

(No Model.)

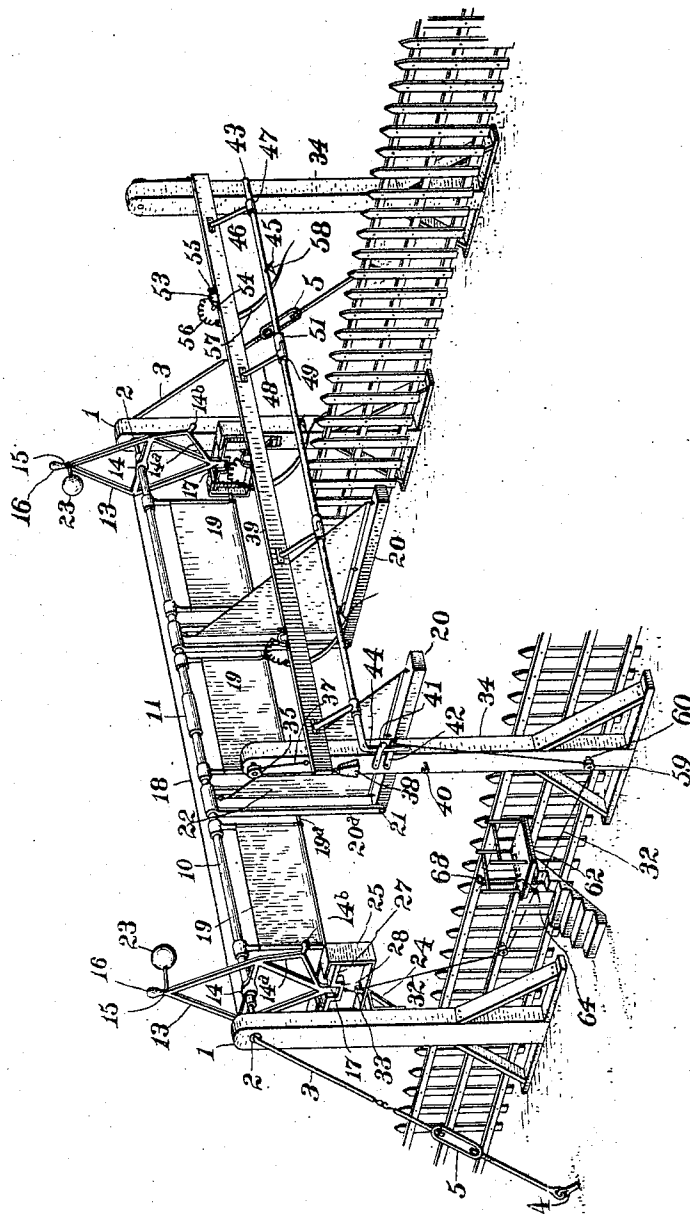
3 Sheets—Sheet 1.

J. SCHMIDT.
STARTER'S GATE FOR RACE TRACKS.

No. 575,130.

Patented Jan. 12, 1897.

Fig. 1.



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(No Model.)

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Fig. 2.

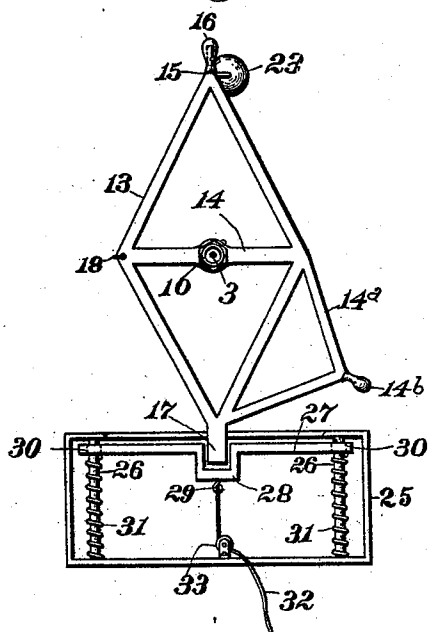


Fig. 3.

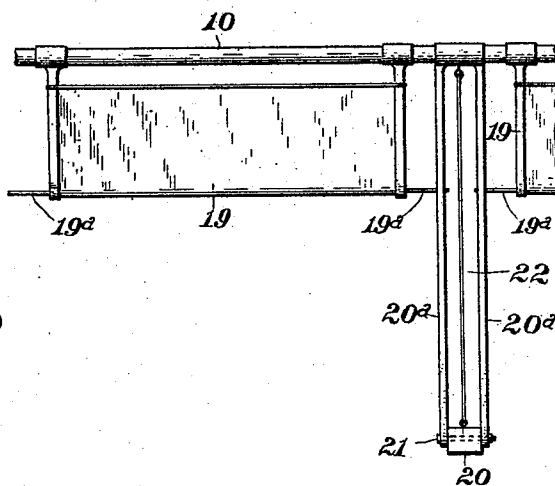
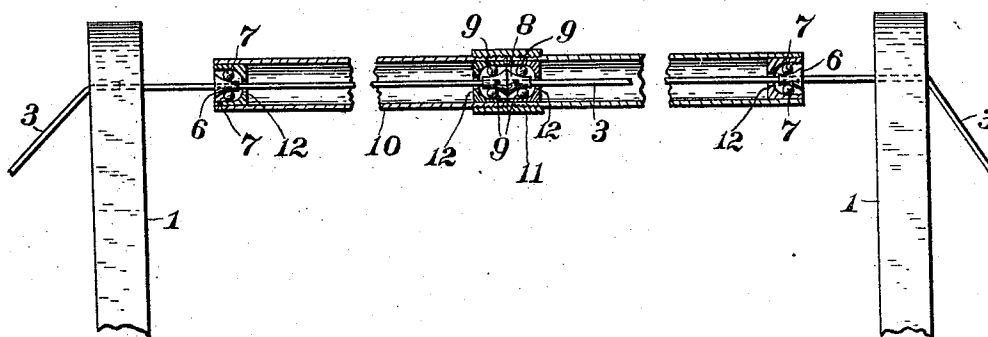


Fig. 4.



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Fig. 5.

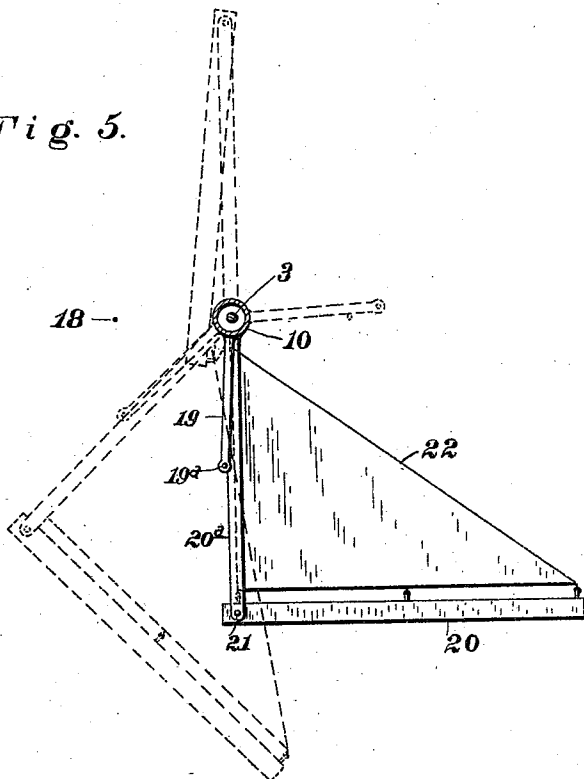


Fig. 6.

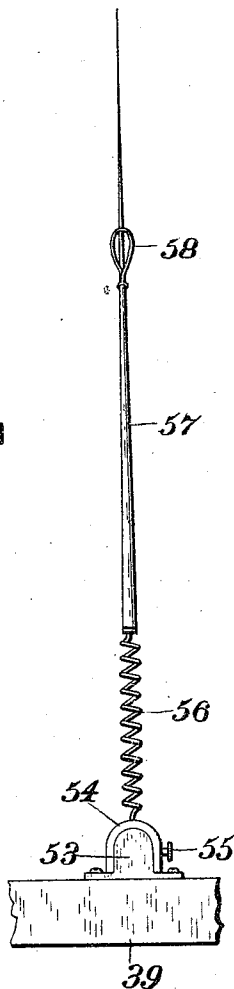
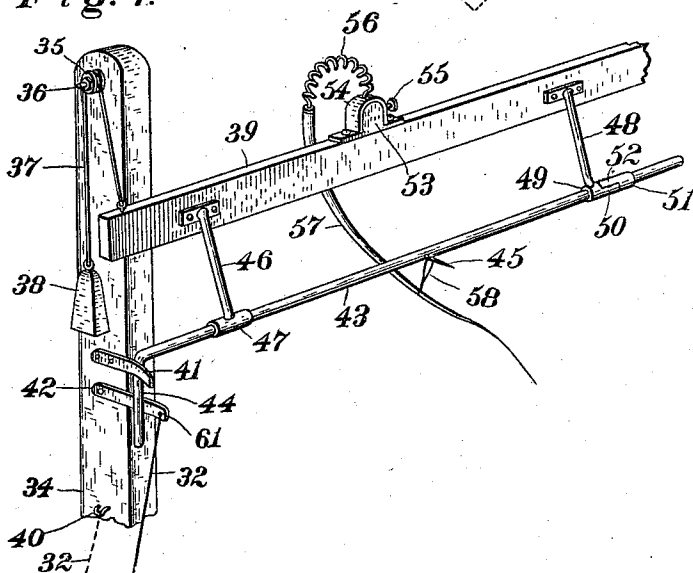


Fig. 7.



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UNITED STATES PATENT OFFICE.

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STARTER'S GATE FOR RACE-TRACKS.

SPECIFICATION forming part of Letters Patent No. 575,130, dated January 12, 1897.

Application filed June 19, 1896. Serial No. 596,165. (No model.)

To all whom it may concern:

Be it known that I, JOHN SCHMIDT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Starters' Gates for Race-Tracks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to starters' gates for race-tracks, and has for its object the improvement of that class of devices which are employed to mechanically insure the fair and simultaneous departure of a number of race-horses side by side in a competitive trial of speed.

Each constituent element of my invention is described in detail, and its office, together with the mode of operation of the whole, fully explained hereinafter.

Referring to the accompanying drawings, wherein like numbers are used to designate like parts throughout the several views, Figure 1 presents a perspective view of the entire invention, showing the parts in their proper relations. Fig. 2 presents an end view showing one of two duplicate diamond-shaped frames, with the spring-return escapement mechanism and means for operating it. Fig. 3 presents an end view of the stall-bars and side view of the stall-gates, showing the rods borne by each gate near its lower edge arranged in contact with the uprights of neighboring stall-bars. Fig. 4 presents a side view of the main cable, the revoluble tube in section, the cones and ball-bearings, and coupling joining the tube-divisions. Fig. 5 presents a side view of a stall-bar with its canvas partition and upright pivotal supports, an end view of a stall-gate, and, in broken lines, the intermediate and final positions of stall bars and gates after revolution of the tube. Fig. 6 presents a side view of a whip, a portion of the whip-board being also shown, with the lug constructed and arranged for attachment to the whip. Fig. 7 represents in perspective

an end portion of the whip bearing and controlling mechanism, showing the longitudinally-movable rod carrying pins provided for engagement with the whip-loops, the brackets having transverse sleeves supporting the rod, the fixed sleeves, the flat spring, and the latch, by which the rod is held against the force of the flat spring. For the sake of clearness all the remaining views are drawn upon a scale slightly larger than that adopted for the first figure.

Considering Fig. 1, numeral 1 designates posts suitably held in upright positions, one upon each side of the track. The posts may be constructed in any chosen form, either of metal or wood, and each has an eye 2, through which may be passed the main cable 3, the ends of the cable being connected with fixed eyebolts or hooks 4 by the cable-tighteners or turnbuckles 5 5.

Considering Fig. 4, numerals 6 6 mark end cones encompassing and fixed upon the cable 3 at each side of the race-track near the posts 1. These cones form one-half of the raceway for balls 7 7 7, &c., to be again mentioned.

8 designates a compound cone, or it may be composed of two single cones having their bases in contact. The cable passes through the cone 8, the cone being fixed in its position in some common and effective manner, as, for instance, by means of one or more set-screws. Cone 8 forms two lower halves of raceways for balls 9 9 9, &c. The construction of the cones and balls is that ordinarily adopted for ball-bearings, and no special description is believed to be needed. Number 10 designates the main revoluble tube. It is divided into one or more lengths in the case of a race-track of considerable width. For the purpose of this description but two tube-lengths, one compound cone, and coupling only are represented. Obviously there could be provided more than one compound cone, the office of which is to furnish an intermediate support and bearing for the revoluble tube upon and between the ends of the cable. In almost every instance this construction is demanded by the necessary length of cable and tube.

11 marks the coupling for the mid-track ends of the revoluble tube 10. Its construc-

tion may be varied, although a simple sleeve oppositely threaded interiorly at each end is usually most economical and convenient.

12 12, &c., are cups corresponding interiorly to cones 7 and 8 in form. They are fixed within the ends of the sections of tube 10 and form the other halves of the raceways for balls of middle and end bearings of the tube. The ends of each tube-section are exteriorly threaded, and diamond-shaped frames 13 13 have cross-bars 14 14 provided with centrally-located interiorly-threaded orifices to receive and engage the outer threaded ends of the tube-sections. Brackets 14^a 14^a are attached to the lower portions of the diamond-shaped frames, and at the outer corner of the brackets there are fixed padded projections 14^b 14^b, to be again referred to. The frames and immediate attachments are best shown in Fig. 2. At the upper point of each diamond frame a projection 15, having a pad 16, is situated, and at the lower point of each of the frames 13 there is an unprotected projection 17 for the purpose of engaging the recessed cross-piece of the escapement mechanism described hereinafter.

18 designates a wire connecting the side angles of the frames 13 upon the side opposite brackets 14^a, and the office of wire 18 is to support stall-bars and stall-gates after the revolution of tube 10.

19 19 19, &c., designate the stall-gates, sleeved pivotally upon the tube 10. Such is the construction of gates 19 that they may be caused to swing forward, but not backward. Should any animal become too restless while between the stall-bars awaiting the starting-signal, the jockey permits the animal to pass out under the tube 10, the gate being swung easily upward out of the path. A rod 19^a, projecting from gate 19, touching the near upright arms of two adjacent stall-bars, (see Fig. 3,) prevents the canvas band, which forms the gate proper, (see Fig. 1,) from being blown backward against the horse's head or annoying the animal by swinging back and forth before his eyes. The attachments of stall-bars 20 20 20, &c., are fixed to tube 10 and move with it. To arms 20^a, &c., vertically depending from the tube-sleeves, the stall-bars are pivotally connected by pivot-rods 21 21 21, &c., and a canvas partition 22, which also acts as a supporting connection, extends from each tube-sleeve to the stall-bar proper, screw-eyes being set in each, to which the ends of the binding-cord of canvas 22 are tied. (See Fig. 5.)

23 23 mark overbalancing-weights attached by arms to the upper points of the frames 13.

24 24 designate the brackets attached to posts 1, supporting the boxes inclosing the spring-return escapement mechanism, the boxes being marked 25 25.

26 26, &c., designate (see Fig. 2) upright guide-posts rising from boxes 25 25, and 27 27 represent the reciprocative cross-pieces, having recesses or rectangular bends 28 28, eyes

or hooks 29 29, attached to the under surface, and orifices 30 30 near each end, which movably fit the guide-posts 26 26. Encircling the posts 26 are coiled springs 31 31, adapted to be compressed between boxes 25 and cross-pieces 27, and 32 32 mark a cord tied to eye 29, by which each cross-piece 27 may be drawn downwardly against the force of spring 31. It is apparent that when the cord is released the springs will return the cross-pieces to their normal positions. Pulley-blocks 33 33 are suitably attached to boxes 25, through which the cords 32 32 may be led away to the starter's stand. (See Fig. 1.)

34 34 designate posts set at each side of the race-track in proper relative situation and at a convenient distance from the posts 1 1. Upon the outside of each post 34 a grooved pulley 35 is revoluble upon a projecting pin 36, and a short cable 37, running over pulley 35, connects with weight 38. (See Fig. 7.) The remaining end of short cable 37 is connected with a whip-board 39, which extends entirely across the track parallel with the tube 10 and bears the whips and their operating devices.

40 designates a pin driven into post 34, to which rope 32 may be tied when it is desired to operate the invention from the vicinity of the whip-board post 34.

41 marks a flat spring attached to post 34, and 42 marks a pivoted arm or latch, also borne by that post. The offices of parts 41 42 are respectively to propel and to hold against propulsion a rod 43, having a bent end 44 and projecting pins 45 45, &c., to engage the whip-loops, to be described.

46 46 designate the brackets borne by whip-board 39 near each end. The brackets 46 have hollow cylinders 47, fixed transversely at their ends, and those cylinders fit movably about the rod 43, which may be actuated to and fro through them.

48 48 48, &c., designate the intermediate brackets borne by beam 39. Brackets 48 have sleeves 49, fixed transversely at their ends and bored to movably fit rod 43. Each sleeve 49 possesses a longitudinal recess 50, which corresponds in form and size with the recess in each of a number of sleeves 51 51 51, &c., which are fixed upon the rod 43.

52 marks the recesses of sleeves 51 51.

Along the upper edge of whip-board 39 are fixed lugs or curved pieces 53 53, designed to engage the whip-yokes 54 54 and to be attached thereto when set-screws 55 55 are set up.

56 56 mark the spring-section of the whips, (see Fig. 6,) one end being joined to the yoke 54 and the remaining end to the whalebone or reed-and-lash portion 57 of the whip. Near the lash are the whip-loops 58 58, which engage pins 45 (see Fig. 7) when the whips are set.

Near the foot of post 34, Fig. 1, will be seen a grooved pulley 59, revoluble upon a pin 60, and about which cord 32 may be passed and

5 tied to eye 61, which is provided near the end of latch 42. Pivoted to 62, which marks a portion of the starter's stand, Fig. 1, is the bent lever 63, connected at the point 64 with
 10 cord 32. If the cord has been drawn sufficiently taut, a movement of lever 63 will draw the cross-pieces 27 27 downwardly against springs 31 31 and at the same time the latch 42 will be withdrawn from before the bent end
 15 of rod 43, permitting the simultaneous rotation of tube 10 and the fall of the whips.

In the main view, Fig. 1, as the parts are shown to be assembled the projection 17 is represented as engaged with the recess 28
 20 upon each side of the race-track. Assume that cord 32 is drawn upon and cross-pieces 27 27 depressed. Weights 23 23, acted upon by gravity, turn the frames 13 13 and tube 10 into the intermediate position indicated by
 25 broken lines in Fig. 5. After being drawn upon the cord 32 is at once released and the cross-pieces 27 27 rise in time to intercept and engage the pads 16 16 of projections 15 15, arresting the revolution of the parts. The
 30 intermediate position of the frames and tube holds the stall-gates 19 above the line of horses and no obstacle is presented to their fair and prompt departure. It is necessary, however, to once more operate lever 63 or
 35 draw upon cord 32 in order that the frames, tube, stall-gates, and stall-bars should assume their final inverted and highest position, in which they are raised entirely above the heads and out of the path of the horses and riders as they approach when completing each lap.

Considering Fig. 7, it will be understood that rod 43 may be moved to and fro within the sleeves of the brackets attached to the
 40 whip-board, and that the correspondingly-recessed sleeves 49 of brackets 48 and 51, fixed upon rod 43, coact when in contact to prevent the rotation of the rod. In drawing the rod 43 outwardly to bring the sleeves into engagement the force of flat spring 41 must be overcome, and to hold the rod in its outermost position the latch 42 must be turned up before the bend 44 of the rod. When the action upon cord 32 removes the end of the latch,
 45 the reaction of spring 41 propels the rod inwardly, the sleeves 49 51 become disengaged, leaving the rod free to rotate, which it quickly does under the influence of the bent whip-springs, the whip-loops 58 58 slip from pins 45 45, and each animal is struck precisely at the same moment, receiving a blow of exactly the same strength as that applied to the backs of any of the others in line with him. While rod 43 occupied its outward position, the grip
 50 upon it between spring 41 and latch 42 prevented it from rising, but immediately the rod is propelled inwardly and the whips sprung the whip-board and all its attachments rise more or less rapidly under the influence of weights 38 38 until the whole apparatus has been raised well above the heads of the mounted jockeys. In the final raised position of

diamond-shaped frames 13 and tube 10 the wire 18 limits the descent (see Fig. 5) of the pivoted stall-gates, which would otherwise
 70 hang too low.

While consisting of a number of parts, my invention as a whole is of such simple character that the manner of resetting the gate to start a subsequent race is believed to appear
 75 sufficiently plain from the description and drawings as already explained.

What I claim, and desire to protect by Letters Patent of the United States, is—

1. In a starter's gate for race-tracks, the combination of a main cable, posts constructed to support said cable, means for tightening said cable and for securing the ends thereof, a tube inclosing said cable and revoluble thereupon between said posts, frames adapted for attachment to opposite ends of said tube, weights arranged to overbalance said frames, escapement mechanism placed beneath said frames, projecting pieces or stops borne by said frames and adapted for engagement with said escapement mechanism whereby said frames may be held in an upright, an intermediate or final inverted position, and means for operating said escapement, substantially as described.

2. In a starter's gate for race-tracks, the combination of a main cable, posts constructed to support said cable, means for tightening said cable and for securing the ends thereof, a tube inclosing said cable and revoluble thereupon between said posts, stall-bars attached to said tube, frames adapted for attachment to opposite ends of said tube, weights arranged to overbalance said frames, escapement mechanism placed beneath said frames, projecting pieces or stops borne by said frames and adapted for engagement with said escapement mechanism whereby said frames may be held in an upright, an intermediate or final inverted position, and means for operating said escapement, substantially as described.

3. In a starter's gate for race-tracks, the combination of a main cable, posts constructed to support said cable, means for tightening said cable and for securing the ends thereof, a tube inclosing said cable and revoluble thereupon between said posts, stall-gates pivotally connected with said tube, devices for limiting the rearward swing of said stall-gates and for causing said stall-gates to revolve with said tube, arms depending from said tube, stall-bars pivoted to said arms, means for supporting said stall-bars at an angle with said arms, means for supporting the pivoted stall-gates when the stall-bars are in their inverted positions, frames adapted for attachment to opposite ends of said tube, weights arranged to overbalance said frames, escapement mechanism placed beneath said frames, projecting pieces or stops borne by said frames and adapted for engagement with said escapement mechanism whereby said frames may be held in an upright, an intermediate

or final inverted position, and means for operating said escapement, substantially as described.

4. In a starter's gate for race-tracks, the combination of suitable uprights, a whip-board, devices supported by said uprights and connected with said whip-board whereby the weight of said whip-board and parts attached thereto is overbalanced, spring-rods or spring-whips, devices for connecting said spring-whips and whip-board, devices for holding said spring-whips in a bowed condition and for holding said whip-board in its lowered position, mechanism for releasing the spring-whips and whip-board, and means for operating said releasing mechanism, substantially as described.

5. In a starter's gate for race-tracks, the combination of a main cable, posts constructed to support said cable, means for tightening said cable and for securing the ends thereof, a tube inclosing said cable and revoluble thereupon between said posts, frames adapted for attachment to opposite ends of said tube, weights arranged to overbalance said frames, escapement mechanism placed beneath said frames, projecting pieces or stops borne by said frames and adapted for engagement with said escapement mechanism whereby said frames may be held in an upright, an intermediate or final inverted position, suitable uprights, a whip-board, devices supported by said uprights and connected with said whip-board whereby the weight of said whip-board and parts attached thereto is overbalanced, spring-rods or spring-whips, devices for connecting said spring-whips and whip-board, devices for holding said spring-whips in a bowed condition and for holding said whip-board in its lowered position, mechanism for releasing the spring-whips and whip-board, means for simultaneously operating said escapement and said whip-releasing mechanism, substantially as described.

6. In a starter's gate for race-tracks a spring-whip consisting of a yoke, a set-screw operating through one leg of said yoke, a spring-section connected at one end with said yoke, and a comparatively rigid rod-section connected with the remaining end of said spring-section, substantially as described.

7. In a starter's gate for race-tracks, the combination of suitable uprights, grooved pulleys revoluble upon pintles borne by said uprights, a whip-board, weights, short cables adapted to be passed over said grooved pulleys and connected with said whip-board and weights, a rod having a bent end and pins projecting at intervals, end brackets attached to said whip-board and provided with transverse sleeves movably fitting said rod, intermediate brackets fixed to said whip-board and having transverse sleeves movably fitting

said rod, the said sleeves being recessed longitudinally, sleeves fixed to said rod and having recesses corresponding in form and extent with the recesses of the sleeves upon said intermediate brackets, a flat spring attached to one of said uprights and arranged to resist the longitudinal movement of said rod, a latch constructed and arranged to engage the bent end of said rod and to hold the same against the force of said flat spring, and means for operating said latch, substantially as described.

8. In a starter's gate for race-tracks, the combination of suitable uprights, grooved pulleys revoluble upon pintles borne by said uprights, a whip-board, weights, short cables adapted to be passed over said grooved pulleys and connected with said whip-board and weights, a rod having a bent end and pins projecting at intervals, end brackets attached to said whip-board and provided with transverse sleeves movably fitting said rod, intermediate brackets fixed to said whip-board and having transverse sleeves movably fitting said rod, the said sleeves being recessed longitudinally, sleeves fixed to said rod and having recesses corresponding in form and extent with the recesses of the sleeves upon said intermediate brackets, a flat spring attached to one of said uprights and arranged to resist the longitudinal movement of said rod, a latch constructed and arranged to engage the bent end of said rod and to hold the same against the force of said flat spring, lugs placed at intervals upon said whip-board, spring-whips having yokes and set-screws adapted for engagement with said lugs, loops attached to said spring-whips and adapted to be brought into engagement with said pins when said spring-whips are bowed, and means for operating said latch, substantially as described.

9. In a starter's gate for race-tracks, the combination of a main cable, posts constructed to support said cable, means for tightening said cable and for securing the ends thereof, a plurality of tubes and tube-couplings inclosing said cable and revoluble thereupon between said posts, frames adapted for attachment to opposite ends of said tubes, weights arranged to overbalance said frames, escapement mechanism placed beneath said frames, projecting pieces or stops borne by said frames and adapted for engagement with said escapement mechanism whereby said frames may be held in an upright, an intermediate or final inverted position, and means for operating said escapement, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN SCHMIDT.

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WILLIAM J. J. GALVIN.