

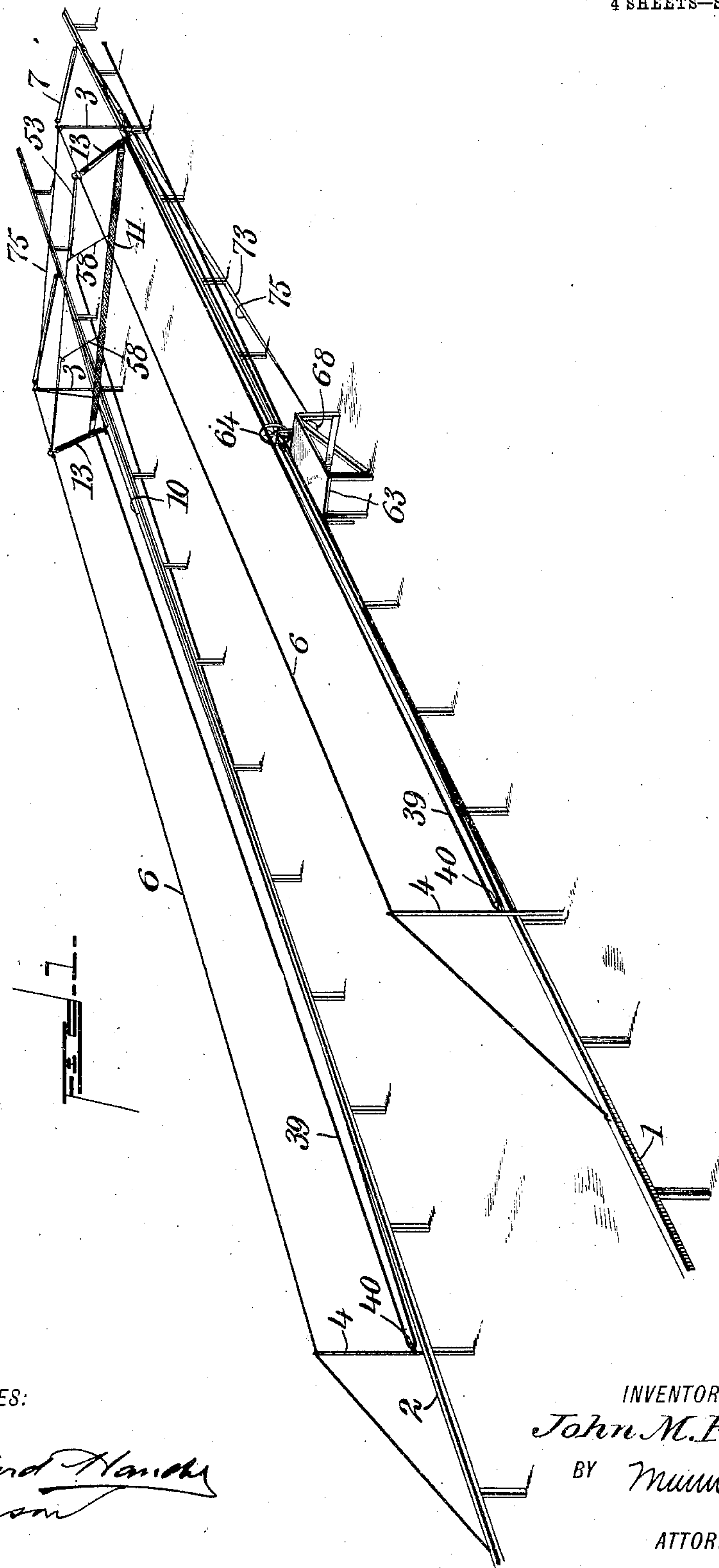
No. 789,801.

PATENTED MAY 16, 1905.

J. M. FLYNN.
STARTING GATE.

APPLICATION FILED MAY 18, 1904.

4 SHEETS—SHEET 1.



WITNESSES:

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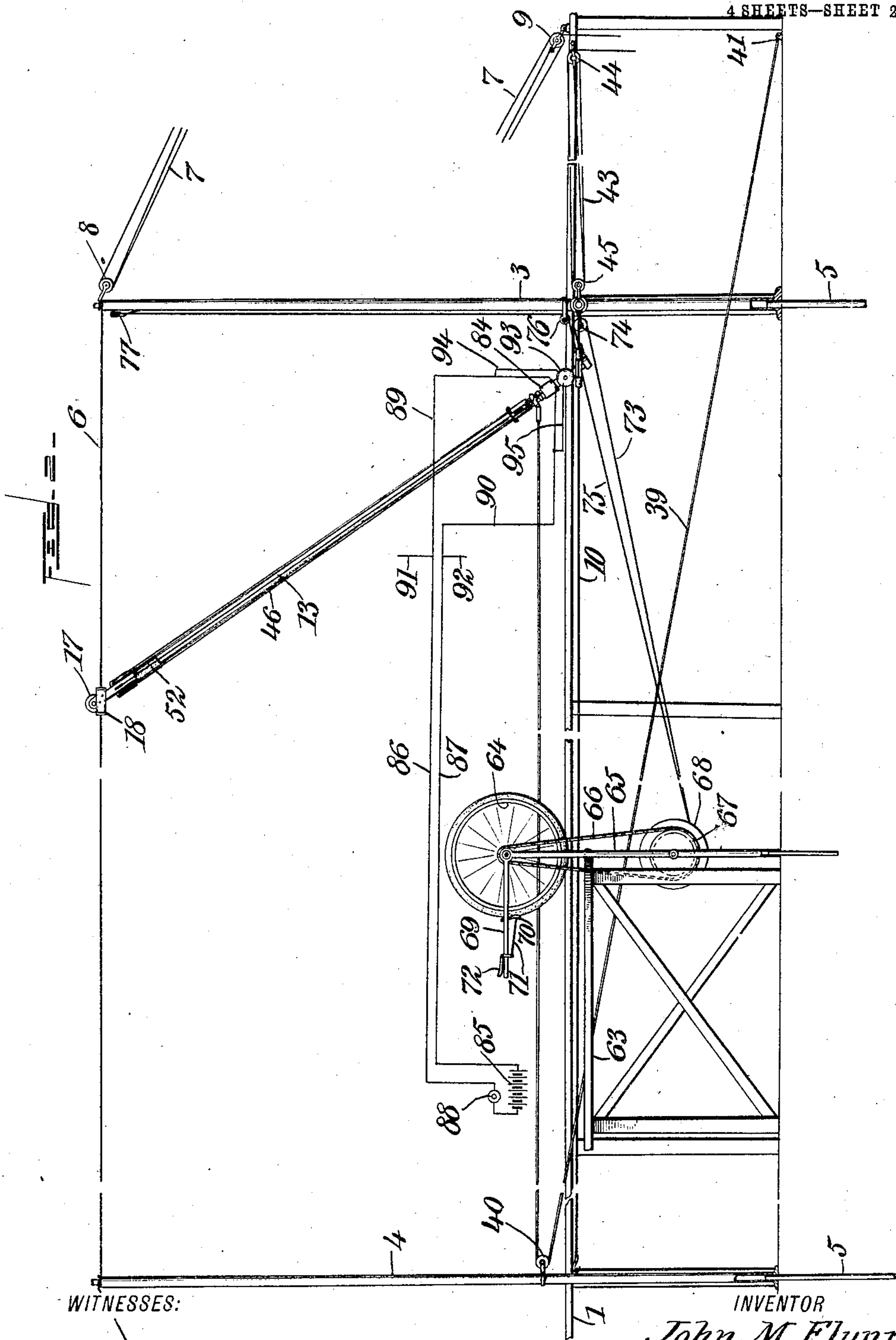
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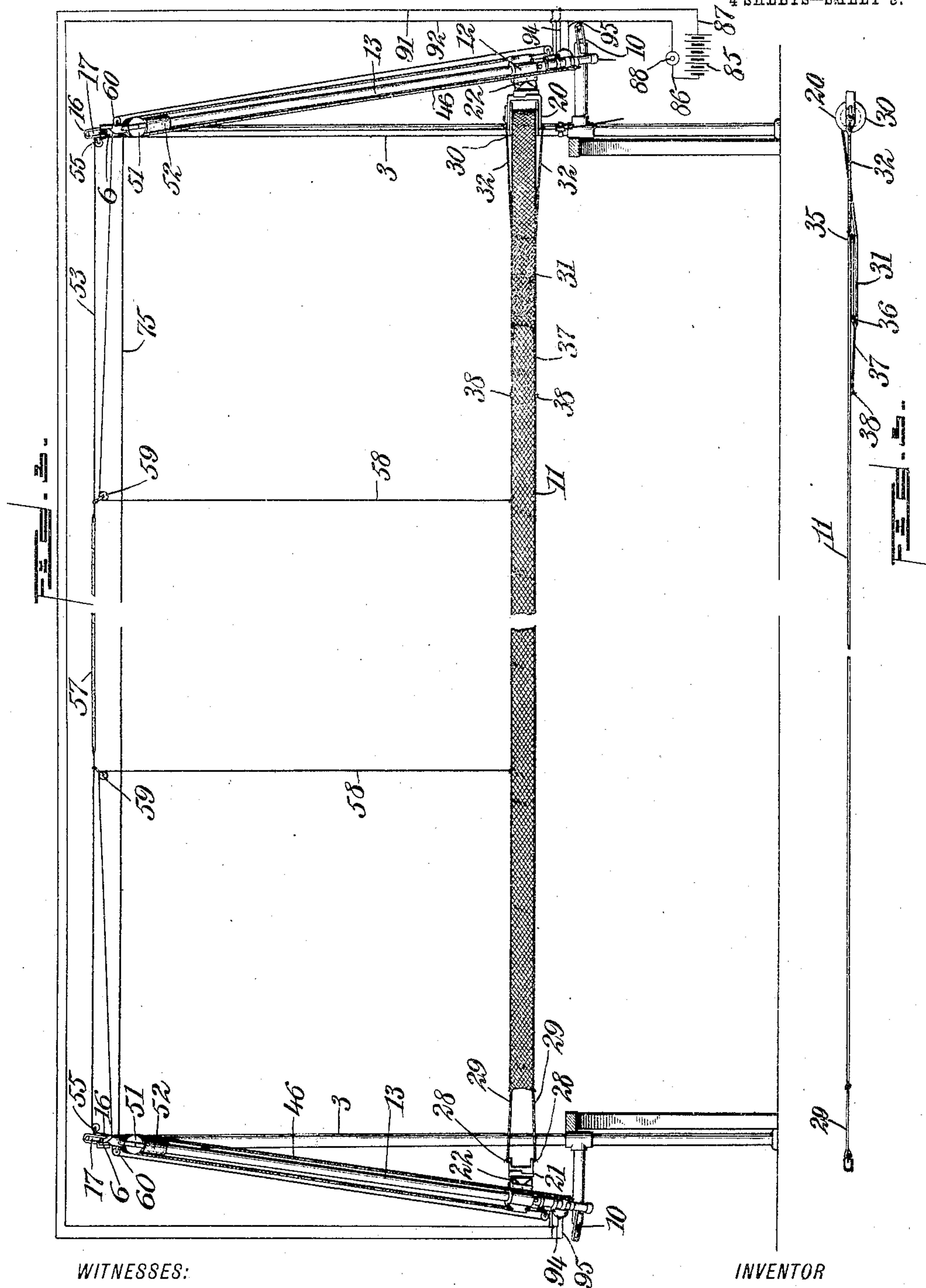
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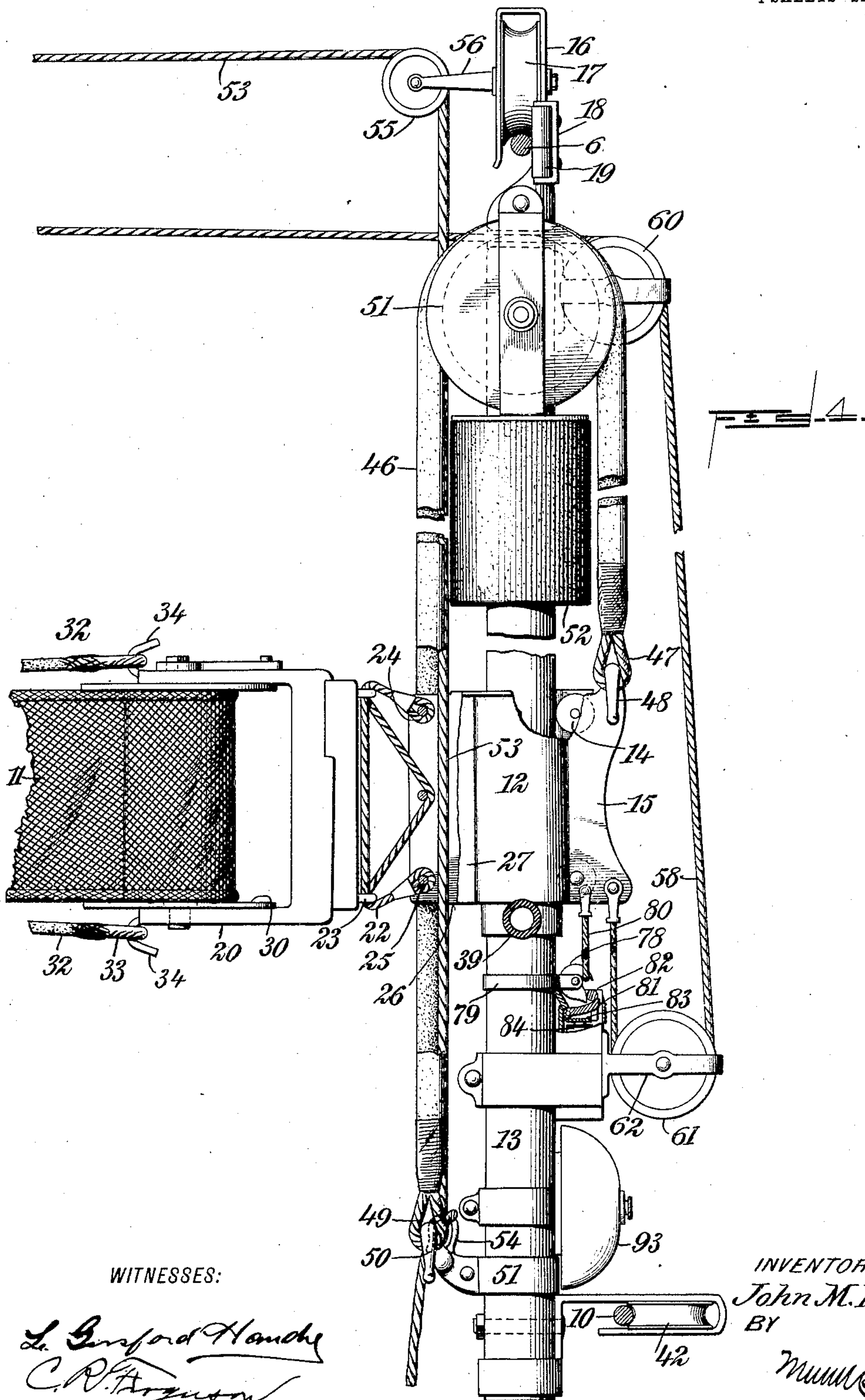
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4 SHEETS—SHEET 4.



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JOHN M. FLYNN, OF NEW YORK, N. Y.

STARTING-GATE.

SPECIFICATION forming part of Letters Patent No. 789,801, dated May 16, 1905.

Application filed May 18, 1904. Serial No. 208,549.

To all whom it may concern:

Be it known that I, JOHN M. FLYNN, a citizen of the United States, and a resident of the city of New York, Sheepshead Bay, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Starting-Gate, of which the following is a full, clear, and exact description.

This invention relates to improvements in gates or barriers particularly adapted for starting running horses on a race-track, an object being to provide a gate so constructed that before rising for the start it will have a movement for a desirable distance lengthwise of the track, whereby the field of horses may be caused to walk to an alinement at the starting-point, thus preventing long and tedious delays incident to starting.

Further objects of the invention are to so arrange a mechanism that the gate may be easily controlled, regulated as to speed, stopped and started at will, and released at any desired time.

Other objects of the invention will appear in the general description.

I will describe a starting-gate embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a starting-gate mechanism embodying my invention. Fig. 2 is a side elevation thereof, drawn on a large scale and broken at intervals. Fig. 3 is a cross-section. Fig. 4 is a detail showing the operating mechanism for the gate or barrier, and Fig. 5 is the top edge of the barrier.

Referring to the drawings, 1 2 designate the usual rails at the opposite sides of the track. The frame mechanism of the starting-gate consists of posts 3 at opposite sides of the track and at the initial starting-point for the horses, and posts 4, arranged at the egress end of the mechanism. These posts for the sake of lightness with sufficient strength may be made of tubular iron and have rod projections 5 for entering the ground to form anchors. Wires or cables 6 connect the two posts of a

side, and these cables are extended from the upper ends of the posts 4 to connection with the rails 1 2, as clearly indicated in Fig. 1, and the whole is drawn taut by means of ropes 7, rove through tackle-blocks 8, connected to the upper ends of the posts 3, and through tackle-blocks 9, attached to the rails. These wires or cables 6 form the upper runways or tracks for the gate, and the lower runways consist of wires or cables 10, attached to the posts 3 4 of each side near the side rails of the race-track. The barrier 11 consists of a strip of suitable webbing, and the ends thereof are connected to runners 12, mounted to move up and down on guide-rods 13, which may consist of tubular metal, and to provide for movement of said runners with the least possible friction friction-rollers 14 are mounted between web portions 15 on the runners and engage against the outer sides of the rods 13.

On the upper end of each rod 13 is a frame 16, open at the bottom, and in each frame is a grooved pulley 17 engaging with the wire or cable 6, and also attached to horizontal plates 18 on the frame 16 are rollers 19, which engage against the outer sides of the wires or cables 6 and serve to hold said wires or cables taut when the gate moves along, as will be hereinafter described.

The ends of the barrier 11 are connected directly to yokes 20 21, which are secured to the runners by crossed flexible cords 22, these cords being extended through eyes 23 in the yokes and having loop ends 24 engaging around pins 25, attached to inner cheek-pieces or webs 26 27, arranged at the inner sides of the runners. The yoke 21 has hook portions 28 for receiving eyes formed in the ends of cords 29, extended from the adjacent end of the barrier 11. In the yoke 20 is arranged a roller 30, around which the adjacent end of the barrier is turned and folded upon itself, as indicated at 31 in Fig. 3. A cord or elastic 32—such, for instance, as a rubber tube—has eyes 33 formed at its ends for engaging removably with hooks 34 on the yoke 20. This elastic cord 32 is passed through the outer fold of the barrier, as indicated at 35, and through the inner fold (indicated at 36) another elastic cord 37 is passed and has its ends secured to the

barrier at the points indicated at 38. These elastic connections will permit the barrier to be swayed considerably inward by pressure of a horse or horses against the same, and upon relieving it of such pressure the elastics will cause the barrier to assume its normal position. It may be here stated, however, that these elastics are somewhat stronger than the cords 29, so that should breaking occur by pressure above mentioned it will be through the cords 29, and therefore the barrier may be quickly and cheaply repaired. The folding of the barrier also permits of its being lengthened or shortened to accommodate it to different widths of track.

As clearly indicated in Figs. 1 and 2, the guide-rods for the barrier are arranged at a forward and upward angle, which is preferable to a straight upward movement, because the barrier in running up the incline may be more quickly gotten out of the way of the horses.

As a means for moving the barrier and the parts supporting the same lengthwise of the track or along the wires 6 and 10 I employ elastic actuating devices 39, which preferably consist of tubular rubber. These elastic actuating devices are secured at one end to the lower ends of the rods 13, then passed around pulleys 40, attached to the posts 4, and thence they pass back to the ingress end of the mechanism and connect with anchors 41, which may be metal stakes or the like driven into the ground, or these ends of said devices 39 may be otherwise secured.

The lower ends of the rods 13 carry at the outer side horizontally-disposed rollers 42, which engage with the outer sides of the wires or cables 10, and these wires or cables 10 may be hauled taut by tackle-ropes 43, engaging around pulleys 44 on the rails of the track and around pulleys 45, attached to said wires 10 or to parts connected to the ends thereof.

The barrier 11 is caused to be moved upward very quickly by means of elastics 46, which may consist of tubular rubber. These elastics have eyes 47 at one end for engaging removably with hooks 48 on the webs 15, and at the opposite ends the elastics have eyes 49 for engaging with hooks 50, attached to rings 51, secured to the rods 13. The eyes 47 and 49 preferably consist of rubber suitably secured in the ends of the elastics, and by making them removable from the hooks it is obvious that should the elastic break a new one may be readily put in its place. The elastics extend over grooved pulleys 51 at the upper ends of the rods 13, as clearly indicated in Fig. 4, and below these pulleys are rubber buffers 52, against which the upper ends of the runners 12 may strike upon reaching the top, thus reducing shock and obviating noise.

A rope 53 connects at its ends to eyes 54, carried by the rings 51 on the rods 13, and this rope passes over grooved pulleys 55,

mounted on arms 56, extended inward from the frames 16. This rope 53 has an elastic portion 57 at the center, and as the barrier moves along toward the center the elastic 57 by contracting will pull the rollers 19 against the wires 6, thus keeping said wires practically taut. Of course as the barrier reaches either end the elastic 57 will stretch and accommodate the pulleys to the divergence of the opposite wires. To prevent the barrier from sagging downward between its ends or at the center, I employ ropes 58, which are secured at their inner ends to said barrier and pass up and around pulleys 59, attached to the rope 53, thence around pulleys 60, supported on the upper ends of the rods 13, then around pulleys 61, supported in brackets 62 near the lower ends of the rods 13, and then up to connection with the webs 15. As the connections of the ropes 58 with the webs are in line with the connections therewith of the flexible devices for the gate, it is obvious that there will be no binding effect of the runners on the rods 13 as the said runners move upward, and of course as the runners move upward the ropes 58 will be drawn in such manner as will keep the center of the barrier from sagging.

I will now describe the means for regulating the speed of the barrier as it moves lengthwise of the track, the said means also serving to return the barrier to its initial position.

Placed along the track at one side is the starter's platform 63, and adjacent thereto is a brake-wheel 64, which may have a rubber tire or rim, and the shaft of this brake-wheel has its bearings in a frame 65, suitably anchored in the ground, and on the shaft is a sprocket-pinion from which a chain 66 extends to engagement with a sprocket-wheel 67, mounted on the shaft of a drum 68, the said shaft having its bearings in said frame 65. Supported on an arm 69, extended lengthwise of the track from the frame 65, is a brake-shoe 70 for engaging with the periphery of the wheel 64. This brake-shoe is connected to a rod 71, which is operated to cause more or less pressure of the shoe by means of a handpiece 72. From the drum 68 a cord or cable 73 extends around a pulley 74, attached to the post 3, and then this cord or cable extends to a connection with the lower end of the guide-rods 13 at the side on which the brake-wheel is arranged. Another cord or cable, 75, extends from said drum 68 around a pulley 76 at the lower portion of the post 3, on which the pulley 74 is arranged, thence over a pulley 77 at the upper end of said post, across the track over a similar pulley at the top of the opposite post 3, thence down around a pulley at the lower portion of said opposite post, and then to a connection with the opposite guide-rod 13. Obviously the movement of the gate lengthwise of the track will be regulated in its speed by the degree of pressure of the brake-shoe on the brake-wheel, and, in fact,

the gate may be entirely stopped between its initial and final points if the same should be necessary, and also by rotating the drum 68 the gate may be returned to its initial position, where it will be held by the brake mechanism to be subsequently released by relieving the brake-pressure.

I will now describe a means for holding the barrier in its lowered position and also a means for releasing the same, the said releasing means being under the control of the starter.

The holding means consists of hooks 78, mounted to swing on rings 79, attached to the rods 13 and adapted to be engaged by loops 80, attached to the runners 12. As here shown these loops are connected directly to the web portions. When in locked position, the downwardly-extended portions of the hooks 78 are engaged by latch-plates 81, carrying rollers 82, which engage directly with said downwardly-extended portions of the hooks. These latch-plates are held in locking position by means of armatures 83, which are moved downward to release the latch-plates, and consequently release the loops from the hooks by means of electromagnets 84. From the poles of an electric battery 85 lead-wires 86 87 extend, and in one of the wires is arranged, in the starter's platform, a push-button or switch 88. From the wires 86 87 connecting-wires 89 90 extend to the electromagnets 84 at one side, and from these wires 86 87 connections 91 92 pass to the electromagnets 84 at the opposite side, and therefore when the circuit is closed the two hooks 78 will be simultaneously released from the loops, permitting the barrier to be moved quickly upward by the elastic connections.

Arranged on the lower portion of each guide-rod 13 is an electric gong 93, the electromagnets of which are connected to the circuits through shunts 94 95, and therefore when the barrier is released the gongs will be sounded to indicate the start for the horses.

In the operation it is intended that the horses shall walk along the track until the barrier is raised, and as it is hardly possible that all of the horses can be lined up against the barrier at the start of its forward movement the starter will by the brake mechanism cause a comparatively slow movement of the barrier lengthwise of the track until all of the horses are lined up against the barrier. Then it may be released and the horses start.

Before or after the return of the gate to its initial position it may be lowered and locked by attendants at opposite sides of the track, and, as before stated, it is held in its initial position by means of the brake mechanism under the control of the starter.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a starting-gate, guide-rods arranged at an upward incline, longitudinal wires along which said guide-rods are movable, elastic de-

vices for causing the movements of the rods along said wires, a barrier movable along the rods, and means for moving the barrier upward after its movement lengthwise of the wires.

2. In a starting-gate, guide-rods, wires along which said guide-rods are movable, elastic devices for causing such movements along the wires, runners mounted to move on the guide-rods, flexible devices for causing the upward movements of the runners at the end of the movement of the rods along the wires, and a barrier having connection with the runners.

3. A starting-gate comprising upright guide-rods, longitudinal wires along which the upper portions of said guide-rods are movable, longitudinal wires along which the lower portions of the rods are movable, runners movable on the guide-rods, pulleys at the upper ends of the guide-rods, elastic devices having connection at one end with the guide-rods and passing over said pulleys and connecting at the opposite end with the runners, and a barrier having connection with said runners.

4. A starting-gate comprising upright guide-rods, runners movable on said rods, buffers at the upper portions of the rods against which said runners may strike, pulleys at the upper ends of the guide-rods, elastic devices connected at one end to the guide-rods and passing over said pulleys and connecting at the other end with said runners, and a barrier carried by said runners, the connection between the barrier and one of the runners being elastic.

5. In a starting-gate, upper wires arranged along a track at opposite sides thereof, lower wires extended along the opposite sides of the track, guide-rods, rollers at the upper ends of said guide-rods engaging on the upper sides of the upper wires, rollers at the upper ends of the guide-rods for engaging at the outer sides of the wires, rollers at the lower ends of the guide-rods for engaging with the outer sides of the lower wires, and a barrier movable along said guide-rods.

6. A starting-gate comprising upper wires extended along a race-track at opposite sides, lower wires extended along the track at opposite sides, guide-rods, rollers on the upper ends of said rods for engaging with the upper wires, rollers at the lower portions of the rods for engaging with the lower wires, runners movable on said rods, elastic devices for moving said runners upward, and a barrier having connection with the runners.

7. A starting-gate comprising guide-rods arranged at opposite sides of a race-track, runners movable along said guide-rods, means for moving the runners upward on the rods, yokes attached to the runners, a roller mounted on one of the yokes, hooks on said yoke having a roller, a barrier having one end extended around said roller, an elastic connection between said hooks and the barrier, and

a fold in said barrier, another elastic connection engaging in said fold, and also connecting at the ends with the barrier, and cords connecting the opposite end of the barrier with the opposite yoke, the said cords having less strength than the elastic connections.

8. A starting-gate comprising guide-rods, upper wires arranged along a race-track at opposite sides, lower wires arranged at opposite sides of the track, rollers carried by said guide-rods and engaging with the wires, elastic devices for moving the guide-rods lengthwise of the wires, means for regulating the speed of movement along the wires, and a barrier movable on said guide-rod.

9. A starting-gate comprising guide-rods, upper and lower wires extended along opposite sides of a race-track and on which said guide-rods are movable, posts supporting the wires at the ingress end, posts supporting the wires at the egress end, pulleys on said last-named posts, elastic tubes having connection with said guide-rods, passing around said pulleys and having their opposite ends anchored at the ingress end of the device, a barrier movable on said rods, and elastic devices for causing the upward movements of the barrier.

10. A starting-gate comprising upper and lower wires arranged along the opposite sides of a race-track, guide-rods, pulleys at the upper ends of said guide-rods engaging with the upper sides of the upper wires, pulleys at the lower ends of the rods for engaging with the lower wires, rollers at the upper ends of the rods for engaging against the outer sides of the wires, rollers movable on the guide-rods, pulleys at the upper ends of the guide-rods, pulleys at the lower ends of the guide-rods, runners on the guide-rods, a cable having connection with said runners and passing around said upper and lower pulleys, means for moving the guide-rods lengthwise of the wires, a barrier movable with said runners, and means for causing the vertical movements of said barrier.

11. In a starting-gate, upper and lower wires extended along opposite sides of a race-track, guide-rods, pulleys at the upper ends of the guide-rods for engaging with the upper wires, pulleys at the lower ends of the guide-rods for engaging with the lower ends of the wires, other pulleys adjacent to said upper pulleys, a cable having connection with the guide-rods and extending over said other pulleys, the said cable having a flexible portion, pulleys on said cable, runners movable on the guide-rods, cords having connection with said runners and passing over the pulleys supported by said cable, and a barrier connected to the runners and with which said cords engage.

12. In a starting-gate, upper and lower wires extended along a race-track and above the same at opposite sides, guide-rods movable along said wires, means for causing said move-

ment along the wires, runners movable on the rods, electrically-controlled locking devices for holding the runners in lowered position, elastic devices for moving the runners upward on the rods, and a barrier carried by said runners.

13. In a starting-gate, guide-rods arranged at opposite sides of the track, runners movable on said rods, a barrier connecting with the runners, pulleys at the upper ends of the rods, tubular elastic devices connecting at one end with the rods passing over said pulleys and engaging at the other end with the runners, and electrically-controlled locking devices for holding the runners in lowermost position.

14. In a starting-gate, upper and lower wires arranged along a track at opposite sides, guide-rods movable along said wires, elastic devices for moving said rods in one direction, a barrier carried by the rods and movable vertically thereon, a winding-drum, and cable connections between said winding-drum and the rods whereby the rods and barrier may be returned to initial position.

15. In a starting-gate, upper and lower wires extended along a track at opposite sides, guide-rods movable along said wires, a barrier carried by the rods and movable along the same, elastic devices for moving the rods toward the egress end, a winding-drum, cable connections between said drum and rods, a brake-wheel having driving connection with said drum, and a brake-shoe for engaging with said brake-wheel.

16. In a starting-gate, a frame for the gate, comprising opposite posts at the ingress end, opposite posts at the egress end, wires connecting with the upper ends of the posts of a side, wires connecting with the lower portions of said posts, guide-rods movable along said wires, rollers on the posts at the egress end, rubber tubes passing around said rollers and engaging at one end with the guide-rods, the other ends being anchored near the ingress-posts, a barrier movable along the guide-rods, elastic tubes for moving the barrier upward, means for moving the guide-rods toward the ingress-posts, longitudinally-controlled locking devices for holding the barrier in lowered position, and a gong arranged in the electric circuit to be sounded upon the releasing of the barrier.

17. In a starting-gate, barrier-carrying guides, horizontal wires along which said guides are movable, and elastic devices for moving said guides in one direction along the wires.

18. In a starting-gate, guide-rods, horizontal wires along which said rods are movable, elastic devices for moving the rods along the wires, a barrier movable along the rods, and means for moving the barrier upward after its movement along the wires.

19. In a starting-gate, opposite supports, a barrier having a fold, an elastic connection between the folded portion and the barrier, and connections between said barrier and the
5 supports.

20. In a starting-gate, opposite supports, a barrier having a fold, an elastic connection between said fold and the barrier, an elastic connection between the barrier and one of

said supports, and a connection between the barrier and the other of said supports.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN M. FLYNN.

Witnesses:

PETER J. FLEMING,

JOHN W. ROGERS.