No. 679,496. Patented July 30, 1901.

L. CARRIER.

RAILWAY GATE.

(Application filed Feb. 5, 1901.)

(No Model.) 2 Sheets—Sheet 1.

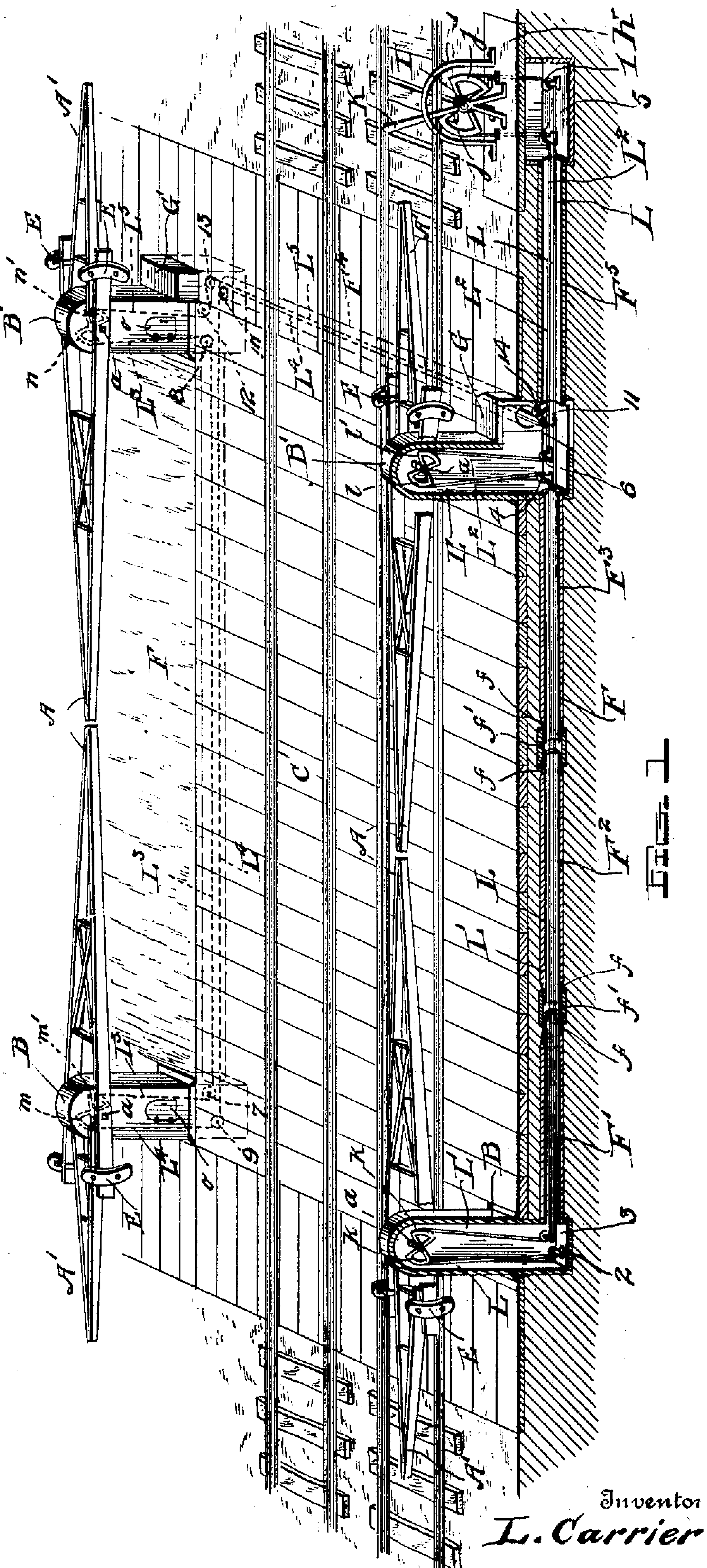

Fig. 1

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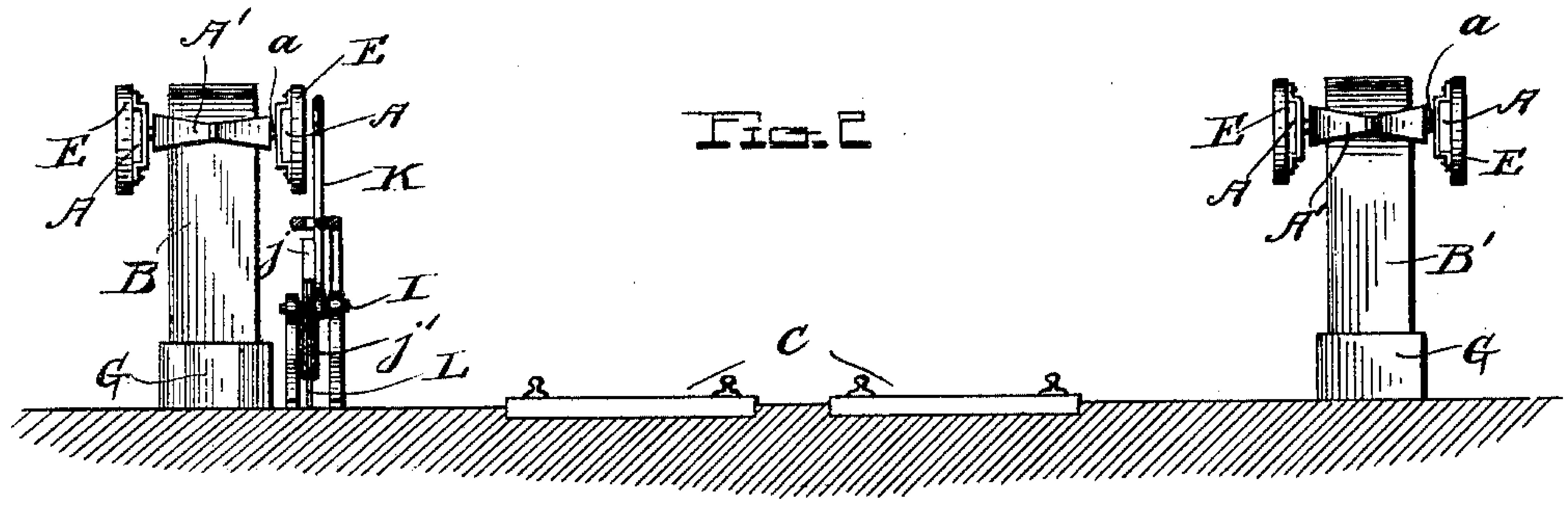
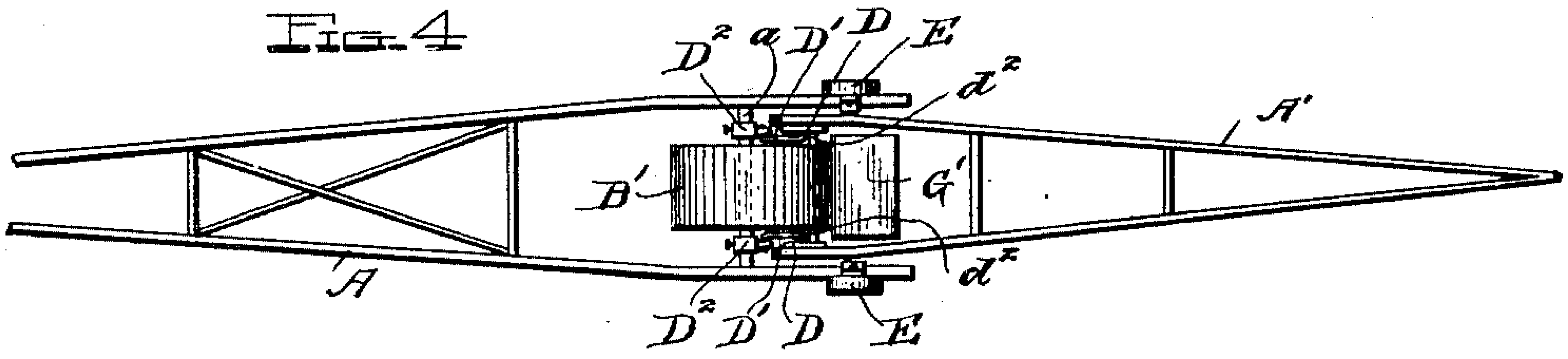


Fig. 2

Fig. 4



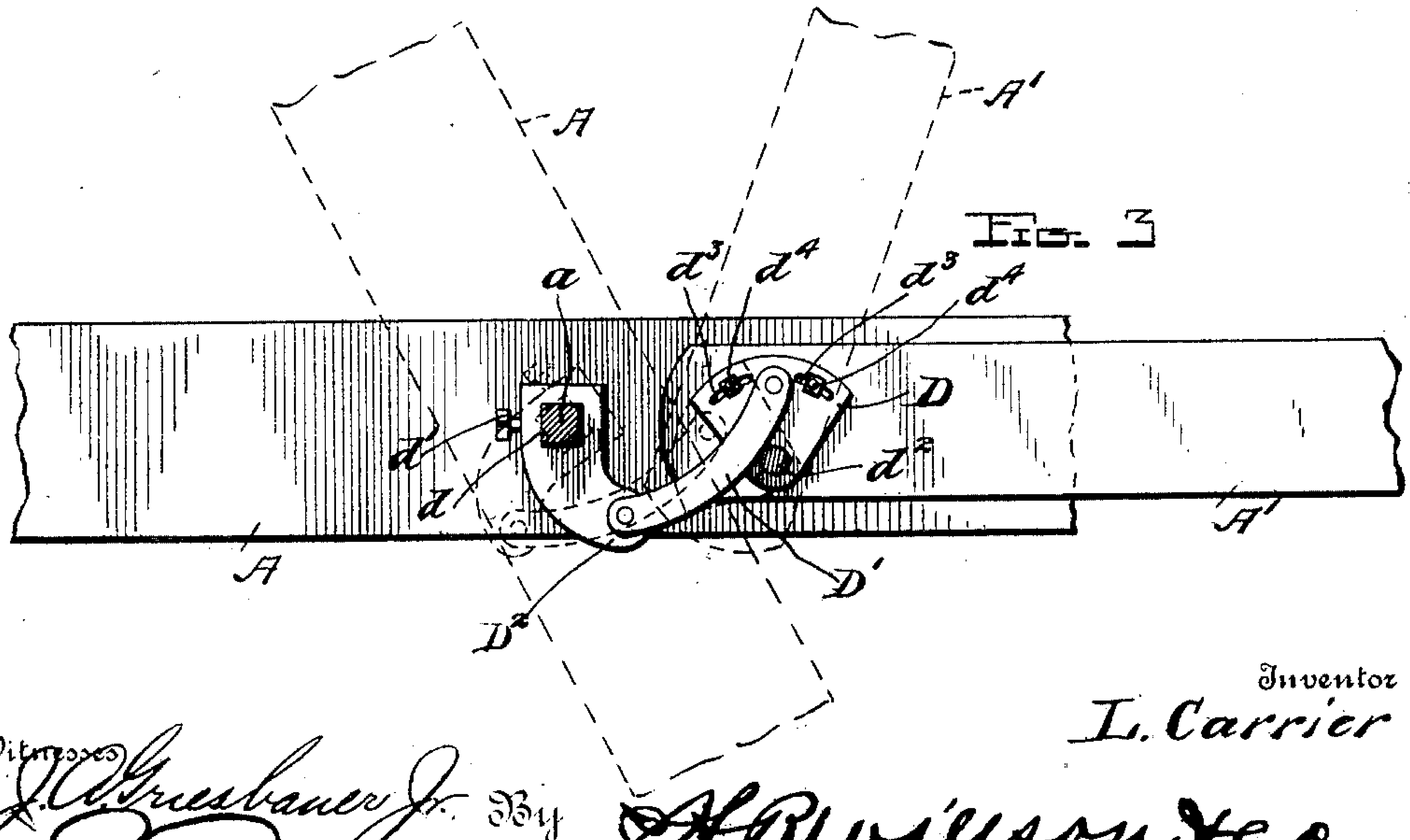


Fig. 3

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UNITED STATES PATENT OFFICE.

LYMAN CARRIER, OF JOLIET, ILLINOIS.

RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 679,496, dated July 30, 1901.

Application filed February 5, 1901. Serial No. 46,089. (No model.)

To all whom it may concern:

Be it known that I, LYMAN CARRIER, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Railway-Gates; 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.

This invention relates to improvements in railway-gates for use in closing a street and sidewalk to travel while a railway-train is crossing them, and relates more particularly to that class of gates wherein a gate-arm is used to be elevated and lowered across the street and sidewalk.

The object of the invention is to provide simple and effective means for operating the gate-arm and, further, to provide means to shield and prevent injury to and interference with the operating means connecting the gate-arms with each other.

With these and other minor objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of the gates as they would appear let down across the roadway and sidewalk to close them to travel, parts appearing in section. Fig. 2 is an end elevation of the same. Fig. 3 is an inner side elevation of the inner ends of a roadway gate-arm and its coacting sidewalk gate-arm, showing in full and broken lines the positions of said connections when the arms are raised and lowered. Fig. 4 is a top plan view of a roadway gate-arm and its sidewalk gate-arm and connections.

Like reference characters designate corresponding parts throughout the several views.

Referring to the drawings, the letter A designates the four roadway-arms of the gate, having their inner ends rigidly mounted upon the rectangular ends of shafts *a*, pivotally connecting said arms to hollow metallic standards or posts B B′, arranged in alined pairs upon opposite sides of the trackway C.

A′ designates sidewalk gate-arms, to the inner ends of which are secured substantially triangular plates D, to each of which is pivoted one end of a link D′, having its opposite end pivoted or jointed to a curved crank-arm D^2, having a rectangular opening *d* to receive the adjacent end of shaft *a*, to which it is secured by a set-screw *d*′. By this construction when the gate-arms A are elevated and lowered they will simultaneously elevate and lower the sidewalk gate-arms A′, as shown in full and broken lines in Fig. 4. The arms A carry counterbalance-weights E. Each triangular plate D is pivoted at its lower end or vertex to the arm A′ by a pivot pin or bolt d^2 and at its upper end is provided with arc-shaped slots d^3, through which pass securing-bolts d^4. By loosening up these bolts the plate D may be swung inwardly or outwardly on its pivot to adjust the link D′ to compensate for wear and expansion or contraction of the parts and said plate held in adjusted position by tightening said bolts.

On each side of the trackway C the posts B B′ are connected by a longitudinal pipe or conduit F, composed of sections F′, F^2, and F^3, which are provided with reduced ends *f*, connected by an air and water tight coupling ring or sleeve *f*′. The two posts B B′ on opposite sides of the trackway at one end of the gate are also connected through the medium of a similar transverse pipe or conduit F^4, which extends beneath the ties of the trackway, between junction-boxes G G′, fixed to said posts. A platform H is arranged adjacent to the box G and is connected therewith by a pipe F^5. The pipes F, F^4, and F^5 are preferably made of wood treated with creosote, pitch, or some other suitable material to render them waterproof and prevent them from rotting, although any other suitable material may be employed, the use of wood being deemed preferable, however, because it is cheap, easily procured, and is when thus treated water and air proof and a non-conductor of telluric influences, whereby undue expansion and contraction and freezing of the parts is prevented and a proper action of the operating means inclosed within the pipes insured at all times. Through the pipes and junction-boxes extend the connecting-cables, and upon the platform H is mounted the operating mechanism therefor, which consists of a rock-shaft I, carrying

grooved segmental cranks *j j'* and an operating-lever K. To the crank *j'* is secured one end of a cable L, which is passed over the pulleys 1 and 2 on the platform H and hollow standard B on the same side of the trackway and has its opposite end secured to a crank *k* on the shaft *a* of the gate-arm A, mounted on said standard. Another cable L' connects the other crank *k'* of the same shaft with a crank-arm *l* on the shaft of the adjacent arm mounted on standard B' and is passed over the pulleys 3 and 4 on said standards. These cables extend through the pipes or conduits F and F^5. A third cable L^2 also extends through the pipe or conduit F^5 and is secured at its ends to the cranks *j* and *l'* and passed over pulleys 5 and 6 on the standard B' and platform H, adjacent thereto. By this construction and arrangement of parts provision is made for operating the gate-arms on one side of the trackway—that on which the said platform is located. To operate the gates on the opposite side of the trackway, to open and close all four sets of gates simultaneously, additional cables L^3, L^4, and L^5 are employed. The cable L^3 connects the cranks *m' n* of the gate-arms A on the side of the trackway opposite the platform H and extends through the pipe or conduit F and is passed around the pulleys 7 and 8. The cable L^4 is connected at one end to the companion crank *m* of crank *m'*, extends continuously through the pipes or conduits F and F^4 and junction-boxes G G', and is connected at its opposite end to the cable L, being passed around pulleys 9, 10, and 11. The cable L^5 is connected at one end to the companion crank *n'* of the crank *n* and at its opposite end to the cable L^2, being extended through the pipe F^4 and junction-boxes G G' and passed over pulleys 12, 13, and 14. By this construction it will be clear that upon moving the lever K all four sets of gate-arms will be simultaneously operated in an obvious manner.

It will be seen from the foregoing description, taken in connection with the accompanying drawings, that my invention provides a simple and effective construction of railway-gate wherein the operating parts connecting the several arms are securely housed and protected from injury and from climatic interferences with the proper movement thereof, so that the gate is adapted to act well under all conditions of service. The construction of the gate herein shown is deemed preferable; but it will of course be understood that changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

To permit access to the interior of the hollow standards B B' for examination of the cables, each standard may be provided with a door *o*, if desired.

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

1. In a railway-gate, the combination of a standard, a shaft mounted therein, a roadway gate-arm carried by said shaft, operating means for said shaft, a sidewalk gate-arm, and connections between the shaft and sidewalk gate-arm, the same comprising an adjustable plate upon said arm, a crank upon the shaft, and a link connecting said plate and crank, substantially as set forth.

2. In a railway-gate, the combination of hollow standards, shafts mounted therein and provided with cranks, roadway gate-arms carried by said shafts, sidewalk gate-arms, connections between the shafts and sidewalk gate-arms comprising adjustable plates upon said arms, cranks upon the shafts, and links connecting the said plates and shafts, a platform having an operating-lever mounted thereon, pipes or conduits connecting the standards at each side of the gateway, a transverse pipe or conduit connecting opposing standards at one end and upon opposite sides of the gateway, a third conduit connecting the platform and one of the standards, and cables passing through the conduits and standards and connecting the said operating device to the cranks, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LYMAN CARRIER.

Witnesses:
JOHN H. WARD,
JOHN S. REYNOLDS.