June 30, 1936. C. W. MUSSER 2,046,178

RACING AMUSEMENT DEVICE

Filed Sept. 9, 1935

Fig 1

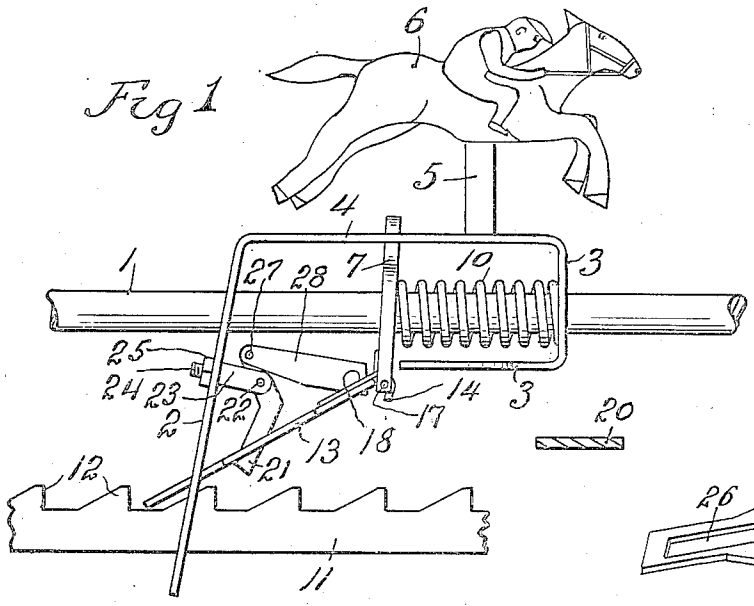


Fig 5

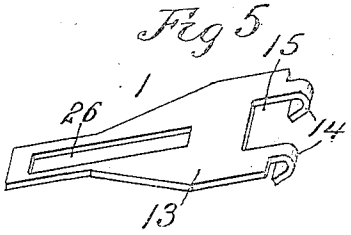


Fig 2

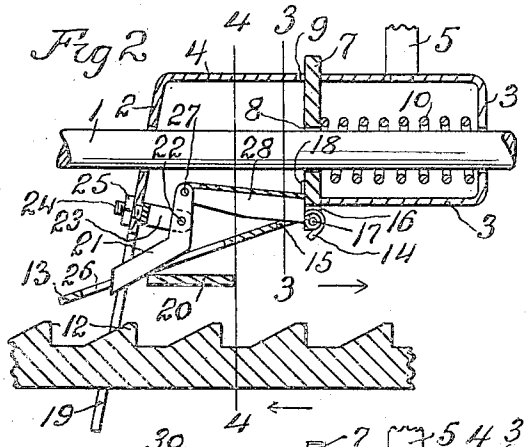


Fig 3

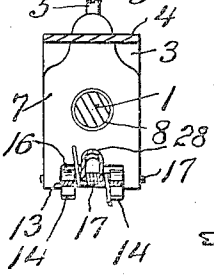


Fig 4

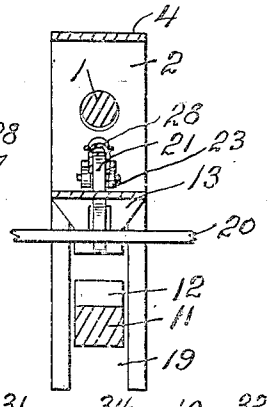


Fig 6

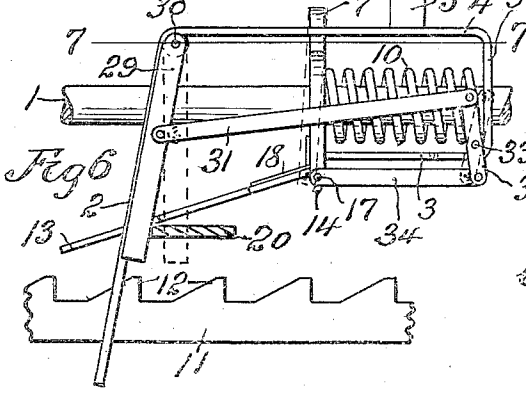
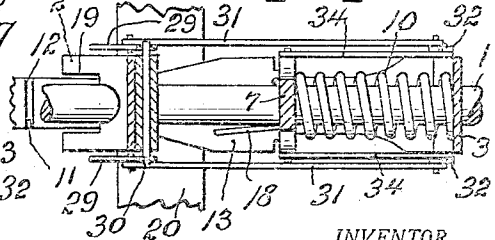


Fig 7



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RACING AMUSEMENT DEVICE

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9 Claims. (Cl. 46—127)

My invention relates to improvements in amusement racing devices.

It relates particularly to the type of amusement devices in which figures simulating horses carrying jockeys are mounted on carriers that are independently advanced to a finishing position, and are then simultaneously retracted to a starting position.

The invention relates more particularly to the type in which each carrier is reciprocative on a bar on which it is advanced by intermittent movements by a locking member which is moved forwardly by a pawl which is intermittently engaged and forwardly moved by a reciprocative ratchet member, the locking member being normally automatically moved to a position in locking engagement with the bar on which it and the carrier are slidably mounted, resetting means being provided for retracting the carriers and the figures carried thereby to the starting position after the finish of a race.

One of the objects of this invention is to provide novel means actuated by the retracting means for moving the locking member from the locking position when the retracting means moves to retract the carrier to the starting position, thereby reducing to a minimum the wear on the locking member, the locking of which to the supporting bar is effected by tilting the locking member to a cramping position on the bar, the object of which locking is to hold the carrier from overrunning after each advancing impulse has been discontinued.

A further object of my invention is the provision of a mechanism of the kind described which is simple, strong, durable, not likely to get out of order, which is readily applicable to racing devices now in use, and which is efficient in operation. This application discloses but does not claim subject matter disclosed in an application filed by me April 26, 1935, Ser. No. 18,294, for a Racing amusement mechanism; and an application filed by me May 31, 1935, Ser. No. 24,270, for a Racing amusement device.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawing, which illustrates the preferred embodiment and a modification of my invention,

Fig. 1 is a side view partly in elevation, partly in vertical section and partly broken away, of the preferred embodiment of my invention, showing the locking member locked to the supporting bar.

Fig. 2 is a central longitudinal vertical sectional view of what is shown in Fig. 1, the racing figure being broken away, the locking member in the released position and the resetting or retracting member shown holding the pawl released from the ratchet member.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is a perspective view of the pawl which engages the ratchet member and the locking member, and which through the latter effects the advancing movement of the carrier.

Fig. 6 is a view similar to Fig. 1, some parts being broken away and others shown in vertical section, of a modification of the means for releasing the locking member from locked engagement with the supporting bar.

Fig. 7 is a horizontal section on the line 7—7 of Fig. 6.

Similar characters of reference designate similar parts in the different views.

The type of amusement racing device with which my invention is adapted for use comprises a plurality of carriers supporting figures simulating, for example, race horses with jockeys thereon, the carriers being reciprocatively sliding on horizontal parallel bars, between starting and finishing positions. The carriers are respectively independently intermittently advanced by parallel reciprocative ratchet member respectively engaging pawls arranged to respectively advance the carriers.

A single transverse resetting or retracting member releases the pawls from the ratchet members and pushes the carriers back to the starting position after the finish of each race.

As the sets of carriers and their accompanying operating parts are duplicates, but one set of each of the two forms of my invention is shown in the drawing.

1 designates a horizontal supporting bar, a portion only of which is shown. The bar 1 extends through the two arms 2 and 3 of an inverted U shaped carrier which is reciprocative lengthwise of and on the bar 1, and the horizontal portion 4 of which supports a post 5 on the upper end of which is mounted a racing figure 6 simulating a horse carrying a jockey.

For advancing the carrier forwardly, to the right in Fig. 1, step by step, the following described mechanism is employed.

An upright locking member comprising a plate 7 has a hole 8 through which extends the bar 1. The upper end of the member 7 extends into a hole 9 in the horizontal portion 4 of the carrier. The locking member 7 when vertically disposed, as in Fig. 2, is in the unlocked position and in

such position is free to move forwardly or rearwardly with the carrier on the bar 1.

To lock the member 7 on the bar 1 to hold the carrier from accidental forward advancement on the bar 1, there is provided encircling the bar 1 between the arm 3 and the member 7, a coil spring 10 one end of which bears against the arm 3 and the other end of which bears against and swings the plate or locking member 7 to the cramped locking position, shown in Fig. 1. In such position the locking member 7 holds the carrier from moving to the right, as viewed in Fig. 1, or forwardly, after the advancing impulse operating on the carrier has ceased, thus preventing the carrier from forward skidding on the bar 1.

To limit the forward swinging of the locking member 7 to the vertical release position, the arm 3 is extended rearwardly under the bar 1, forming a stop against which the member 7 strikes, Fig. 2.

For sliding the carrier and the locking member 7 forwardly, there is disposed below the bar 1 and parallel therewith a longitudinally reciprocative ratchet member comprising a bar 11 the upper edge of which is provided with a longitudinal row of ratchet teeth 12 adapted to be engaged by the lower end of a pawl 13, the upper end of which has two fingers 14 separated by a notch 15 and pivoted in a recess 16 in the lower end of the member 7 on a transverse pintle 17 mounted horizontally in the member 7.

A coil spring 18 encircling the pintle 17 has one end portion bearing against the rear side of the member 7, the other end portion of the spring 18 bearing on the upper side of the pawl 13, and normally exerting a tension which swings the pawl 13 into operative engagement with the teeth 12 of the ratchet member 11.

The lower end of the arm 2 of the carrier has a longitudinal slot 19 through which extend the ratchet member 11 and the pawl 13, Figs. 2 and 4.

For releasing the pawl 13 from the teeth 12 of the ratchet member 11, and for retracting the carrier and the locking member 7 with it rearwardly after the finish of a race, there is provided a horizontal transversely reciprocative retracting or resetting member comprising a bar 20, which is reciprocated by means, not shown, in a horizontal plane disposed between the ratchet member 11 and the lower end of the locking member 7.

In both forms of my invention, when the pawl 13 is engaged with the ratchet member 11 and the latter moves forwardly, the pawl 13 will push forwardly the locking member 7 from the locking position, shown in Fig. 1 and in dotted lines in Fig. 6, thus swinging the locking member to the release position in which it is in contact with the rearward extension of the arm 3, thus pushing the carrier forwardly while the ratchet member 11 is moving forwardly. When the ratchet member stops its forward movement, the spring 10 will force the locking member 7 into the locking position, shown in Fig. 1 and in dotted lines in Fig. 6.

The locking member 7 will thus hold the carrier from skidding forwardly after the forwarding impulse has ceased.

So far as has been described, the two forms of my invention are alike, the difference between the two forms being in the means by which the locking member is released from locked engagement with the bar 1.

In the form shown in Figs. 1 to 5, an angular lever 21 is pivoted by a horizontal pin 22 to and between a U shaped bracket 23 having a threaded portion 24 extended through a hole in the carrier arm 2 above the slot 19. A nut 25 on the outer side of the arm 2 and on the threaded portion 24 clamps the bracket 23 to the inner side of the arm 2.

The lower portion of the lever 21 extends into a slot 26 provided lengthwise in the pawl 13, Figs. 2 and 5. To the upper end of the lever 21 is pivoted on a horizontal pin 27 the rear end of a channel like member 28 the forward portion of which extends into the notch 15 and rests on the pawl 13.

Normally the member 28 is separated from the locking member 7, as in Fig. 1. When the retracting member 20 moves rearwardly to retract the carrier, after the finish of a race, the member 20 will strike the under side of the pawl 13 and lift it clear of the teeth 12 of the ratchet member 11. On its continued rearward movement, the member 20 will strike the under side of the lever 21 below the pin 22, thus swinging the upper part of the lever 21 forwardly which will move the member 28 into engagement with the rear side of the locking member 7, forcing the latter forwardly from the locking position, shown in Fig. 1 to the release position shown in Fig. 2. The carrier will then be retracted rearwardly by the member 20 with a minimum of drag and wear upon the locking member 7.

When the member 20 stops its rearward movement and starts forwardly, the coil spring 10 will swing the member 7 and through it the member 28 and lever 21 to their normal positions and the spring 18 will reengage the pawl 13 with the ratchet member 11.

In the form shown in Figs. 6 and 7, two levers 29 are pivoted by a horizontal transverse pin 30 to the horizontal portion 4 of the carrier. The levers 29 are disposed at opposite sides of the arm 2 of the carrier and are respectively pivoted to two forwardly extending links 31 which are respectively pivoted to two levers 32 pivoted by a horizontal transverse pin 33 to the inner side of the arm 3 of the carrier. The levers 32 below the pin 33 are respectively pivoted to one set of ends of two links 34, the rear ends of which are pivoted to the pintle 17 to which the upper end of the pawl 13 is pivoted.

Normally the spring 10 forces the locking member 7 to the locking position shown in dotted lines in Fig. 6. The levers 29 are then disposed vertically as shown in dotted lines in Fig. 6. When the retracting member 20 moves rearwardly and strikes and lifts the pawl 13 out of engagement with the ratchet member 11, it will strike the levers 29 and swing them rearwardly to the position shown in solid lines in Fig. 6, thus through the links 31, levers 32 and links 34 swinging the locking member 7 forwardly to the release position shown in solid lines in Fig. 6, thus permitting the retracting member 20 to force rearwardly the carrier without resistance from the locking member 7, and thereby avoiding undue wear on the latter.

It will be noted that the levers 21 and 29 are actuated by the member 20 to release the locking member 7 before the member 20 forces the carrier rearwardly.

Thus it will be seen that when the parts are disposed as in Fig. 1, the locking member 7 will be in the locking inclined position, to which it has been forced by the spring 10. When the ratchet member 11 moves to the right, as viewed in Fig. 1, it being engaged with the pawl 13, will

move the latter to the right, thus forcing the locking member to the right against the projection 3 against the pressure of the spring 19. Continued movement of the ratchet member will, through the pawl 13 and the locking member 7, force the carrier to the right on the bar 1. When the movement to the right of the ratchet member 11 ceases, temporarily, and it is retracted to the left, the spring 19 will force the locking member 7 to the left to the locking inclined position, shown in Fig. 1, thus stopping the movement of the carrier to the right and preventing its forward skidding, due to its momentum.

After the carrier has been moved to the right by the reciprocation of the ratchet member 11 to the finishing position, the retracting member 20 is moved to the left, thus lifting and disengaging the pawl 13 from the ratchet bar 11 and then engaging and swinging the lever so as to force the member 23 against the locking member 7, the member 23 pushing the locking member to the release position, shown in Fig. 2. The continued movement of the retracting member 20 will then, by engagement with the lever 21 and the carrier, force the latter to the left to the starting position, upon which the retracting member 20 is again moved to the extreme right to its initial position. The spring 19 will then force the locking member 7 to the inclined locking position, and the spring 18, and the gravity of the pawl 13 will swing the latter downwardly into operative engagement with the ratchet member 11, thus completing a cycle of operations.

Many modifications of my invention, within the scope of the appended claims, may be made without departing from the spirit of my invention.

What I claim is:—

1. In a device of the kind described having a carrier reciprocative on a bar, a locking member engaging and movable with said carrier and slidable on said bar and movable thereon to and from locking engagement therewith, a reciprocative ratchet member, a pawl engaging said locking member and adapted to move the latter and said carrier forwardly on said bar and engageable with and movable forwardly by said ratchet member, and means for disengaging said pawl from said ratchet member and for retracting said carrier rearwardly, of a releasing member movable in one direction by said retracting means when the latter is moved to retract said carrier, and means for forcing the locking member from the locking position when said releasing member is moved in said direction.

2. In a device of the kind described having a carrier reciprocative on a bar, a locking member engaging and movable with said carrier and slidable on said bar and movable thereon to and from locking engagement therewith, a reciprocative ratchet member, a pawl engaging said locking member and adapted to move the latter and said carrier forwardly on said bar and engageable with and movable forwardly by said ratchet member, and means for disengaging said pawl from said ratchet member and for retracting said carrier rearwardly, of a lever engageable and movable in one direction by said retracting means when the latter is moved to retract said carrier, and means actuated by said lever when moved in said direction for forcing the locking member from the locking position.

3. In a device of the kind described having a carrier reciprocative on a bar, a locking member locking engagement therewith, a reciprocative ratchet member, a pawl engaging said locking member and adapted to move the latter and said carrier forwardly on said bar and engageable with and movable forwardly by said ratchet member, and means for disengaging said pawl from said ratchet member and for retracting said carrier rearwardly, of a spring normally forcing said locking member to the locking position, a releasing member movable in one direction by said retracting means when the latter is moved to retract said carrier, and means actuated by said releasing member when the latter is moved in said direction for forcing said locking member from the locking position.

4. In a device of the kind described, having a carrier reciprocative on a bar, a locking member engaging and movable with said carrier and slidable on said bar and movable thereon to and from locking engagement therewith, a reciprocative ratchet member, a pawl engaging said locking member and adapted to move the latter and said carrier forwardly on said bar and engageable with and movable forwardly by said ratchet member, and means for disengaging said pawl from said ratchet member and for retracting said carrier rearwardly, of a releasing member pivoted to said carrier and disposed in the path of said releasing means and movable in one direction thereby when said retracting means is moved to retract said carrier, and means actuated by said releasing member when moved in said direction for forcing the locking member from the locking position.

5. In a device of the kind described having a carrier reciprocative on a bar, a locking member engaging and movable with said carrier and slidable on said bar and movable thereon to and from locking engagement therewith, a reciprocative ratchet member, a pawl engaging said locking member and adapted to move the latter and said carrier forwardly on said bar and engageable with and movable forwardly by said ratchet member, and means for disengaging said pawl from said ratchet member and for retracting said carrier rearwardly, of a lever pivoted to said carrier and engageable by said retracting means and movable in one direction when the latter moves to retract said carrier, and a member pivoted to said lever and when the latter is moved in said direction engaging and moving said locking member from the locking position.

6. In a device of the kind described having a carrier reciprocative on a bar, a locking member engaging and movable with said carrier and slidable on said bar and movable thereon to and from locking engagement therewith, a reciprocative ratchet member, a pawl engaging said locking member and adapted to move the latter and said carrier forwardly on said bar and engageable with and movable forwardly by said ratchet member, and means for disengaging said pawl from said ratchet member and for retracting said carrier rearwardly, of a lever pivoted to said carrier and engageable by said retracting means and movable thereby in one direction when said retracting means is moved to retract said carrier, a second lever pivoted to said carrier, a link pivoted to said levers, and a link pivoted to said second lever and to said locking member and adapted to move the latter from the locking position when said first named lever is moved in said direction.

7. In a device of the kind described having a carrier reciprocative on a bar, a locking member

engaging and movable with said carrier and slidable on said bar and movable thereon to and from engaging and movable with said carrier and reciprocative on said bar and movable thereon to and from locking engagement therewith, a reciprocative ratchet member, a pawl engaging said locking member and adapted to move the latter and carrier forwardly when said pawl is moved in one direction, said pawl normally engaging and being adapted to be moved in said direction by said ratchet member, and means for disengaging said pawl from said ratchet member and for retracting said carrier rearwardly, of means actuated by said retracting means for releasing said locking member from locking engagement with said bar prior to the rearward movement of said carrier.

8. In a device of the kind described having a carrier reciprocative on a bar, a locking member engaging and movable with said carrier on said bar and movable on the latter to and from locking engagement therewith, means for engaging and moving said locking member, and with it said carrier, forwardly, and means for retracting said carrier rearwardly, of means actuated by said retracting means and independently of the retraction of said carrier for moving said locking member out of locking engagement with said bar.

9. In a device of the kind described having a carrier reciprocative on a bar, a locking member engaging and movable with said carrier on said bar and movable on the latter to and from locking engagement therewith, means normally forcing said locking member into said locking engagement, means for moving said locking member, and with it said carrier, forwardly, and means for retracting said carrier and locking member rearwardly on said bar, of means actuated by said retracting means prior to the retraction of said carrier thereby for moving said locking member out of locking engagement with said bar.

CLARENCE W. MUSSER.