Oct. 9, 1928. 1,686,832

P. McGINNIS

STARTING GATE

Filed Sept. 27, 1927 3 Sheets-Sheet 1

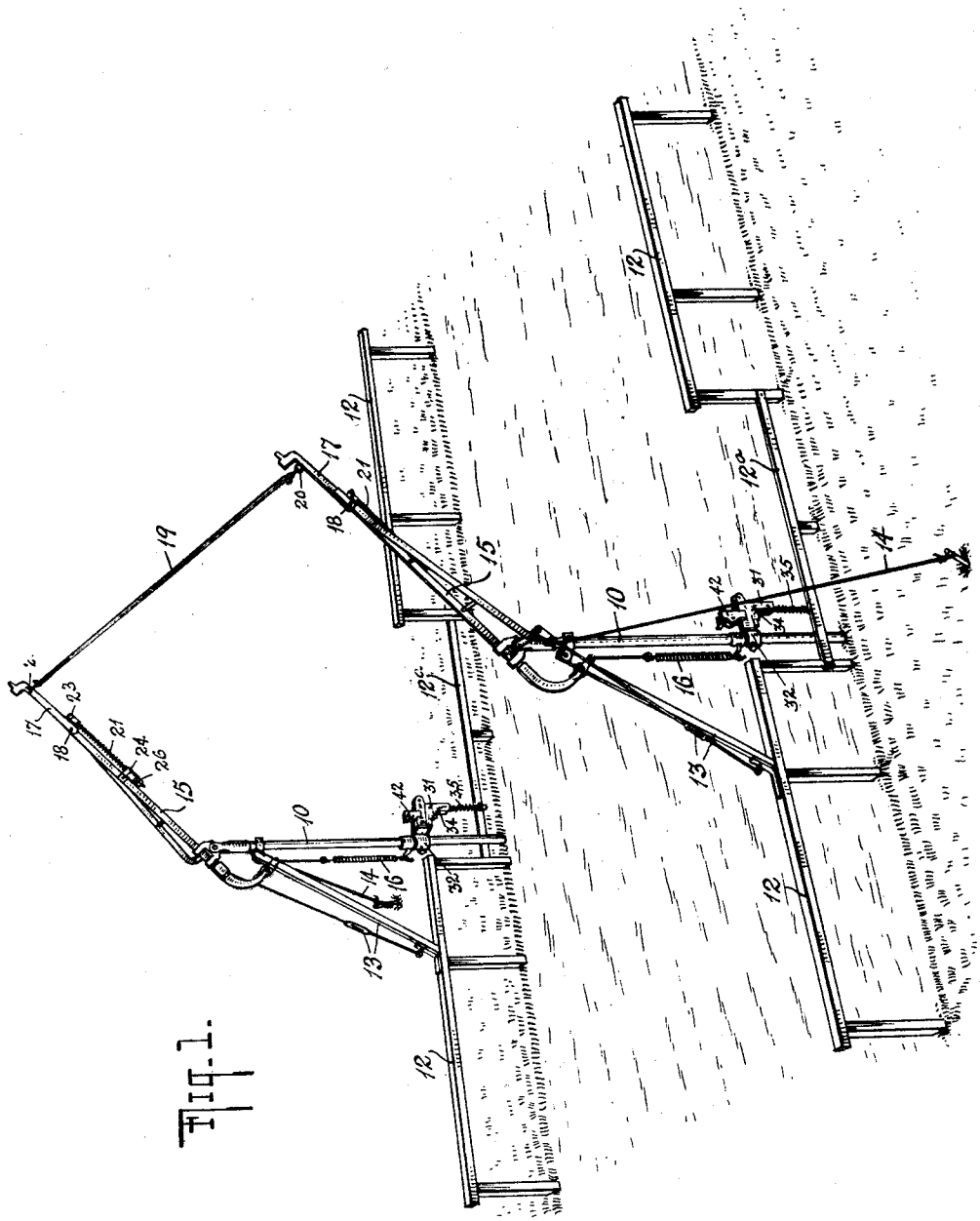


Fig. 1.

WITNESS

G. V. Rasmussen

INVENTOR

PHILIP McGINNIS

BY

Bissell & Schrenk

ATTORNEYS

Oct. 9, 1928. 1,686,832

P. McGINNIS

STARTING GATE

Filed Sept. 27, 1927 3 Sheets-Sheet 2

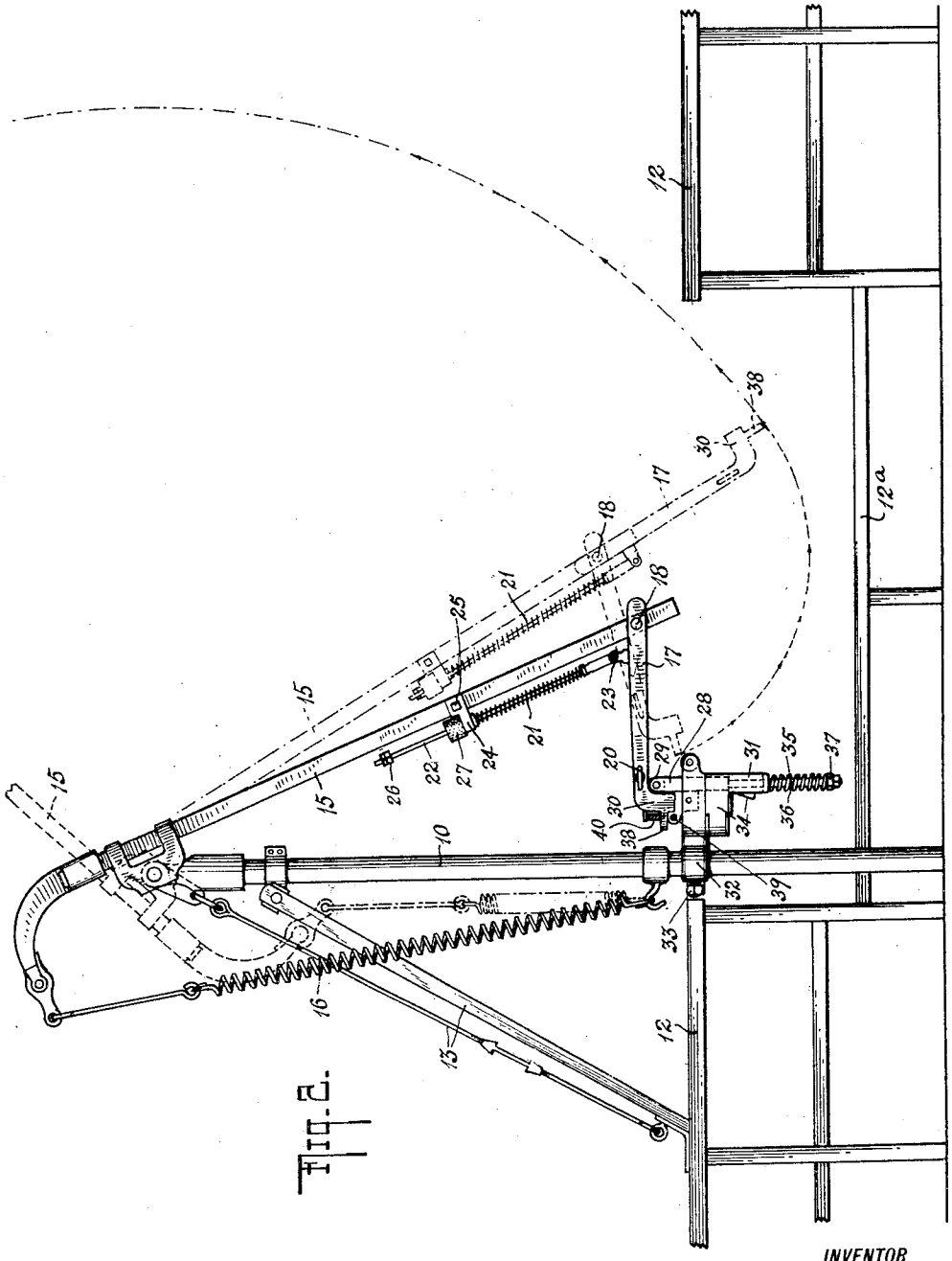


Fig. 1.

WITNESS

G. V. Rasmussen

INVENTOR

PHILIP McGINNIS

BY

Briesen & Schurck

ATTORNEYS

Oct. 9, 1928. 1,686,832

P. McGINNIS

STARTING GATE

Filed Sept. 27, 1927 3 Sheets-Sheet 3

Fig. 5.

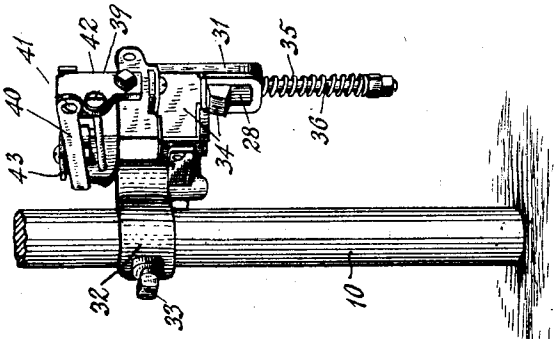


Fig. 4.

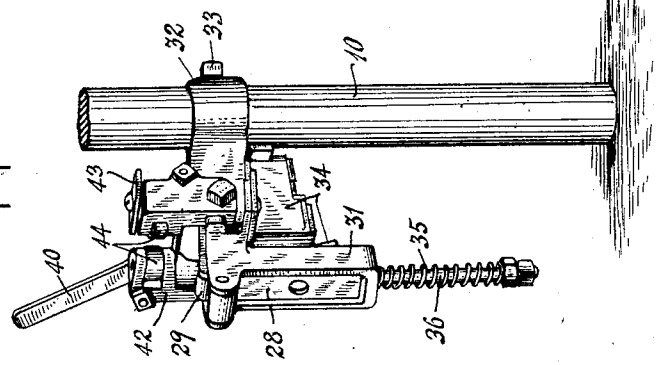
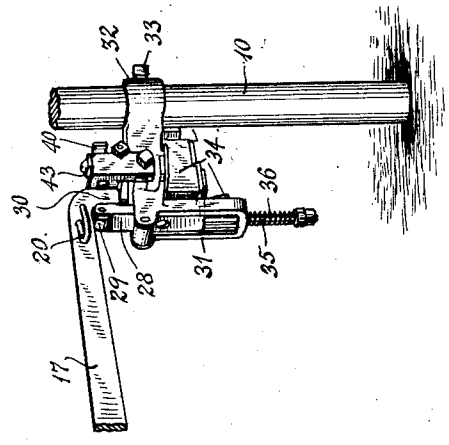


Fig. 3.



WITNESS

G. V. Rasmussen

INVENTOR

PHILIP McGINNIS

BY

Bicsen & Schroeck

ATTORNEYS

Patented Oct. 9, 1928. 1,686,832

UNITED STATES PATENT OFFICE.

PHILIP McGINNIS, OF LONDON, ONTARIO, CANADA.

STARTING GATE.

Application filed September 27, 1927. Serial No. 222,242.

The invention relates to starting-gates or barriers for race tracks, and more particularly to that type thereof in which the barrier, in its operative position, extends across the track at a height of approximately three feet, or about in registry with the breasts of the competing horses. In the particular class of starting-gates in question, the barrier is pivotally swung to an inoperative, raised position when the gate is released to start the race, and the possibility exists that the webbing or barrier, in its upward swing, may catch beneath the neck of one or more horses and thus prevent their proper starting, or even interfere with the starting of all of the horses. The object of the invention is to provide a gate of novel construction and operation in which this possibility is eliminated or at least reduced to a minimum, and whereby the proper functioning of the gate is assured. Other more specific objects will appear from the description hereinafter and the features of novelty will be pointed out in the claims.

In the accompaning drawings, which illustrate an example of the invention without defining its limits, Fig. 1 is a perspective view of a starting-gate embodying the invention; Fig. 2 is a side elevation showing the gate in its lowered or starting position; and Figs. 3, 4 and 5 are perspective views of the locking mechanism whereby the gate is locked in its operative, starting position.

The starting-gate which, generally speaking, may be of any conventional construction comprises upright posts 10 located at opposite sides of the race track which usually is provided with rails 12 as shown in Fig. 1. The posts 10 are secured in upright positions by suitable braces 13 and 14, and at their upper ends pivotally support the main members 15 of the starting-gate. The latter is sprung or thrown from its lowered operative position to a raised inoperative position by means of springs or equivalent devices connected with the main members 15 in the well known way. In starting-gates of the type under discussion as usually constructed and operated, the conventional barrier is carried directly by the main members 15 and accordingly moves in an arc having the pivots of the main members 15 as centers when the gate is sprung. The aforesaid barrier is generally located at a distance of about three feet above the surface of the track or in other words approximately in registry with the breast of a horse partaking in the race. With this arrangement of the starting-gate it happens from time to time, particularly in the case of low standing horses having the habit of throwing their heads downwardly, that the heads of such horses may become caught by the barrier as it rises subsequent to the release of the starting-gate. The possibility is entirely avoided in the instant construction which for this purpose includes auxiliary members 17 pivoted at 18 to the outer ends of the main members 15. These auxiliary members 17 carry the barrier 19 which may be of any conventional form and accordingly may consist of webbing or other suitable yielding material, the ends of which are connected with hooks or equivalent devices 20 provided on the auxiliary members 17 so that said barrier is capable of being positioned transversely across the track at about the level previously indicated. The auxiliary members 17 are capable of moving independently or relatively to the main members 15 and when the barrier is released are given such independent movement by suitable mechanism which in the illustrated example is shown in the form of compression springs 21 mounted on rods 22 pivotally connected at 23 with the auxiliary members 17 and slidable in brackets 24 which form abutments for one end of the springs and are fixed upon the main members 15 for instance by means of set screws 25; to arrest the movement of the rods 22 under the influence of the springs 21 stops 26 are fixed upon set rods for engagement with the brackets 24 or preferably with resilient cushions 27 mounted thereon. In the operative position of the gate the auxiliary members 17 are maintained in an operative position which in the illustrated example is shown being approximately horizontal by means of alternately locking devices fixed upon the posts 10. The locking devices of the illustrated example comprise vertically movable bolts 28 preferably provided with rollers 29 adapted to project in front of lugs 30 on the auxiliary members 17 which as shown may be formed by bending the ends of said auxiliary members 17 transversely to their length. The bolts 28 are vertically slidable in guides 31 depending from brackets 32 which are secured upon the posts 10 in any convenient manner as by set screws 33. The bolts 28 are maintained in their operative locking positions

in any suitable manner so as to be capable of being automatically released when it is desired to spring the starting-gate; in the illustrated example the means in question comprise electrically controlled latches 34 which are controlled by the starter and may be of any conventional construction; as these latches per se form no part of the present invention excepting in so far as they contribute to its operativeness it has been deemed unnecessary to illustrate the same in detail. For the purpose of throwing the bolts 28 into their releasing positions when the latching devices 34 are operated compression springs 35 are provided; these springs are mounted upon rods 36 depending from the bolts 28 through the bottom of the guides 31, said springs being confined between said bottom of the guides 31 and abutments 37 carried by the rods 36 and comprising for instance nuts, screw threaded thereon. In order to prevent the pressure developed by the springs 21 or equivalent mechanism whereby the auxiliary members 17 are independently actuated from interfering with the release of the locking bolts 28, the members 17 at their free ends are provided with short projections 38 adapted to rest upon lugs 39 from part of the brackets 32 and preventing the members 17 from engaging the upper ends of the bolts 28 when the latter are in their locking positions. The arrangement further includes a bar 40 pivoted at 41 upon extensions 42 projecting upwardly from the brackets 32. These bars 40 are adapted to extend across and about the projections 38 and locked beneath a stationary lug 43 so as to prevent unintentional disengagement of the auxiliary members 17 from the locking means by pressure upon the barrier 19 from below. Such pressure results for instance when a horse gets its head under the barrier as they sometimes do when throwing their heads up and down prior to the starting of the race and when in position at the starting-gate.

In practice the starting official by suitably closing an electric circuit at the proper moment actuates the latching device 34 to release the bolts 28 which accordingly are thrown downwardly by the action of the springs 35 to the position shown in Fig. 4 and are thus removed from engagement with the lugs 30 and accordingly release the members 17 from restraint. At the instant this release takes place the action of the springs 16 will cause the main member 15 to swing upwardly about their pivots and accordingly withdraw the auxiliary members 17 from engagement with the aforesaid locking mechanism. To facilitate this withdrawal rollers 44 may be provided upon opposite sides of the brackets 32 as shown in Fig. 4. As soon as the auxiliary members 17 are clear of the brackets 32 and associated elements, springs 21 or equivalent mechanism will swing the auxiliary members 17 on their pivots 18 independently of and relatively to the main members 15. This independent relative actuation of the auxiliary members 17 will accordingly cause the barrier 19 to develop an initial movement which brings it to a lowered position before it starts to move upwardly with the main members 15 to an inoperative raised position. In some devices the aforesaid initial movement of the auxiliary members 17 whereby the barrier 19 is brought to a lowered position may be other than a movement in the arc of a circle without in any way changing the result and the efficiency of the device. In any case the barrier is brought to a position in which interference with the horses during the raising of the barrier to its inoperative position is reduced to a minimum as not entirely obviated. To reduce the danger of interference with the barrier as it describes the aforesaid initial movements the rails 12 are preferably lowered for instance as indicated at 12^a in Fig. 2.

The device is extremely simple in construction and efficient in operation and may readily be attached to existing starting-gates without requiring any material changes in the construction and operation thereof.

Various changes in the specific form shown and described may be made within the scope of the claims without departing from the spirit of the invention.

I claim:

1. In a starting-gate, the combination of a barrier adapted to occupy an operative, restraining position, primary means whereby said barrier is movable to an inoperative position, and auxiliary means movably connected with said primary means whereby said barrier is supported in an operative position and is independently shifted downwardly from its operative position prior to its being carried by said primary means to said inoperative position.

2. In a starting-gate, the combination of main carrying means movable from an operative position to an inoperative position, a barrier, and auxiliary carrying means movably connected with said main carrying means and arranged to support said barrier in a restraining position when said main carrying means are in their operative position, said auxiliary carrying means having an independent initial movement whereby said barrier is initially shifted downwardly from its operative position when said starting gate is released, and subsequently being movable with said main carrying means whereby said barrier is shifted to an inoperative position.

3. In a starting-gate, the combination of

pivoted main members movable from an operative to an inoperative position, a barrier, and auxiliary members movably mounted on said main members and arranged to support said barrier in an operative restraining position when said main members are in said operative position, said auxiliary members having an independent initial movement whereby said barrier is initially shifted downwardly when the starting-gate is released, and subsequently being movable with said main members to shift said barrier to an inoperative position.

4. In a starting-gate, the combination of pivoted main members movable from a lowered operative position to a raised inoperative position, a barrier arranged to be swung upwardly by said main members from an operative restraining position to an inoperative position when the gate is released, auxiliary members movably connected with said main members for supporting said barrier in its operative position when said main members are in their lowered position, and means whereby said auxiliary members are operated relatively to and independently of said main members when said gate is released, to initially shift said gate downwardly from its operative position as it is being moved to its inoperative position by said main members.

5. In a starting-gate, the combination of pivoted main members movable from a lowered operative position to a raised inoperative position, a barrier arranged to be swung upwardly by said main members from an operative restraining position to an inoperative position when the gate is released, auxiliary members pivotally connected with said main members for supporting said barrier in its operative position when said main members are in their lowered position, and a spring for pivotally swinging said auxiliary members relatively to said main members, to shift said gate downwardly from its operative position as it is being moved to its inoperative position by said main members.

6. In a starting-gate the combination of upright posts located at opposite sides of a race track, main members pivotally mounted on said posts at the upper ends thereof, springs connected with said members for swinging them from an operative lowered position to an inoperative raised position, a barrier adapted to extend across said race track in an operative restraining position when said main members are in their operative positions and to be swung upwardly thereby to a raised, inoperative position, auxiliary members movably mounted on said main members for supporting said barrier in its operative position, locking mechanism arranged to engage said auxiliary members for locking said gate in its operative position, means for tripping said locking mechanism to release said gate, and means whereby said auxiliary members are actuated relatively to said main members when said gate is released, to impart an independent downward movement to the barrier as it is being raised to its inoperative position by said main members.

7. In a starting-gate, the combination of upright posts located at opposite sides of a race track, main members pivotally mounted on said posts at the upper ends thereof, springs connected with said members for swinging them from an operative lowered position to an inoperative raised position, a barrier adapted to extend across said race track in an operative restraining position when said main members are in their operative positions and to be swung upwardly thereby to a raised, inoperative position, auxiliary members pivotally connected with said main members at their free ends for supporting said barrier in its operative position, locking mechanism arranged to engage and auxiliary members for locking said gate in its operative position, electrically controlled means for tripping said locking mechanism to release said gate, and springs whereby said auxiliary members are pivotally actuated relatively to said main members when said gate is released, to impart an independent, downward pivotal movement to said barrier as it is being pivotally raised to its inoperative position by said main members.

8. In a starting-gate, the combination of a barrier adapted to occupy an operative, restraining position, primary means whereby said barrier is movable to an inoperative position, and auxiliary means movably connected with said primary means whereby said barrier is initially shifted downwardly from its operative position prior to its being shifted to said inoperative position, locking mechanism cooperating with said auxiliary means to lock said gate in its operative position, means for tripping said locking mechanism to release said gate, and means whereby unintentional disengagement of said auxiliary means from said locking mechanism is prevented.

9. In a starting-gate, the combination of upright posts located at opposite sides of a race track, main members pivotally mounted on said posts at the upper ends thereof, springs connected with said members for swinging them from an operative lowered position to an inoperative raised position, a barrier adapted to extend across said race track in an operative restraining position, when said main members are in their operative position and to be swung upwardly thereby to a raised, inoperative position, auxiliary members pivotally connected with said main members at their free ends for

supporting said barrier in its operative position, locking mechanism arranged to engage said auxiliary members for locking said gate in its operative position, electrically controlled means for tripping said locking mechanism to release said gate, and springs whereby said auxiliary members are pivotally actuated relatively to said main members when said gate is released, to impart an independent, downward pivotal movement to said barrier as it is being pivotally raised to its inoperative position by said main members, and movable locking bars arranged to engage said auxiliary members to prevent disengagement thereof from said locking mechanism by pressure from below upon said barrier.

In testimony whereof I have hereunto set my hand.

PHILIP McGINNIS.