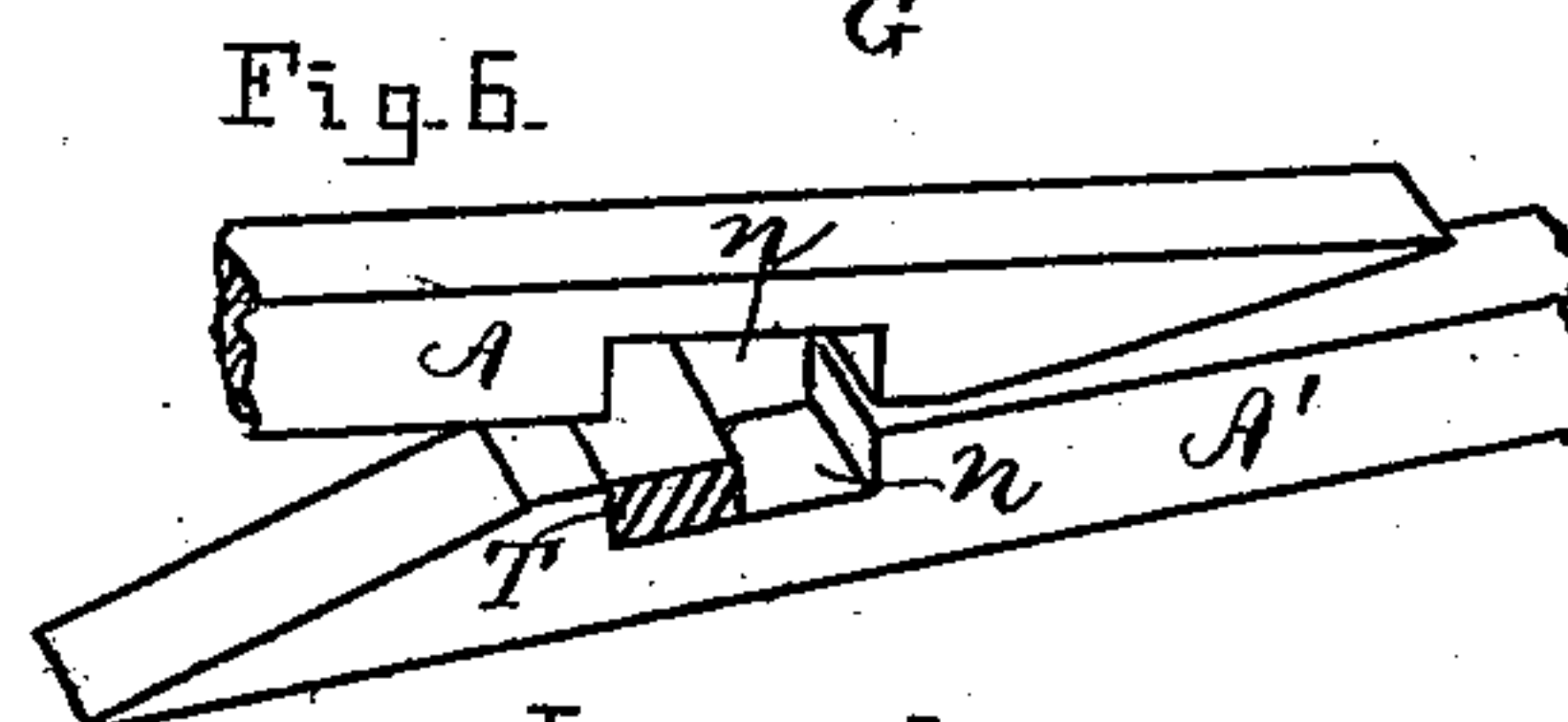
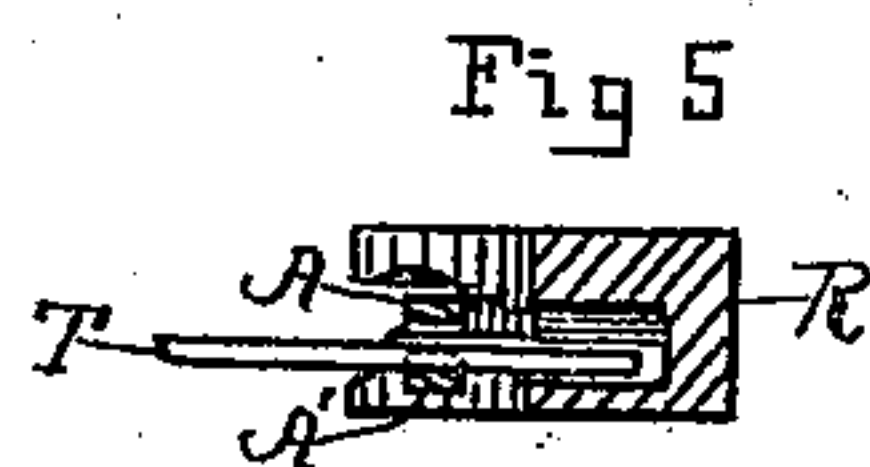
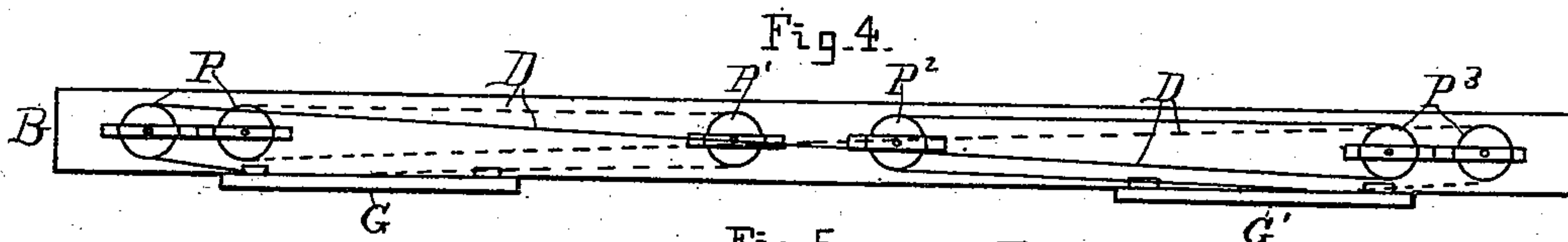
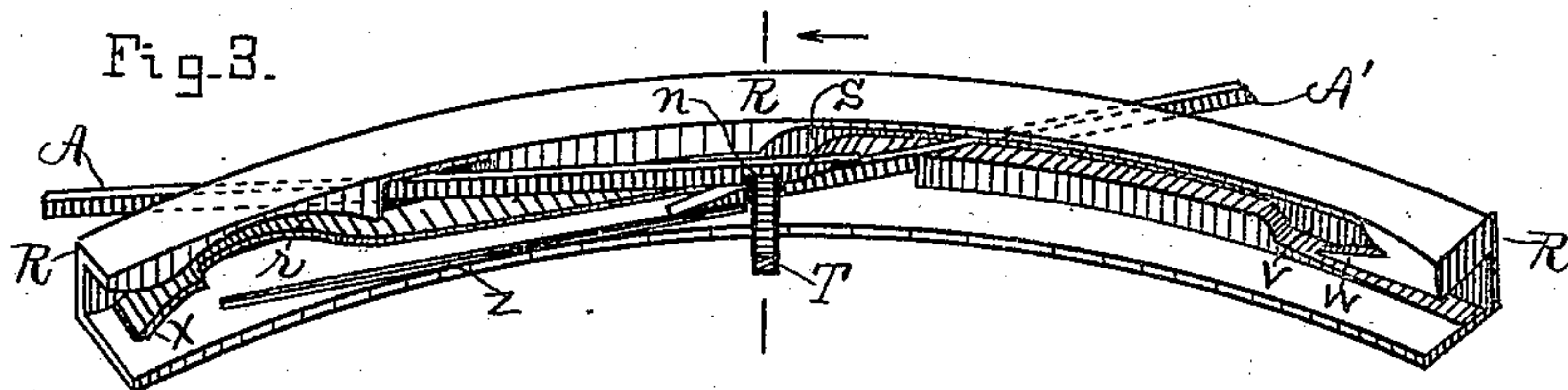
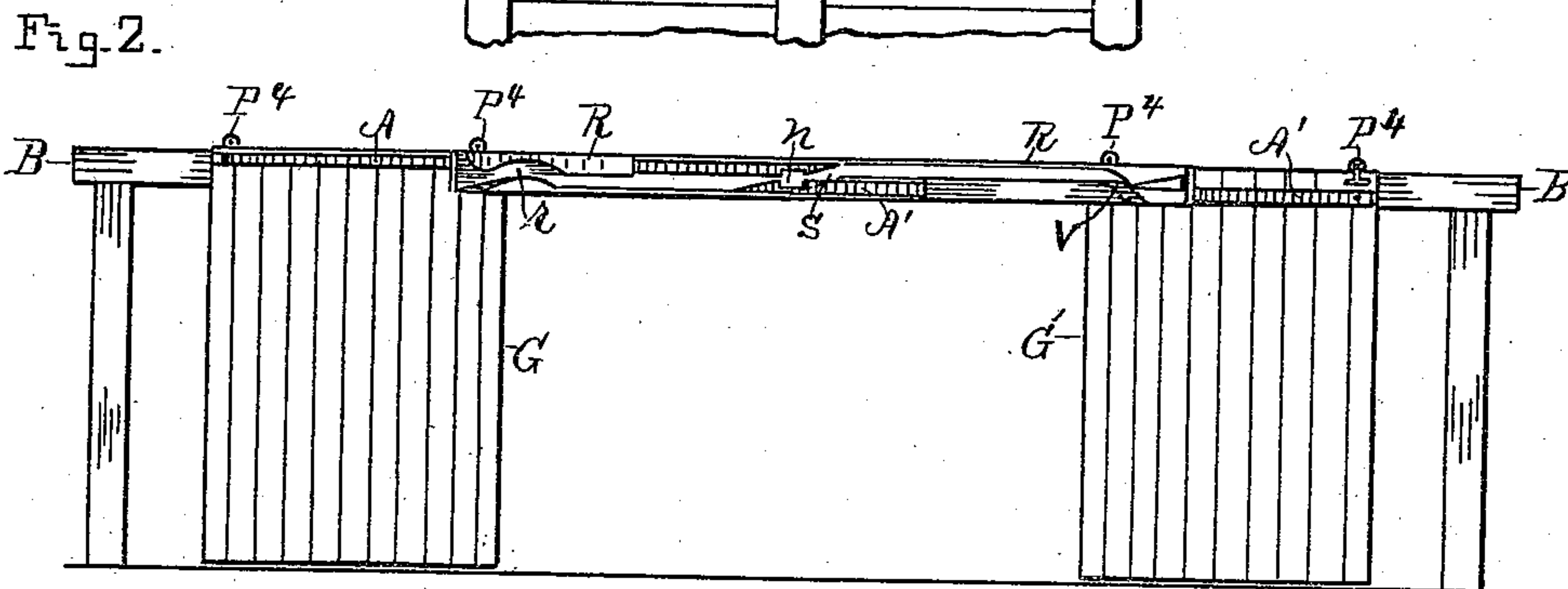
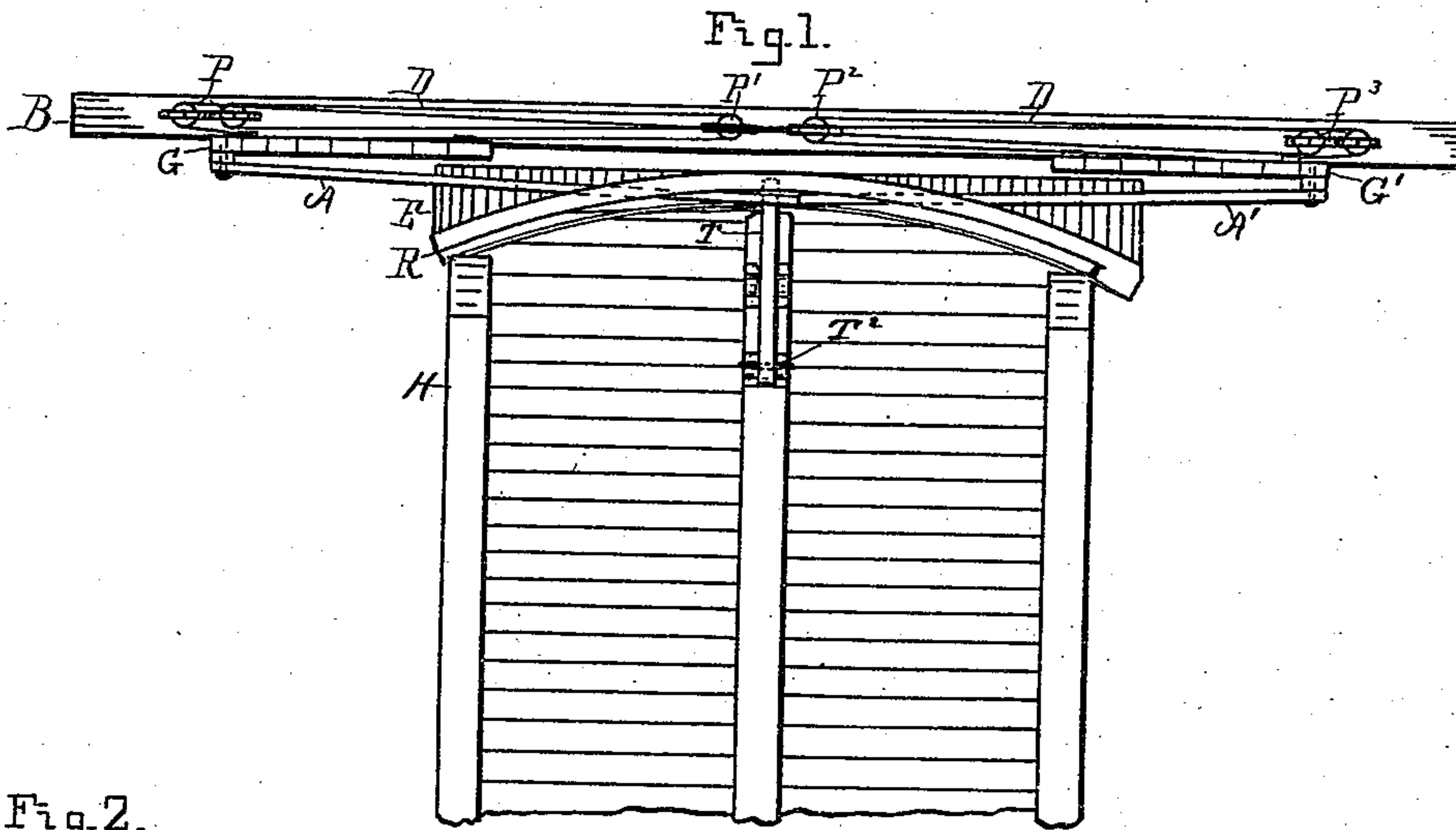


(No Model.)

A. J. LAGERQUIST.  
BRIDGE GATE.

No. 501,516.

Patented July 18, 1893.



Witnesses:

Ray Hutchins,  
Herbert Corwell,

Inventor:

Andrew J. Lagerquist. By  
Thos Hutchins his

Attorney.



# UNITED STATES PATENT OFFICE.

ANDREW J. LAGERQUIST, OF BRACEVILLE, ILLINOIS.

## BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 501,516, dated July 18, 1893.

Application filed April 26, 1893. Serial No. 471,859. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW J. LAGERQUIST, a citizen of the United States of America, residing at Braceville, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in Bridge-Gates, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a plan of one end of a swing bridge, and of a pair of gates connected by cords or chains, and having arms thereto attached adapted to be engaged by an arm of the bridge as it may swing in either direction, and a plan of a curved guide way for guiding said arm attached to the bridge for engaging said gate arms. Fig. 2 is a side elevation of the two bridge gates, and of a frame for supporting their track, and a side view of a guide way for directing the course of an arm of the bridge for moving said gates. Fig. 3 is a perspective view of the guide way for directing the course of the arm of the bridge, and showing a portion of said arm engaged with arms designed to be attached to the said gates. Fig. 4 is a plan of the two bridge gates and of the cord and pulley mechanism for connecting said gates. Fig. 5 is a cross section of Fig. 3, taken on line 1 looking in the direction of the arrow, and Fig. 6 is a perspective view of the two outer ends of the arms connected to the two gates, showing them provided with notches for receiving an arm connected to a bridge.

This invention relates to certain improvements in bridge gates for use in connection with a swing bridge for closing the road way approach to travel when the bridge is turned away from its approach, which improvements are fully set forth and explained in the following specification and claims.

Referring to the drawings H represents a portion, or one end of a swing bridge, shown as having three trusses, and two road ways, the middle truss having a projecting arm T, pivotally connected at its inner end at T<sup>2</sup> to the upper part of the middle truss so that its outer end may vibrate vertically.

G and G' represent a pair of gates suspend-

ed by means of roller hanger P<sup>4</sup> on a track on frame B above and across the road way or approach to the bridge in such manner that they may move to or from each other on their tracks as the bridge is turned to or from its approach. Said gates are respectively provided with arms A and A' pivotally connected thereto, the outer ends of which arms pass through apertures in a curved guide way R as shown in Figs. 1 and 3, so that said arms are in contact with and cross each other, and so that the notches *n* in their sides facing each other will be opposite, or register with each other when the gates are open, as shown in Figs. 2, 3 and 6. Said gates are connected with each other by means of a cord or chain D passing around the pulleys P, P', P<sup>2</sup> and P<sup>3</sup> in such manner that when one gate is moved in either direction, it will through the medium of such cord and pulley connection move the other gate in the opposite direction. The manner of connecting said gates by means of cords or chains is shown particularly in Fig. 4. One of said cords or chains is shown in full lines, and one is shown in broken lines. The one shown in full lines is connected to the outer end of gate C, and from thence passes around the outer pulley P, from thence around the inner pulley P<sup>3</sup>, and from thence around pulley P<sup>2</sup> to gate C' to which it attaches. The one shown in broken lines is connected to the outer end of gate C', and from thence passes around the outer pulley P<sup>3</sup>, from thence around the inner pulley P, and from thence around pulley P' to gate C to which it attaches, so that if either gate is moved, it will move the opposite gate in the opposite direction.

R is a curved guide arranged adjacent to the upper side of the gates, so that their arms A and A' may pass through boxes therein as shown particularly in Fig. 3. The face of said guide, on its side toward the bridge is provided with a longitudinal guide channel or groove as shown particularly in Fig. 3 for the reception of the outer end of the arm T attached to the bridge, as shown also in Fig. 5. As the bridge swings, said arm traverses said channel in either direction from one end to the other, for the purpose of engaging the arms A and A' of the gates, and through their



medium move the gates to or from each other to open or close the gates.

Figs. 2, 3 and 6, represent the arms A and A' in the positions they are in when the gates are open so that the roadway or approach to the bridge is free to travel, and at such time the two notches or recesses  $n$ ,  $n$ , of said arms are opposite each other, or register with each other as shown in said figures, and the arm T of the bridge will lie in the notch of arm A' as shown particularly in Fig 6, said arm T being no greater in thickness than the notch in said arm A'. Looking at Fig. 3, if the bridge and its arm T should be moved toward the right of the figure, the cam form of the channel of guide R, shown at  $s$  will immediately elevate the outer end of arm T out of the notch  $n$  in arm A' into notch  $n$  of arm A, and cause arm T to carry with it arm A until said arm approaches the outlet of said guide where the point of arm A will pass upon the projecting point  $w$ , and the cam form of said guide channel shown at  $v$ , will permit arm T to pass out from the notch  $n$  and move out of its guide channel and permit the bridge to swing farther open. Such operation and movement of the arms T and A will cause the two gates to move toward each other across the roadway, on account of their being so connected by means of said cord and pulley mechanism. If the bridge should swing in the opposite direction, or to the left from that shown in Fig. 3, arm T will remain in notch  $n$  in arm A', as is also shown in Fig. 6, and carry said arm with it until the cam form of said guide channel shown at  $r$  will elevate said arm T out of said notch  $n$  and permit arm T to pass out of its guide channel, and the outer end of arm A' will pass under the cam shaped flange shown at  $x$  for the purpose of bringing the outer end of arm A' down and cause arm T to be so released from its said notch or recess  $n$ . It will thus be seen that when the bridge is turned away from the roadway or approach, the gates G will be moved so as to close the roadway or approach to travel. When the

bridge returns from either direction, its arm T will enter its said guide way R and the forms of the cams  $x$  and  $v$  will cause it to engage a notch  $n$  in either arm A or A' according to which arm T engages, and return the said arms A and A' to their first positions, the gates being open, and the bridge at the approach open to travel; when further movement of the bridge in either direction will close the gates across the roadway as before described, so that as the bridge is turned, it automatically opens and closes the gates across the roadway.

It is intended to provide each approach or roadway with such gates to be operated simultaneously by the bridge as it is turned, and the operating mechanism is located above the roadway or approach as shown so as to be less liable to be obstructed by wear and the elements.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In a bridge gate, the combination of the bridge H having arm T, gates G, G' having respectively arms A and A' provided with the notches or recesses  $n$ , cord D and pulleys P, P'. P<sup>2</sup>. P<sup>3</sup>. for connecting said gates in such manner that they may move each other simultaneously in either direction, and guide R having the cam surfaces  $r$  *s. v.*  $x$  for detachably connecting arms A, A'. with arm T. all arranged to operate substantially as and for the purpose set forth.

2. In a bridge gate, the combination of the bridge H having arm T, arms A and A' adapted to be detachably connected with arm T, and gates connected with arms A and A' in such manner as to be opened and closed by the bridge when it swings substantially as and for the purpose set forth.

ANDREW J. LAGERQUIST.

Witnesses:

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