical support for a knuckle of a mating coupler, said shelf having a rearwardly converging recess disposed to normally receive a forwardly projecting auxiliary interlocking lug on a mating F type coupler.

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