No. 717,249. Patented Dec. 30, 1902.

P. McGINNIS.

STARTING GATE.

(Application filed May 21, 1902.)

(No Model.) 3 Sheets—Sheet 1.

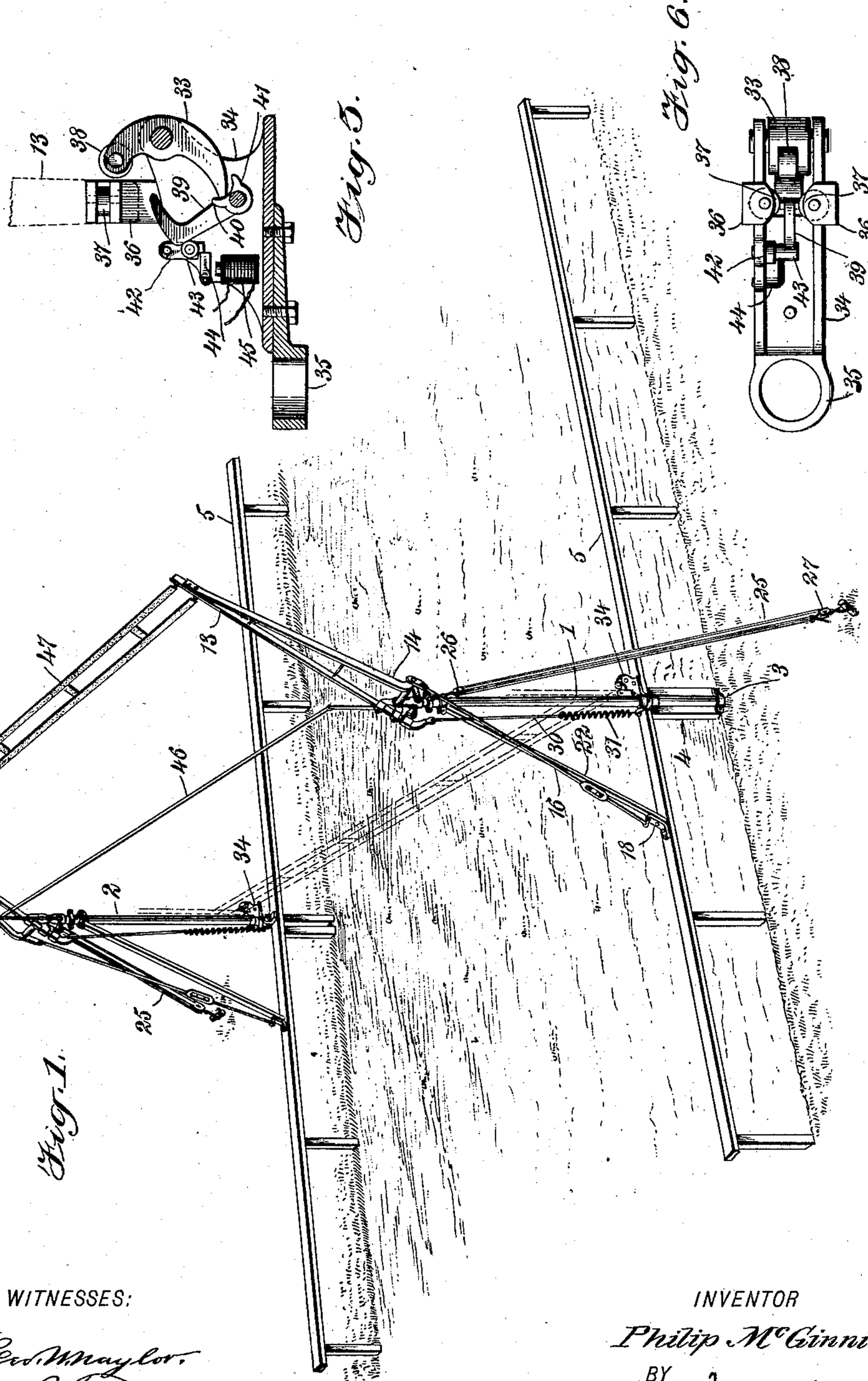


Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES:

Geo. Maylor.
C. R. Ferguson

INVENTOR
Philip McGinnis
BY
ATTORNEYS.

No. 717,249. Patented Dec. 30, 1902.

P. McGINNIS.

STARTING GATE.

(Application filed May 21, 1902.)

(No Model.) 3 Sheets—Sheet 2.

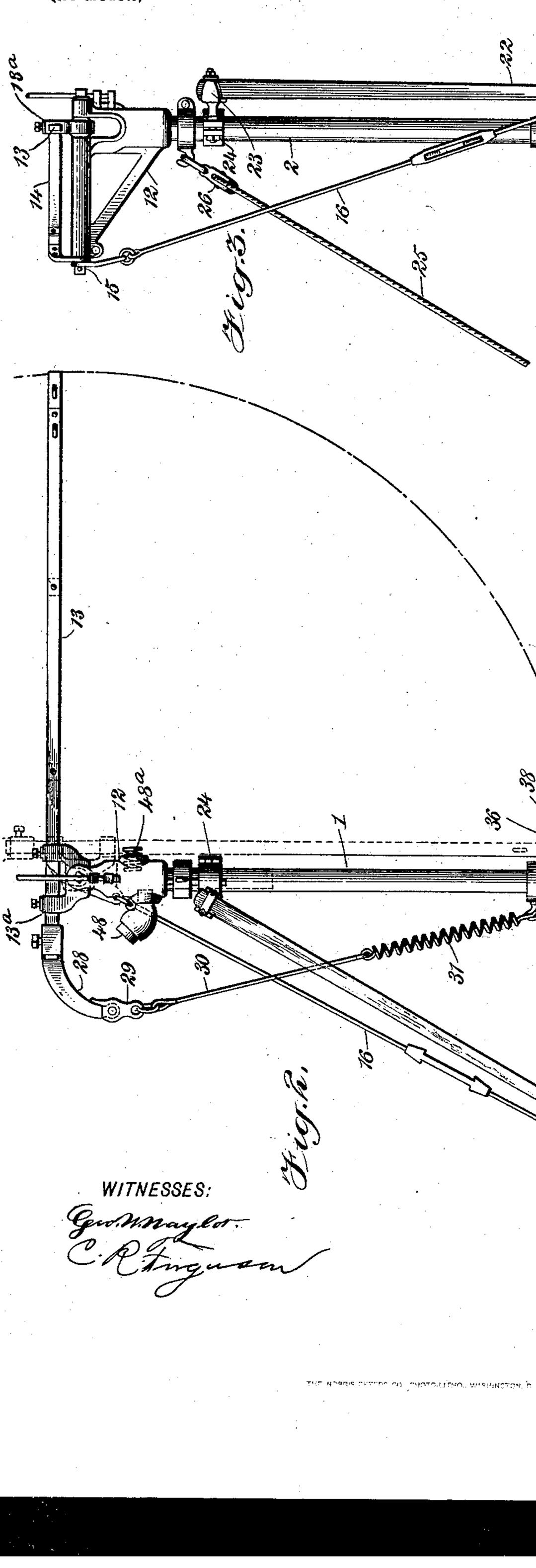


Fig. 3.

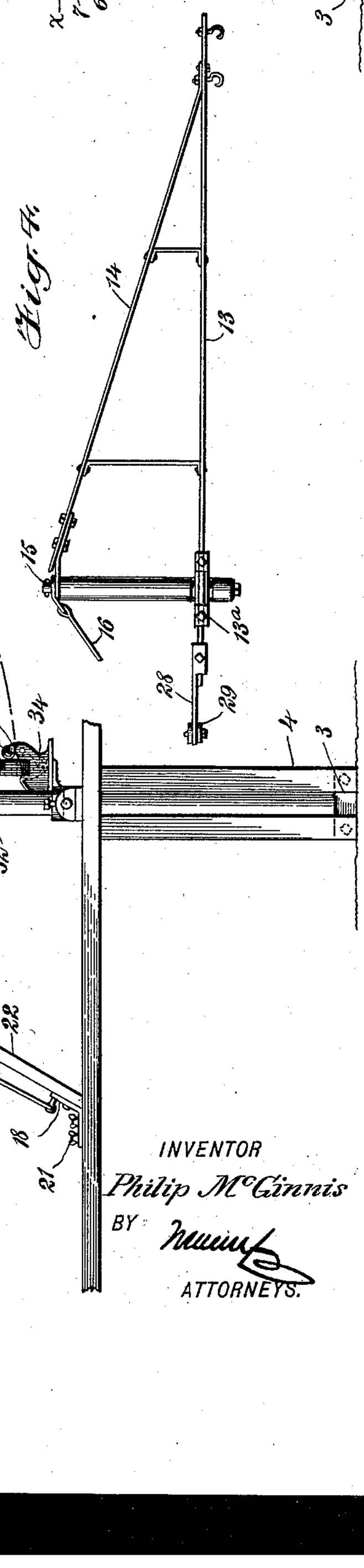


Fig. 4.

Fig. 2.

WITNESSES:
Geo. W. Naylor.
C. R. Ferguson

INVENTOR
Philip McGinnis
BY
ATTORNEYS.

No. 717,249. Patented Dec. 30, 1902.

P. McGINNIS.

STARTING GATE.

(Application filed May 21, 1902.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 9.

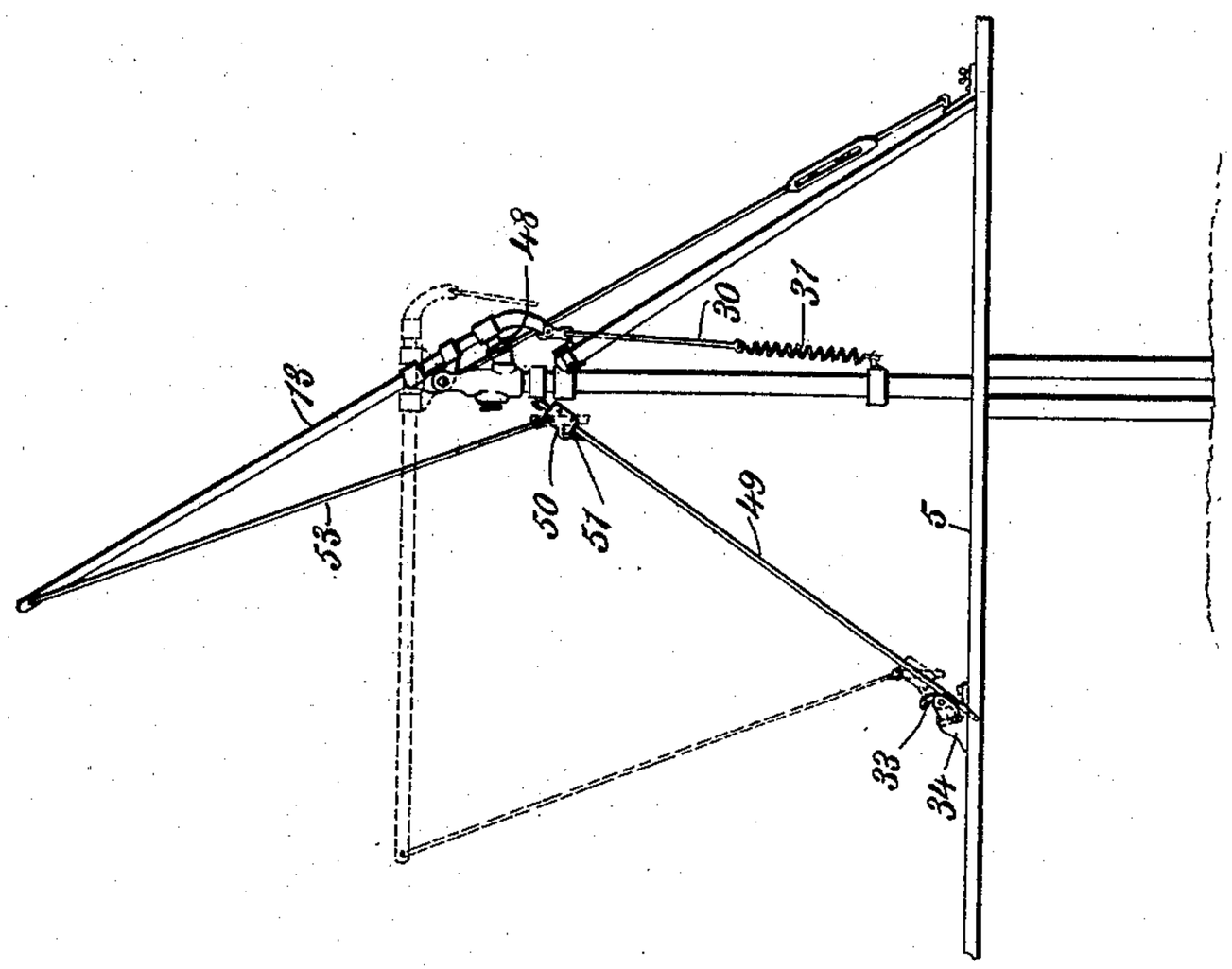


Fig. 8.

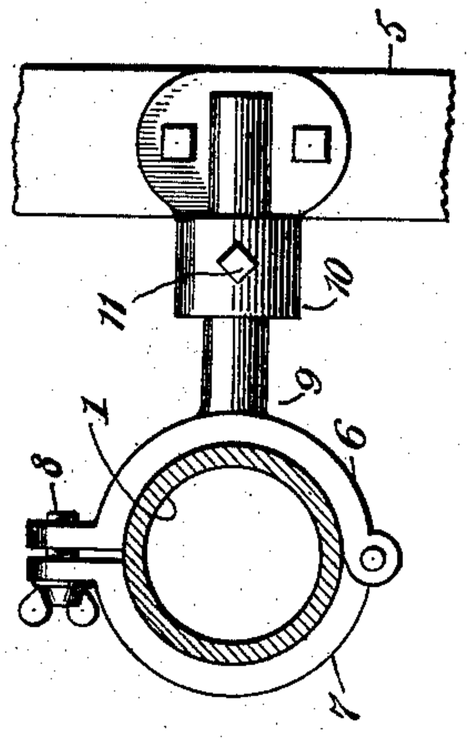


Fig. 7.

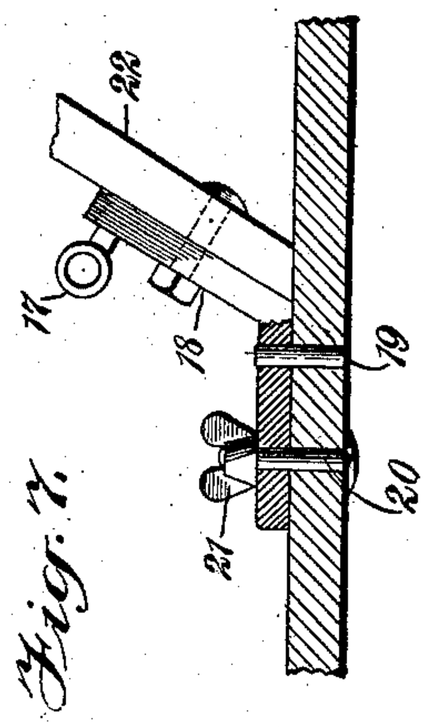
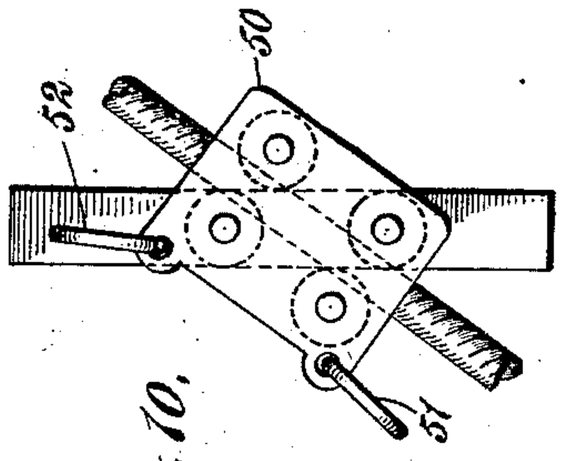


Fig. 10.



WITNESSES:

Geo. W. Maylor.

C. R. Ferguson

INVENTOR

Philip McGinnis

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

PHILIP McGINNIS, OF LONDON, CANADA.

STARTING-GATE.

SPECIFICATION forming part of Letters Patent No. 717,249, dated December 30, 1902.

Application filed May 21, 1902. Serial No. 108,340. (No model.)

To all whom it may concern:

Be it known that I, PHILIP MCGINNIS, a subject of the King of Great Britain, and a resident of London, in the Province of Ontario and Dominion of Canada, 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 starting-gates or barriers for race-tracks, the object being to provide a gate of simple construction and having a locking means so arranged as to be quickly and positively released to permit the gate to move to open position.

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 embodying my invention. Fig. 2 is a side elevation thereof with the gate partly open. Fig. 3 is a rear elevation of one of the gate-supports. Fig. 4 is a plan view of one of the arms and its mountings. Fig. 5 is a detail showing one of the locking devices for the arms. Fig. 6 is a plan view thereof. Fig. 7 is a detail illustrating a brace-anchor. Fig. 8 is a section on the line *x x* of Fig. 3. Fig. 9 is a side view showing a modification in the gate arrangement, and Fig. 10 shows one of the barrier-carriers employed in Fig. 9.

The starting-gate comprises posts 1 2, arranged at opposite sides of the track. As these posts are of similar construction and the parts connecting therewith are also of similar construction, a description of one will answer for both. The post 1, which preferably consists of iron, has a bearing 3 at its lower end in a strap connected to a post 4 underneath the rail 5, which extends along the side of the track. As a means for adjusting the post slightly toward and from the rail 5, it is engaged by a collar consisting of two hinged sections 6 7, held together around the post by a clamping-bolt 8. The section 6 of the collar has a stem 9, movable in a block 10, secured to the upper side of the rail 5. The stem may be held as adjusted by means of a set-bolt 11. On the top of the post is a bracket 12, on a shaft portion of which an arm 13 is mounted to swing. A brace 14 extends from the outer end of the arm and at the outer side thereof to a pivotal connection with a lug 15, extended from the upper portion of the bracket 12, and from this lug a brace-rod 16 extends downward and connects with an eye 17 on an angular casting 18, secured to the rail 5. It will be noted that the arm 13 is adjustable lengthwise in a yoke 13^a, which swings on the bracket, and the arm is held as adjusted by means of set-screws, as indicated. The object of this adjustment is to compensate for the strain of the barrier under varying conditions of weather or width of track—that is, by moving the arm outward a greater tension is exerted on the barrier. The casting 18 is secured to the rail 5 by means of a pin 19 on the rail extending into a horizontal portion of the casting, and a bolt 20 passes through the rail and through an opening in said horizontal portion, and this upper end is provided with a thumb-nut 21. By this arrangement the casting, with the braces, may be quickly released or set when it is desired to adjust the gate lengthwise of the rail or to remove it entirely. The brace 16 as here shown consists of two sections connected together by a turnbuckle. From the casting 18 a brace 22 extends upward at an angle and connects with a clip 23, mounted on a collar 24, removably attached to the upper portion of the post below the bracket. To hold the post from lateral movement, I employ guide cables or ropes 25, which at the upper end pass through a tackle-block 26, removably engaged with the upper portion of the post, and at the lower portion engage in a tackle-block 27, which is anchored to the ground by means of a pin or other suitable device.

Removably attached to the forward end of the arm 13 is a downwardly-curved arm 28, and having swinging connection with the end of this arm 28 is a block 29, from which a rod 30 extends downward and connects with one end of a spring 31, the other end of said spring being engaged with a hook on a collar 32, secured to the post. This spring is designed for moving the arm 13 to its uppermost position, as will be hereinafter described. To

hold the arm in its lowered position for starting, as indicated in dotted lines in Fig. 2, I employ a locking device consisting of a curved dog 33, mounted to rotate in a frame 34, attached by means of a collar 35 to the lower portion of the post or just above the rail 5. Extended upward from opposite sides of the frame 34 are arms 36, having on their inner sides rollers 37, which serve to guide and center the end of the arm 13 in the frame. The upper end of the dog 33 is provided with a roller 38 for engaging with the outer side of the arm 13 near its end.

A locking device for the dog consists of an angle-lever 39, pivoted in the frame 34 and having at its fulcrum-point lugs 40 41 for engaging, respectively, with the upper and lower sides of the lower end of the dog. It will be noted that the engaging surfaces of these lugs are curved in opposite directions. While in locking position, the lever 39 is held by means of a plate 42, mounted to swing in the frame 34 and having a roller 43, with which the angle-lever engages. The upper horizontally-disposed portion of the angle-lever 39 is designed to prevent the said angle-lever from falling entirely out of engagement with the roller 43 upon releasing the catch.

The holding-plate 42 is engaged by an armature 44, coacting with an electromagnet 45. It may be here stated that the electromagnets for the opposite arms are both arranged in one circuit, the wires of which may pass through a tubing 46, extended across the track, and the circuit will be closed by the proper officer.

Opposite arms 13 are connected by a barrier 47, which consists of webbing or other suitable yielding material, the ends of this barrier being engaged with hooks at the ends of the arms.

In the operation when the gate is in its lowered or starting position the ends of the arms 13 will be engaged by the dogs 33, as before described and as illustrated in Fig. 5. The dogs will be held from rocking under the influence of the springs 31 by means of the inner ends of the dogs engaging with the lugs 40. Upon closing the electric circuit the armatures 44 will be drawn out of engagement with the plates 42, permitting the angle-levers to swing downward, so that the springs 31 will quickly swing the arms upward. To relieve the shock, cushions 48 are supported in sockets attached to the upper portion of the bracket. As a means for imparting a quick starting movement to the arms I provide spring-pressed blocks 48^a, supported by the posts and with which the arms engage when in lowered position.

In Fig. 9 the several parts are similar to those already described, except that the barrier is mounted to slide with the upward movement of arms and at the starting side of the machine. A brace 49 extends downward from the post at an angle and toward the starting side of the gate and connects with the frame in which the locking devices are arranged. Movable on this brace 49 is a carriage 50, the opposite carriages being connected by the barrier-webbing. The carriage has grooved wheels, between which the brace engages, as clearly illustrated in Fig. 10. In this connection the holding-dog 33 is provided with a hook end instead of the roller 38 for engaging with a ring 51, and also connected to the carriage is a ring 52 for engaging with a draw bar or cable 53, the end of which engages with the end of the gate-arm, as clearly shown in Fig. 9. In the operation of this device when the arms are released they will be swung upward by their springs, and this movement will draw the carriages 50 along the braces, and consequently elevate the barrier, so that the horses may pass underneath.

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

1. In a starting-gate, opposite posts, brackets on the upper ends of said posts and having shaft portions, yokes mounted to swing on said shaft portions, arms adjustable in said yokes, braces extended from the outer ends of the arms and having pivotal connection with said brackets, a barrier movable with the arms, means for holding the arms in forward position, and means for swinging the arms upward, substantially as specified.

2. In a starting-gate, an arm-locking mechanism comprising a swinging dog, a lever having lugs for engaging with one end of the dog, a holding-plate for said lever, an armature for engaging with the plate, and an electromagnet coacting with the armature, substantially as specified.

3. In a starting-gate, an arm-locking mechanism comprising a swinging dog, a roller supported at one end of said dog, a lever having lugs for engaging at opposite sides of the other end of said dog, the said lugs being curved, a holding-plate for said lever, an armature for engaging with the plate, and an electromagnet coacting with the armature, substantially as specified.

4. In a starting-gate, an arm-locking mechanism comprising a curved swinging dog adapted for engagement at one end with the arm of the gate, an angle-lever having lugs for engaging at opposite sides of the other end of said dog, a holding-plate carrying a roller for engaging with said angle-lever, an armature for engaging with the plate, and an electromagnet coacting with the armature, substantially as specified.

5. In a starting-gate, opposite posts, brackets on the post, yokes mounted to swing on the brackets, arms connected to said yokes, fixed angle-plates, braces extended from the upper portions of the posts and connecting with said angle-plates, and brace-rods extended from the outer ends of the brackets and connecting with said angle-plates, substantially as specified.

6. In a starting-gate, opposite posts, yokes mounted to swing on the posts, arms adjustable lengthwise in said yokes, a barrier movable with the arms, means for holding the arms in lowered position, and means for swinging the arms upward, substantially as specified.

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

PHILIP McGINNIS.

Witnesses:
JNO. M. RITTER,
C. R. FERGUSON.