

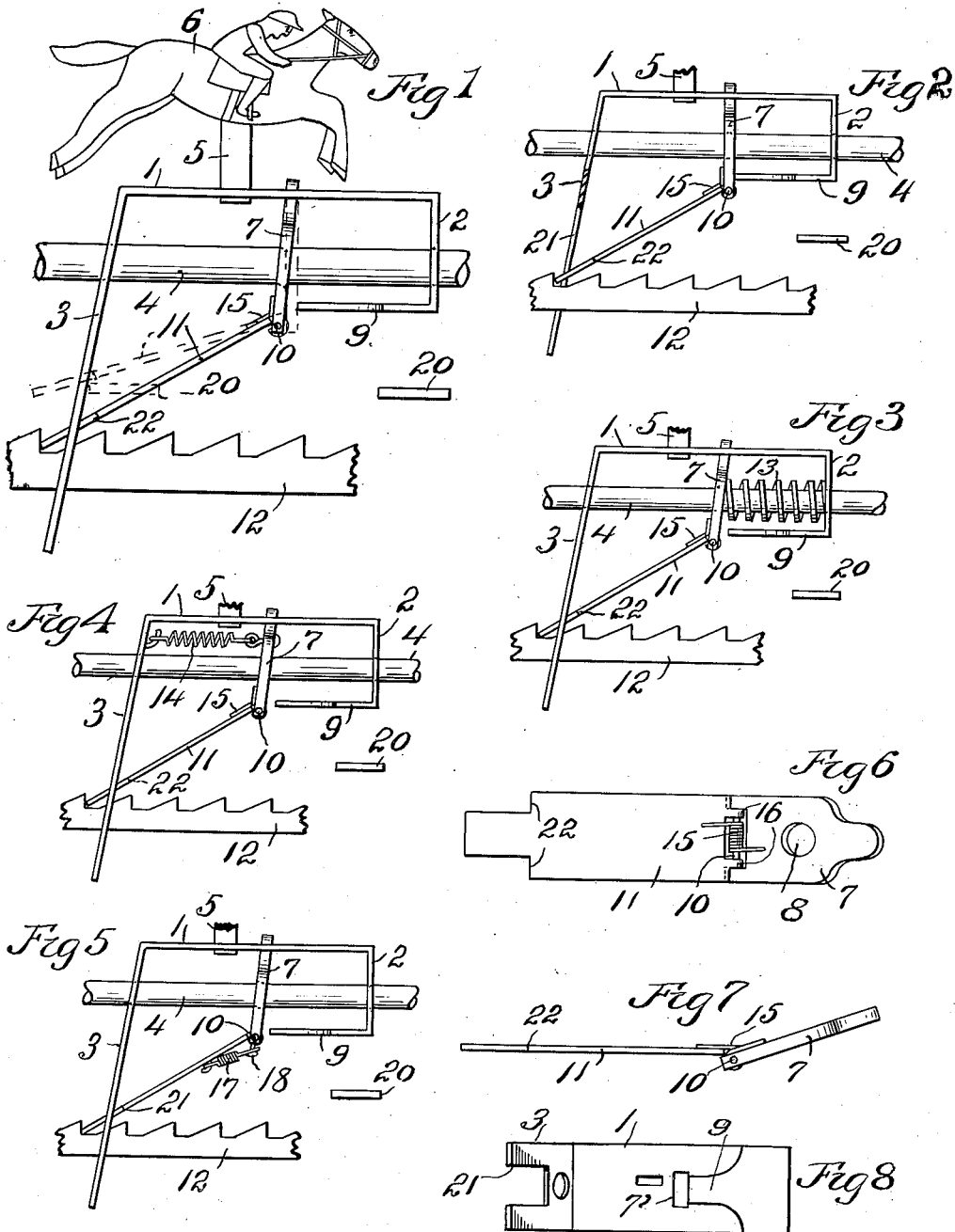
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RACING AMUSEMENT DEVICE

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# UNITED STATES PATENT OFFICE

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## RACING AMUSEMENT DEVICE

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Application May 31, 1935, Serial No. 24,270

8 Claims. (Cl. 273-86)

My invention relates to improvements in racing amusement devices of a type in which devices simulating racing figures, as jockeys on horses, are mounted on carriers independently intermittently advanced to a finish position and then simultaneously retracted to the starting position.

It relates particularly to the type in which each carrier is reciprocatively slidable on a supporting bar on which it is intermittently advanced by a locking member slidable on the bar and tiltable thereon to and from a locking position in which it holds the carrier from advancing, the locking member being released from the locking position and forwardly advanced step by step by a pawl which is intermittently engaged by a reciprocative ratchet member, resetting means being provided when the carrier reaches the finish for disengaging the pawl from the ratchet member and retracting the carrier to the starting position.

One of the objects of my invention is the provision of novel means, for reducing wear on the locking member and pawl, and for enabling these members to properly effect their functions in spite of wear.

Another object of my invention is the provision of novel means for normally forcing the locking member to its locking position.

A further object of my invention is the provision of novel means for connecting the pawl to the locking member that will eliminate lost motion between the two with its consequent ill effects, and will enable them to be handled as a unitary member.

Still another object of my invention is the provision of novel means for causing the pawl to operatively engage the ratchet member. This application discloses but does not claim some of the subject matter claimed in my application for Racing amusement mechanism, filed April 26, 1935, Serial Number 18,294.

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

In the accompanying drawing, which illustrates the preferred embodiment of my invention and modifications thereof,

Fig. 1 is a side elevation of one form of my invention, showing a racing figure supported upon the carrier, the latter operatively mounted on a supporting bar, and a coil spring encircling the pintle connecting the locking member and the pawl for engaging the latter with the ratchet member, a part of which is shown.

ly in side elevation and partly broken away, showing the locking member held in the release position against the limiting stop by the ratchet member through the intermediacy of the pawl.

Fig. 3 is a view similar to Fig. 2, and including a coil spring encircling the supporting bar and holding the locking member in the locking position.

Fig. 4 is a view similar to Fig. 3, excepting that a coil pull spring connects the locking member with the carrier and holds the locking member in the locking position.

Fig. 5 is a side elevation of the parts shown in Fig. 2, excepting that the spring encircling the pintle is eliminated and a coil pull spring connects the pawl with the locking member and serves to engage the pawl with the ratchet member.

Fig. 6 is an enlarged plan view of the pawl and locking member engaged by a spring encircling the pintle, as in the form shown in Figs. 1 to 4.

Fig. 7 is a side edge view of the parts shown in Fig. 6.

Fig. 8 is a bottom view of the carrier.

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

In each form of my invention there is provided a carrier having a horizontal portion 1 provided at its front and ends respectively with downwardly extending arms 2 and 3 respectively provided with holes through which extends a horizontal supporting bar 4 on which the carrier is longitudinally slidably reciprocative.

Upwardly extending from the portion 1 is a post 5 which supports a racing figure 6, the one shown simulating a horse carrying a jockey.

A locking member comprising an upright plate 7 is disposed between the arms 2 and 3 and has through it a transverse hole 8, Fig. 6, through which extends the supporting bar 4 on which the locking member 7 is slidably reciprocative. The upper end of the locking member 7 is fitted in a slot 7' in the portion 1 of the carrier so as to be oscillated forwardly and rearwardly. The hole 8 through the locking member 7 is of a size such that the locking member can be tilted on the bar 4 from the release vertical position, shown in dotted lines in Fig. 1, to the downwardly and rearwardly inclined position shown in Fig. 1 in solid lines, in which inclined position, the locking member will crampingly and lockingly engage the bar 4 and hold the carrier from forward movement.

Extending rearwardly from the lower end of

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the front arm 2 is a projection 9 against which the locking member 7 strikes when it is moved forwardly at its lower end to the vertical, as shown in dotted lines in Fig. 1, and as shown in solid lines in Fig. 2. The projection 9 thus forms a limiting stop for the forward swinging of the locking member 7.

When in the vertical position against the projection 9, the locking member 7 will be released from locking cramped engagement with the bar 4, and the carrier will be free to be slid forwardly and rearwardly on the bar 4.

For forcing the locking member 7 to the release position shown in dotted lines in Fig. 1 and in solid lines in Fig. 2, it has snugly pivotally fitted to its lower end portion by a horizontal pintle 10 which is transverse to the bar 4, downwardly and rearwardly extending pawl 11, the lower contracted portion of which normally engages the upper side of a ratchet member 12 having ratchet teeth on its upper side engaged by the pawl 11. The ratchet member 12 is below and parallel with the bar 4 and is intermittently longitudinally reciprocated, so as to force forwardly the pawl 11, which in turn forces the locking member 7 to the release position against the projection 9, and on the continued forward movement of the ratchet member 12, causes the locking member 7 to move forwardly the carrier with the racing figure 6 which is carried thereby.

When the ratchet member stops its forward movement, it is designed to stop the forward movement of the carrier. To effect this, means are provided for forcing the lower end of the locking member 7 rearwardly to the locking position shown in solid lines in Fig. 1. This can be effected by means of a coil spring 13 which encircles the bar 4 and bears at its front end against the arm 2 and at its rear end against the locking member 7, and which exerts a continual pressure upon the latter tending to force it to the tilted locking position and thereby instantly stopping the carrier and preventing the carrier from forward skidding to any substantial amount, Fig. 3.

The locking member 7 is retracted to the locking position, in the form shown in Fig. 4, by a coil spring 14 disposed above the bar 4 and attached at its forward end to the locking member 7 and attached at its rear end to the arm 3, and which normally pulls the member 7 to the tilted locking position, shown in Fig. 4.

For normally quickly forcing the pawl 11 into operative engagement with the ratchet member 12, I provide in the form shown in Figs. 1 to 4 and 6 and 7 a coil spring 15 which encircles the pintle 10 between two ears 16 of the pawl 11, which encircle the pintle, Fig. 6, and which has its end portions bearing respectively against the rear sides of the locking member 7 and the pawl 11, and which exerts a pressure tending constantly to force the lower end of the pawl 11 into operative engagement with the ratchet member 12. The tension of the spring 15 also normally exerts a constant pressure tending to force the locking member 7 to the tilted locking position, so that the spring 15 serves a double function, that of engaging the pawl 11 with the ratchet member 12, and of forcing the locking member 7 normally to the locking position.

The spring 15 could be used alone to effect engagement of the locking member 7 in holding relationship to the bar 4, but it is desirable to provide additional means, to avoid wear on the locking member, such as the spring 13 or the spring 14,

to effect positive locking engagement of the locking member with the bar 4.

Instead of the spring 15, a coil spring 17, Fig. 5, may be attached at its front end to a pin 18 in the lower end of the locking member 7, and its rear end attached to a lip 19 on the pawl 11, for forcing the pawl into operative engagement with the ratchet member 12. The tension of the spring 17 is such as tends to move the pawl 11 to its operative position, and also to move the locking member 7 to the locking position.

For retracting the carrier to the starting position, after it has reached the finish position, there is provided a horizontally reciprocative bar 20, which moves rearwardly, engages the pawl 11, and lifts the latter to the dotted position shown in Fig. 1, in which the pawl will be released from the ratchet member 12.

The reduced lower end portion of the pawl 11 is vertically movable in a longitudinal slot 21 provided in the lower end of the pawl 11 to a position in which two shoulders 22 on opposite side edges of the pawl 11 engage the arm 3, and, as the pawl 11 is lifted by the bar 20, the pawl 11 will be caused by the arm 3 to push forwardly the locking member 7 to the release position, whereupon the carrier will be free to be retracted by the bar 20 on the continued rearward movement of the latter.

By reason of the snug pivotal fitting of the pawl 11 to the locking member 7, through the pintle 10, there is no sliding movement of the pawl relative to the locking member, and consequent excess wear of the locking member, when the carrier is retracted, is eliminated.

With the employment of the spring 13 or the spring 14, for retracting the locking member, wear of the locking member, due to its continual sliding and locking on the bar 4, the locking member is always reliably forced to its locking position as soon as the forward impulse against the carrier ceases, so that forward skidding, due to momentum, is avoided. As shown in the drawing, the rear arm 3 of the carrier inclines rearwardly from a plane at right angles to the bar 4, while in my copending application No. 18,294, the corresponding arm is at right angles to the bar supporting the carrier.

The object of so inclining the arm 3 is to compensate for wear of the locking member 7, due to its sliding braking action on the bar 4, and to prolong the period of operativeness and utility of the locking member. As the locking member 7 becomes worn, it will swing rearwardly farther before it locks with the bar 4 to stop the forward sliding of the carrier. By having the arm 3 so inclined, the shoulders 22 of the pawl 11 are, when the locking member 7 is in the locking position, shown in solid lines in Fig. 1, spaced a substantial distance from the arm 3. This permits much greater wear of the locking member to occur before the shoulders 22 contact with the arm 3 and prevent the locking member 7 swinging to the locking position, than were the arm 3 at right angles to the bar 4, as it is in the mechanism of my copending application No. 18,294.

Thus, with the use of the inclined arm 3, a longer period of usefulness for the locking member is obtained, than can be obtained with the use of the right angled arm.

Other 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, the combination with a supporting bar, a carrier reciprocative on said supporting bar, a locking member engaged by and movable with said carrier and slidably reciprocative on said bar and tiltable thereon to and from a locking position in which it will hold said carrier from forward but will permit its rearward movement, a forwardly and rearwardly reciprocative ratchet member, and a pawl engageable and movable forwardly by said ratchet member and engaging said locking member for releasing said locking member and moving it and said carrier forwardly, of a spring engaging said locking member and said pawl and holding them tightly engaged with each other, and having a tension normally forcing said pawl into operative engagement with said ratchet member and said locking member toward the locking position, and resilient means operable independently of said pawl for normally forcing said locking member to the locking position.

2. In a device of the kind described, the combination with a supporting bar, a carrier reciprocative on said supporting bar, a locking member engaged by and movable with the carrier and slidably reciprocative on said bar and tiltable thereon to and from a locking position in which it will hold said carrier from forward but will permit its rearward movement, a forwardly and rearwardly reciprocative ratchet member, and a pawl engageable and movable forwardly by said ratchet member and engaging said locking member for releasing said locking member and moving it and said carrier forwardly, of a spring engaging said pawl and said locking member and holding them tightly engaged with each other, and having a tension normally forcing said pawl into operative engagement with said ratchet member and said locking member toward the locking position, and a spring encircling said bar and bearing against said carrier and said locking member for normally forcing the latter to the locking position.

3. In a device of the kind described, the combination with a supporting bar, a carrier reciprocative on said supporting bar, a locking member engaged by and movable with said carrier and slidably reciprocative on said bar and tiltable thereon to and from a locking position in which it will hold said carrier from forward but will permit its rearward movement, a forwardly and rearwardly reciprocative ratchet member, and a pawl engageable and movable forwardly by said ratchet member and engaging said locking member for releasing the latter from the locking position and moving it forwardly with said carrier, of a spring engaging said pawl and said locking member and having a tension normally forcing said pawl into operative engagement with said ratchet member and said locking member toward the locking position.

4. In a device of the kind described, the combination with a supporting bar, a carrier reciprocative on said supporting bar, a locking member engaged by and movable with said carrier and slidably reciprocative on said bar and tiltable thereon to and from a locking position in which it will hold said carrier from forward but will permit its rearward movement, a forwardly and rearwardly reciprocative ratchet member, and a pawl engageable and movable forwardly by said ratchet member and engaging said locking member for releasing the latter from the locking position and moving it forwardly with

said carrier, of a spring engaging said pawl and said locking member and having a tension normally forcing said pawl into operative engagement with said ratchet member and said locking member toward the locking position, and a spring engaging said carrier and said locking member and exerting a constant pressure for normally forcing the latter to the locking position.

5. In a device of the kind described, the combination with a supporting bar, a carrier reciprocative on said supporting bar, a locking member engaged by and movable with said carrier and slidably reciprocative on said bar and tiltable thereon to and from a locking position in which it will hold said carrier from forward but will permit its rearward movement, a forwardly and rearwardly reciprocative ratchet member, and a pawl engageable and movable forwardly by said ratchet member, of a spring engaging said pawl and said locking member and having a tension normally forcing said pawl into operative engagement with said ratchet member and said locking member toward the locking position, and a pintle engaging said pawl and said locking member and holding them in snug pivotal engagement with each other.

6. In a device of the kind described, the combination with a supporting bar, a carrier reciprocative on said supporting bar, a locking member engaged by and movable with said carrier and slidably reciprocative on said bar and tiltable thereon to and from a locking position in which it will hold said carrier from forward but will permit its rearward movement, a forwardly and rearwardly reciprocative ratchet member, and a pawl engageable and movable forwardly by said ratchet member, of a pintle engaging said pawl and said locking member and holding them in snug pivotal engagement with each other, and a spring encircling said pintle and having a bearing against said locking member and against said pawl such that the latter will be forced into operative engagement with said ratchet member.

7. In a device of the kind described the combination with a supporting member, a carrier forwardly and rearwardly reciprocative thereon, a locking member slidably reciprocative on said supporting member and tiltable thereon to and from locked engagement therewith that will hold said locking member from forward sliding and engaging and movable with said carrier and adapted to move said carrier forwardly and, when in said locked engagement, holding said carrier from forward movement, a forwardly and rearwardly reciprocative ratchet member, and a pawl engaging and movable with said locking member and adapted to be engaged and moved forwardly with said locking member by said ratchet member, of a spring engaging said locking member and said pawl and normally forcing the latter into operative engagement with said ratchet member.

8. In a device of the kind described the combination with a supporting member, a locking member slidably forwardly and rearwardly reciprocative thereon and tiltable to and from locked engagement therewith that will hold said locking member from forward sliding, a reciprocative ratchet member, a pawl adapted to be engaged and moved forwardly by said ratchet member and engaging and adapted to release and tilt said locking member to an unlocked position and to then slide said locking member forwardly, and retracting means, of a carrier forwardly and rearwardly reciprocative on said

supporting member and engaging and movable  
with and adapted to be moved forwardly by  
said locking member and rearwardly by said  
retracting means and having an arm pro-  
5 vided at its front side with a rearwardly  
inclined portion, said retracting means prior to  
moving said carrier rearwardly disengaging from

said ratchet bar said pawl and moving said pawl  
against said inclined portion, the latter forcing  
said pawl forwardly to a position in which said  
locking member will be moved out of locking en-  
gagement with said supporting member. 5

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